World Health Organization
REGIONAL OFFICE FOR Europe

THE TAP TOOLBOX

Exercises, tools and templates to support your **T**ailoring **A**ntimicrobial Resistance **P**rogrammes plan

THE TAP
TOOLBOX

Exercises, tools and templates to support your
Tailoring **A**ntimicrobial Resistance **P**rogrammes plan

Abstract

This Tailoring Antimicrobial Resistance Programmes (TAP) process assists Member States in initiating and undertaking projects to address the spread of antimicrobial resistance (AMR) in their countries. AMR is a complex problem requiring unique, context-specific solutions. This 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. The exercises and tools presented in this Toolbox have been abridged and adapted from the TAP Manual which will be available soon.

Address requests about publications of the WHO Regional Office for Europe to:

Publications
WHO Regional Office for Europe
UN City, Marmorvej 51
DK-2100 Copenhagen Ø
Denmark

Alternatively, complete an online request form for documentation, health information, or for permission to quote or translate, on the Regional Office website (http://www.euro.who.int/pubrequest).

ISBN: 978-92-890-5557-4

Design and layout: 4PLUS4.dk

Contents

Acknowledgement

The Tailoring Immunization Programmes (TIP) approach was developed by the WHO Regional Office for Europe to support countries achieve high and equitable vaccination uptake, through understanding the barriers to vaccination among population groups with suboptimal coverage. The TIP approach inspired the development of a Manual for Tailoring Antimicrobial Programmes (TAP), to be available in 2021. The Manual for the TAP then inspired, and served as the foundation for, user-friendly TAP Quick Guide and this TAP Toolbox.

This Toolbox was prepared by Felicity Pocklington (Common Thread, London, England), Michael Coleman (Common Thread, London, England) and Sahil Warsi (WHO Regional Office for Europe) under the technical guidance of Ketevan Kandelaki (WHO Regional Office for Europe), Danilo Lo Fo Wong (WHO Regional Office for Europe), Karen Mah (WHO headquarters) and Anand Balachandran (WHO headquarters).

Input and review were provided by Siff Malue Nielsen (WHO Regional Office for Europe), Katrine Bach Habersaat (WHO Regional Office for Europe) and Ponnu Padiyara (WHO headquarters).

Significant contributions for the technical concept were made by Marie Louise Wright (World Food Programme headquarters), Chantal den Daas (National Institute for Public Health and the Environment Netherlands, RIVM) and Anja Schreijer (Public Health Service, Amsterdam, The Netherlands).

This document was produced with the financial assistance of the European Union. The views expressed herein can in no way be taken to reflect the official opinion of the European Union.

Abbreviations

AMC	antimicrobial consumption
AMR	antimicrobial resistance
COM-B	Capability, Opportunity and Motivation for Behaviour Change
FGD	focus group discussion
GP	general practitioner
HAI	Healthcare Associated Infection
IDI	individual in-depth interview
NGO	Non Governmental Organization
OTC	over-the-counter
SWOT	strengths, weaknesses, opportunities, and threats
TAP	Tailoring Antimicrobial Resistance Programmes
TrACSS	Tripartite AMR Country Self-Assessment Survey
WG	Working Group

Introduction: What is this Toolbox for?

This Toolbox is aimed at you as members of a Tailoring Antimicrobial Resistance Programmes (TAP) working group. The Toolbox should be used in parallel with the TAP Quick Guide to address drivers of and barriers to antimicrobial resistance (AMR), and can be read alongside the full WHO TAP manual, which will be published soon.

The Toolbox provides you with a set of hands-on tools and templates for each step of the TAP approach. The five sections in this Toolbox are in line with the five stages of the TAP Quick Guide:

1. **Engage.** Are you ready? This stage is about planning. What capacity is there to carry out the process? Do you have the right resources to start? Think about the people, time and money needed and available before you decide to go ahead and plan your process.

