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Country case study – Turkey

This case study describes key findings that relate to costing Turkey's AMR NAP. It provides an overview of current AMR NAP implementation, describes overall processes and systems for costing and budgeting in Turkey, summarizes specific approaches this country has undertaken to cost AMR NAP activities and outlines key lessons learned.

Background:

Turkey participated in the scoping exercise to inform the development of the WHO costing and budgeting tool for AMR NAPs. Activities included engagement with key Turkish stakeholders through the project, a WHO mission to Turkey in March 2020, workshops, key informant interviews, and post-mission data collection and consultations.

Turkey AMR NAP: overview and implementation

The draft Turkey AMR NAP was completed in 2016 in accordance with the AMR GAP developed by the FAO, OIE and WHO.

Development of the AMR NAP was coordinated by the Ministry of Health with the participation of the Ministry of Agriculture and Forestry and all related stakeholders to develop national strategies and provide intersectoral coordination.

While the Turkey AMR NAP has not yet been formally approved, several activities under the plan have already been implemented. To ensure sustainability and accountability for the implementation, however, it is critical that Turkey's AMR NAP be formally approved by the country's government.

Among key activities already implemented in Turkey are:

- Establishment of surveillance networks for antibiotic consumption and electronic prescription systems.

- Delivery of training for pharmacists to prevent the sale of antibiotics without prescription.

- Publication of an NAP on the rational use of medicines.

- Establishment of an antimicrobial stewardship team in most hospitals.

- Implementation of a national veterinary AMR monitoring programme.

- Preparation of awareness materials for use in training for kindergarten, elementary school, secondary school and high school students.

AMR NAP implementation in Turkey

Costing and budgeting

Selecting NAP activities for costing

Given that many components of the AMR NAP are already underway in Turkey, the process of selecting AMR NAP activities focused on determining activities that were already being implemented, and on identifying new activities and/or those for which costs and a detailed implementation plan had yet to be determined. A list of activities selected for costing in Turkey is available in a table at the end of this document.

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Selecting NAP activities for costing

- Is this an essential activity that needs to be implemented in the near future (1–2 years), and is it feasible that this activity will be implemented?

- Is this an existing activity that is already being implemented but may be modified, adapted or scaled to address AMR-related issues, or is this a new activity that has not yet been implemented?

- Is there a detailed implementation plan for this activity with clear roles and responsibilities? Or is there an implementation plan for similar activities that have been implemented in the past?

- Has full or partial funding been identified for this activity?

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Overview of costing and budgeting processes in Turkey

Key informant interviews with technical and financial government ministry staff in Turkey showed the existence of well-developed processes and systems for public procurement, budgeting and accounting. Key processes and systems are described below.

Overview of budgeting process

The governmental budgeting system starts with the publication of the budget recall and budget preparation guide in September of every year. Needs are determined through interviews between the institutions and the Strategy and Budget Office, as well as through individual meetings. Once the interviews with the institutions are completed, budget ceilings are established that correspond with the medium-term financial plan published in an official newspaper.

Related institutions constitute their budgets within the determined ceiling allowances and forward them to the Strategy and Budget Office. Once the Strategy and Budget Office achieves the necessary consolidation, the budget is dispatched to the Grand National Assembly of Turkey (Türkiye Büyük Millet Meclisi [TBMM]) by the Office of the Presidency. The budget of every institution is negotiated separately by the Commission of Plan and Budget participating in the TBMM. Once the interviews are complete, commission reports are directed to the TBMM General Board sessions, after which a vote takes place. If an "accept" vote is obtained, the decision is forwarded to the Office of the Presidency. The official budget is published and takes effect as of 1 January of the following year. The institutions make their expenditures within the allowances allocated for that year.

The budget in Turkey is prepared for 3 years at a time. The first year is based on real expenses and revenues, and the next 2 years represent the estimated budget. The various ministries coordinate budgeting activities in Turkey. If necessary, additional coordination is provided by the Ministry of Treasury and Finance and the Strategy and Budget Directorate.

Systems and software

Two custom software packages are used in Turkey for costing and budgeting. The e-budget system is used for the initial budget preparation and follow-up stages (e.g. revising the budget). This system is used in coordination with the Strategy and Budget Directorate. The second system is a budget application system which is used for tracking how the budget is released. This system is used in coordination with the Ministry of Treasury and Finance.

