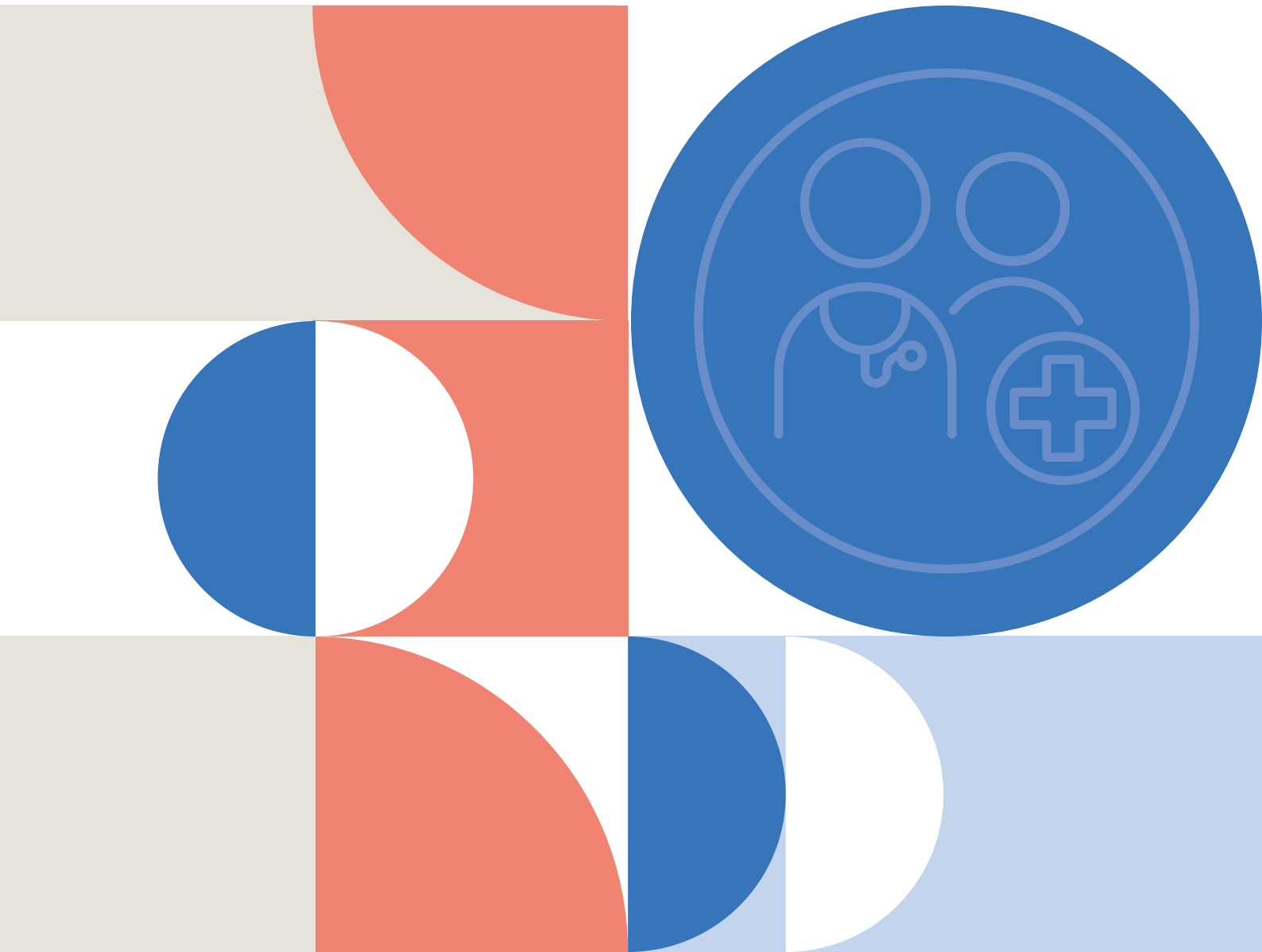


WHO implementation handbook for national action plans on antimicrobial resistance

Guidance for the human health sector



WHO implementation handbook for national action plans on antimicrobial resistance

Guidance for the human health sector

WHO implementation handbook for national action plans on antimicrobial resistance:
guidance for the human health sector

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Abbreviations

AMC	antimicrobial consumption
AMR	antimicrobial resistance
AMU	antimicrobial use
AWaRe	Access, Watch, Reserve
AST	antimicrobial susceptibility testing
DDD	defined daily dose
EML	essential medicines list
EQA	external quality assurance
EUCAST	European Committee on Antimicrobial Susceptibility Testing
FAO	Food and Agriculture Organization of the United Nations
GAP	Global Action Plan
GDEF	Global Disease Eradication Fund
GLASS	Global Antimicrobial Resistance Surveillance System
GMP	good manufacturing practice
HIV	human immunodeficiency virus
IACG	Interagency Coordination Group
IHR	international health regulations
IPC	infection prevention and control
IT	information technology
IVDs	in vitro diagnostics
IQA	internal quality assurance
JEE	joint external evaluation
JICA	Japan International Cooperation Agency
LMICs	low- and middle-income countries
NAP	national action plan

NAPHS	national action plan for health security
NGO	nongovernmental organization
NRL	national reference laboratory
OECD	Organisation for Economic Co-operation and Development
OIE	World Organisation for Animal Health
R&D	research and development
SOPs	standard operating procedures
SSIs	surgical site infections
STGs	standard treatment guidelines
SWOT	strengths, weaknesses, opportunities and threats
TAP	tailoring antimicrobial resistance programmes
TB	tuberculosis
TOR	terms of reference
TPP	target product profile
TrACSS	Tripartite AMR country self-assessment survey
TWG	technical working groups
UHC	universal health coverage
UN	United Nations
USAID	United States Agency for International Development
USCDC	United States Centers for Disease Control and Prevention
WAAW	World Antimicrobial Awareness Week
WASH	water, sanitation and hygiene
WGS	whole-genome sequencing
WHO	World Health Organization

01

Introduction

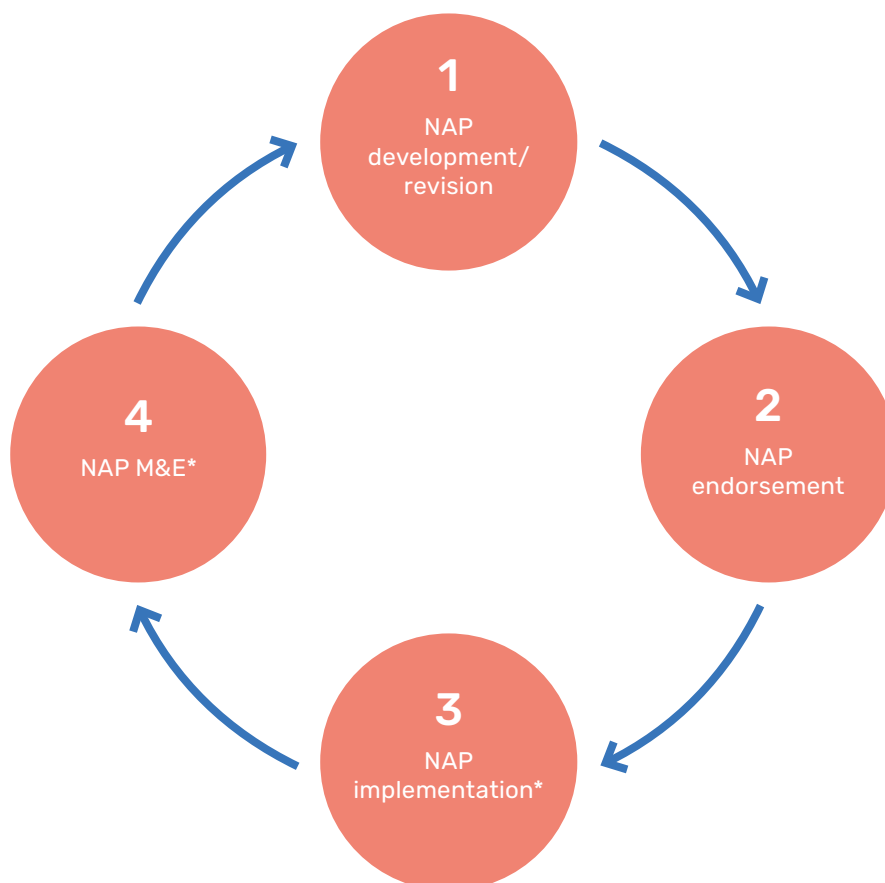


1.1 Background

In recognition of antimicrobial resistance (AMR) as a growing global public health threat, the World Health Assembly endorsed the [Global action plan on antimicrobial resistance](#) (GAP on AMR) in 2015. The GAP calls on countries to develop national action plans (NAPs) on AMR in the context of a One Health approach (1). Member States committed to develop and implement NAPs on AMR and have been supported in this by the World Health Organization (WHO) together with partners including the Food and Agriculture Organization of the United Nations (FAO) and the World Organisation for Animal Health (OIE). The continuous, stepwise process includes development, endorsement, implementation, and monitoring and evaluation (M&E) (see Fig. 1).

The One Health approach to NAPs on AMR calls for coordination and collaboration between the human health, animal health, agriculture and food production sectors(1). In collaboration with FAO and OIE, WHO has been monitoring the progress of country action on AMR through the annual Tripartite AMR country self-assessment survey (TrACSS) since 2016. Results for 2019–2020 (TrACSS 4.0) show that 88% of 136 responding countries had a NAP on AMR. However, only 20% of those countries have fully financed their NAPs, reflecting a major gap in implementation (2). For comprehensive and sustainable implementation of NAPs, coordination both across sectors and within individual sectors and programmes is critical. The *Draft AMR Tripartite strategic framework* sets objectives for collaborative action to address AMR (3). The present handbook focuses on providing technical guidance to strengthen implementation within the human health sector.

Fig 1. Continuous process for NAP development through to M&E



*This handbook provides practical guidance on NAP implementation (step 3) and NAP M&E (step 4).

M&E: monitoring and evaluation; NAP: national action plan.

1.2 Purpose

For most countries, the greatest challenge is not developing a NAP; rather, it is achieving NAP implementation that is evidence-based and demonstrates sustained action (4). In 2019, WHO published [Turning plans into action for AMR](#) to provide countries with practical guidance on implementing NAPs (5). Building on that paper, the purpose of this handbook is:

- to provide a practical, stepwise approach to NAP implementation within the human health sector; and
- to provide a process and collation of WHO tools to prioritize, cost, implement, monitor and evaluate NAP activities.

The handbook is primarily intended to guide implementation of NAPs on AMR in the human health sector following a six-step continuous process (Box 1).

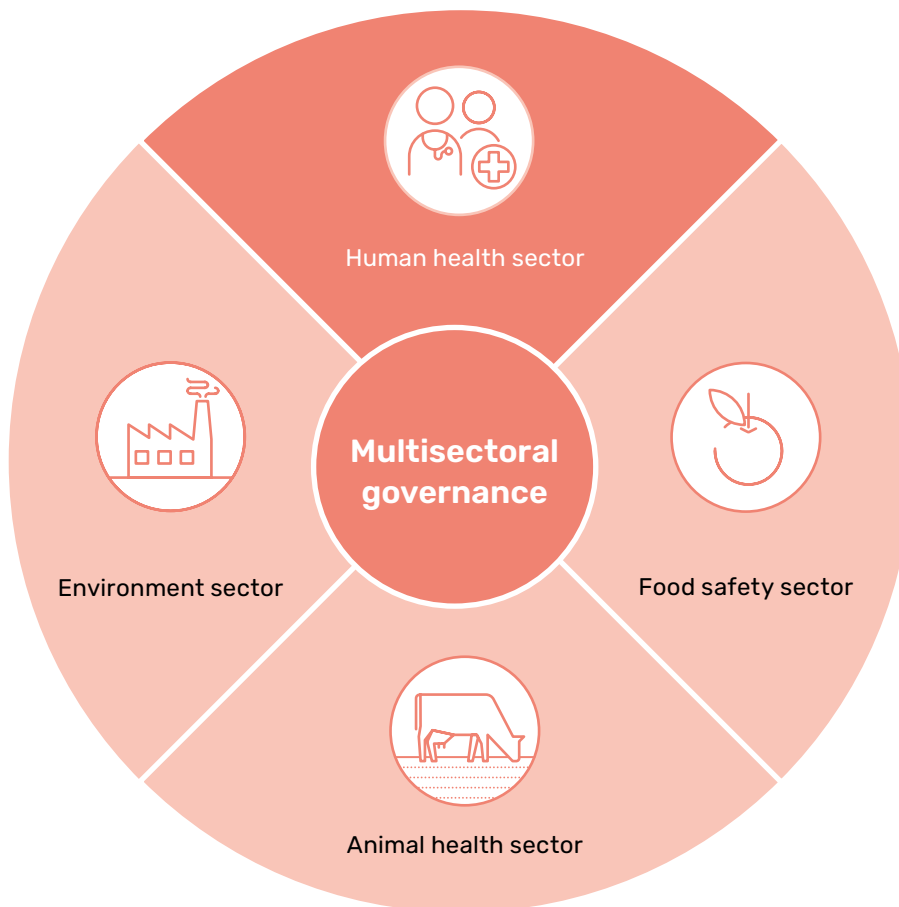
This includes functions of the human health sector within multisectoral governance to ensure a well-coordinated approach to sustainable NAP implementation (Fig. 2).

1.3 Target audience

The target audience of this handbook is national/subnational stakeholders working on AMR within the human health sector. This includes national health authorities, national multisectoral coordination groups, senior technical experts and policymakers involved in implementing AMR activities at all levels of the health system, and implementation partners to accelerate sustainable implementation and M&E of NAPs on AMR.

The handbook is primarily intended to guide implementation of NAPs on AMR in the human health sector following a six-step continuous process (Box 1). This includes functions of the human health sector within multisectoral governance to ensure a well-coordinated approach to sustainable NAP implementation (Fig. 2).

Fig 2. Sectors involved in multisectoral governance



Box 1. Six steps for sustainable implementation of NAPs on AMR



1. Strengthen governance

Establish a functional multisectoral coordinating mechanism and technical working groups with clear terms of reference, budget and an accountability framework.



2. Prioritize activities

Initiate a consultative process to prioritize activities based on an assessment of the current situation, resources available, and the impact and feasibility of activities.



6. Monitor and evaluate

Periodically monitor and evaluate progress in implementing the plan or activities, communicating progress and lessons learned.



3. Cost the operational plan

Develop, cost and budget an operational plan that includes prioritized activities, who is to do what, when and where, and integrates existing funding sources.



5. Implement prioritized activities

Work with internal and external stakeholders to sustainably implement the prioritized activities.



4. Mobilize resources

Map existing and potential funders, advocate to fill the funding gap and where possible leverage domestic financing through other national plans and budgets.



AMR: antimicrobial resistance; NAPs: national action plans.

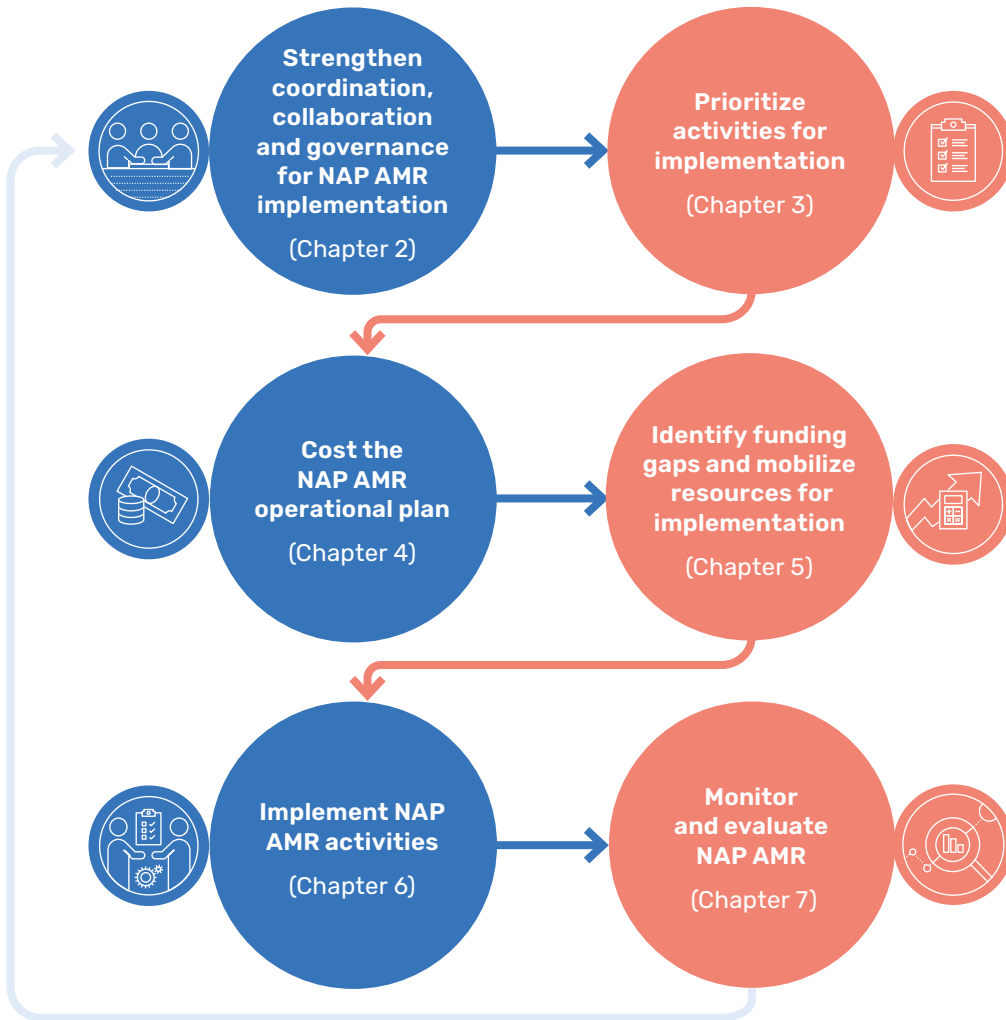
1.4 Implementation process overview

The chapters follow the six steps for sustainable implementation of NAPs on AMR. The process begins with establishing multisectoral and sectoral coordination and governance mechanisms, followed by prioritizing activities and developing costed and budgeted operational plans, through to implementing activities and M&E (Fig. 3). Countries may wish to reprioritize their activities based on monitoring and evaluating.

The chapters provide stepwise implementation guidance, links to existing WHO guidance and tools to support implementation along with appropriate checklists. Case studies for each chapter will be included in the online version of the handbook as they become available.

A summary checklist for the six steps for sustainable implementation of NAP on AMR can be found in [Annex 9](#). For countries that are developing/revising their NAPs, tools for NAP development and revision can be found in [Annex 8](#).

Fig 3. Process for NAP implementation and corresponding handbook chapter



NAP AMR: national action plan on antimicrobial resistance.

02

**Strengthen coordination,
collaboration and
governance for NAP on
AMR implementation**



2.1 Overview

In 2015 Member States committed to developing multisectoral NAPs on AMR when they endorsed the GAP (7). In 2016 the United Nations (UN) [Political declaration of the high-level meeting of the General Assembly on antimicrobial resistance](#) reinforced this objective, calling for “the promotion and protection of human health within the framework of a One Health approach, emphasizing that this requires coherent, comprehensive and integrated multisectoral action, as human, animal and environmental health are interconnected” (8).

As the key drivers and subsequent impact of AMR are felt across the human and animal health, and agriculture and environment sectors (Fig. 4), action against AMR must be addressed in all these sectors through coordinated One Health and multisectoral collaboration and action (Box 2) as well as sector-specific action. AMR should be positioned as a priority within broader development issues (Box 3).

TrACSS data indicates that broad cross-sector engagement (defined as four or more sectors) in multisectoral coordination is associated with greater progress in implementation towards the Global Action Plan (GAP) on AMR objectives across all relevant sectors (11).