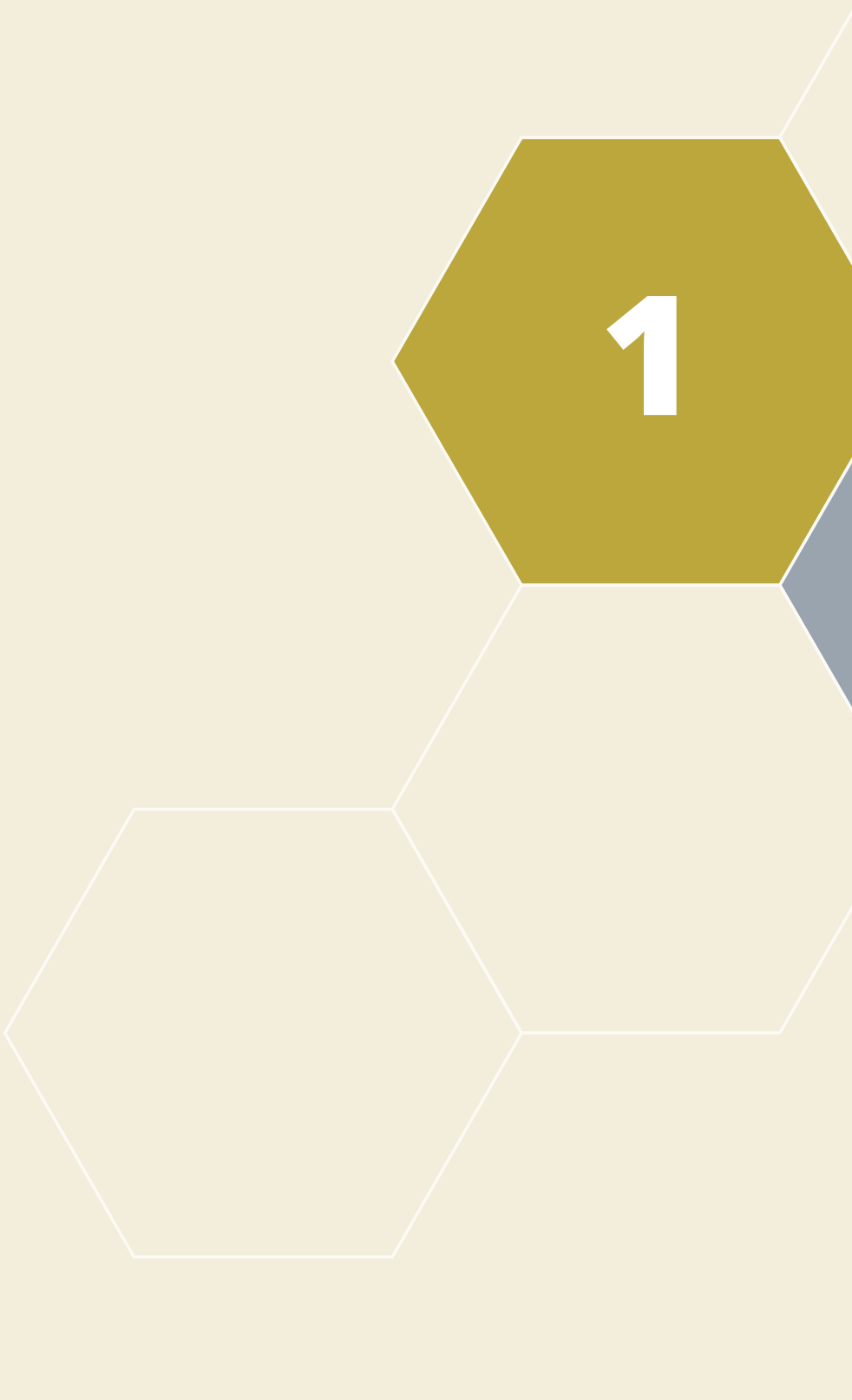
2. **Analyze.** What do we know already? Do you understand your context? What is the question or behaviour you wish or need to address? This situation analysis phase guides you through reviewing relevant data and speaking to stakeholders before collating findings into a set of questions and behaviours to be addressed.

3. **Prioritize.** What is the priority behaviour to address? Use the TAP methodology to dig deeper into what you do not know. Once new and existing information is collated, prioritize a behaviour and the drivers and barriers we need to target.

4. **Design.** Build your strategy and interventions. Define the behaviour you wish to address, the related barriers and drivers, and the possible interventions that might be applied. This is where the Behaviour Change Wheel framework and Capability, Opportunity and Motivation for Behaviour Change (COM-B) tool help you to understand AMR-related behaviours and consider options available to you to address them. You may wish to incorporate this step into your research plan.