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Operationalizing costing and budgeting: example of Turkey's Ministry of Agriculture and Forestry

All ministries in Turkey have various software tools to facilitate accounting, budgeting and planning. The Ministry of Agriculture and Forestry is linked directly to the financing departments; it is web based and updated in real time. Budget requests are entered at a "project" level, with a project being a relatively large set of activities. The system has two different dashboards: one is for routine governmental procedures that are common across ministries, such as staff salaries and operational costs; another is specific for each ministry and allows them to enter their projects. The software does not necessarily allow for very detailed entry of implementation steps/sub-activities for each project.

Consequently, staff often use their own tools (e.g. Excel) to initially calculate more details and cost/budget lists before submitting them using the ministry's software.

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Procurement

Public procurement laws in Turkey require tendering for any goods or services above TL 15,000 (USD 2,407.71). Key mechanisms for procurement are open tendering, restricted tendering and negotiated tendering. The Public Procurement Authority, an independent agency, is authorized to monitor the procurement of the public agencies to ensure the process is transparent, competitive and reliable. Procurement largely relies on historical prices; however, case-by-case negotiations often result in heterogeneity across unit costs/prices for specific items/services. Prices are often "grouped" into packages rather than presented on an itemized basis (e.g. for a meeting, the unit cost covers the meeting room, transport, lunch, team dinner and the hotel rooms for participants, if applicable).

Costing and budgeting for AMR

The budget that specifically pertains to AMR activities needs to be included in allocations within the framework situated in ministry-specific strategic plans. Although many AMR NAP activities have already been implemented in Turkey, no formal implementation plans for specific AMR NAP activities have been developed. Similarly, there are no AMR-specific budget lines; funding for the activities is absorbed under existing budget line items of the Ministry of Health, the Turkish Medicines and Medical Devices Agency, and the Ministry of Agriculture and Forestry.

The workshop organized by WHO in March 2020 was an opportunity for multisectoral stakeholders in Turkey to come together to purposely work on developing implementation steps and to initiate costing for select AMR NAP activities. Stakeholders also provided valuable feedback and input on development of the WHO AMR Costing and Budgeting Tool.

AMR NAP costing workshop: Ankara, March 2020

During the workshop, participants were divided into small groups to initiate the development of implementation plans and costing of previously selected AMR NAP activities. This process (facilitated by a costing coordinator) continued after the workshop.

Technical personnel determined specific implementation resources required to implement each activity, outlined various assumptions for each step (e.g. number of participants for various meetings and training sessions, amounts and types of supplies to be procured, additional personnel needs), and planned a timeline for each step.

Finance and procurement staff helped in estimating unit costs for various items and resources that were included in the technical plans. After preliminary drafting conducted during the workshop, the plans and cost estimates were revised according to the feedback received during the workshop when additional information was collected. These revisions were made by a small group consisting of technical and procurement staff.

Example of implementation planning: detailed steps and components

STRATEGY 2:

Strengthen national AMR surveillance

OBJECTIVE 1:

Strengthen national AMR surveillance
for human and animal health

A5.

Create a surveillance system for antibiotic resistance
to *Escherichia coli* and *Klebsiella pneumoniae* isolates,
the community-acquired agents of urinary tract infection
(UTI), and gather data

Conduct workshop on community-based surveillance system

Develop software system for web-based surveillance system:

1. Purchase of software system
2. Maintenance service for software
3. Training on software

Prepare standard operating procedures (SOPs) for AMR methods for human and animal health:

1. Conduct workshop to develop SOPs
2. Train technical personnel on SOPs

Strengthen reference laboratory infrastructure:

1. Equipment maintenance and calibration (thermal cycler, biosafety cabin, McFarland instrument, incubator, refrigerator, freezer)
2. Procurement of chemicals (antibiotic disc, powdered antibiotics, Mueller Hinton agar, Mueller Hinton broth, NAD (nicotinamide adenine dinucleotide), sheep blood agar, chocolate agar)
3. Procurement of consumables (disposable inoculating loop, sterile cotton swabs, Petri dishes, sterile capped plates, PCR (polymerase chain reaction) tubes, microcentrifuge tubes, Taq DNA polymerase, dNTP (deoxynucleoside triphosphate) mix, gloves, primer, pipette tips)

Lessons learned

Development of a costed plan leads to greater multisectoral stakeholder involvement.

There is already a high level of coordination between the health and agriculture sectors in the area of AMR, with the environment sector ready to support AMR activities as well once formal government mandates are implemented. The costing exercise was viewed as a significant step in bringing sectors together to join efforts in addressing AMR.

Selecting activities for costing helped focus implementation planning and development of the costed plan.

Given that many components of the AMR NAP are already underway in Turkey, stakeholders concentrated on costing AMR NAP activities that were new or scaled up and for which funding has not yet been secured. This deliberate multisectoral, consultative process of selecting activities for costing helped focus development of the costed plan.