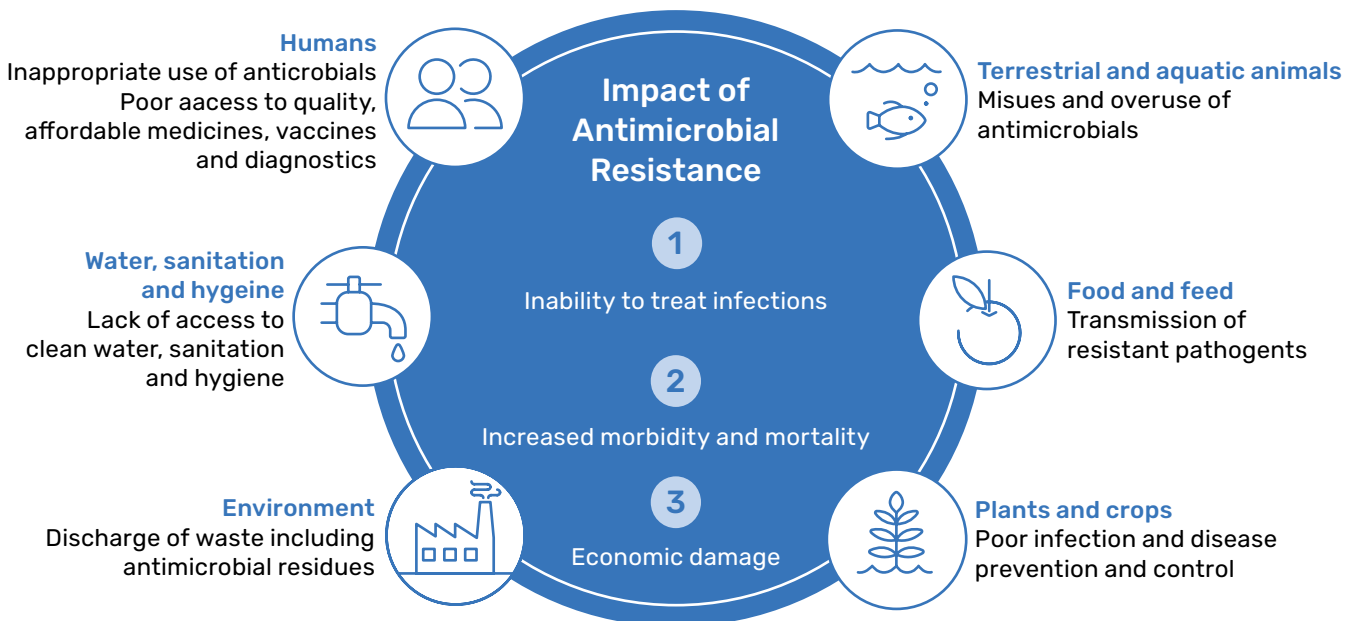
Box 2. Multisectoral collaboration definition

Multisectoral collaboration is the deliberate coordination of different stakeholder groups (e.g. government, civil society, the private sector and technical partners) and sectors (e.g. human health, animal health, agriculture, trade, planning, finance, education and the environment) to jointly achieve a goal (6).

Box 3. Cooperation Framework

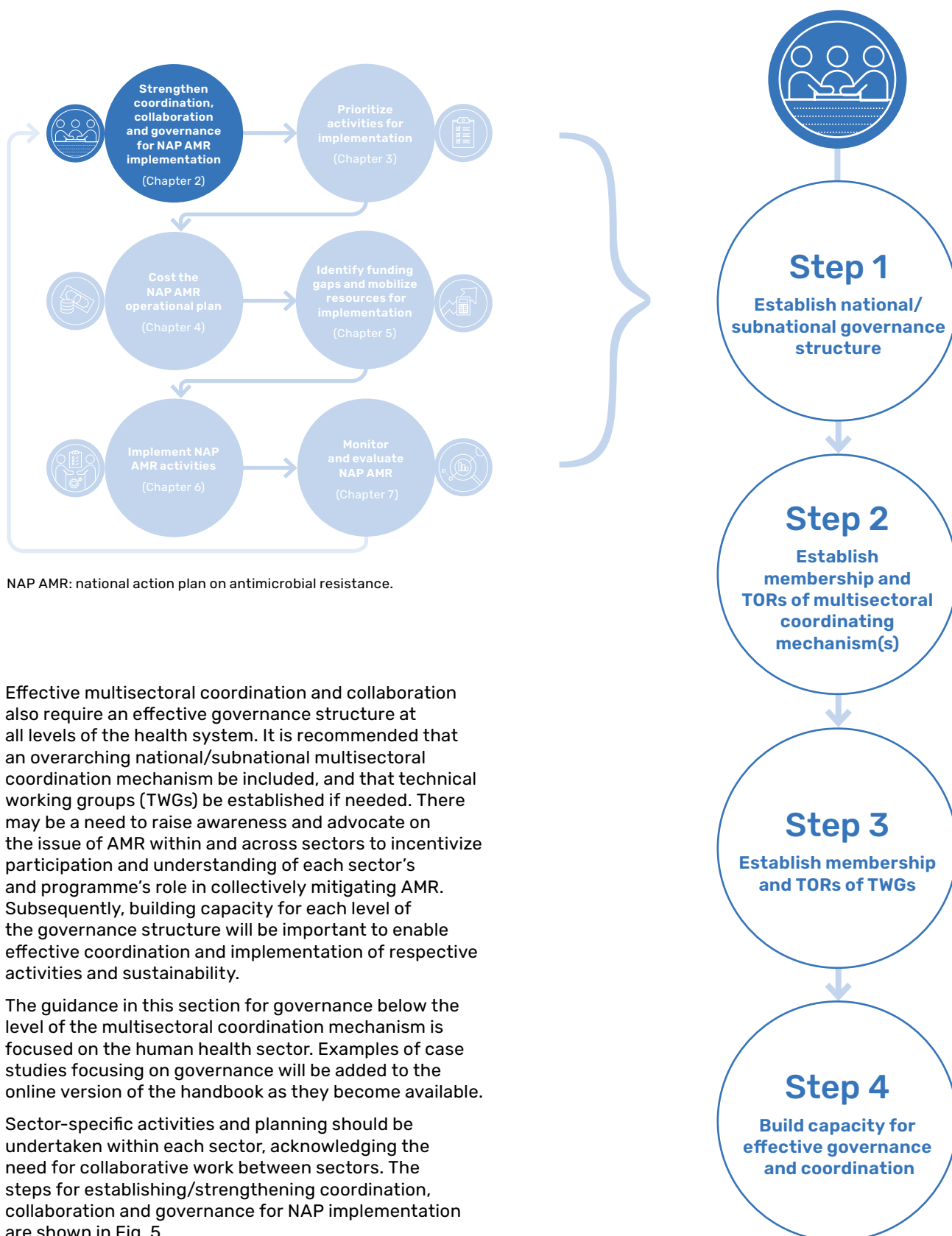
The [United Nations Sustainable Development Cooperation Framework](#) (“Cooperation Framework”) is an agreement between the UN and the host government and determines a country’s development priorities as well as the UN development system’s contributions in the country (10). **New guidance for UN country teams**, including WHO, highlights the need for AMR to be included in the Cooperation Framework. The guidance argues for AMR to be meaningfully linked to broader development issues of One Health, pandemic preparedness, UHC, sustainable food systems and environmental issues. The guidance can be found [here](#).

Fig 4. Drivers of AMR



Source: adapted from (9).

Fig 5. Steps to establish effective coordination and governance structures on AMR



NAP AMR: national action plan on antimicrobial resistance.

Effective multisectoral coordination and collaboration also require an effective governance structure at all levels of the health system. It is recommended that an overarching national/subnational multisectoral coordination mechanism be included, and that technical working groups (TWGs) be established if needed. There may be a need to raise awareness and advocate on the issue of AMR within and across sectors to incentivize participation and understanding of each sector's and programme's role in collectively mitigating AMR. Subsequently, building capacity for each level of the governance structure will be important to enable effective coordination and implementation of respective activities and sustainability.

The guidance in this section for governance below the level of the multisectoral coordination mechanism is focused on the human health sector. Examples of case studies focusing on governance will be added to the online version of the handbook as they become available.

Sector-specific activities and planning should be undertaken within each sector, acknowledging the need for collaborative work between sectors. The steps for establishing/strengthening coordination, collaboration and governance for NAP implementation are shown in Fig. 5.

2.2 Steps for implementation

Step 1: Establish a national/subnational governance structure

To tackle AMR effectively, the governance structure will need to deliver vertical (within a sector) and horizontal (between sectors) coordination and collaboration (6). The governance structure should comprise national/subnational AMR **multisectoral coordinating mechanism(s)** that oversee ongoing work and provide or seek the leadership commitment required.

The multisectoral coordinating mechanism(s) should be accountable to an **interministerial group** within the president or prime minister's office or equivalent. This interministerial group may also oversee other issues such as zoonoses or food safety (12). The AMR multisectoral coordinating mechanism(s) should liaise with relevant national committees to exchange information and collaborate on shared objectives. Efforts should align with existing national One Health approaches to promote cross-cutting activities and avoid duplication of efforts.

The multisectoral coordinating mechanism(s) should be supported by a **dedicated secretariat** that coordinates meetings, provides minutes and reports, and supports effective coordination and communication.

The multisectoral coordinating mechanism(s) and/or sectors should establish and provide leadership to **TWGs** according to need and priority actions to implement activities across the objectives of the NAP AMR (as shown for the human health sector in Fig. 6 on page 10). The multisectoral coordinating mechanism(s) should also ensure that there is information sharing and communication between the TWGs and from the TWGs to the multisectoral coordinating mechanism(s).

Step 2: Establish membership and terms of reference (TORs) for multisectoral coordinating mechanism(s)

The national/subnational AMR multisectoral coordinating mechanism(s) oversee and coordinate NAP AMR activities in all sectors to ensure a comprehensive approach while advocating for their prioritization and financing (12). This includes NAP AMR plan development, implementation, assessment and revision, as well as identification of existing human and financial resources, budget gaps and resource mobilization strategies for all sectors. The multisectoral coordinating mechanism(s) need to be supported by a dedicated secretariat, which will require resources to carry out its function.

Membership

The multisectoral coordinating mechanism(s) ideally should comprise members who represent relevant sectors, including (but not limited to) human health; animal health; agriculture; food safety; education; water, sanitation and hygiene (WASH); environment; development planning and finance sectors. The composition of members should seek to achieve both

regional and gender balance. Members should have enough decision-making authority from their institutions and be clear about their role and the contribution of their sector to implementation of the plan (6).

TORs

The scope of the multisectoral coordinating mechanism(s) should ensure coordination and accountability across all NAP objectives. The multisectoral coordinating mechanism(s) may play a convening role in the involvement of public sector, private sector, academia, civil society, etc., as these groups have a crucial role in implementing and scaling up the NAP (6). In addition, the multisectoral coordinating mechanism(s) should link with other relevant national/subnational committees.

WHO tool: TORs for multisectoral coordination

[Sample terms of reference for a national multisectoral coordinating group, for a national focal point and for a technical working group](#) (2016)

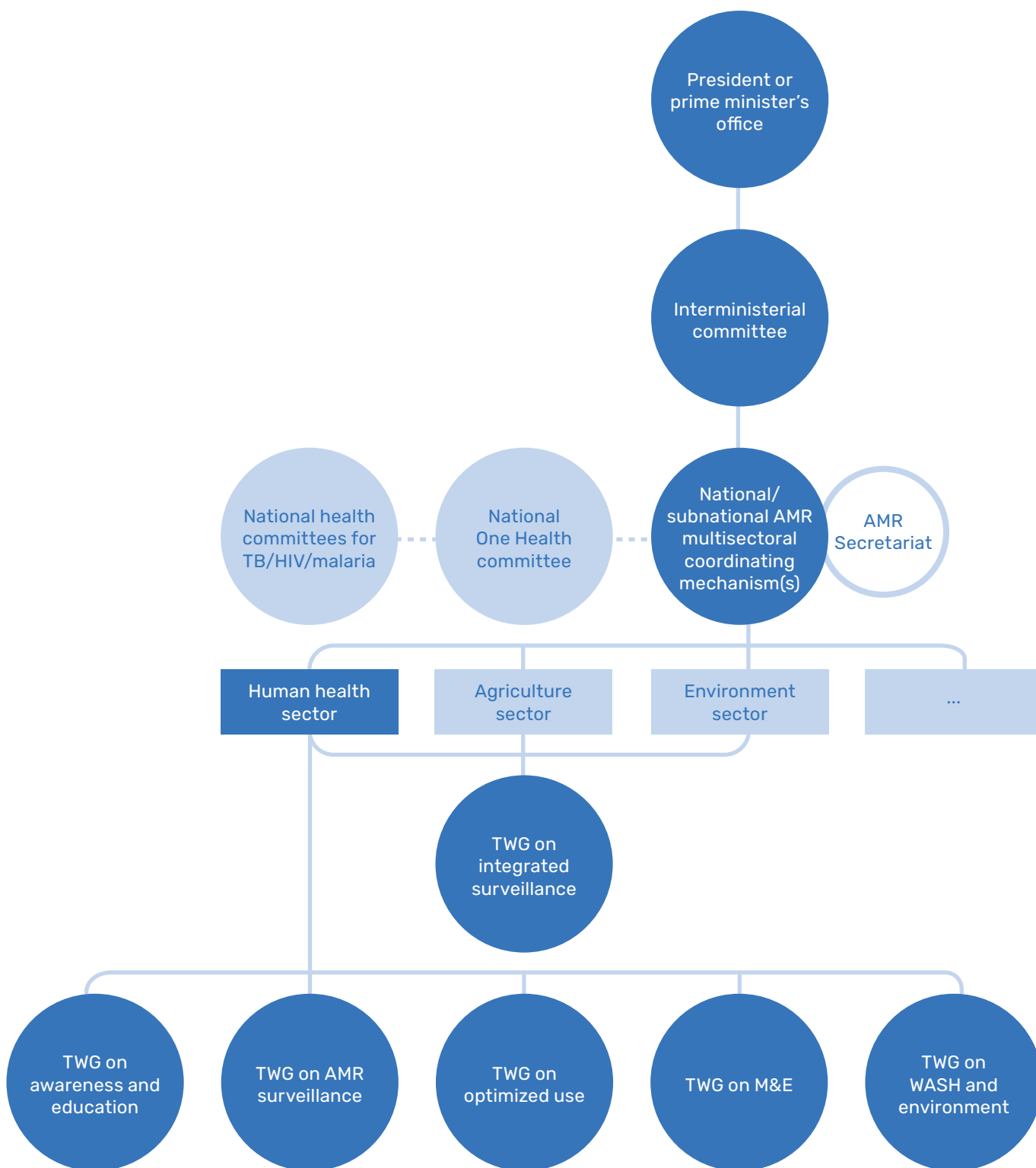
Step 3: Establish membership and TORs of TWG(s)

The multisectoral coordinating mechanism(s) or national health authority may decide to form TWG(s) for NAP AMR strategic objectives. The TWG(s) should have clear deliverables. Country-level experience suggests that it is better to set up time-bound TWG(s) only as the need for them arises. Many relevant TWG(s) may already exist, and the multisectoral coordinating mechanism(s) should not seek to replicate them. Rather, existing groups should be encouraged to report to the multisectoral coordinating mechanism(s) (6).

Membership

A TWG may be established for any of the relevant technical areas/strategic objectives of the NAP AMR. Within the human health sector, a TWG may include experts in policy and regulation, surveillance systems – including laboratory AMR surveillance and antimicrobial use or consumption (AMU/AMC) – infection prevention and control (IPC), antimicrobial stewardship (AMS), pharmacovigilance and medicines supply chain management, clinical and epidemiological research, health economics, M&E and other areas, depending on the technical area of focus (12). In some instances these will be sector specific, and in others they will need to be multisectoral, such as for integrated surveillance and regulatory issues. The TWG could also consider relevant institutions or hospitals, representatives from the private sector and observers such as WHO. Similar to the multisectoral coordinating mechanism(s), the composition of the TWG should seek to achieve both regional and gender balance.

Fig 6. Generic template for a national AMR governance structure*



AMR: antimicrobial resistance; M&E: monitoring and evaluation; TB: tuberculosis; TWG: technical working group; WASH: water, sanitation and hygiene.

*To be adapted to the country context and needs

TORs

TWG(s) comprise technical experts from required ministries/agencies with expertise based on the scope of work. Regular reporting to and communications with the multisectoral coordinating mechanism(s) should occur and be defined in the roles and responsibilities.

WHO tool: sample TORs for TWGs

[Antimicrobial stewardship programmes in health-care facilities in low- and middle-income countries: a WHO practical toolkit. Annex I: sample terms of reference – national AMS technical working group \(2019\)](#)

WHO tool: sample TORs for a TWG national focal point

[Terms of reference for the Global Focal Point Network for substandard/spurious/falsely-labelled/falsified/counterfeit \(SSFFC\) medical products \(2016\)](#)

Step 4: Capacity building for effective coordination and governance on AMR

Leadership and managerial skills are needed to promote collaboration and coordinate the sustainable implementation of AMR NAPs within and across sectors and stakeholders (Box 4). Some of the essential “people skills” needed to enhance multisectoral coordination and governance include:

- building trust and promoting transparency;
- understanding and prioritizing complementary and competing interests;
- promoting ethics, values, accountability and equity;
- framing issues for effective consensus building;
- mapping influence and persuasion goals, and understanding specific coalitions, their value, and how to influence them and work with partners towards mutual gains;
- joint fact-finding for structuring consensus building processes; and
- structuring commitments and managing alternatives for ongoing evaluation of multisectoral partnerships.

Box 4. Global governance initiatives to support multisectoral coordination

As recommended by the Interagency Coordination Group on AMR, there are ongoing global governance structures and initiatives to support national multisectoral governance and coordination. These initiatives include the [Global Leaders Group on AMR](#), the independent panel on evidence and the multi-stakeholder partnership platform.

These skills support self-awareness for multisectoral coordination and collaboration; understanding existing policies and strategies for health security such as international health regulations (IHR) (13) and the One Health approach; understanding multisectoral partners and their interests; multistakeholder consensus building; and planning for multisectoral collaboration. To support countries in developing effective leadership skills for implementing multisectoral NAPs on AMR, WHO is developing a leadership skills training package that is expected to be rolled out to countries in 2022–2023.

2.3 Governance and coordination within the health sector

Within the human health sector, it is important to coordinate and collaborate across health programmes and to embed AMR activities into broader health sector plans and budgets. The multisectoral coordination mechanism(s) and relevant human health TWG(s) should ensure linkages to committees and TWGs of other health programmes and plans, including national health sector strategic development plans, health security, universal health coverage (UHC), primary health care, WASH and disease-specific programmes such as tuberculosis (TB), HIV and malaria. Links or the inclusion of focal points from these different relevant areas within the relevant TWG (e.g. the substandard and falsified medicines focal point with the TWG for optimizing AMU) is vital to ensure synergies in activities and resources, and to avoid duplication of efforts.

2.4 Checklist

- Has a governance structure for AMR been defined that includes the following?**
 - Multisectoral coordinating mechanism(s) endorsed at ministerial level
 - Multisectoral coordinating mechanism(s) established
 - Functional AMR secretariat to support the multisectoral coordinating mechanism(s)
 - TWG(s) as needed
 - Subnational governance structure if needed
 - Dedicated funding to support the multisectoral coordinating mechanism(s) and secretariat
 - Communication and feedback with other relevant national committees.
- Are the national multisectoral coordinating mechanism(s) memberships and TORs defined?**
 - Does the membership include all relevant sectors?
 - Does the multisectoral coordinating mechanism(s) have decision-making authority?
 - Do TORs include reporting responsibilities?
 - Do TORs include annual review (at a minimum) of NAP implementation progress and annual TrACSS submission to WHO?
 - Is there gender balance in the multisectoral coordinating mechanism(s)?
- Are the TWG(s) membership and TORs defined?**
 - Does the membership include technical experts from the main relevant area(s)?
 - Are the responsibilities of the members defined? Who takes the lead? Who are the members? What are the responsibilities of the leader/chair? What are the responsibilities of the members?
 - Are the deliverables defined?
 - Are the reporting requirements to the multisectoral coordinating mechanism(s) defined?
- Are there sufficient leadership capacities within AMR coordination and governance mechanism(s)?**
 - Do committee members have the required leadership skills?
 - Are mechanisms established to promote teamwork?