5. **Do it.** Implement and evaluate. Test out the intervention and monitor its impact. Consider adjusting as needed. If it works, scale it up!

While this Toolbox and the companion Quick Guide are written from the human health perspective, the methodology presented can also be applied in the animal health and agriculture sectors – for example, to develop studies targeting veterinarians or farmers. The contents of this Toolbox are taken from the TAP Manual, which will be printed soon, and in which further examples and context will be provided.


1

The TAP process

1. Engage. Are you ready to start?

In line with Stage 1 of the TAP Quick Guide, the following tools will help you build a TAP Assessment Report on readiness to begin the TAP process. The three exercises and eight tools will make up the bulk of a TAP assessment report.

- Exercise. Think independently about the most important challenge(s) in your context, at both the national and subnational levels
  - » Tool 1.1. Template for considering the most important challenge(s) in your context, at both the national and subnational levels
  - » Tool 1.2. Template for a strengths, weaknesses, opportunities and threats (SWOT) analysis of current practices on AMR at the national and subnational levels

- Exercise. Suggested stakeholder profiles to consult and engage in your TAP working group
  - » Tool 1.3. Suggested stakeholder profiles
  - » Tool 1.4. Suggested governance structure and approach to engaging key stakeholders
  - » Tool 1.5. Matrix to support the identification of stakeholders

- Exercise. Budgetary considerations for the TAP process
  - » Tool 1.6. Potential cost items related to the TAP process

- Tool 1.7. Sample process monitoring framework

- Tool 1.8. Sample terms of reference for a National TAP working group

Exercise. Thinking about the most important challenges

You may already have an idea of the detailed behavioural challenges that you want to address, or you might not know where to start. In either case, a thorough review of the current AMR situation will help set the scene for the entire TAP process. Depending on your needs as a Member State, this review can be conducted:

- at the national and subnational levels, to generate a general understanding of trends in AMR; or

- within a particular part of the country or a subpopulation with high AMR risk or priority, to examine issues related to that population.

Work through Tool 1.1 and Tool 1.2 below to help you prioritize the most important AMR problems to tackle using the TAP approach.

Tool 1.1. Template for considering the most important challenge(s) at national/subnational levels

You can use Table 1 below to think through the most important challenges you face in addressing AMR at the national or subnational levels.

Table 1. Table template for considering the most important challenges

Your challenge	Relevance/ urgency in the response	Data	Where/Who/What	Data	Stakeholders to engage	Key stakeholder support
What are the most important challenges facing AMR at the national and subnational levels?	Is this challenge relevant or a priority? Explain why.	Select the data used to identify this problem, or write a *hypothesis* if this is your assumption.	Are there particular issues, populations or behaviours that are critical to your AMR work? Where is this happening? With whom? What are the behaviours you might want to explore further?	Select the data used to identify where and who, or write a *hypothesis* if this is your assumption.	Who are the key stakeholders (e.g. experts, advisory group, working group)?	Do you have their support? [Yes/No]