Development of detailed implementation plans is necessary for a realistic and concrete costing process.

For each of the selected activities, stakeholders carefully outlined sub-activities and/or implementation steps so that the type and magnitude of resources required to support each activity could be accurately identified. When detailed sub-activities were available, the costing exercise was much easier and effective.

Costing required close collaboration between technical and financial staff.

Technical staff at various ministries led the development of implementation planning and outlining of the resource requirements for specific activities. These staff worked closely with financial and procurement staff to determine appropriate unit costs for the identified resources.

Existing budgeting systems and processes should be leveraged to facilitate integration of a costed AMR NAP into overall sectoral planning/budgets.

Turkey has existing systems and processes for budgeting which the country can leverage for AMR costing and budgeting. However, because AMR activities are often a small component of the overall sectoral budget, these systems might not be conducive for AMR NAP costing and budgeting. Stakeholders in Turkey found the AMR-specific costing tool useful prior to sending formal budget submissions through the existing systems.

Existing budget systems and processes are almost exclusively sector/ministry specific and might not address the multisectoral nature of AMR NAPs.

Currently, budget systems and processes in Turkey are sector specific: each ministry submits its own budget. While improved coordination of stakeholders in Turkey is likely to mitigate any potential cost inefficiencies, the risk of such inefficiencies is still present when information and budgets are spread across systems. The costing exercise triggered an initial dialogue with the Ministry of Finance regarding a possible cross-ministerial budget structure to support AMR NAP activities of a more collaborative nature (e.g. establishment of ongoing activities of the National AMR Coordination Committee).

AMR NAP activities selected for costing by Turkish stakeholders

STRATEGY 1: Ensure coordination and cooperation among stakeholders in national studies on development of AMR	
OBJECTIVE 1: Ensure multi-stakeholder coordination at the national level with the purpose of hindering and limiting AMR	A1. Establish the National AMR Coordination Committee with the participation of fundamental stakeholders that will coordinate the activities related to policies of antibiotic usage and monitoring of resistance development
OBJECTIVE 1: Ensure multi-stakeholder coordination at the national level with the purpose of hindering and limiting AMR	A4. Ensure integration of the existing AMR and Antimicrobial Consumption surveillance systems and those to be created in human, food, agriculture, animal breeding and environment sectors
STRATEGY 2: Strengthen national AMR surveillance	
OBJECTIVE 1: Strengthen national AMR surveillance for humans	A1. Strengthen the surveillance system for blood and CSF (cerebrospinal fluid) isolates
OBJECTIVE 1: Strengthen AMR surveillance for humans	A2. Strengthen the surveillance system for enteric bacterial pathogens
OBJECTIVE 1: Strengthen AMR surveillance for humans	A3. Strengthen the surveillance system for resistance to anti-TB medicines
OBJECTIVE 1: Strengthen AMR surveillance for humans	A5. Create a surveillance system for antibiotic resistance to *E. coli* and *K. pneumoniae* isolates, the community-acquired agents of UTI, and gather data
OBJECTIVE 1: Strengthen AMR surveillance for humans	A6. Perform the pilot study on the surveillance system for antibiotic resistance to gonococcus isolates and then create this system
OBJECTIVE 1: Strengthen AMR surveillance for humans	A7. Create a molecular epidemiology surveillance system for infections related to health services
STRATEGY 4: Strengthen processes for IPC	
OBJECTIVE 1: Strengthen activities for preventing and controlling infections related to health services	A1. Strengthen the surveillance system for infections related to health services and its technical infrastructure
OBJECTIVE 1: Strengthen activities for preventing and controlling infections related to health services	A2 Ensure data exchange between the surveillance programme for infections related to health services and the hospital information management system
OBJECTIVE 2: Strengthen immunization studies and improve compliance	A3. Implement vaccine completion and acceleration programmes for immigrant children below the age of 5

STRATEGY 5.2: Monitor AMR in veterinary medicine	
OBJECTIVE 1: Plan and organize laboratory activities	A2. Improve the infrastructure of laboratories working on AMR
OBJECTIVE 1: Plan and organize laboratory activities	A3. Organize personnel training programmes
STRATEGY 7: Improve awareness on development of AMR and rational use of antibiotics	
OBJECTIVE 2: Improve public awareness of AMR and rational use of antibiotics	A3. Develop software programmes which people can use to access information on directions for use of antibiotics and which are compatible with mobile phones or tablet PCs, and put these programmes into use
OBJECTIVE 2: Improve public awareness of AMR and rational use of antibiotics	A4. Ensure that health reporters are informed about antibiotic resistance and the rational use of antibiotics and that the news regarding it is published in the various media