03

Prioritize activities for implementation



3.1 Overview

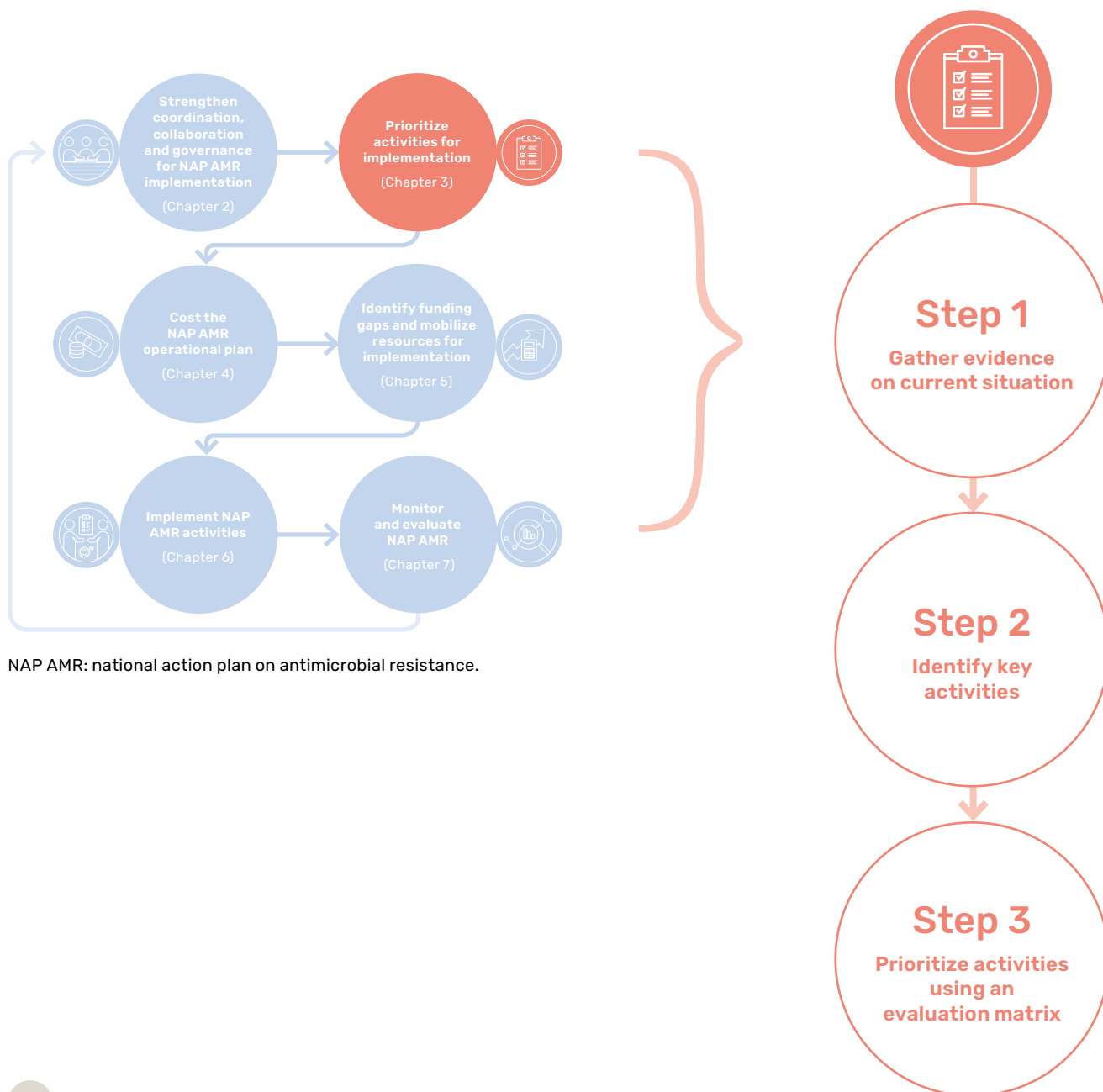
Given that AMR is a multisectoral, One Health issue, the activities to address it are linked to many other national programmes and plans (in the human health sector, this might be UHC, health security, TB, HIV, malaria, etc.). In many instances, it may not be possible to implement all NAP activities at once, and the AMR multisectoral coordinating mechanism(s) need to decide where to focus their efforts (5). The multisectoral coordinating mechanism(s) are encouraged to define the overarching goals and associated priorities, and may then choose task-specific TWG(s) to define specific objectives, activities and monitoring approaches to put priorities into an operational plan.

Box 5. Priority-setting definition

Priority setting is an evidence-based process where societal values and goals are considered and reflect a compromise among stakeholders. This process may draw on findings of a situation analysis. The purpose of priority setting is to select activities for addressing aspects of AMR, as highlighted in the situation analysis, given the context and resources available (14).

AMR: antimicrobial resistance.

Fig 7. Steps in prioritizing activities



NAP AMR: national action plan on antimicrobial resistance.

Countries are encouraged to undertake a process to prioritize activities (Box 5) based on assessment of the current situation, which will be particularly important if a significant amount of time has elapsed between NAP development and implementation (tools and templates for situation analyses can be found in Annexes 1–3). The proposed process is intended to identify immediate short-term actions that will serve as a foundation for activities that can be undertaken in the longer term in order to develop a stepwise, time-bound and costed NAP AMR operational plan (Chapter 4). As costing data and resource mapping information (Chapter 5) become available, there may be a need to reprioritize activities. Once priority activities are implemented, M&E data may be used to support further revisions to the operational plan (Chapter 7). The steps for prioritization are shown in Fig. 7.

3.2 Steps for implementation

Step 1. Review the current situation and identify implementation goals

a) Undertake an analysis of the current situation

The first step in priority setting is a review of the current situation to ensure prioritization is evidence-based. The multisectoral coordinating mechanism(s), supported by the TWG(s) (if they have been established), should begin by reviewing available information on the country's current situation on AMR and NAP status. If no recent information exists, an assessment may need to be undertaken to provide the evidence base for prioritization (15). The assessment may include a review of the existing literature, undertaking or reviewing a situational analysis, SWOT (strengths, weaknesses, opportunities and threats) analysis and stakeholder analysis. It may also review existing country-level AMR-related data (e.g. AMR and AMU as well as TrACSS submission and other M&E data);

- See Annex 1 for more information on conducting a situational analysis.
- See Annex 2 for an example of a SWOT analysis.
- See Annex 3 for more information on stakeholder analysis.

b) Identify goals for implementation

Following analysis of available evidence (which may have highlighted information gaps), the multisectoral coordinating mechanism(s) should develop goals that will help determine priority objectives that need attention in the short, medium and long term (15).

WHO tools: prioritizing activities at the health care facility level

IPC:

- [Minimum requirements for infection prevention and control programmes](#) (2019)

Optimizing use of antimicrobials:

- [Antimicrobial stewardship programmes in health-care facilities in low- and middle-income countries: a WHO practical toolkit](#) (2019)
- [WHO policy guidance on integrated antimicrobial stewardship activities](#) (2021)

WASH:

- [Water and sanitation for health facility improvement tool \(WASH FIT\): a practical guide for improving quality of care through water, sanitation and hygiene in health care facilities \(Tool 2A: indicators assessment\)](#) (2018)

WHO tools: prioritizing activities at the national/subnational level

AMR surveillance:

- [National AMR surveillance systems and participation in the GLASS: a guide to planning, implementation, and monitoring and evaluation](#) (2016)
- [GLASS guidance for national reference laboratories](#) (2020)

IPC:

- [Minimum requirements for infection prevention and control programmes](#) (2019)

Vaccines:

- [Leveraging vaccines to reduce antibiotic use and prevent antimicrobial resistance: an action framework](#) (2020)

Optimizing use of antimicrobials:

- [Critically important antimicrobials for human medicine: 6th revision](#) (2018)
- [WHO policy guidance on integrated antimicrobial stewardship activities](#) (2021)

Step 2. Identify key activities for prioritization

The multisectoral coordinating mechanism(s) may then decide to assign relevant TWG(s) and/or other responsible entity(ies) to develop a list of activities/(sub)activities for each priority goal/objective – drawing on the existing NAP AMR and review of the current situation– through an inclusive consultative process (5).

For a comprehensive and sustainable impact in tackling AMR, several interventions implemented across different sectors and levels will be required. High-impact activities should be considered (Box 6). Once key activities for implementation have been identified, further prioritization can be undertaken using an evaluation matrix (step 3).

Box 6. High-impact activities

Information on the cost effectiveness of potential “best buys” of interventions including AMs programmes, improved hand hygiene, enhanced environmental hygiene, delayed prescription, mass media campaigns, and rapid diagnostic tests to address AMR can be found in the OECD report [Stemming the superbug tide: just a few dollars more](#) (2018).

AMR: antimicrobial resistance; AMS: antimicrobial stewardship;
OECD: Organisation for Economic Co-operation and Development.

Step 3. Prioritize activities based on an agreed scope and approach

Based on the initial list of key activities identified by sectors or TWG(s), actions can be quantified using an evaluation matrix (Table 1). This priority-setting exercise, often led by the multisectoral coordinating mechanism(s), is where the decision is made as to what needs to be done first versus what can be left for later based on evidence resulting in priority activities to be implemented in a stepwise manner.

a) Agree on the scope and approach for prioritizing activities

Decide a timeframe (e.g. the next 2–3 years) during which the activities should be prioritized and identify the stakeholders to be involved in the priority-setting exercise and approach (15). Identify the timing and process for bringing the identified stakeholders together. An evaluation method should be decided on to further prioritize actions across sectors, within sectors and within specific technical areas (Box 7). One option is to use a prioritization matrix to quantify options based on criteria such as priority level identified through stakeholder discussion, whether the activity/sub-activity will have a low or high impact on the AMR situation and imminent risk if not undertaken, and whether the activity will be an early win. Criteria can be weighted along a quantitative scale (Table 1).

Box 7. Prioritization methods

Further information on examples of different types of prioritization methods can be found on pages 36–39 of [NAPHS for all: a country implementation guide for national action plan for health security](#) (2019).

b) Prioritize activities through a consultative process

Once the method(s) have been agreed, review the list of key activities with internal and external stakeholders and assign a scoring/weighting using Table 1. This exercise should focus on the importance of different activities to mitigate the AMR situation in the country based on the assessment of the current situation and the technical and operational feasibility. Considerations include:

- activities that will have the greatest impact on AMR (Box 6);
- activities that address an imminent risk based on data from risk assessments; and
- activities that are early wins and highly feasible (15).

In addition, it is important to consider:

- **new activities versus activities that are already ongoing and can be built on** – many activities may already be ongoing within other programmes (UHC, vaccines, malaria, TB, HIV, etc.) and have significant potential to reduce the spread of AMR if they are more broadly implemented;
- **sequencing of activities** – prioritize activities that are a necessary first step to other important components of the plan (e.g. establishing laboratory capacity before designing AMR surveillance systems); and
- **interdependencies of activities** – prioritized activities within the same or across different NAP objectives may be interdependent of each other (e.g. laboratory capacity including antimicrobial susceptibility testing to inform appropriate prescribing of antimicrobials based on available treatment guidelines).
- **availability of resources** – prioritize implementation of activities for which existing human, technical and financial capacity are available (see Chapter 5) (5).

Table 1. Sample evaluation matrix for activity prioritization

Strategic objective	Activity or sub-activity	Priority as assigned within stakeholder discussions (1–5; 1 = low priority, 5 = high priority)	Impact (1–5; 1 = low impact, 5 = high impact)	Imminent risk (1–5; 1 = low risk, 5 = high risk)	Early wins (1–5; 1 = time-intensive; 5 = quick win)	Feasibility (1–5; 1 = low feasibility, 5 = high feasibility)	Total

Source: adapted from (15).

Once activities have been prioritized and sequenced, they can be inserted into a costed and time-bound operational plan as described in Chapter 4. Further prioritization may be needed based on the results of costing and budgeting. The COVID-19 pandemic may also have an impact on the prioritization of activities given that human and financial resources may have been repurposed to fighting the pandemic (Box 8).

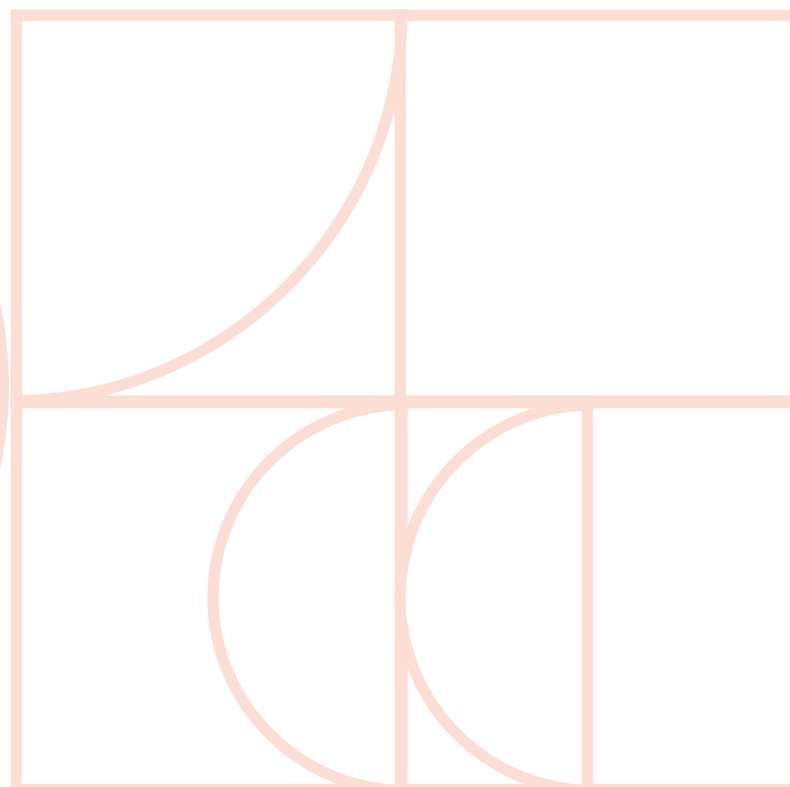
Box 8. AMR and COVID-19

The ongoing COVID-19 pandemic will require countries to prioritize activities related to the pandemic response. This is an opportunity to strengthen health systems, including specific activities such as AMS, IPC measures, WASH and immunization that also help prevent and control the emergence and spread of AMR.

AMR: antimicrobial resistance; AMS: antimicrobial stewardship; IPC: infection prevention and control; WASH: water, sanitation and hygiene.

3.3 Checklist

- Has an assessment of the current AMR situation and progress in AMR NAP implementation been undertaken?**
 - Has a situational analysis/SWOT analysis/stakeholder analysis been undertaken?
 - Were any AMR-related data considered – including TrACSS submissions from the country?
- Have overall goals been identified for NAP implementation for the short, medium and long term?**
- Has an initial list of key activities been identified based on the existing NAP AMR?**
 - Does the list of activities align with the current situation?
 - Does the list of activities align with guidance on minimum requirements for various technical areas where it is available?
- Has a final list of prioritized activities for implementation been defined?**
 - Has the scope been defined, including the timeframe for implementation?
 - Was an evaluation method used?
 - Were the activities prioritized through an inclusive consultative process?
 - Does the final list include activities that are a necessary first step for other activities?
 - Have the interdependencies of activities been considered?
 - Have existing resources and the technical capacity to implement the activities been considered in the prioritization exercise?



04

Develop a costed operational plan



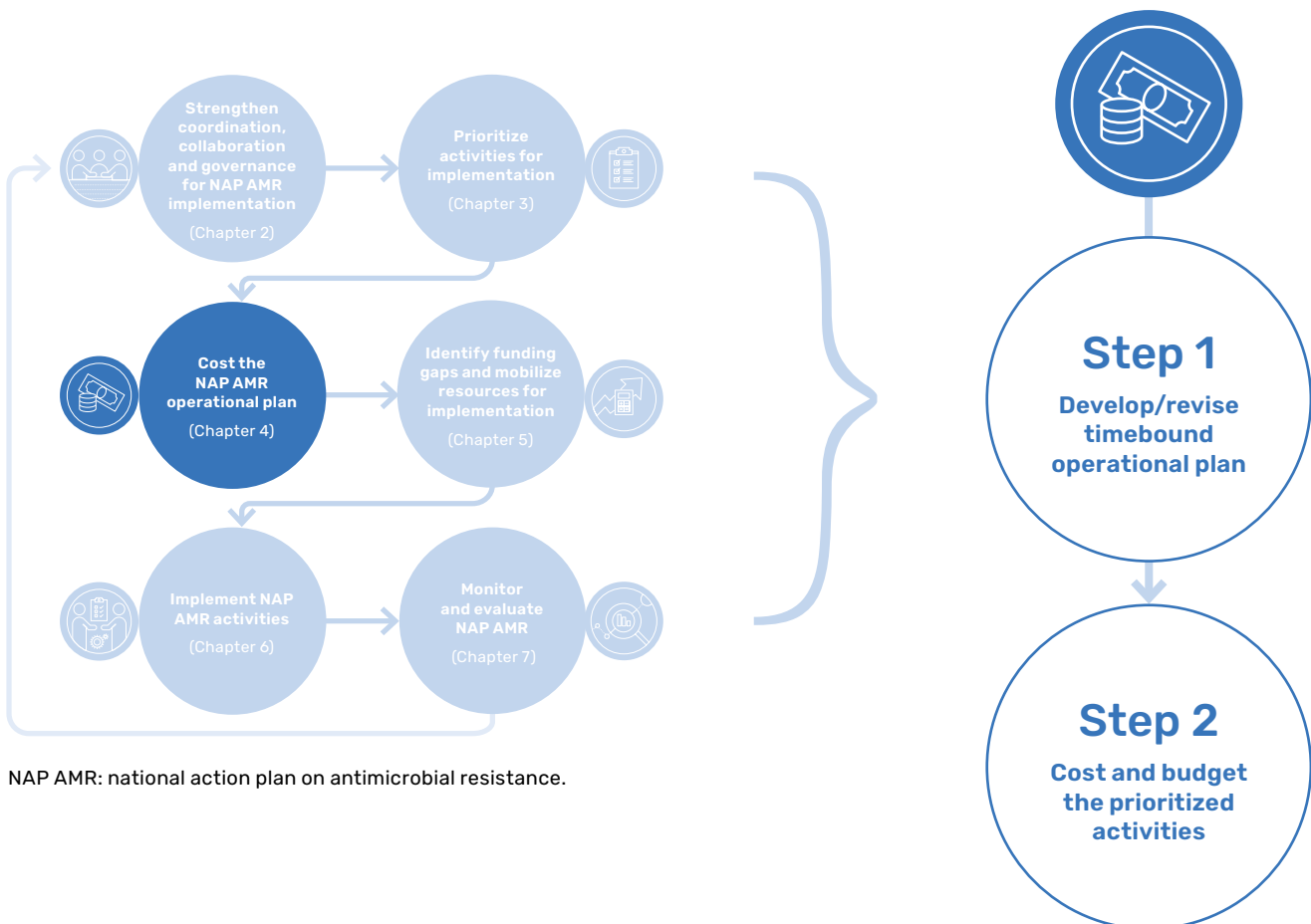
4.1 Overview

As part of the NAP development stage, countries are encouraged to formulate an operational plan that includes their prioritized activities for a predefined timeframe (Box 9). This chapter is intended to provide guidance to countries that have not yet developed an operational plan for implementing their NAP activities, or who need to revise their existing operational plan (1).

An effective operational plan should be fully consistent with the strategic objectives of the NAP on AMR and the M&E plan (1). The activities and sub-activities should be listed under the strategic objectives to which they are linked. As mentioned in Chapter 3, there may be AMR-related activities in other ongoing national plans (e.g. NAP for health security following a joint external evaluation) and programmes (e.g. WASH or IPC) that should be identified and integrated into or linked to the NAP on AMR to promote synergies and avoid duplication of effort (5). The steps for developing a costed NAP on AMR operational plan are shown in Fig. 8.

Box 9. NAP on AMR operational plans
 Examples of operational plans can be viewed in the [library of AMR national action plans](#).

Fig 8. Steps for developing a costed NAP AMR operational plan



NAP AMR: national action plan on antimicrobial resistance.

4.2 Steps for implementation

Step 1. Develop or revise a time-bound operational plan

A time-bound operational plan (e.g. 2–3 years) should be developed based on the prioritized list of activities identified (Chapter 3) and should include the following as a minimum:

- the activity/sub-activity
- responsible entity
- unit and quantity of the activity/sub-activity
- implementation level (national/subnational) (optional)
- timeline
- monitoring indicator/s
- cost (to be inserted in step 2).

An operational plan template can be found in Annex 4. Annex 7 presents sample monitoring indicators to consider in the operational plan.

Step 2. Cost and budget prioritized activities within the operational plan

After the operational plan has been drafted, the next step is for the multisectoral coordinating mechanism(s) or individual ministries/departments to input costs for the activities included in the plan. This may require delegating costing activities to TWG(s) across different sectors/ministries and departments. In addition to costing activities, it is also helpful to input existing funding sources for activities. The multisectoral coordinating mechanism(s) or a designated lead (costing coordinator) will then need to combine the costed activities into one costed operational plan (using a consolidator tool) (16).