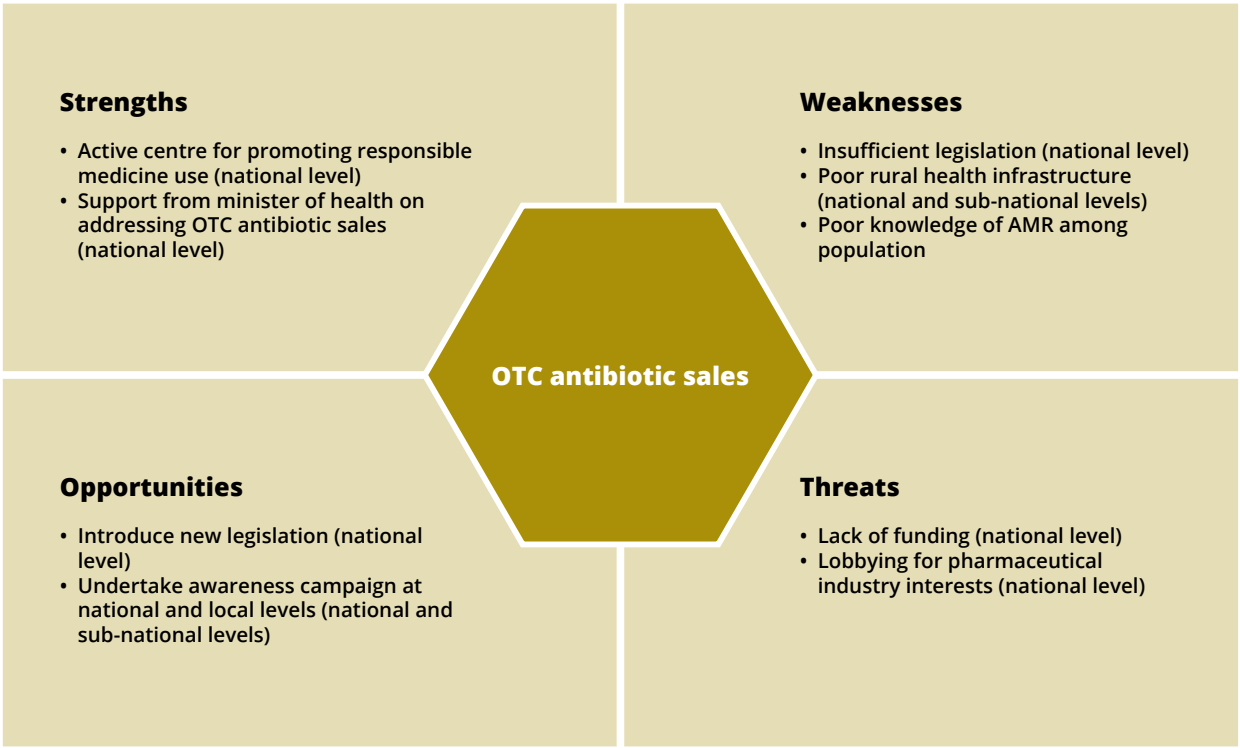
Tool 1.2. Template for a strengths, weaknesses, opportunities and threats (a SWOT analysis) of AMR-related challenges at the national or subnational levels

Using the sample below, list the strengths, weaknesses, opportunities, and threats with regard to current AMR challenges at the national and subnational levels. You can think of the national and subnational levels separately or together, and simply identify at which level each strength, weakness, opportunity, or threat lies.

At the centre of a flipchart, poster or whiteboard, write the AMR-related challenge. Add four quadrants around the centre with the strengths, weaknesses, opportunities, and threats to addressing the challenge.

Fig. 1 below provides an example for a partial SWOT analysis around the issue of over-the-counter (OTC) antibiotic sales.

Fig. 1. Example of partial SWOT analysis for OTC antibiotic sales



Exercise. Suggested stakeholder profiles to consult and engage in your TAP working group

Introduction to the exercise

An important step in the stage 1 of TAP process is to think about identifying stakeholders to consult and engage in your TAP working group. We suggest limiting membership of the TAP working group in order to keep it smaller, more focused, and more efficient. Involve people who will be active and invested in the process, and invite others (e.g. specialists, policy-makers, target group representatives) to specific meetings as needed.

In thinking about which stakeholders to consult, consider the following:

- Who will be implementing the work?
  - » Will it be the Ministry of Health, or a key partner organization, such as the Food and Agriculture Organization of the United Nations (FAO), the World Organization for Animal Health (OIE) and the WHO?
  - » Make sure to involve key organizations that will be implementing the AMR intervention.

- Think about different stakeholders' experiences and roles, and identify stakeholders that bring together diverse and complementary perspectives.

- Consider people's availability and if they will be able to actively contribute and participate.

Guidance

Use tools 1.3–1.5 in sequence to work through this exercise.

Tool 1.3. Suggested stakeholders to consider

Table 2 provides prompts for specific stakeholders you might want to consider engaging with. Review the table and think about which key stakeholders to include in your TAP process that are relevant to your context.

You may not need to involve all the groups mentioned below. Whom you involve will depend on your selected behaviour and context, and there might be stakeholders beyond this list you might also consider.

Table 2. Potential stakeholders to involve in the TAP process

Area of expertise	Potential stakeholders
Targeted health behaviour	Experts
	Researchers
	Opinion leaders
National health programme	Ministry of Health
	National health institutes/institutions
Service provision within health area	Health workers
	Medical faculties
	Professional associations
The targeted community	Community representatives and leaders
	Local organizations (e.g. community organizations or nongovernmental organizations)
	Local institutions
	Local health workers
Social science research	Researchers
	Private or university-based research institutes
	Ministry of Health or Health Promotion Unit staff
Stakeholders in other relevant areas	Ministry of Education/Poverty/Children/Social Affairs
	National and international organizations

Tool 1.4. Suggested governance structure and approach to engaging key stakeholders

Once you have thought about who your key stakeholders are, think about your governance structure: who do you want to bring into the TAP process, and who would you like to consult and engage with at key instances? For example, a high-level officer in the Ministry of Health will be important to bring into the process at key instances but may not be available for the whole TAP process.

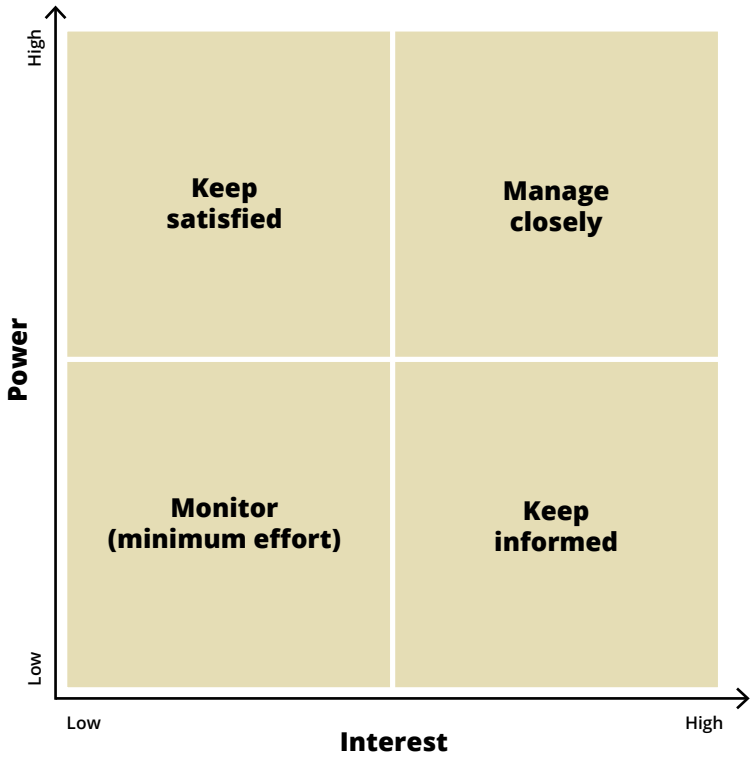
Fig. 2 below provides a suggested governance structure and approach to engaging key stakeholders. Review the tool and consider stakeholders and a governance structure that would best suit your context.

Fig. 2. Suggested TAP governance structure and stakeholders

Tool 1.5. Matrix to support you in thinking about which stakeholders to engage and consult

The matrix provided in Fig. 3 below will help you think about which stakeholders you would like to engage with and in what way. Take the list of stakeholders identified via Tools 1.3–1.4 and map them against the power/interest grid.

Fig. 3. Matrix for considering stakeholder engagement



- High power, highly interested people (manage closely)
  - » These are priority individuals to engage and inform as much as possible in the process.
- High power, less interested people (keep satisfied)
  - » Engage and inform this group, but not so much that they get disinterested.
- Low power, highly interested people (keep informed)
  - » These individuals are helpful team players and advocates to keep engaged and informed.
- Low power, less interested people (monitor)
  - » Make this group aware of the process, but do not over-engage.

Exercise. Budgetary considerations for the TAP process

Introduction to the exercise

It's important to consider your budget for carrying out the TAP process. This includes additional research that might be needed, and developing and implementing an AMR-related intervention. To do this, consider:

- the required resources and time for undertaking the TAP process, including conducting any further research to support development; and
- available or existing resources and financial mechanisms that could support the AMR intervention.

Funding mechanisms for an intervention, evaluation, and scale-up might include:

- an increased budget obtained through budget negotiations
- a sustained budget, but with a reallocation (e.g. a change in how AMR interventions are delivered)
- joint funding with other ministries
- external donor resources.