The following steps are required to populate the WHO costing and budgeting tool:

1. **NAP entry:** The identified costing coordinator specifies the NAP strategic objectives and activities that were selected for costing. This information can be inserted directly from the operational plan.
2. **Basic inputs:** Users enter key parameters relevant to their country, including implementing entity, implementation years, currency and unit costs for various items.
3. **Detailed activities and costing matrix:** These tabs are automatically generated after the NAP entry tab is completed and are used to insert sub-activities and to enter unit costs and units according to the operational plan developed by the country prior to costing.
4. **Funding sources:** Users enter existing funds from various sources as applicable. This step is optional and can be completed at any time after the NAP entry tab is complete. Users can return to this step after following the process for resource mapping in Chapter 5.
5. **Dashboards:** Users can specify various levels of analysis to produce dashboards and visualize all data. The Dashboard tab summarizes total cost as well as costs per strategic objective and activity. The Funding Dashboard tab combines cost and funding data.
6. **Output:** Users can then export the costed operational plan as well as the dashboard figures.

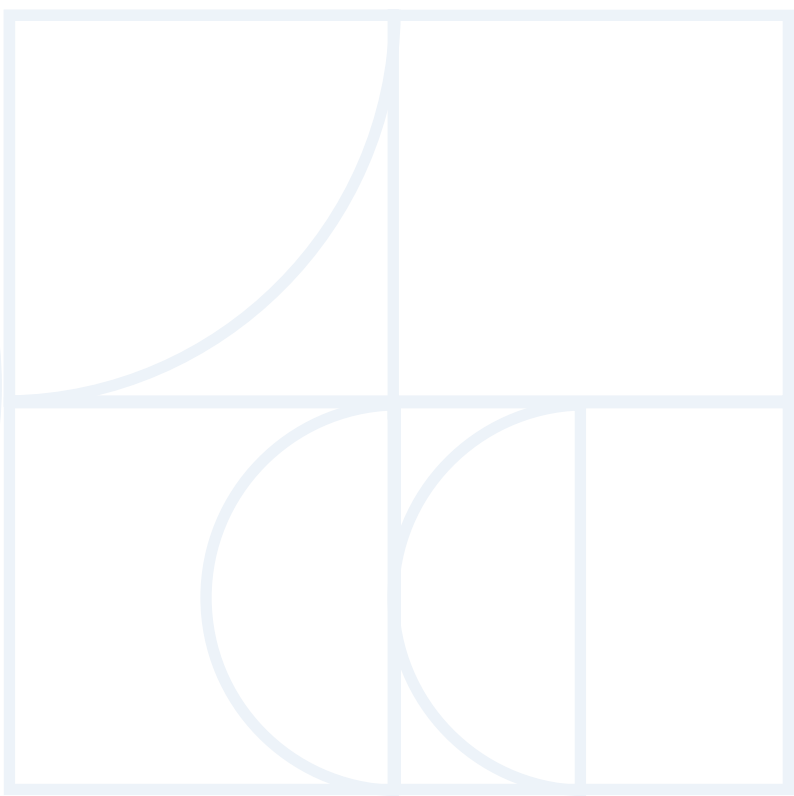
The costing tool is developed in a modular format that allows different sectors and/or departments to fill out the costing tool independently for their activities. A costing coordinator can then combine the costed activities into one final costing file using the consolidator tool (16).

WHO tools: Costing NAPs on AMR

- [Link to costing and budgeting tool](#) (2021)
- [Link to consolidator tool](#) (2021)
- [Link to country readiness checklist](#) (2021)
- [Link to the WHO costing and budgeting tool for national action plans on antimicrobial resistance: user guide](#) (2021)
- [Link to the WHO helpdesk](#) (2021)

4.3 Checklist

- Has a prioritized operational plan been developed?
- Has an operational plan been developed that includes prioritized activities, responsible entity, unit and quantity of the activity/sub-activity, implementation level (national/subnational) (optional), timeline and monitoring indicator(s)?
- Has a costing and budgeting process been decided on?
 - To fill in one costing module together; or
 - To fill in multiple costing modules (at the ministry or department level)) and consolidate these afterwards using a modular approach?
- If a modular approach is taken, have costing coordinators and a lead been identified?
- Has the costing and budgeting tool been filled in?
 - NAP entry tab
 - Basic inputs tab
 - Detailed activities and costing matrix
 - Funding sources
 - Dashboards
 - Export files
- If a modular approach is taken, have modules been consolidated using the module consolidator tool?



05

**Identify funding gaps
and mobilize resources
for implementation**



5.1 Overview

After developing a costed NAP AMR operational plan, the next step is to identify funding gaps and to mobilize additional resources to fill those gaps to allow for successful implementation of the activities. Existing funding sources can be inserted into the WHO costing and budgeting tool and the identified funding gaps.

AMR cannot be positioned as a siloed programme. Accordingly, it will be necessary to leverage resources from within existing ministerial and development partner programmes, strategic plans and budgets to achieve implementation (17, 18, 19) (Box 10). The steps in identifying funding gaps and mobilizing resources are outlined in Fig. 9.

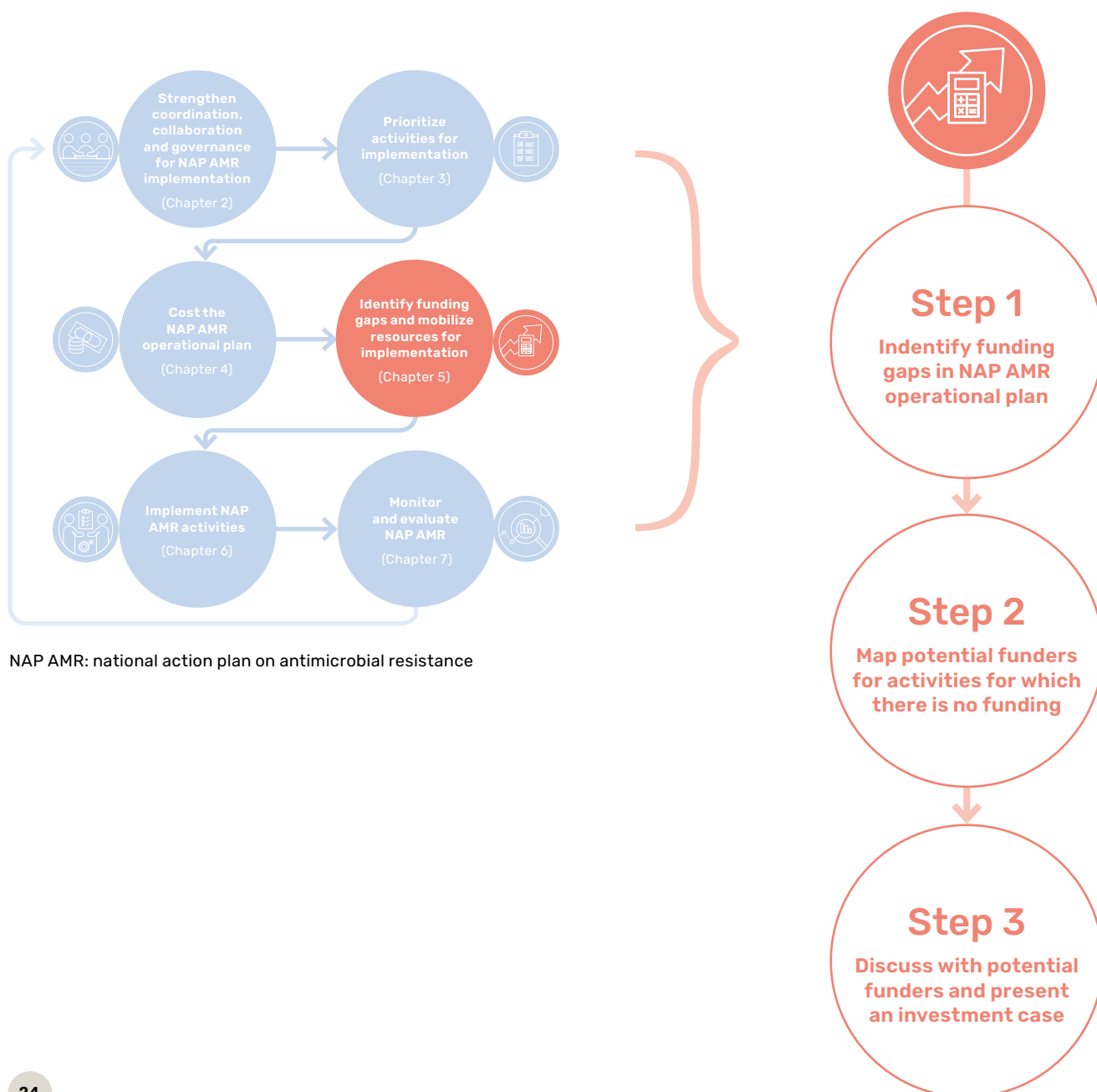
Box 10. Case studies of getting AMR into national plans and budgets

The following three case studies present the challenges and options for seeking investment in AMR in LMICs:

- [Ghana country level report](#) (2018)
- [Nepal country level report](#) (2018)
- [Nigeria country level report](#) (2018)

AMR: antimicrobial resistance; LMICs: low- and middle-income countries.

Fig 9. Steps in identifying funding gaps and mobilizing resource



5.2 Steps for implementation

Step 1. Identify funding gaps in NAP AMR operational plan

In order to identify funding gaps, the relevant TWG(s) and/or costing coordinator(s) will first need to determine which AMR activities are already supported, including those that may be supported through other existing programmes and plans (such as UHC or national health security plans) (19, 20, 21). As mentioned in Chapter 4, this data may be inputted into the costing tool.

Step 2. Map potential funders for activities for which there is no funding

The aim of this step is to identify ministries, development partners and other stakeholders that would have an interest in funding activities that are not yet supported.

If a stakeholder analysis (Annex 3) was conducted during the prioritization phase, it may be useful to refer to it again here. The funder map should include:

- stakeholders (such as government, development partners, private sector, etc.) that exclusively fund AMR-related activities within the AMR NAP;
- stakeholders that fund AMR-related activities that may fall under other national/subnational plans and budgets (such as activities relating to HIV, TB, malaria, UHC, health security, WASH, IPC, etc.); and
- stakeholders that have shown a firm interest in AMR but are not yet funding any activities (19, 20, 21).

Activities may be mapped against the strategic objectives of the GAP, as shown in Table 2 or against the objectives of the NAP.

Table 2. Example of a potential funder map

Awareness and education	Surveillance	IPC, including WASH and vaccines	Optimizing use	Research and development (R&D)
National departments/agencies				
<ul style="list-style-type: none"> • Department of drug administration • National health education information and communication council • National primary health care development agency 	<ul style="list-style-type: none"> • National primary health care development agency: epidemiology and disease control division • National public health laboratory 	<ul style="list-style-type: none"> • Federal ministry of health, family health division • National primary health care development agency: epidemiology and disease control division 	<ul style="list-style-type: none"> • Department of drug administration • National primary health care development agency 	<ul style="list-style-type: none"> • National health research council • National institute for pharmaceutical research and development
Other development partners				
<ul style="list-style-type: none"> • UNICEF • USAID • WHO • World Bank 	<ul style="list-style-type: none"> • Fleming Fund • Global Fund • Kingdom of Saudi Arabia • KOICA • US CDC 	<ul style="list-style-type: none"> • Gavi • Kingdom of Saudi Arabia • UNICEF • USAID • WHO • World Bank 	<ul style="list-style-type: none"> • Government of Norway • USAID • WHO • Government of Germany 	<ul style="list-style-type: none"> • CARB-X • Government of Germany • JICA

Gavi: Gavi, the Vaccine Alliance; IPC: infection prevention and control; JICA: Japan International Cooperation Agency; KOICA: Korea International Cooperation Agency; UNICEF: United Nations Children's Fund; USAID: United States Agency for International Development; US CDC: United States Centers for Disease Control and Prevention; WASH: water, sanitation and hygiene; WHO: World Health Organization.

Source: adapted from (19, 20, 21). Note that the table only includes examples from the human health sector, and is illustrative rather than exhaustive.

Step 3. Discuss with potential funders and present a resource mobilization advocacy or investment case

Following on from the funder map, it may be useful to develop an advocacy plan or AMR investment case (Boxes 11 and 12, and Annex 6) for discussions with existing and potential funders in order to:

- create awareness and a sense of urgency of the need for AMR support (see Annex 6 for guidance around presenting an “investment case for AMR support at country level”);
- present activities in the context of national and global strategies, including investing in health systems strengthening;
- present the existing funding available and the funding gap of the costed operational plan; and
- establish how likely or not the funder is to fund additional AMR activities identified in the operational plan for which there is a funding gap (5).

Box 11. An investment case

An example of an investment case for the Global Polio Eradication Initiative (2019–2023) can be found [here](#).

It is useful to have local facts, figures and stories as well as documentation, including peer-reviewed articles to encourage funding and implementation of AMR-related activity in your country. Even if evidence at the country level is incomplete, there is often some data available in public health institutes or teaching or private hospitals (5). [TrACSS data](#) may also be used to compare AMR-related activity in your country with other countries in your region and beyond. When developing an advocacy plan or investment case it is important to consider the following:

- develop key messages that consider your goals, objectives and your audience;
- select advocacy methods for approaching decision-makers, potential funders and the media; and
- develop and implement the advocacy plan and/or investment case to mobilize resources.

Box 12. Developing an advocacy plan

Practical example of how to develop and implement an advocacy plan from the WHO guide for effective programmes in cancer control can be found [here](#).

Depending on the outcome of resource mobilization efforts, activities may need to be reprioritized (Chapter 3) and the operational plan revised (Chapter 4). Funding for implementation of the NAP AMR operational plan should be encouraged from national plans and budgets; approaching development partners should be secondary.

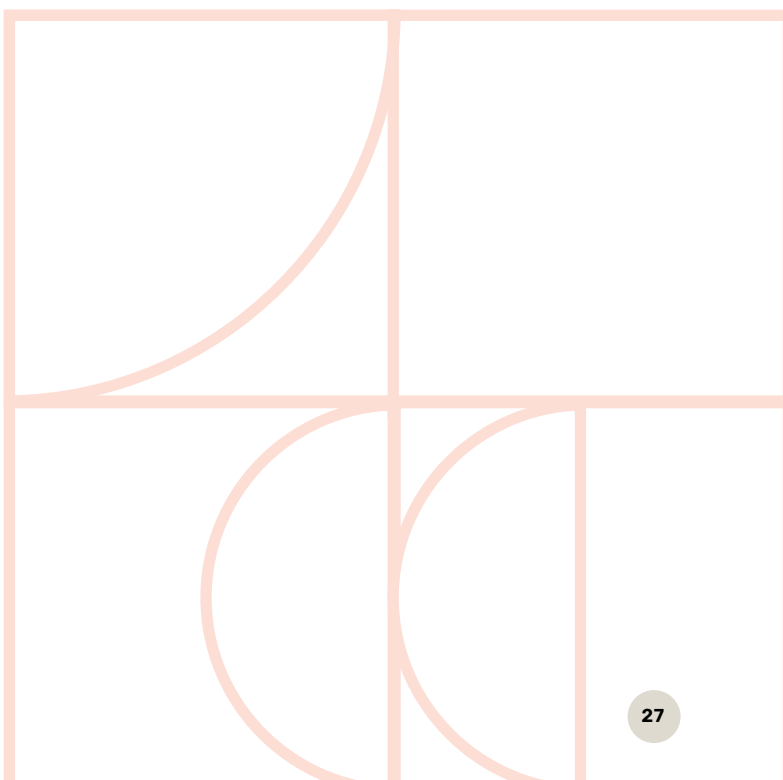
In addition, TWG(s) could explore other innovative approaches for promoting funding of some priority activities, as discussed in Box 13.

Box 13. An example of innovative financing

An example of innovative financing used by the Republic of Korea is the Global Disease Eradication Fund (GDEF), whereby a proportion of earnings from every international flight ticket departing the country is donated to the GDEF. More information can be found [here](#).

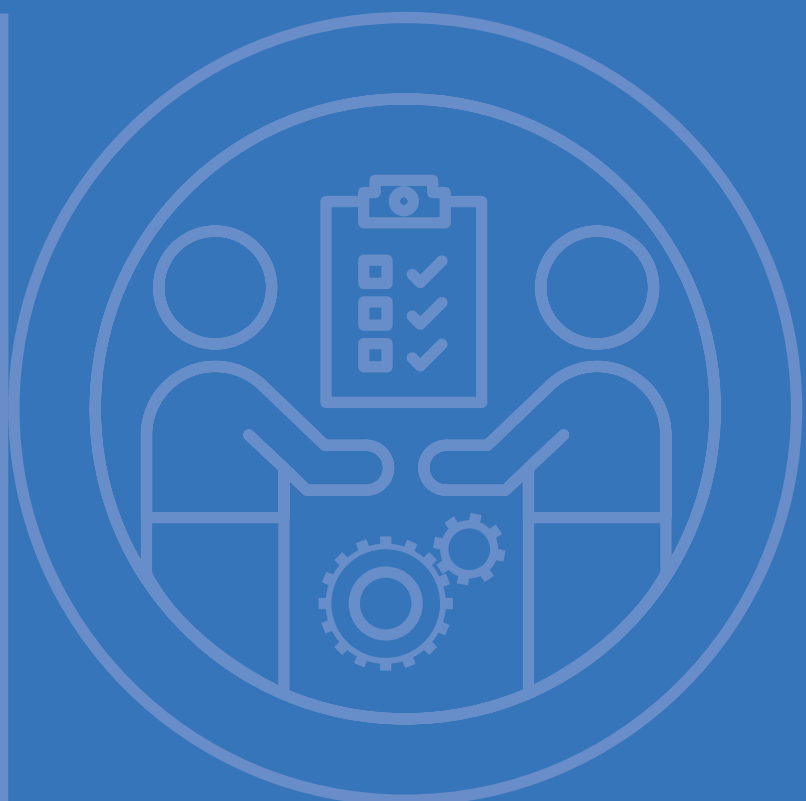
5.3 Checklist

- Have the funding gaps for implementing the operational plan been identified?**
 - Has it been determined which activities are already funded?
 - Has it been determined which activities have a funding gap?
- Has a funding map been developed?**
 - Does the map include both existing and potential funders?
 - Are funders identified by strategic objective of the NAP?
- Has an investment case or advocacy plan been developed to present to existing and/or potential funders?**
- Have existing and/or potential funders been approached?**
- Have activities been reprioritized based on resource mapping and mobilization efforts?**
- Have any innovative approaches been identified for potential funding of selected priority activities (optional)?**



06

Implement NAP AMR activities

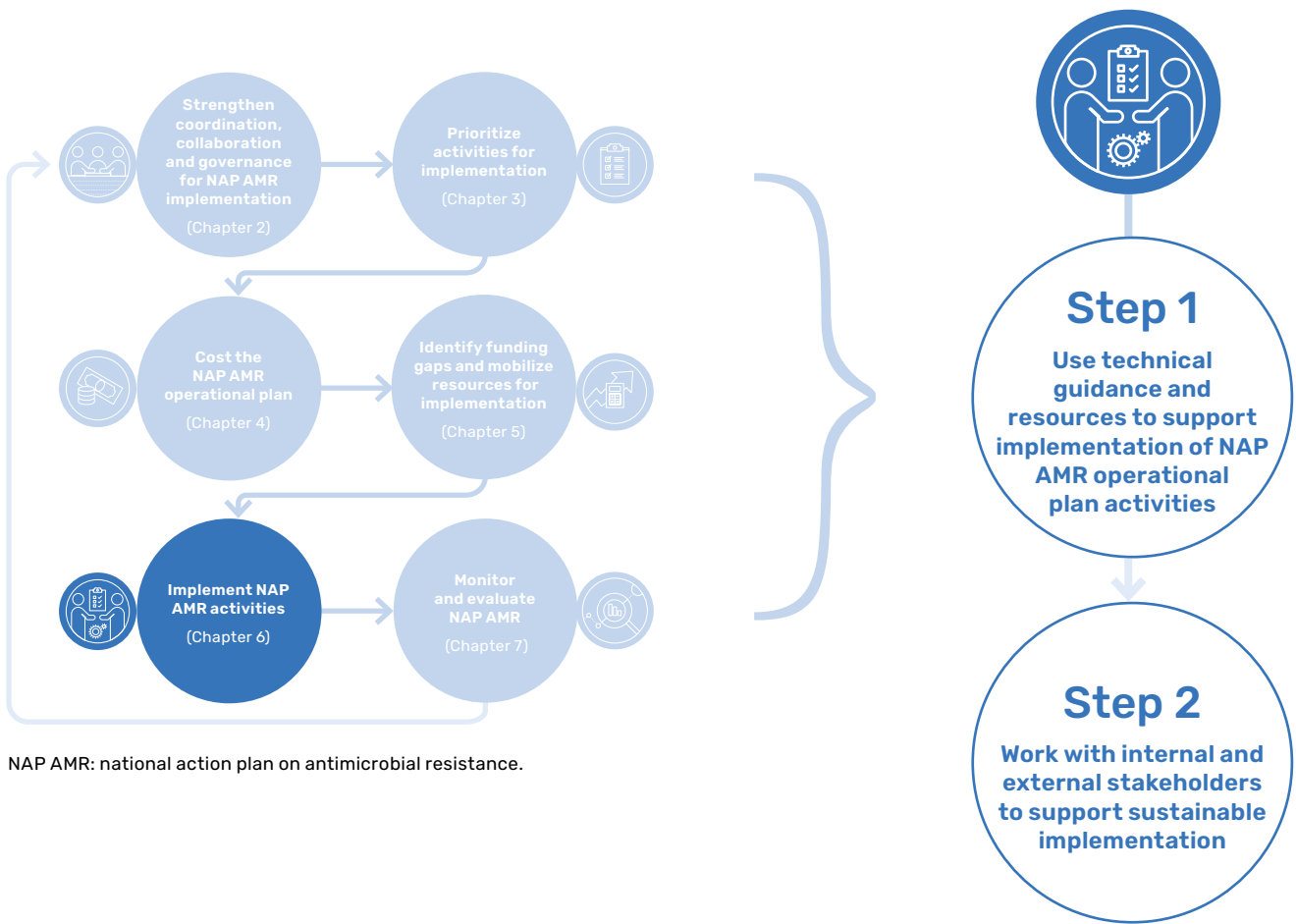


6.1 Overview

Once a costed and budgeted NAP AMR operational plan has been finalized, the next step is to sustainably implement the activities. The final operational plan may consist of new AMR-related activities, existing AMR-related activities that need to be scaled up, as well as existing AMR-related activities being implemented in other health programmes. A range of stakeholders both

within and beyond the Ministry of Health must take responsibility for activities within their own spheres of influence (1). Monitoring activities is essential to adjust implementation approaches; as such, an M&E framework should be defined prior to the onset of implementation. M&E of the NAP AMR will be discussed in Chapter 7. Fig. 10 shows the steps involved in implementing NAP AMR activities.

Fig 10. Steps for implementing NAP AMR activities



NAP AMR: national action plan on antimicrobial resistance.

6.2 Steps for implementation

Step 1. Use technical guidance and resources to support implementation of NAP AMR operational plan activities

TWG(s) and/or other responsible implementing entity(ies) should begin by identifying technical guidance and resources that can be shared with all relevant stakeholders in order to support implementation. The NAP AMR operational plan activities to be implemented should be aligned and adapted from the GAP on AMR and the draft WHO AMR patient centred framework for AMR. There are five key objectives of the GAP on AMR:

1. Improve awareness and understanding of AMR through effective communication, education and training.
2. Strengthen the knowledge and evidence base through surveillance and research.
3. Reduce the incidence of infection through effective sanitation, hygiene and infection prevention measures.
4. Optimize the use of antimicrobial medicines in human health through AMS interventions.
5. Develop an economic case for sustainable investment that takes account of the needs of all countries and increasing investment in new medicines, diagnostic tools, vaccines and other interventions (7).

Technical guidance and resources to support the implementation of activities identified in the NAP AMR operational plan are presented in Annex 5, in alignment with the GAP on AMR objectives.

Step 2. Work with internal and external stakeholders to support sustainable implementation

Several stakeholders will be involved in the implementation of a NAP on AMR operational plan (Box 14). In the health sector, implementing stakeholders will include members of the TWG(s), health professionals, politicians, academics, civil society, private sector etc. (5). Stakeholders should begin by reviewing available technical guidance and resources available for their area of implementation. In addition implementation bottlenecks should be identified and ways to overcome these.

Box 14. AMR communities of practice

The [WHO NAP AMR communities of practice forum](#) is a free and open online resource for those developing and implementing NAPs on AMR. It is a platform to facilitate sharing of peer support and innovative advice for operational challenges.

NAP AMR: national action plan on antimicrobial resistance;
WHO: World Health Organization.

As mentioned in Chapter 3, there may be many AMR-related activities already being implemented as part of other human health programmes. Countries are encouraged to integrate activities within existing programmes to support sustainable implementation. Strategies should be identified and implemented to optimize resources and technical capacities and sustain activities (5). Information should be gathered where possible from existing monitoring processes to avoid duplication of efforts when monitoring NAP on AMR implementation. Reviewing the data will be important to identify bottlenecks and ensure that implementation is sustainable. M&E will be covered in the next chapter.

6.3 Checklist

Have technical guidance and resources been identified to support implementation of NAP on AMR operational plan activities? If so, for which of the following areas?

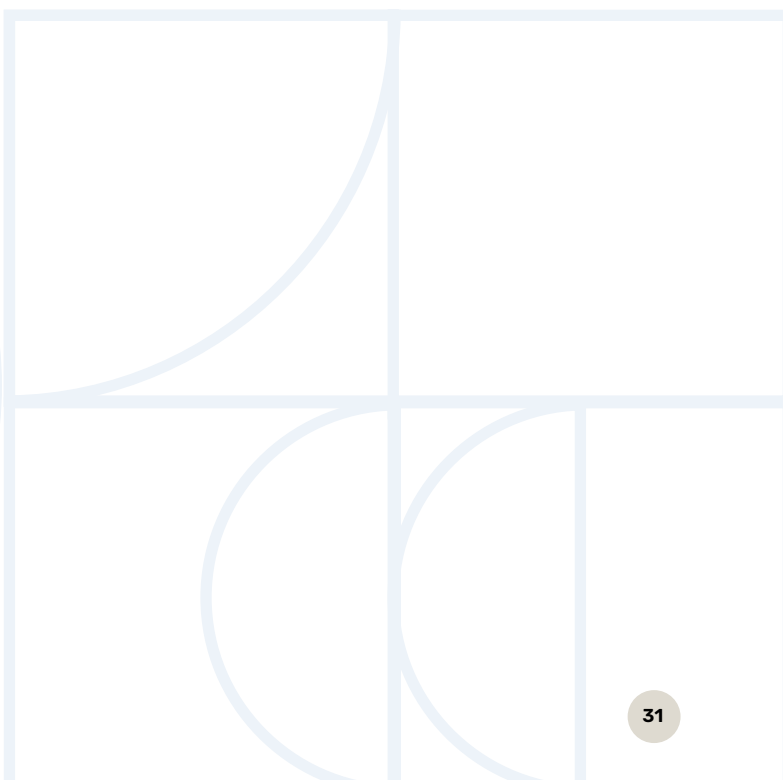
- Awareness and education
- Surveillance, laboratory and research
- Preventing infections (including IPC, immunization and WASH)
- Optimised use of antimicrobials
- Research and development
- Others

Is additional technical capacity needed to implement planned activities and utilize recommended technical guidance and resources? If so, for which of the following areas?

- Awareness and education
- Surveillance and research
- Preventing infections (including IPC, immunization and WASH)
- Optimized use of antimicrobials
- Research and development
- Others

Have potential bottlenecks been identified for each technical area and activities?

Have strategies been identified and implemented to optimize resources and technical capacities and sustain activities for each technical area?



07

Monitor and evaluate the NAP AMR

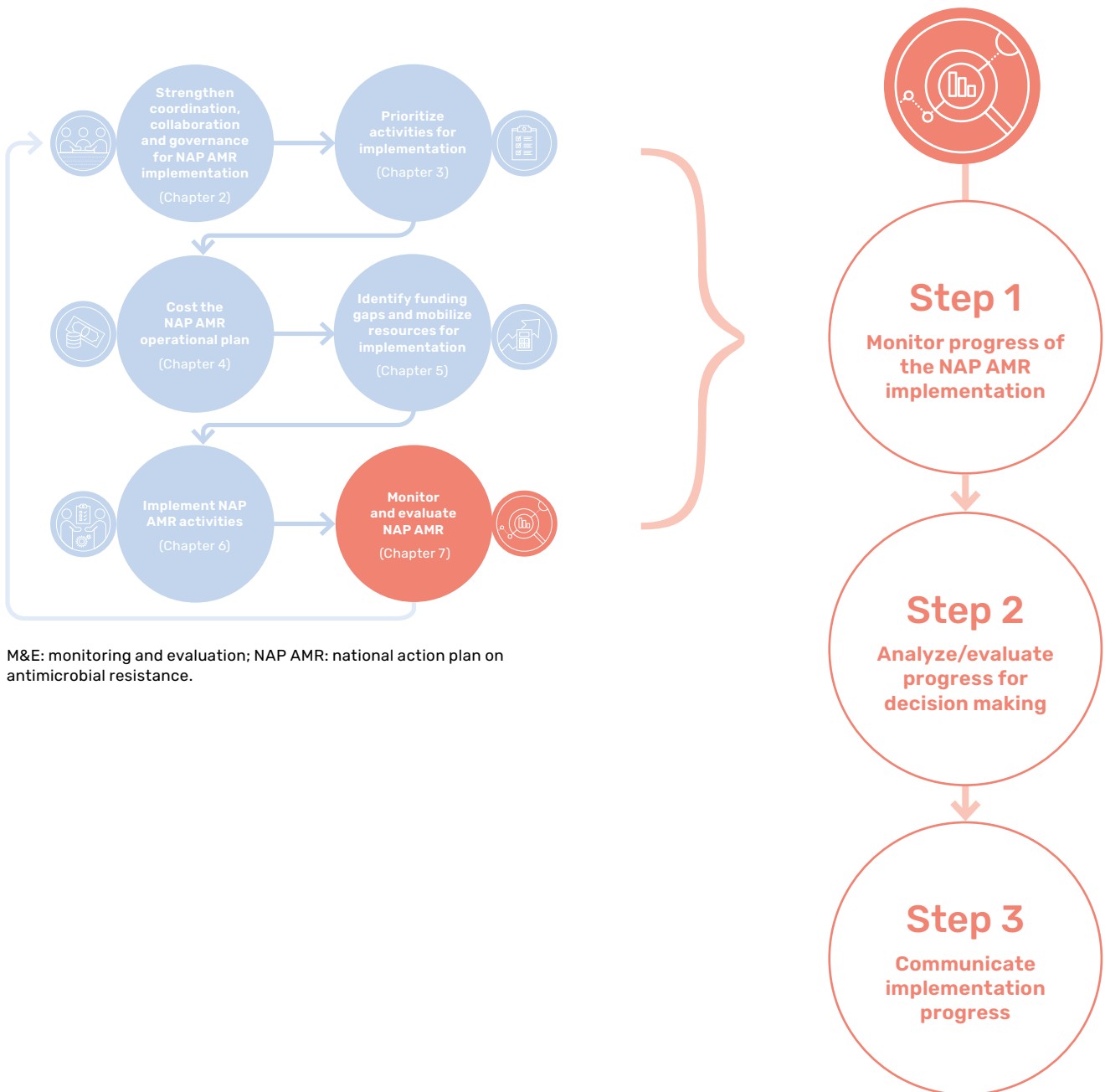
7.1 Overview

To track whether stakeholders are taking action and to assess whether those actions are having the intended effect, an M&E framework is needed. The M&E framework includes, at a minimum, process indicator monitoring and, where feasible, output indicator monitoring as well as a results assessment for outcomes and goals (20). As such, the activities within the operational plan should include indicators, baseline and targets, data collection methods

and responsible entities. The multisectoral coordinating mechanism(s) and TWG(s) should regularly review the comprehensive M&E framework for monitoring progress (1). Fig. 11 captures the steps for M&E of NAP AMR operational plan activities in order to inform decision-making and refine implementation approaches.

Periodically, it will be important for countries to evaluate their NAP on AMR as a whole and – where necessary – to move from NAP 1.0 to 2.0 or subsequent revisions.

Fig 11. M&E of NAP AMR



M&E: monitoring and evaluation; NAP AMR: national action plan on antimicrobial resistance.

7.2 Steps for implementation

Step 1. Monitor progress of NAP on AMR implementation

Countries will need to monitor progress in implementing their NAP operational plans and evaluate the extent to which this is making an impact at the national/subnational level (Box 15). Establishing and resourcing an M&E system in the country is important to track progress against the activities and outputs detailed in the NAP operational plan, which should be reviewed regularly (annually or biennially) to identify and address barriers to, and capacity for, implementation (22). In particular, the multisectoral coordinating mechanism(s) along with the TWG(s) are best positioned to review TrACSS data before official submission. Establishing a TWG on M&E for the NAP on AMR is encouraged.

Box 15. Data sources on AMR and health systems

The emergence and spread of organisms resistant to antimicrobials is often a sign of problems with the quality of health services. Improvements in health systems can be tracked via indicators related to [UHC in the Global Health Observatory](#).

AMR: antimicrobial resistance; UHC: universal health coverage.

WHO tools: M&E of NAP implementation

- [Monitoring and evaluation of the global action plan on antimicrobial resistance: framework and recommended indicators \(2019\)](#)
- [Annex 3: methodology sheets for recommended indicators \(2019\)](#)
- [Tripartite AMR country self-assessment survey \(TrACSS\) \(2020–2021\)](#)

A core list of human health indicators for monitoring at country level is captured in Annex 7.

Step 2: Analyse progress for decision-making

Results from monitoring tools and systems should be reviewed on a regular basis by the TWG(s) and/or multisectoral coordinating mechanism(s). This information should feed into a decision-making process to enhance sustainable implementation of the operational plan as needed. As mentioned, a full NAP evaluation should be periodically undertaken to assess how the country is progressing, consolidating data from different assessments that may have been undertaken related to AMR (Box 16).

A comprehensive evaluation tool to assess NAP on AMR implementation is under development. This tool will be able to support evidence for further revisions and/or reprioritization of the NAP on AMR and operational plan.

Box 16. Measuring AMR capacities through health security assessment

Under the legally binding IHR, WHO Member States are required to maintain minimum capacities in specific technical areas, including AMR. Through IHR 2005, countries undertake a voluntary JEE to assess their capacity to prevent, detect and rapidly respond to public health risks.

AMR: antimicrobial resistance; IHR: international health regulations; JEE: joint external evaluation; WHO: World Health Organization.

In the interim, countries are encouraged to review available monitoring data, including [TrACSS data](#), to assess progress on NAP on AMR implementation. It will also be important to consider monitoring activities conducted by other stakeholders outside of the TWG(s), including civil society members, patient group representatives, NGOs (nongovernmental organizations), etc., to ensure comprehensive evaluation.

Step 3: Communicate implementation progress

A communication strategy may need to be developed to communicate progress on implementation of the NAP on AMR operational plan, best practices, challenges, lessons learned and resources/capacity needed to various stakeholders (Box 17). The communication strategy should include what, when and how to communicate as well as whom to communicate to, and consider the One Health approach for NAP AMR implementation. An example of a communication strategy for NAPHS can be found [here](#).

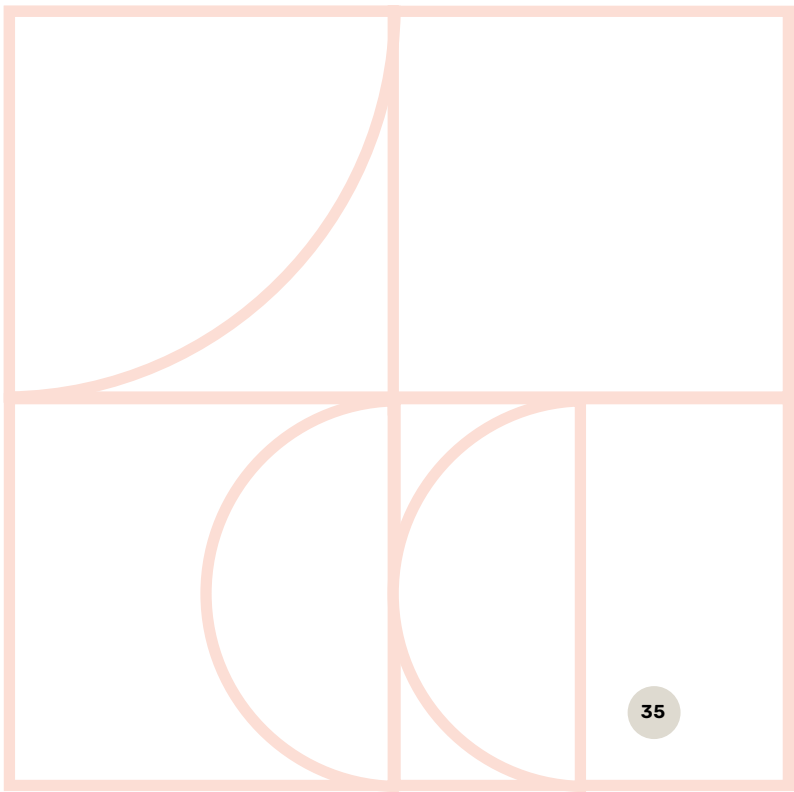
Box 17. Risk-based communication

The overarching communication strategy should include risk-based communication approaches to report on AMR issues during the management of outbreaks and epidemics (e.g. inappropriate use of antibiotics during public health events, as observed during the COVID-19 pandemic).

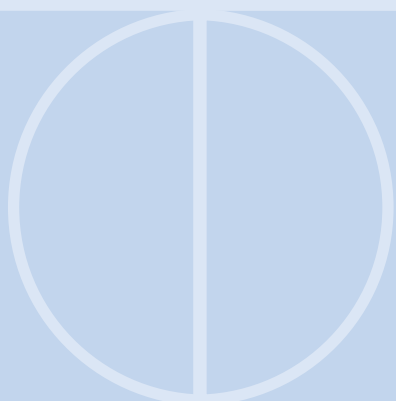
AMR: antimicrobial resistance.

4.3 Checklist

- Have AMR activities that are being implemented by other health programmes been identified?**
 - If these activities are already being monitored by other programmes, has the data been collected for integration within the AMR M&E framework?
- Is the country's AMR M&E system established and resourced for tracking progress on NAP AMR operational plan implementation?**
 - Is the data reviewed regularly (annually or biennially)?
- Is the monitoring data used by the multisectoral coordinating mechanism(s) and/or TWG(s) for decision-making to adjust implementation?**
- Has a communication strategy been developed to regularly communicate on NAP AMR implementation progress to national decision-makers, external stakeholders as well as the public?**
 - Does the strategy include risk-based communication strategies for informing stakeholders on AMR issues during outbreaks and epidemics?



Annexes



Annex 1.

Situational analysis

When developing a prioritized implementation plan, inventory should be taken of existing AMR structures, policies, resources, capacities and activities related to NAP implementation (1).

Different tools may be used to facilitate this exercise based on who the end user is. From a policymaker's perspective, it is important to capture a broad picture on the current state of the NAP AMR. Elements to be assessed in this type of analysis include:

- comprehensiveness of the existing NAP AMR (strategic, operational, monitoring and budgetary considerations);
- multisectoral and One Health coordination mechanisms;
- existing literature and quality data;
- existing legal and policy frameworks;
- existing national coordination and implementation structures – e.g. national multisectoral AMR coordinating mechanism(s) and TWG(s) – policies/plans and programmes/networks for each of the five GAP objectives (for all relevant sectors) (1); and
- human and financial resources available for implementing the NAP AMR (5).

WHO tools: resources for policy-level situation analysis

- [National action plan development support tools: sample checklist](#) (2016)
- [Situational analysis on antimicrobial resistance in the South-East Asia Region: Annex 1: situation analysis tool](#) (2017)
- [Situational analysis on antimicrobial resistance in the South-East Asia Region: Annex 2: situation analysis tool](#) (2019)
- [Landscape analysis on the status of the implementation of AMR National Action Plans for the EU project "Working together to fight AMR"](#) (2020)
- [Tripartite AMR country self-assessment survey](#) (2020)

Note that these tools are also useful in supporting the revision process of an NAP AMR.

While policymakers require a broader overview, **technical leads** will need to assess the current state of specific resources, capacities and activities for a GAP objective.

WHO tools: resources for technical level situation analysis**Awareness and understanding:**

- [The TAP toolbox: exercises, tools and templates to support your tailoring antimicrobial resistance programmes plan \(Chapters 1 and 2\)](#) (2021)

AMR surveillance:

- [National AMR surveillance systems and participation in the GLASS: core components checklist and questionnaire](#) (2016)

IPC:

- [National level tool \(comprehensive\): infection prevention and control assessment tool \(IPCAT 2\) and instructions manual under assessment tools](#) (2017)
- [Infection prevention and control assessment framework at the facility level](#) (2018)
- [Assessment tool of the minimum requirements for infection prevention and control programmes at the national level](#) (2021)
- [IPC minimum requirements tool](#) (2021)

WASH:

- [Water and sanitation for health facility improvement tool \(WASH FIT\): a practical guide for improving quality of care through water, sanitation and hygiene in health care facilities. Tool 2A](#) (2018)
- [Understanding barriers to quality care: an approach for conducting a situational analysis of water, sanitation and hygiene \(WASH\) in health care facilities, under relevant publications](#) (2021)

Immunization:

- [Electronic Joint Reporting Form \(eJRF\)](#)

Optimizing use of antimicrobials:

- [Antimicrobial stewardship programmes in health-care facilities in low- and middle-income countries: a WHO practical toolkit. Checklist of essential national core elements for AMS programmes in LMICs \(pp. 8–9\)](#) (2019)
- [WHO policy guidance on integrated antimicrobial stewardship activities. Annex: periodic national and health-care facility assessment tools](#) (2021)

Countries may also refer to national data (where it exists) to understand the current context and inform subsequent decision-making.