When thinking about your budgetary considerations, key questions to ask yourself may include the following:

- Do you foresee any budgetary constraints in developing an AMR intervention?
- Do you have enough of a budget to pay for team members' time, for a research team if needed, or any other individuals that would need to be paid for contributions made during the process?
- Do you have existing funding mechanisms in place for implementing the AMR intervention? Is this budget stand-alone or integrated into existing work?

Guidance

To help you think about your budgetary needs and considerations, see Table 3 in Tool 1.6 below which outlines potential budget line items. Think of your own needs relating to project development and implementation, and then try filling out the table yourself.

Tool 1.6. Potential cost items related to a TAP process

Table 3. Example of TAP process costs

Item	Subitem	Details of task	Type of input	Quantity	Unit price	Total	Organizations responsible
TAP working group fees (3–5 persons)		If appropriate/necessary, part-time for 1 year or more	Senior expert-days				
TAP working group meetings (5–10 meetings, 3–6 people)		Venue and catering Transportation Printing	Material inputs and logistic costs				
Stakeholder workshops (2–3 workshops, 10–30 people)		Venue and catering Transportation Printing	Material inputs and logistic costs				
Research (one or more studies)	Preparatory work	Definition of data request on antibiotic use in primary care, production of data tables, analysis and visualisation	Senior expert-days				
		National approval process (preparation and execution)	Senior expert-days				
			Administrative procedure				
	Training of interviewers	Preparation, training and follow-up by international experts	Senior international expert-days				
		Travel expenses of international trainers	Travel to and from place of research				
		Per diem	Days				
		Room, equipment and catering	One-off material input				

Table 3 cont'd

Item	Subitem	Details of task	Type of input	Quantity	Unit price	Total	Organizations responsible
Research (one or more studies)	Recruiting the interview sample	Writing and sending out recruitment letter, follow-up with participants	Management-days				
		Incentives for interview participants	Package of evidence-based antibiotic prescription material and small gift items				
	Data collection	Preparation and execution of interviews	Senior expert-days				
		Travel to and from the interview sites	Average 300 km by car = appr. 24 l of petrol				
			Car rental (daily; only needed for remote areas)				
		Material costs	Paper, recording equipment, etc.				
	Data analysis	Preparation of transcripts	Supporting worker-days, translation costs (if required)				
		Coding of transcripts and analysis of codes	Senior expert-days				
	Presenting results	Writing and editing the research report	Senior expert-days				
		Organizing stakeholder dialogue	Management-days				
		Room, equipment and catering for stakeholder dialogue	One-off material input				
		Publication of results in a peer-reviewed journal	Open access fee				

Table 3 cont'd

Item	Subitem	Details of task	Type of input	Quantity	Unit price	Total	Organizations responsible
Research (one or more studies)	Administration	Managing contracting and reporting with funders and suppliers	Management days				
Advocacy		Printing, design and distribution of materials Dissemination of results Media engagement including social media	Material costs				
Implementation of the intervention – activities, evaluation and scale-up		Costs related to activities: categories will be as per research protocol (e.g. staff costs, training, supplies and equipment, office expenses) In addition, costs related to any changes of health services, development of new training curricula, development of materials, education of health workers – this will depend on the intervention	These will be based on your intervention				
Evaluation		Costs related to undertaking an evaluation of the behaviour change intervention	Staff costs, management days, administrative costs				

Tool 1.7. Example of a TAP process monitoring framework

Introduction to the tool

The completed table below is an example of a TAP process monitoring framework. When you build your framework, the activities will be targeted and subactivities will also be included. A framework should also include columns for Input and Expected impact. Information on the timeline in the example table is in the format of Quarters (Q) and Years (Y), but the timeline might be measured differently depending on the kind of project you build.

Guidance

Review Table 4 below as a tool for thinking about the long-term planning of your own TAP project.

Add a column for Inputs before Output, and Impact after Outcome. Remember that outputs are the specific results of activities, outcomes are the mid-term results of outputs, and impacts are the longer-term effects of outputs.

Ask yourself whether this timeline is suitable and affordable for your context? As you build and carry out your project, you might need to revisit and alter parts of this table.

Table 4. Example of long-term TAP planning

Activity	Timeline	Output	Outcome	Responsibility
Stage 1 TAP				
Do capacity assessment	Q1, Y1 [a]	TAP capacity assessment report	Informed decision made on TAP initiation	Ministry of Health
Establish TAP working group (WG)	Q1, Y1	WG set up and ToRs signed	WG starts coordination responsibilities	Ministry of Health
Prepare process plan	Q2, Y1	TAP process plan (report)	TAP process planned and ready to begin	TAP WG
Stage 2				
Review data and existing studies	Q2–3, Y1	Analysis for situational report	Baseline understanding of problem area	TAP WG, consultants
Engage stakeholders	Q3–4, Y1	Analysis for situational report	Input from stakeholders on problem identified	TAP WG, consultants
Situational analysis	Q4, Y1	Develop situational report	Comprehensive understanding of problem area	TAP WG, consultants
Stage 3				
Prioritize and plan research	Q4, Y1	Research protocol	Research planned and approved	TAP WG, consultants

Table 4 cont'd

Activity	Timeline	Output	Outcome	Responsibility
Conduct research	Q1–2, Y2	Interviews and focus group discussions completed	Comprehensive understanding of problem behaviours	TAP WG, consultants
Report findings	Q2–3, Y2	Research report	Analysis of research for intervention planning	TAP WG, consultants
		Research publication	Publication of findings in peer review publication	Ministry of Health, TAP WG, consultants
Stage 4				
Design intervention	Q3, Y2	Intervention design	Tailored intervention on basis of behavioural insights	TAP WG, consultants
Plan intervention	Q3, Y2	Intervention plan with monitoring and evaluation framework	Intervention planned and ready to implement	TAP WG, consultants
	Q4,Y2	Intervention pilot	Intervention is tested and adjusted	TAP WG
Stage 5				
Implement intervention	Q3, Y2–Q3, Y3	Monitoring data	Intervention implemented	TAP WG
Evaluate intervention	Q4, Y3	Evaluation report	Summary of key results and recommendations for scale-up	TAP WG, WHO
Scale-up	Q1, Y4	Plan for adjustment and/or scale-up	Roadmap for planning and implementing scale-up activities	TAP WG, Ministry of Health

a Information on the timeline in the example table is in the format of quarters (Q) and years (Y), but the timeline might be measured differently depending on the kind of project you build.

Tool 1.8. Sample terms of reference for a TAP working group

Introduction to the tool

When developing your TAP working group, it is important to clarify expectations and develop terms of reference for the group early. This will ensure that members of the group bring relevant experience and only commit to the process if they have the time to commit.

Guidance

The sample terms of reference in Box 1 below can be tailored as needed to your context.

Box 1. Sample TAP working group terms of reference

Sample terms of reference

Purpose

- Provide strategic leadership on the TAP process under the national action plan on AMR.
- Provide a coordinated approach for national, subnational and community TAP programmes.
- Support national and international efforts as appropriate.

The overall aim of the TAP working group is to optimize the use of existing antimicrobials and prevent the spread of resistant infections.

The TAP working group is accountable to:

- The National AMR Steering Committee
- Professional organizations and others as applicable.

Responsibilities and activities

- Oversees and coordinates the development and implementation of the national strategy and/or policy for controlling AMR by optimizing the use of antimicrobials through the implementation of the TAP analysis and programmes.
- Ensures sufficient resources (human and financial) to achieve the objectives and outcomes of the national and supporting TAP strategies or policy.
- Ensures that relevant education and training on the TAP are provided to relevant stakeholders and partners.
- Undertakes monitoring and evaluation of TAP interventions at the national, subnational and community levels based on the national TAP strategy or plan on an annual or biannual basis.
- Presents data and annual progress report(s) to the National Multisectoral AMR Steering Committee.

Membership (to be adapted based on the country context)

The membership of the national TAP working group should be composed of members representing the relevant departments within the Ministry of Health, leading universities and/or think-tanks, public health organizations, and a WHO consultant. Where appropriate, including membership from affected communities is advisable.

Representatives should be given sufficient authority by their institutions to make decisions. The TAP working group should remain small enough to be functional, striking a balance between full representation and the functionality of the group to coordinate a national TAP strategy, or plan and be linked with other relevant groups/TAP working groups (e.g. AMR and antimicrobial consumption (AMC) surveillance).

Box 1, cont'd

Frequency of meetings

The meeting format and rules should conform to national norms. Standard operating procedures may be elaborated transparently and according to the principles of best practice to guide the activities of the TAP working group.