WHO sources of data for analysis

- **Overall implementation:** [Global database for the Tripartite antimicrobial \(AMR\) country self-assessment survey \(TrACSS\)](#)
- **AMR/AMU surveillance:** [Global Antimicrobial Resistance and Use Surveillance System](#)
- **WASH:** [Joint Monitoring Programme data. WASH services in health care facilities](#)
- **Immunization:** [WHO-UNICEF estimates of DTP3 coverage](#)

Ultimately, the situation analysis should highlight where the country is performing well and where gaps need to be addressed. Results from the situation analysis will inform the subsequent SWOT analysis.

Please note that these tools are not exhaustive. Additional related tools can be found in Annex 5.

Annex 2. SWOT analysis

The purpose of this analysis is ultimately to lay a foundation for strategic prioritization and operational planning for the NAP AMR implementation plan.

The SWOT analysis should:

- **include strengths, weaknesses, opportunities and threats (SWOT) at different levels of implementation (national, subnational, facility, community) against each of the strategic objectives of the NAP AMR/GAP:**
 - awareness and education
 - AMR and AMU/AMC surveillance, including laboratory capacity building and infrastructure
 - prevention of infection, including IPC, WASH and vaccines
 - optimized use of antimicrobials
 - research and development.

- **consider the following elements that enable implementation:**

- leadership commitment
- awareness of all stakeholders
- coordination, stakeholder engagement and partnership
- financial resources
- technical capacity, including infrastructure and information technology (IT)
- structures or enablers for implementation (incl. policies, plans, regulations, guidelines)
- implementation of NAP AMR activities
- monitoring and data.

Fig. A2.1 shows an example SWOT analysis for surveillance.

Fig A2.1. Example of a national SWOT analysis for GAP objective 2: AMR surveillance (dummy example)

	Helpful Strengths	Harmful Weaknesses
Present factors	<p>Awareness and political will</p> <ul style="list-style-type: none"> Renewed political commitment towards AMR surveillance from the ministry of health. <p>Coordination and stakeholder engagement</p> <ul style="list-style-type: none"> Technical working group on AMR surveillance has been established with clear TORs and meets on a regular basis. <p>Financial resources:</p> <ul style="list-style-type: none"> Donor funding is available for selected facility-level improvement of lab capacity. <p>Technical capacity:</p> <ul style="list-style-type: none"> Larger tertiary health care facilities have trained clinical microbiologists. <p>Structures or enablers for implementation:</p> <ul style="list-style-type: none"> Laboratory SOPs for antimicrobial resistance testing (AST) developed and well disseminated; EQA/IQA in place in x facilities. <p>Implementation of NAP AMR activities:</p> <ul style="list-style-type: none"> Training programmes for clinical diagnostics exist at subnational level. <p>Monitoring and data:</p> <ul style="list-style-type: none"> National AMR data submitted via GLASS platform on an annual basis. 	<p>Awareness and political will</p> <ul style="list-style-type: none"> Limited visibility on the importance of AMU/AMC surveillance at the subnational and community level. <p>Coordination and stakeholder engagement</p> <ul style="list-style-type: none"> No national coordinating mechanism(s) or TWG(s) for AMU/AMC in place. <p>Financial resources:</p> <ul style="list-style-type: none"> Lack of government funding for improvement in data collection systems for AMU/AMC. <p>Technical capacity:</p> <ul style="list-style-type: none"> No trained staff in health care facilities to undertake AMU/AMC surveillance at the facility. <p>Structures or enablers for implementation:</p> <ul style="list-style-type: none"> No national standardized SOPs for analysing AMC data. <p>Implementation of NAP AMR activities:</p> <ul style="list-style-type: none"> Limited training on point prevalence surveys in health care facilities. <p>Monitoring and data:</p> <ul style="list-style-type: none"> Segmented surveillance activities ongoing for AMU.
	Opportunities	Threats
Future factors	<p>Awareness and political will</p> <ul style="list-style-type: none"> Generate awareness on AMC surveillance at the highest political level through presentations in existing AMR governance mechanisms. <p>Governance and coordination:</p> <ul style="list-style-type: none"> Link the TWG on AMR surveillance in human health to existing coordinating mechanisms in the animal health sector for information sharing. <p>Financial resources:</p> <ul style="list-style-type: none"> UHC donor support can be channelled to include AMR surveillance activities. Identify internal national funding streams for AMR surveillance activities. <p>Technical capacity:</p> <ul style="list-style-type: none"> Larger tertiary health care facilities have trained clinical microbiologists. <p>Implementation of AMR activities:</p> <ul style="list-style-type: none"> New health insurance scheme can be used for making an economic case for AMR surveillance activities. <p>Monitoring and data:</p> <ul style="list-style-type: none"> Opportunity to leverage existing AMR surveillance IT systems to integrate AMU/AMC monitoring. 	<p>Awareness and political will</p> <ul style="list-style-type: none"> Uncertainty in government about the devolution of power to the municipality level. <p>Coordination and stakeholder management</p> <ul style="list-style-type: none"> Private sector not involved in AMR and AMC/AMU surveillance activities and reporting, although the private sector covers 60% of health care facilities <p>Financial resources:</p> <ul style="list-style-type: none"> Some aspects of AMR surveillance programmes are funded exclusively by donors, and funding will end in the near future. <p>Technical capacity:</p> <ul style="list-style-type: none"> Health emergencies may keep technical staff from working on AMR surveillance if it is not incorporated into the health security agenda. <p>Implementation of AMR activities:</p> <ul style="list-style-type: none"> Competing interests from the private sector. <p>Monitoring and data:</p> <ul style="list-style-type: none"> Limited surveillance data sharing within and between relevant sectors may lead to inconsistent messaging on AMR.

AMC: antimicrobial consumption; AMR: antimicrobial resistance; AMU: antimicrobial use; EQA/IQA: external quality assurance/internal quality assurance; GAP: Global Action Plan; GLASS: Global Antimicrobial Resistance Surveillance System; IT: information technology; NAP AMR: national action plan on AMR; SOPs: standard operating procedures; SWOT: strengths, weaknesses, opportunities and threats; TORs: terms of reference; TWG: technical working group; UHC: universal health coverage.

Annex 3.

Stakeholder analysis

What is a stakeholder?

A stakeholder in the context of implementing NAP AMRs is defined as any person or entity capable of influencing the process of implementation and/or responsible for partial or total implementation of an NAP AMR (21). A broad range of stakeholders within and beyond the ministry of health, including those from other relevant sectors (e.g. animal health, agriculture, environment, trade and finance), are needed to implement NAP AMRs (5).

What is stakeholder analysis and why do it?

Stakeholder analysis is the systematic identification, evaluation and prioritization of everyone who can influence and/or is responsible for implementing the NAP AMR (all or part of it). This exercise will inform the development of an effective stakeholder communication and engagement strategy as well as prioritize outputs and activities for the NAP AMR implementation plan (15). Stakeholder analysis should be done both at the **policy** level and at the **technical** level, aligned with objectives of the GAP on AMR (Box A3.1).

Box A3.1. Stakeholders in NAP AMR implementation

For more information on the main stakeholders and their likely contributions to NAP implementation, please refer to [Turning plans into action for antimicrobial resistance \(AMR\). Working paper 2.0: implementation and coordination](#), Chapter 5: engaging stakeholders.

NAP AMR: national action plan on antimicrobial resistance.

How to carry out a stakeholder analysis:

1. Identify your key stakeholders.

Stakeholders in NAP AMR implementation are diverse and span the human health sector along with other sectors involved in the NAP AMR (e.g. animal health, agriculture and environment, trade and finance) (5). Involvement of the private sector and civil society should be considered. At the **policy** level, stakeholder identification can be undertaken, aligned with the pillars of the GAP on AMR.

2. Evaluate the stakeholders' degree of current engagement and influence.

Different stakeholders have different interests and different contributions to make in supporting NAP implementation (5) (Box A3.2). Parameters to be considered in a stakeholder analysis include:

- Level of current engagement: how invested a stakeholder(s) is in the outcomes; level of current engagement in the implementation of the NAP.
- Level of influence: the degree to which a stakeholder can/is facilitate(ing) or hinder(ing) project progress [i.e. through funding, legislation, etc. (15)].

Box A3.2 Example of stakeholder analysis for GAP on AMR objective 1

Note that stakeholder identification, evaluation and prioritization can be done for each GAP on AMR objective. An example for how to do this for objective 1, awareness and education, is available in the [TAP toolbox: exercises, tools and templates to support your tailoring antimicrobial resistance programmes plan](#) (2021).

AMR: antimicrobial resistance; GAP: Global Action Plan; TAP: tailoring antimicrobial resistance programmes.

3. Prioritize each stakeholder.

The analysis of the level of influence and interest of stakeholders should inform how they are prioritized for engagement. While all stakeholders contribute to the implementation of the NAP AMR, it is important to consider the degree to which they should be engaged (5, 15, 23). Fig. A3.1 shows a matrix that can be used to facilitate prioritization.

Finally, findings from the previous steps can be inputted into a comprehensive stakeholder analysis (Fig. A3.2). Note that Fig. A3.2 only captures stakeholders from the human health sector, as mapped from the policymaker perspective. It is important to reiterate that several key stakeholders exist within other sectors and the stakeholder analysis should include organizations from these sectors as well.

Fig A3.1. Prioritization of stakeholders

<p>High influence, high engagement</p> <p>Manage closely: Stakeholders in this category should be regularly involved in documentation and decision-making.</p>	<p>High influence, low engagement</p> <p>Keep satisfied: Ensure that the objectives of stakeholders in this category are met, and that they remain strong advocates for the NAP AMR.</p>
<p>Low influence, high engagement</p> <p>Keep informed: These individuals are helpful team players if kept engaged and informed in implementing the NAP AMR.</p>	<p>Low influence, low engagement</p> <p>Monitor: Keep stakeholders in this category informed on the NAP AMR implementation, but do not over-engage.</p>

Source: adapted from (15,22).

Fig A3.2. Example of a stakeholder analysis

Name of organization	Area of engagement	Current level of engagement	Role and type of engagement	Level of influence	Type of influence	Priority of engagement
National primary health care development agency	All NAP AMR objectives	High	Technical and implementing agency. Provides the technical support, capacity development for primary health care workers, and guidelines and minimum standards for core services.	High	Advocacy, normative	Manage closely
National agency for food and drug administration and control	Optimize use	High	Regulatory body that publishes guidelines related to access to quality antibiotics and responsible use. Regulates the sale of prescription antibiotics.	High	Regulatory, normative	Manage closely
National health research institute	R&D	Medium	Undertake implementation research on AMR interventions.	Medium	Advocacy (shapes policies through research)	Keep informed
Private tertiary health care facilities	Surveillance, IPC, optimize use	Low	Limited current engagement. Have a role to play in rolling out AMS programmes.	High	Normative	Monitor

AMS: antimicrobial stewardship; IPC: infection prevention and control; NAP AMR: national action plan on antimicrobial resistance; R&D: research and development.

Source: adapted from (21)

Annex 4.

Operational plan template

Strategic objective:

Activity:


Sub-activity	Implementing entity	Unit and quantity	Implementation level (national/ facility/ community)	Timeline	Indicator	Cost	Funding source

Annex 5.

Technical guidance and resources for NAP AMR implementation

GAP objective 1: Improve awareness and understanding of AMR through effective communication, education and training.

Legend

 National level
  National and facility level
  Health care facility level

	Document title	Description	Available languages
Health worker education	WHO competency framework for health workers' education and training on antimicrobial resistance (2018)	The main purpose of this document is to strengthen efforts at the country level to address AMR by outlining a set of core and additional competencies to guide the education and training of health workers. The competency framework is aimed primarily at pre-service and in-service health education and training institutions, accreditation and regulatory bodies and health policy- and decision-making authorities.	English
	Health workers' education and training on antimicrobial resistance: curricula guide (2019)	The purpose of this curricula guide is to strengthen the ability of educators to deliver quality and standard education and training on AMR, including how antimicrobials are procured, prescribed and used.	English
E-learning resources	Antimicrobial stewardship: a competency-based approach	This course will equip clinicians who frequently prescribe antimicrobials with knowledge and tools to improve their use of these essential medications in daily clinical practice. The course highlights how AMS principles can be applied to common clinical scenarios.	English French Italian Spanish Russian
	Infection prevention and control course series	The IPC channel hosts general courses designed for all health workers, as well as more advanced courses specific to IPC focal points. The goal is to strengthen health workers' IPC knowledge and advance the IPC focal points' capacity to implement facility-led IPC efforts. The channel includes courses on COVID-19 preparedness, readiness and response, as well as IPC strategies required to prevent and mitigate the spread of COVID-19 infections in health facilities.	Multiple
	Reducing antimicrobial resistance of treatable sexually transmitted infections in antenatal care	The aim of this course is to help to improve the prevention, detection, treatment and cure of sexually transmitted infections and other reproductive tract infections in settings serving pregnant women and their families.	English

AMR: antimicrobial resistance; AMS: antimicrobial stewardship; GAP: Global Action Plan; IPC: infection prevention and control; NAP: national action plan; TAP: tailoring AMR programmes; WHO: World Health Organization.

	Document title	Description	Available languages
Awareness and advocacy	World Antimicrobial Awareness Week campaign materials	Celebrated annually, World Antimicrobial Awareness Week (WAAW) aims to increase awareness of global AMR and to encourage best practices among the general public, health workers and policymakers to avoid the further emergence and spread of drug-resistant infections. The campaign website lists all former WAAW campaigns and associated advocacy materials.	Arabic English Chinese French Russian Spanish
	Antimicrobial resistance advocacy briefs	This suite of advocacy documents was created by the WHO Regional Office for Europe to explain how AMR affects health in different contexts and how focusing on different sectors can contribute to managing AMR.	English Russian
Behaviour change	The TAP quick guide: a practical handbook for implementing tailoring antimicrobial resistance programmes (2021)	This guide has been developed to assist Member States in initiating and undertaking projects to address the spread of AMR in their countries. The guide is designed to assist national level TAP working groups in using a behavioural insights approach to identify appropriate and feasible interventions to begin tackling AMR in their contexts.	English
	The TAP toolbox: exercises, tools and templates to support your tailoring antimicrobial resistance programmes plan (Chapters 1 and 2) (2021)	The TAP process assists Member States in initiating and undertaking projects to address the spread of AMR in their countries. The TAP Toolbox contains a series of exercises and is aligned with the stages outlined in the TAP Quick Guide. The Toolbox is designed to be used by a TAP working group as they work through the stages outlined in the TAP Quick Guide.	English

GAP objective 2: Strengthen the knowledge and evidence base through surveillance and research

Legend

 National level
  Health care facility level

	Document title	Description and implementation use	Available languages
Integrated AMR surveillance	Integrated surveillance of antimicrobial resistance in foodborne bacteria: application of a one health approach (2017)	The purpose of this guidance is to assist WHO Member States and other stakeholders in establishing and developing programmes of integrated surveillance of AMR in foodborne bacteria. It describes a step-by-step approach to designing a programme of integrated surveillance of AMR in foodborne bacteria and includes recommended standardized and validated AST methods, harmonized interpretive criteria, and approaches to the collection and reporting of AMC and AMU data.	English

	Document title	Description and implementation use	Available languages
AMR surveillance	GLASS manual for early implementation (2015)	This manual provides guidance on participation in global antibacterial resistance surveillance in humans to those responsible for AMR surveillance nationally; proposes steps for developing national surveillance systems and adherence to GLASS; and provides indicators for measuring implementation of a national surveillance programme.	English Chinese French Russian Spanish
	National AMR surveillance systems and participation in the GLASS: a guide to planning, implementation, and monitoring and evaluation (2016)	This document is primarily intended to benefit capacity building in countries with limited resources, particularly in the planning phase of setting up national AMR surveillance in the human sector. It outlines the key steps in planning and establishing a national AMR surveillance system and describes the three core components of the system and how each should function and work together. It will also assist countries in formulating and implementing an M&E strategy for the system.	English
	National AMR surveillance systems and participation in the GLASS: core components checklist and questionnaire (2016)	The items included in the checklist and questionnaire are based on the core components of the national AMR surveillance system as proposed by GLASS and described in the WHO documents GLASS manual for early implementation and the National antimicrobial resistance surveillance systems and participation in the Global Antimicrobial Surveillance System (GLASS) – a guide to planning, implementation, and monitoring and evaluation	English
AMC/AMU surveillance	WHO methodology for point prevalence survey on antibiotic use in hospitals (2019)	This document aims to provide a standardized methodology for use in LMICS to estimate the prevalence of antibiotic use in hospitals; to collect information on prescribing antibiotics; to support policymakers and practitioners for improving antibiotic use; and to provide a standardized tool for hospitals.	English
	GLASS methodology for surveillance of national antimicrobial consumption (2020)	This publication gives an overview of the WHO methodology for the national surveillance of AMC and principles for data collection and reporting, including data sources, ATC/DDD classification, variables and reporting metrics. The publication also provides instructions on setting up a national surveillance system for AMC, data flow between countries and WHO, and the GLASS-AMC IT platform.	English French
	GLASS manual on the management of antimicrobial consumption data (2020)	This manual summarizes the WHO methodology for a global programme on surveillance of AMC. It is intended to guide countries on how to use the GLASS-AMC Microsoft Excel template to prepare national AMC surveillance data according to the WHO methodology, produce national AMC data files to foster AMC data analysis at the national level and facilitate preparation of national AMC data for submission to GLASS-AMC.	English French
	GLASS guide for national surveillance systems for monitoring antimicrobial consumption in hospitals (2020)	With this document, WHO proposes an approach for monitoring AMC in hospitals, based largely on the WHO methodology used for monitoring AMC at the national level. One of the main differences between hospital and national monitoring methodology relates to the use of local hospital activity data instead of population-based data as the reference value (denominator) for AMC.	English

	Document title	Description and implementation use	Available languages
Laboratory capacity and diagnostics	GLASS whole-genome sequencing for surveillance of antimicrobial resistance (2016)	The purpose of this document is to discuss the benefits and limitations of current WGS technologies for AMR surveillance, report the results of an analysis of application of WGS to single bacterial pathogens for AMR surveillance and outline the requirements for building new WGS laboratories or upgrading existing laboratories to ensure capacity for WGS.	English
	Diagnostic stewardship: a guide to implementation in antimicrobial resistance surveillance sites (2016)	A guide that outlines steps to be taken by clinicians and other front-line health-care workers for the diagnostic pathway, and organizational and structural elements that must be in place to facilitate diagnostic stewardship.	English
	Proof-of-principle antimicrobial resistance routine diagnostics surveillance project (PoP project) (2018)	Developed by the WHO Regional Office for Europe, the objective of this project is to identify bacteria causing bloodstream infections and their antibiotic susceptibility patterns. The protocol provides guidance on active case finding, aseptic venepuncture procedures and laboratory procedures, including timely feedback of results. In addition, the project provides guidance on species identification and the use of EUCAST for AST.	English Russian
	Molecular methods for antimicrobial resistance diagnostics to enhance the GLASS (2019)	Technical note providing an overview of the benefits, costs, limitations and challenges of the molecular diagnostics considered and of molecular AMR diagnostics that could be used for surveillance in non-reference laboratories and clinical settings.	English
	GLASS guidance for national reference laboratories (2020)	Technical guidance focusing specifically on the functions and activities of NRLs for national surveillance of AMR. Details of the various functions are provided, including reference functions such as confirmation and characterization of resistance mechanisms, quality control for surveillance sites, external quality assessment, outbreak support, guidance and standardization, test validation and verification, provision of training, data collection and analysis for national surveillance of AMR and laboratory assessments. Countries can use this document to establish or improve NRL capacity within the national AMR surveillance system.	English
Burden of disease	GLASS method for estimating attributable mortality of antimicrobial resistant bloodstream infections (2020)	This is a protocol for a prospective cohort study to estimate mortality attributable to community and hospital-acquired AMR bloodstream infections for each selected AMR pathogen in selected health-care facilities.	English

AMC: antimicrobial consumption; AMR: antimicrobial resistance; AMU: antimicrobial use; AST: antimicrobial susceptibility testing; EUCAST: European Committee on Antimicrobial Susceptibility Testing; GLASS: Global Antimicrobial Resistance Surveillance System; IT: information technology; LMICS: low- and middle-income countries; M&E: monitoring and evaluation; NRL: national reference laboratory; WGS: whole-genome sequencing; WHO: World Health Organization

GAP objective 3: Reduce the incidence of infection through effective sanitation, hygiene and infection prevention measures.

Legend

● National level
 ● National and facility level
 ● Health care facility level
 ● Primary health care level




	Document title	Description and implementation use	Available languages
IPC assessment	Supporting national implementation of the WHO Guidelines on core components of infection prevention and control programmes: national level tool (IPCAT 2) (comprehensive), under assessment tools (2017)	The WHO National IPC Assessment Tool 2 (IPCAT2) will assist countries in determining the core components already in place and in identifying gaps and weaknesses to guide action planning. IPCAT2 corresponds to the core component recommendations of the guidelines targeted at the national level. Its purpose is to help assess, plan, organize and implement a national IPC programme.	English
	Instructions for the national infection prevention and control assessment tool 2 (IPCAT2) (2017)	Instruction manual for using the IPCAT2.	English
	Assessment tool of the minimum requirements for infection prevention and control programmes at the national level (2021)	This tool will assist countries in determining the minimum requirements for each core component that is in place and to identify those that need to be achieved. This tool is mostly based on selected indicators included in IPCAT2.	English
	Infection prevention and control assessment framework at the facility level (2018)	The IPC Assessment Framework is a tool to support the implementation of the WHO guidelines on core components of IPC programmes at the acute health care facility level. The user should be familiar with the contents of these guidelines, including the Interim practical manual supporting implementation of the IPC core components at the facility level before using this tool.	English
Pathogen specific IPC	Guidelines for the prevention and control of carbapenem-resistant Enterobacteriaceae, Acinetobacter baumannii and Pseudomonas aeruginosa in health care facilities (2017)	The primary objective of these guidelines is to provide evidence- and expert consensus-based recommendations on the early recognition and specific required IPC practices and procedures to effectively prevent the occurrence and control the spread of carbapenem-resistant Enterobacteriaceae, <i>A. baumannii</i> and <i>P. aeruginosa</i> (CRE-CRAB-CRPsA) colonization and/or infection in acute health-care facilities.	English
	Implementation manual to prevent and control the spread of carbapenem-resistant organisms at the national and health care facility level (2019)	This practical manual is designed to support national IPC programmes and health-care facilities to achieve effective implementation of WHO's Guidelines for the prevention and control of carbapenem-resistant Enterobacteriaceae, A. baumannii and P. aeruginosa in health care facilities in the context of their efforts to improve the quality and safety of health service delivery and the health outcomes of the people who access these services.	English

	Document title	Description and implementation use	Available languages
Surgical site infection (SSI) prevention	Global guidelines for the prevention of surgical site infection, 2nd edition (2018)	The aim of these guidelines is to provide a comprehensive range of evidence-based recommendations for interventions to be applied during the pre-, intra- and postoperative periods for the prevention of SSI, while also considering aspects related to resource availability and values and preferences.	English
	Preventing surgical site infections: implementation approaches for evidence-based recommendations (2018)	The purpose of this document is to present a range of tested approaches to achieve successful SSI prevention implementation at the facility level, including in the context of a broader surgical safety climate.	English
	Implementation manual to support the prevention of surgical site infections at the facility level – turning recommendations into practice (2019)	This manual builds on the approaches previously outlined in Preventing surgical site infections: implementation approaches for evidence-based recommendations , particularly multimodal strategies. It is intended as an “operational” manual for the WHO SSI prevention recommendations. The manual is aimed at all those concerned with the prevention of SSI.	English
WASH	Water and sanitation for health facility improvement tool (WASH FIT): a practical guide for improving quality of care through water, sanitation and hygiene in health care facilities (2018)	WASH FIT is a multistep, iterative process to facilitate improvements in WASH services, quality and experience of care. It is primarily designed for use in primary health-care facilities. WASH FIT covers four broad areas: water, sanitation (including health-care waste management), hygiene (hand hygiene and environmental cleaning) and management. Each area includes indicators and targets for achieving minimum standards for maintaining a safe and clean environment.	Arabic English French Spanish Russian
	Water, sanitation and hygiene in health care facilities: practical steps to achieve universal access to quality care (2019)	This document includes practical steps that Member States can take at the national and subnational level and the WHO and UNICEF response to the 2018 UN Secretary General’s Call to Action.	English French Russian Spanish
	Technical brief on water, sanitation, hygiene (WASH) and wastewater management to prevent infections and reduce the spread of antimicrobial resistance (AMR) (2020)	This technical brief provides a summary of evidence and rationale for WASH and wastewater actions within NAP AMRs and sector specific policy to combat AMR. Evidence and actions are presented in the domains of; coordination and leadership, households and communities, health care facilities, animal and plant production, manufacturing of antimicrobials, and surveillance and research.	English French Portuguese Russian Spanish
	Understanding barriers to quality care: an approach for conducting a situational analysis of quality and WASH in health care facilities, under relevant publications (2021)	This document describes an approach for conducting a national situational analysis of WASH as a basis for improving quality of care. A situational analysis is the first of the eight practical steps recommended by WHO and UNICEF as a means to trigger action to improve and sustain WASH in health care facilities, a prerequisite for providing quality care.	English
Immunization	Leveraging vaccines to reduce antibiotic use and prevent antimicrobial resistance: an action framework (2020)	This document presents a strategic vision for vaccines to contribute fully, sustainably and equitably to the prevention and control of AMR by preventing infections and reducing antimicrobial use. It identifies a series of priority actions to be taken by stakeholders in the fields of immunization and AMR, in three areas: expanding the use of licensed vaccines to maximize impact on AMR; developing new vaccines that contribute to the prevention and control of AMR; and expanding and sharing knowledge on the impact of vaccines on AMR.	English

	Document title	Description and implementation use	Available languages
IPC programme	Guidelines on core components of infection prevention and control programmes at the national and acute health care facility level (2016)	The objectives of this document are to provide evidence-based recommendations on the core components of IPC programmes and to support countries and health-care facilities in developing or strengthening IPC programmes and strategies.	English Spanish
	Interim practical manual: supporting national implementation of the WHO guidelines on core components of infection prevention and control programmes (2017)	This practical manual is designed to support implementation of the WHO guidelines on core components of IPC programmes at the national level, with a special focus on countries with limited resources.	English
	Improving infection prevention and control at the health facility: interim practical manual supporting implementation of the WHO guidelines on core components of infection prevention and control programmes (2018)	This practical manual is designed to support health-care facilities to achieve effective, stepwise implementation of their IPC programmes according to the WHO guidelines on core components of IPC programmes .	English
	Minimum requirements for infection prevention and control programmes (2019)	The purpose of this document is to present and promote the minimum requirements for IPC programmes at the national and health care facility level, identified by expert consensus according to available evidence and in the context of the WHO core components of IPC programmes .	English
	Infection prevention and control: guidance to action tools (2021)	This publication by the WHO Regional Office for Europe consists of three focused improvement tools, called "aide-memoires", which focus on respiratory and hand hygiene; personal protective equipment; and environmental cleaning, waste and linen management, all elements of standard, droplet/contact and airborne precautions. The tools include a range of practical actions that are known to support guidance to action and therefore improve both practices and outcomes. They should be used by IPC focal points, primarily at facility level.	English
	Strengthening infection prevention and control in primary care: a collection of existing standards, measurement and implementation resources (2021)	This document aims to support those working in primary care to strengthen IPC, informed by existing WHO IPC guidance and implementation resources. It brings together existing WHO IPC standards, indicators and implementation approaches that are focused on, or directly relevant to, IPC in primary care. It should also be used to identify resources suitable for use in primary care that can be embedded within relevant IPC or other health programmes.	English
	Strengthening infection prevention and control in primary care (2021)	This document provides a collecting of existing standards, measurements and implementation resources to strengthen IPC in the primary care setting.	English

AMR: antimicrobial resistance; CRE-CRAB-CRPsA: carbapenem-resistant Enterobacteriaceae, Acinetobacter baumannii and Pseudomonas aeruginosa; IPC: infection prevention and control; NAP AMR: national action plan on AMR; UN: United Nations; UNICEF: United Nations Children's Fund; WASH: water, sanitation and hygiene; WASH FIT: Water and Sanitation for Health Facility Improvement Tool; WHO: World Health Organization.

GAP objective 4: Optimize the use of antimicrobial medicines in human health.**Legend**

 National level
  National and facility level
  Health care facility level

	Document title	Description and implementation use	Available languages
AMS	Step-by-step approach for development and implementation of hospital and antibiotic policy and standard treatment guidelines (2011)	Developed by the WHO Regional Office for South-East Asia, this document focuses on the mechanism to develop a practically applicable hospital antibiotic policy and standard treatment guidelines (STGs). In addition, the document contains information on various effective strategies for implementation of STGs.	English
	Antimicrobial stewardship programmes in health-care facilities in low- and middle-income countries: a WHO practical toolkit (2019)	The specific aim of the toolkit is to enable AMS in health care facilities in LMICs. It includes structures that should be in place to support AMS at the national and facility level, AMS interventions to be performed at a health care facility level, and education and training for health care professionals performing AMS.	Arabic English French Russian Spanish
	WHO policy guidance on integrated antimicrobial stewardship activities (2021)	This guidance aims to provide a set of evidence-based, pragmatic recommendations to drive comprehensive and integrated AMS activities under the purview of a central national coordination unit, national AMR steering or coordinating committees, or other equivalent national authorities. The policy guidance complements the GAP , the WHO practical toolkit for AMS programmes in health care facilities in LMICs and other WHO guidance in surveillance, IPC and WASH.	English French Spanish
	Antimicrobial stewardship interventions: a practical guide (2021)	This practical guide describes 10 commonly used stewardship interventions which promote the optimal use of antimicrobials at health care facilities. Administrators, health care leaders and front-line clinicians learn about the most common interventions and the evidence behind them, as well as important implementation considerations, particularly for low-resource settings.	English
	Recommendations for implementing antimicrobial stewardship programmes in Latin America and the Caribbean: manual for public health decision-makers (2018)	Developed by the WHO Regional Office for the Americas, this document provides comprehensive and practical guidance for national authorities and decision-makers in Latin America and the Caribbean on the implementation of AMS programmes related to human health, and aligned with quality of care and patient safety.	English

	Document title	Description and implementation use	Available languages
Antimicrobial selection	Model list of essential medicines	The electronic essential medicines list (eEML) is a comprehensive, freely accessible online database containing information on essential medicines (including antimicrobials). The database provides a blueprint on which countries can base their own national lists. The eEML combines detailed pharmaceutical data with evaluation of benefits, harms and costs.	English
	Critically important antimicrobials for human medicine: 6th revision (2018)	This document is intended for public health and animal health authorities, practicing physicians and veterinarians, and other interested stakeholders involved in managing AMR to ensure that all antimicrobials, especially critically important antimicrobials, are used prudently both in human and veterinary medicine.	English French Spanish Infographics in all UN languages
	WHO AWaRe antibiotic categorization	This tool provides recommendations for 21 common infectious diseases, classifies antibiotics into three groups based on the potential to induce and propagate resistance, and identifies antibiotics that are priorities for monitoring and surveillance of use.	English
Quality of antimicrobials	WHO good manufacturing practices for pharmaceutical products: Main principles (Annex 2, WHO Technical Report Series, No. 986) (2014)	This guide covers good manufacturing practice for medicines. It is applicable to operations for the manufacture of medicines in their finished dosage forms, including large-scale processes in hospitals and the preparation of supplies for use in clinical trials. The good practices outlined within the document are to be considered general guides, and they may be adapted to meet individual needs.	English
	Guidance for post-market surveillance and market surveillance of medical devices, including in vitro diagnostics (2020)	This document pertains to the objectives and processes for post-market surveillance for medical devices conducted by manufacturers with the assistance of their economic operators, as well as market surveillance conducted by regulators, and the role of other stakeholders in these processes.	English Russian Spanish
	TRS 1025 – Annex 6: points to consider for manufacturers and inspectors: environmental aspects of manufacturing for the prevention of antimicrobial resistance (2020)	This document is intended to provide recommendations and expectations for manufacturing facilities for medicines regarding waste management, to mitigate/prevent potential AMR; raise awareness of medicines' manufacturers, national regulatory authorities and especially good manufacturing practice (GMP) inspectorates and inspectors in all Member States, on sections of relevant GMP guidance that are applicable to the management of waste/wastewater from the production of antimicrobials; and provide clarification on the interpretation of those clauses and specific measures that should be taken to be considered compliant with the relevant sections of GMP guidance.	English

AMR: antimicrobial resistance; AMS: antimicrobial stewardship; AWaRe: Access, Watch, Reserve; LMICs: low- and middle-income countries; NRAs: national regulatory authorities; UN: United Nations; WHO: World Health Organization.

GAP objective 5: Develop the economic case for sustainable investment that takes account of the needs of all countries and to increase investment in new medicines, diagnostic tools, vaccines and other interventions.

Legend

 National level

	Document title	Description and implementation use	Available languages
Antimicrobials	Prioritization of pathogens to guide discovery, research and development of new antibiotics for drug-resistant bacterial infections, including tuberculosis (2017)	This is a list of priority pathogens to guide and promote research and development (R&D) of new antibiotics as part of WHO's efforts to address growing global resistance to antimicrobial medicines. The list is divided into three categories according to the urgency of need for new antibiotics: critical, high and medium priority.	English Russian
	Target product profiles for needed antibacterial agents: enteric fever, gonorrhoea, neonatal sepsis, urinary tract infections and meeting report (2020)	The target product profiles (TPPs) provide companies and other product developers, regulatory agencies and research funders with a list of the specific characteristics of a future treatment that the drug developer should aim for in the development process. Each TPP comprises an introduction, rationale and summary of the preferred characteristics of the proposed product with a minimal and preferred TPP.	English
	A financial model for an impact investment fund for the development of antibacterial treatments and diagnostics (2020)	This financial model was prepared as part of an overall project on setting up an impact investment fund to foster development of new antibacterial treatments.	English
	2020 antibacterial agents in clinical and preclinical development: an overview and analysis (2021)	This report is part of WHO's efforts to prioritize and coordinate global R&D efforts to address the discovery void in antibacterial drug development	English
Diagnostics	Target product profiles for antibacterial resistance diagnostics (2019)	A TPP is a planning tool for the development of health products, including diagnostics. Industry uses in-house TPPs as planning tools to strategically guide development towards desired product characteristics. In particular, TPPs specify the product's intended use, target populations and desired attributes, and guide product development programmes. A WHO TPP document informs product developers, regulatory agencies, procurement agencies and funders on R&D and public health priorities. It is intended to facilitate the most expeditious development of products addressing the greatest and most urgent public health needs.	English
	Second WHO model list of essential in vitro diagnostics (2019)	This list presents in vitro diagnostics (IVDs) that are recommended by WHO for use in countries. The list is expected to provide guidance and serve as a reference for Member States (programme managers, laboratory managers, procurement officers and reimbursement officers) that are developing and/or updating national essential diagnostics lists for interventions within UHC and for selecting and using IVDs.	English
	The selection and use of in vitro diagnostics – TRS 1031 (2021)	Report of the third meeting of the WHO Strategic Advisory Group of Experts on In Vitro Diagnostics, 2020 (including the Third WHO model list of essential in vitro diagnostics).	English

Annex 6.

Presenting an “investment case” for AMR support at the country level

1. Outline the current situation in the country. Present one to three key statistics on AMR in your country

- **Use country data to demonstrate the current situation on AMR. Data sources may include TrACSS data, GLASS data, data available from local hospitals/health facilities or information from reports and peer-reviewed articles.**
- **State key achievements and ongoing work in line with the NAP AMR.**
 - Demonstrate the impact that former funding provided has had on NAP AMR implementation (23).
 - Bring forward specific examples, reporting at the outcome level (what changes have resulted from the activities you’ve done) (25).
- **Highlight current/future needs in line with prioritized activities**
 - Efforts should be driven by established plans and budgets, highlighting any funding gaps that were identified through costing of the NAP AMR (25).

2. Establish why AMR is of critical importance

- **Use concrete examples and case studies to emphasize the threat or risks posed.**
 - Note any high-level political commitments such as statements by government officials/health ministry.
 - Note what inaction may result in, citing “If we don’t act now, then...”.
- **How supporting the NAP AMR can bolster efforts across programmes/support other health priorities in-country**
 - Tackling drug resistance requires addressing the burden of infections, which can be achieved with public health solutions such as improving water, sanitation, sewers and nutrition, as well as strengthening health systems, investing in UHC and implementing the IHRs and the One Health approach. These types of solutions have considerable economic benefit with long-term effects, not only with respect to AMR but also broader health priorities (24).

3. The “ask”

- **State the amount of funding that is needed to achieve the objectives and activities of the NAP AMR, referring to the NAP AMR operational plan for indicator targets and costing data.**

Annex 7.

Sample human health indicators for M&E of the NAP AMR at the country level

Establish or improve national/subnational coordination and governance.

Activity indicators:

- National focal points for all sectors nominated.
- TORs for national focal points (25), multisectoral coordination mechanism(s) and TWG(s) written and approved.
- Independent M&E working group on NAP implementation established.
- Fully functional decision-making body with operational working groups established.
- Annual reports from all sectors on NAP progress shared with the multisectoral governance mechanism for decision-making and revision.
- Budget lines for different activities in all sectors finalized and agreed.

GAP objective 1: Improve awareness and understanding of AMR through effective communication, education and training.

Activity indicators:

- WAAW activities conducted.
- Baseline survey on awareness and understanding among key professional groups conducted.
- Several awareness campaigns addressing different sectors and stakeholders conducted.
- Baseline survey on awareness and understanding in the general population conducted.
- Comprehensive communication strategy published.
- Periodic surveys on knowledge, attitudes and practices to monitor change in knowledge and practices conducted.
- Assessment completed of number and proportion of professionals who have completed training sessions on AMR/AMU.

Output indicators:

- Targeted awareness raising: nationwide, government-supported AMR awareness campaign targeting priority stakeholder groups.

Outcome indicators:

- Percentage of stakeholders (e.g. human health workers, prescribers) who have knowledge of AMR and the implications for AMU and infection prevention.

GAP objective 2: Strengthen the knowledge and evidence base through surveillance and research.

Activity indicators:

- National reference laboratory (NRL) established.
- National plan for AMR surveillance with respect to data collection, coordination and resources across all relevant sectors developed.
- Fully functional NRLs using accredited quality assessment systems established.
- Network of functional surveillance sites with regular exchange of information set up.
- Annual national AMR surveillance report published.
- Data reported to regional and global AMR/AMU structures regularly.
- Early warning systems for emerging AMR in place.

Output indicators:

- Data on AMR and AMU in humans: reporting to GLASS on AMR in humans and AMU in humans.
- Use of AMR surveillance data: national bodies that review information from national AMR surveillance programmes, and make and implement recommendations accordingly.

Outcome indicators:

- Prevalence of bloodstream infections caused by methicillin-resistant *Staphylococcus aureus* or extended spectrum beta-lactamases in *Escherichia coli* – third-generation cephalosporin resistance as a proxy.

GAP objective 3: Reduce the incidence of infection through effective sanitation and hygiene and infection prevention measures.

Activity indicators:

- National IPC programme, including key players, resources, planning and coordination; consider implementing the minimum requirements developed.
- Review of existing WASH and health policies and assessment in health care facilities conducted.
- National immunization schedule and coverage for children to include rotavirus and pneumococcal vaccines reviewed.
- National plan to improve overall immunization coverage developed.
- Objective baseline assessment of the current situation of the IPC core components conducted.
- Action plan with focus on priority areas for improvement of IPC core components and review the effectiveness of this action plan to monitor and revise the national IPC programme developed.
- Hazard and risk assessment in health care facilities conducted and an improvement plan on WASH practices developed.
- Assessment completed of number of training sessions on good IPC management practices in human health.
- Assessment completed of the number and proportion of hospitals or facilities with regular training sessions on IPC, sanitation and hygiene.
- Assure access to safe water supply and sanitation services in all health care facilities in urban and rural areas.
- Progress in the WASH improvement plan monitored.
- Overall vaccination coverage of >95% in human population achieved.

Output indicators:

- Hand hygiene in health care: number of countries that have a regulatory framework for the discharge of antimicrobials and waste potentially contaminated with antimicrobials into the environment. Hand hygiene in health care: percentage of acute tertiary health care facilities monitoring the hand hygiene compliance of health workers according to the WHO direct observation method or similar.
- Basic water services in health care facilities: percentage of health care facilities where the main source of water is from an improved source, located on the premises.
- Basic sanitation services in health care facilities: proportion of health care facilities with improved and usable sanitation facilities, with at least one toilet dedicated for staff, at least one sex-separated toilet with menstrual hygiene facilities and at least one toilet accessible for users with limited mobility.

Outcome indicators:

- Quality of care: incidence of surgical site infections – inpatient surgical procedures.
- Immunization coverage: percentage of the target population that has received the last recommended dose of the basic series for each of the following vaccines: pneumococcal conjugate vaccine; rotavirus vaccine; measles-containing vaccine, either alone or in a measles–rubella or measles–mumps–rubella combination; and Haemophilus influenzae type b containing vaccine (Hib).
- Access to safe water: proportion of the population using safely managed drinking-water services.
- Access to sanitation: proportion of the population using safely managed sanitation services.

GAP objective 4: Optimize the use of antimicrobial medicines in human health.

Activity indicators:

- Training sessions on good AMS practices in human health provided across all levels of health care.
- A national plan or policy on AMS or optimization of AMU in the human sector in place.
- Sales and import data to estimate the consumption of antibiotics in human health collected and analysed.
- AWaRE (Access, Watch, Reserve) classification included in the national EML.
- Regular audit, review and dissemination of treatment guidelines and audit report published.
- Pilot point prevalence surveys on AMU in selected health care facilities conducted.
- A national/subnational AMS TWG and AMS committees in health care facilities established.
- Legislative framework to limit or prohibit over-the-counter sale of antibiotics without a prescription developed and implemented.
- Legislative framework for regulation of antibiotic and active pharmaceutical ingredient production developed and implemented.
- Assessment of adherence legislation on strict rules of sales of antimicrobials to animals (and use the WHO list of critically important antimicrobials [CIA list (26)] for human medicine correctly) assessed.

Output indicators:

- Adoption of AWaRe classification of antibiotics in the national EML and AMS strategies.
- Guidelines on optimizing antibiotic use are implemented for all major syndromes and data on use is systematically fed back to prescriber.

Outcome indicators:

- **Use of antimicrobials in humans:**
 - a. total human consumption of antibiotics for systemic use (Anatomical Therapeutic Chemical classification code J01) in Defined Daily Doses (DDDs) per 1000 population (or inhabitants) per day;
 - b. proportion of Access antibiotics for systemic use, relative to total antibiotic consumption in DDDs;
 - c. Relative proportion of AWaRe antibiotics for paediatric formulations; and
 - d. percentage of adult and paediatric hospital patients receiving an antibiotic according to AWaRe categories.
 - Access of antibiotics: percentage of health facilities that have a core set of relevant antibiotics available and affordable on a sustainable basis.
 - Appropriate use of antimicrobials: percentage of inpatient surgical procedures with appropriate timing and duration of surgical antibiotic prophylaxis.
 - Optimized AMU and regulation: legislation or regulation that requires antimicrobials for human use to be dispensed only with a prescription from an authorized health worker.
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Annex 8.

Summary of WHO AMR tools for the stages of NAP on AMR implementation

Step 0: Develop the NAP.

Document title	Description and implementation use	Available languages
Antimicrobial resistance: a manual for developing national action plans (2016)	This manual proposes an incremental approach to developing or refining an NAP AMR that countries can adapt to the specific needs, circumstances and available resources of each individual country. Details of actions to be taken will vary according to national contexts.	English
National action plan development support tools: sample checklist (2016)	Checklist of elements to be considered in the NAP on AMR.	Arabic Chinese English French Russian Spanish
NAP AMR sample template (2016)	Sample template for developing an NAP on AMR.	English
Library of AMR national action plans	A library of existing, publicly available NAPs on AMR. The library contains only those NAPs which have been officially approved.	Multiple

NAP AMR: national action plan on antimicrobial resistance.

Step 1: Establish/strengthen multisectoral coordination, collaboration and governance for the NAP on AMR.

Document title	Description and implementation use	Available languages
Sample terms of reference for a national multisectoral coordinating group, for a national focal point and for a technical working group (2016)	A governance mechanism is essential for coordinating national efforts to combat AMR. All Member States will have a process for developing and managing such a system; however, they may differ from one country to another. Countries are therefore advised to use this guide to develop their own national TORs.	Arabic Chinese English French Russian Spanish
Antimicrobial stewardship programmes in health-care facilities in low- and middle-income countries: a WHO practical toolkit – National Antimicrobial Stewardship Technical Working Group (Annex I–III) (2019)	The specific aim of the toolkit is to enable AMS in health care facilities in LMICs (the tool is also referenced in Annex 6). The sample TORs for a national TWG on AMS are presented in Annex I of the document.	Arabic English French Russian Spanish
Terms of reference for the Global Focal Point Network for substandard/spurious/falsely-labelled/falsified/counterfeit (SSFFC) medical products (2016)	This document sets out to formalize the TORs for the existing focal points within the WHO global surveillance and monitoring system for SSFFC medical products.	English

AMR: antimicrobial resistance; LMICs: low- and middle-income countries; NAP: national action plan; SSFFC: substandard/spurious/falsely-labelled/falsified/counterfeit; TORs: terms of reference; TWG: technical working group; WHO: World Health Organization.

Step 2: Prioritize activities for implementation.

Document title	Description and implementation use	Available languages
National level situation analysis for prioritization		
National action plan development support tools: sample checklist (2016)	Checklist of elements to be considered in an NAP on AMR. Can be used to identify which activities are already in place.	Arabic Chinese English French Russian Spanish
Situation analysis (Annex 1)	Checklist of elements to be considered in an NAP on AMR. Can be used to identify which activities are already in place.	English (Tools in various languages)
SWOT analysis (Annex 2)	Example of a SWOT analysis; the purpose of this analysis is ultimately to lay a foundation for strategic prioritization and operational planning for the NAP AMR implementation plan.	English
Stakeholder analysis (Annex 3)	Process and example of stakeholder analysis. This exercise will inform the development of an effective stakeholder communication and engagement strategy as well as how to prioritize outputs and activities for the NAP on AMR implementation plan.	English

Step 2: Prioritize activities for implementation.

Document title	Description and implementation use	Available languages
National level minimum requirements		
National AMR surveillance systems and participation in the GLASS: a guide to planning, implementation, and monitoring and evaluation (2016)	This document (referenced also in Annex 5) is primarily intended to benefit capacity building in countries with limited resources, particularly in the planning phase of setting up national AMR surveillance in the human sector. It outlines the key steps in planning and establishing a national AMR surveillance system and describes the three core components of the system and how each should function and work together. It will also assist countries in formulating and implementing an M&E strategy for the system.	English
GLASS guidance for national reference laboratories (2020)	Technical guidance focusing specifically on the functions and activities of NRLs for national surveillance of AMR. Details of the various functions are provided, including reference functions such as confirmation and characterization of resistance mechanisms, quality control for surveillance sites, external quality assessment, outbreak support, guidance and standardization, test validation and verification, training provision, data collection and analysis for national surveillance of AMR and laboratory assessments. Countries can use this document to establish or improve NRL capacity within the national AMR surveillance system.	English
Minimum requirements for infection prevention and control programmes (2019)	The purpose of this document is to present and promote the minimum requirements for IPC programmes at the national and health care facility level, identified by expert consensus according to available evidence and in the context of the WHO core components of IPC programmes.	English
Leveraging vaccines to reduce antibiotic use and prevent antimicrobial resistance: an action framework (2020)	This document (referenced also in Annex 5) presents a strategic vision for vaccines to contribute fully, sustainably and equitably to the prevention and control of AMR by preventing infections and reducing AMU. It identifies a series of priority actions to be taken by stakeholders in the fields of immunization and AMR, in three areas: expanding the use of licensed vaccines to maximize impact on AMR; developing new vaccines that contribute to the prevention and control of AMR; and expanding and sharing knowledge on the impact of vaccines on AMR.	English
Critically important antimicrobials for human medicine: 6th revision (2018)	This document is intended for public health and animal health authorities, practicing physicians and veterinarians, and other interested stakeholders involved in managing AMR to ensure that all antimicrobials, especially critically important antimicrobials, are used prudently both in human and veterinary medicine.	English French Spanish Infographics in all UN languages
WHO policy guidance on integrated antimicrobial stewardship activities (2021)	This guidance aims to provide a set of evidence-based, pragmatic recommendations to drive comprehensive and integrated AMS activities under the purview of a central national coordination unit, national AMR steering or coordinating committees, or other equivalent national authorities. The policy guidance complements the GAP , the practical toolkit for AMS programmes in health care facilities in LMICs and other WHO guidance in surveillance, IPC and WASH. It also includes a tool in the annex to assess national and health facility progress on AMS activities.	English French Spanish

Document title	Description and implementation use	Available languages
Health care facility level minimum requirements for prioritization		
Minimum requirements for infection prevention and control programmes (2019)	The purpose of this document is to present and promote the minimum requirements for IPC programmes at the national and health care facility level, identified by expert consensus according to available evidence and in the context of the WHO guidelines on core components of IPC programmes.	English
Antimicrobial stewardship programmes in health-care facilities in low- and middle-income countries: a WHO practical toolkit (2019)	The specific aim of the toolkit is to enable AMS in health care facilities in LMICs (the tool is also referenced in Annex 5). The core elements in health care facilities are presented on pages 14–16 of the toolkit.	Arabic English French Russian Spanish
WHO policy guidance on integrated antimicrobial stewardship activities (2021)	This guidance aims to provide a set of evidence-based, pragmatic recommendations to drive comprehensive and integrated AMS activities under the purview of a central national coordination unit, national AMR steering or coordinating committees, or other equivalent national authorities. The policy guidance complements the GAP , the WHO practical toolkit for AMS programmes in health care facilities in LMICs and other WHO guidance in surveillance, IPC and WASH. It also includes a tool in the annex to assess national and health facility progress on AMS activities.	English
Water and sanitation for health facility improvement tool (WASH FIT): a practical guide for improving quality of care through water, sanitation and hygiene in health care facilities (Tool 2A: indicators assessment) (2018)	WASH FIT (referenced also in Annex 5) is a multistep, iterative process to facilitate improvements in WASH services, quality and experience of care. It is primarily designed for use in primary health care facilities. WASH FIT covers four broad areas: water, sanitation (including health care waste management), hygiene (hand hygiene and environmental cleaning) and management. Tool 2A presents an overview of essential activities to be monitored.	Arabic English French Spanish Russian

AMR: antimicrobial resistance; AMS: antimicrobial stewardship; AMU: antimicrobial use; IPC: infection prevention and control; LMICs: low- and middle-income countries; M&E: monitoring and evaluation; NRL: national reference laboratory; SWOT: strengths, weaknesses, opportunities and threats; WASH FIT: water and sanitation for health facility improvement tool; WHO: World Health Organization.

Step 3: Develop a costed NAP AMR operational plan.

Document title	Description and implementation use	Available languages
Operational plan template (see Annex 4)	The operational plan template provides guidance on how countries can develop a time-bound operational plan of prioritized activities.	English
WHO costing and budgeting tool for national action plans on AMR user guide (2021)	The tool can be used to generate detailed costs for technical activities included in the NAPs on AMR. The tool is developed in a modular format that allows different sectors and/or departments to fill out the costing tool independently for their activities and then through a costing coordinator to combine the costed activity tabs into one final costing file.	English

AMR: antimicrobial resistance; NAPs: national action plans.

Step 4: Identify funding gaps and mobilize resources for implementation.

Document title	Description and implementation use	Available languages
Presenting an investment case (Annex 6)	Annex 6 provides an overview of points for countries to consider when presenting an investment case, including the current situation in the country, why AMR is critically important, how it links to other health priorities and how to request funding.	English

Step 5: Implement NAP AMR activities.

Document title	Description and implementation use	Available languages
Technical guidance and resources for NAP AMR implementation (Annex 5)	Annex 5 provides a collation of technical guidance and resources to support implementation of the NAP AMR operational plan, in alignment with the GAP on AMR objectives. Guidance and resources are further categorized by whether they are applicable at the national level, the health care facility level or both.	English

Step 6: Monitor and evaluate the NAP AMR.

Document title	Description and implementation use	Available languages
Monitoring and evaluation of the global action plan on antimicrobial resistance: framework and recommended indicators (2019) <ul style="list-style-type: none"> • Annex 3: methodology sheets for recommended indicators (2019) 	To ensure that all stakeholders assume their roles and responsibilities, and to assess whether they are collectively effecting the necessary change in AMR, the implementation of the GAP on AMR needs to be routinely monitored and evaluated. To that end, the Tripartite organizations codeveloped an M&E framework for the GAP, as outlined in this document and accompanying methodology sheets.	Arabic Chinese English French Spanish Russian
Tripartite AMR country self-assessment survey (TrACSS) (2020–2021)	To monitor country progress in the implementation of NAPs, an annual TrACSS has been jointly administered by FAO, OIE and WHO since 2016.	Arabic Chinese English French Spanish Russian
Sample human health indicators for M&E of NAP AMR at the country level (Annex 7)	Annex 7 provides an overview of sample activity, output and outcome indicators that countries may monitor to assess NAP AMR implementation progress.	English

AMR: antimicrobial resistance; FAO: Food and Agriculture Organization of the United Nations; GAP: Global Action Plan; M&E: monitoring and evaluation; NAP: national action plan; OIE: World Organisation for Animal Health; TrACSS: Tripartite AMR country self-assessment survey; WHO: World Health Organization.

Annex 9.

Summary checklist for six steps for sustainable implementation of NAPS on AMR

1. Strengthen governance

- Has a governance structure for AMR been defined that includes the following?**
 - Multisectoral coordinating mechanism(s) endorsed at ministerial level
 - Multisectoral coordinating mechanism(s) established
 - Functional AMR secretariat to support the multisectoral coordinating mechanism(s)
 - TWG(s) as needed
 - Subnational governance structure if needed
 - Dedicated funding to support the multisectoral coordinating mechanism(s) and secretariat
 - Communication and feedback with other relevant national committees.
- Are the national multisectoral coordinating mechanism(s) memberships and TORs defined?**
 - Does the membership include all relevant sectors?
 - Does the multisectoral coordinating mechanism(s) have decision-making authority?
 - Do TORs include reporting responsibilities?
 - Do TORs include annual review (at a minimum) of NAP implementation progress and annual TrACSS submission to WHO?
 - Is there gender balance in the multisectoral coordinating mechanism(s)?
- Are the TWG(s) membership and TORs defined?**
 - Does the membership include technical experts from the main relevant area(s)?
 - Are the responsibilities of the members defined? Who takes the lead? Who are the members? What are the responsibilities of the leader/chair? What are the responsibilities of the members?
 - Are the deliverables defined?
 - Are the reporting requirements to the multisectoral coordinating mechanism(s) defined?

- Are there sufficient leadership capacities within AMR coordination and governance mechanism(s)?**

- Do committee members have the required leadership skills?

- Are mechanisms established to promote teamwork?**

2. Prioritize activities

- Has an assessment of the current AMR situation and progress in AMR NAP implementation been undertaken?**
 - Has a situational analysis/SWOT analysis/ stakeholder analysis been undertaken?
 - Were any AMR-related data considered – including TrACSS submissions from the country?
- Have overall goals been identified for NAP implementation for the short, medium and long term?**
- Has an initial list of key activities been identified based on the existing NAP AMR?**
 - Does the list of activities align with the current situation?
 - Does the list of activities align with guidance on minimum requirements for various technical areas where it is available?
- Has a final list of prioritized activities for implementation been defined?**
 - Has the scope been defined, including the timeframe for implementation?
 - Was an evaluation method used?
 - Were the activities prioritized through an inclusive consultative process?
 - Does the final list include activities that are a necessary first step for other activities?
 - Have the interdependencies of activities been considered?
 - Have existing resources and the technical capacity to implement the activities been considered in the prioritization exercise?

3. Cost the operational plan

- Has a prioritized operational plan been developed?
- Has an operational plan been developed that includes prioritized activities, responsible entity, unit and quantity of the activity/sub-activity, implementation level (national/subnational) (optional), timeline and monitoring indicator(s)?
- Has a costing and budgeting process been decided on?
 - To fill in one costing module together; or
 - To fill in multiple costing modules (at the ministry or department level)) and consolidate these afterwards using a modular approach?
- If a modular approach is taken, have costing coordinators and a lead been identified?
 - Has the costing and budgeting tool been filled in?
 - NAP entry tab
 - Basic inputs tab
 - Detailed activities and costing matrix
 - Funding sources
 - Dashboards
 - Export files.
- If a modular approach is taken, have modules been consolidated using the module consolidator tool?

4. Mobilize resources

- Have the funding gaps for implementing the operational plan been identified?
 - Has it been determined which activities are already funded?
 - Has it been determined which activities have a funding gap?
- Has a funding map been developed?
 - Does the map include both existing and potential funders?
 - Are funders identified by strategic objective of the NAP?
- Has an investment case or advocacy plan been developed to present to existing and/or potential funders?
- Have existing and/or potential funders been approached?

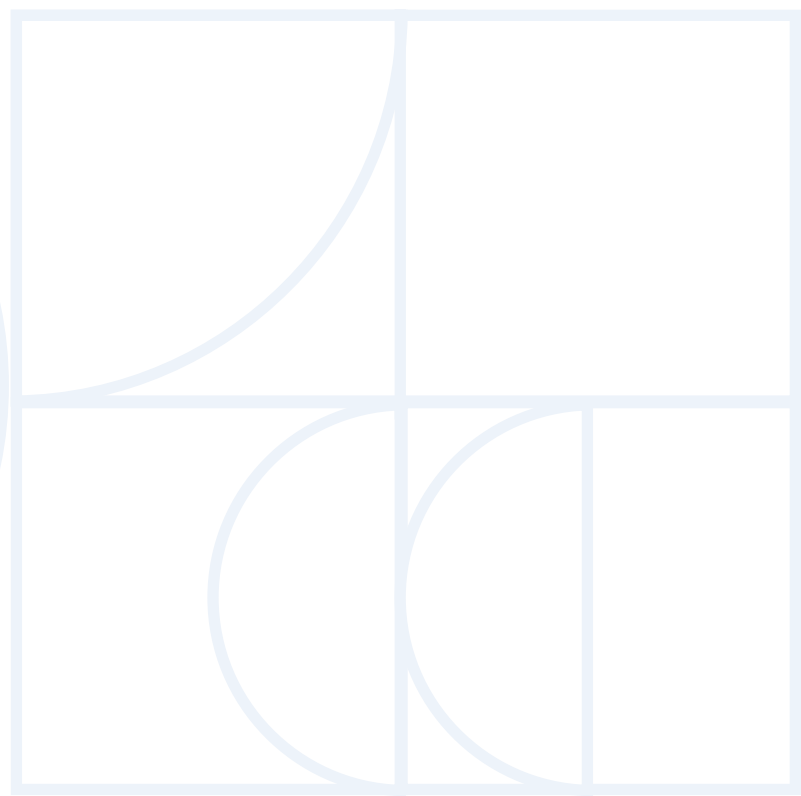
- Have activities been reprioritized based on resource mapping and mobilization efforts?
- Have any innovative approaches been identified for potential funding of selected priority activities (optional)?

5. Implement prioritized activities

- Have technical guidance and resources been identified to support implementation of NAP on AMR operational plan activities? If so, for which of the following areas?
 - Awareness and education
 - Surveillance, laboratory and research
 - Preventing infections (including IPC, immunization and WASH)
 - Optimised use of antimicrobials
 - Research and development
 - Others
- Is additional technical capacity needed to implement planned activities and utilize recommended technical guidance and resources? If so, for which of the following areas?
 - Awareness and education
 - Surveillance and research
 - Preventing infections (including IPC, immunization and WASH)
 - Optimized use of antimicrobials
 - Research and development
 - Others
- Have potential bottlenecks been identified for each technical area and activities?
- Have strategies been identified and implemented to optimize resources and technical capacities and sustain activities for each technical area?

6. Monitor and evaluate

- Have AMR activities that are being implemented by other health programmes been identified?**
 - If these activities are already being monitored by other programmes, has the data been collected for integration within the AMR M&E framework?
- Is the country's AMR M&E system established and resourced for tracking progress on NAP AMR operational plan implementation?**
 - Is the data reviewed regularly (annually or biennially)?
- Is the monitoring data used by the multisectoral coordinating mechanism(s) and/or TWG(s) for decision-making to adjust implementation?**
- Has a communication strategy been developed to regularly communicate on NAP AMR implementation progress to national decision-makers, external stakeholders as well as the public?**
 - Does the strategy include risk-based communication strategies for informing stakeholders on AMR issues during outbreaks and epidemics?



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