A chairperson should be selected based on his or her expertise in leadership. Rotation of the chair among members of the TAP working group could be considered.

The TAP working group should meet on a regular basis, to be determined by local needs and norms.

Conflict of interest

It is recommended that the group have a mechanism (with appropriate records) to ensure that its members have no conflicts of interest and that the work of the TAP working group is transparent in the interests of public health.

2. Analyze. What do you know already?

In line with Stage 2 of the Quick Guide, the tools and templates here will help you as you undertake Stage 2 of the TAP process:

- Tool 2.1. Data and information sources
- Tool 2.2. Questions to guide the data review
- Tool 2.3. Stakeholder mapping tool 1
- Tool 2.4. Stakeholder mapping tool 2

Tool 2.1. Data and information sources

Introduction to the tool and guidance

Below are examples of data and information sources that can be reviewed for your situation analysis.

Look through the list and consider which data and information sources will be relevant to you and whether there are additional sources available in and relevant to your setting. The list includes:

- AMR surveillance data: European Surveillance of Antimicrobial Consumption Network, Central Asian and European Surveillance of Antimicrobial Resistance data, or Global Antimicrobial Resistance and Use Surveillance System;
- surveillance data on Healthcare Associated Infections (HAIs) ;
- national and subnational level AMR data;
- library of AMR national action plans;
- National Action Plan on AMR implementation data from the annual Tripartite AMR Country Self-Assessment Survey;
- Disease surveillance data;
- data on sale and use of antibiotics and antimicrobial medicines (e.g. European Surveillance of Antimicrobial Consumption Network, AMC Network, global AMC data);
- health service utilization data;
- population health data;

- lifestyle data and reports;
- population health surveys, analyses, and studies;
- data from the **Global Health Observatory**;
- multiple indicator cluster surveys;
- demographic and health surveys;
- surveys, strategies, and action plans related to the health area or relevant population groups;
- equity analyses;
- strategies and action plans for the health behaviour and for relevant population groups;
- legislation related to the health area and relevant population groups;
- reports and evaluations of previous projects or initiatives conducted for the health behaviour or relevant population groups;
- reports, recommendations and assessments from national and international organizations related to the health area or relevant population groups;
- media coverage related to the health behaviour or relevant population groups;
- social media coverage related to the health behaviour or relevant population groups; and
- peer-reviewed academic publications related to the health area, the country or relevant population groups. It would be worth conducting a literature search using **Pubmed** and also looking at the **Cochrane Library** for systematic reviews.

Tool 2.2. Questions to guide the data review

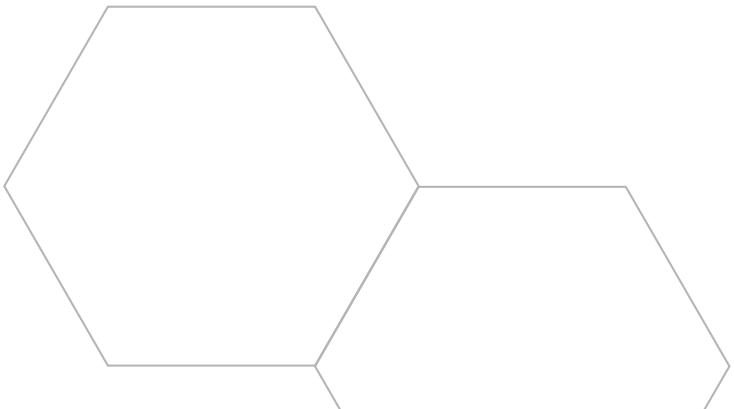
Introduction to the tool

To help you gain an in-depth understanding of the problem you are trying to address, you need to review the existing evidence base to find out what you know already, and speak to key stakeholders to test this knowledge and fill in any gaps. You can speak to key stakeholders through interviews, workshops or focus group discussions.

To help guide you in this research and these discussions, Box 2 outlines some key questions below.

Guidance

Read through the questions, and think about what you already know, what you think you know but want to verify, and what data gaps exist that you want to further probe through a discussion.



Box 2. Questions to guide data review

Questions to guide the data review

Status of AMR

- What is the prevalence or burden of AMR in the country?
- What are the trends and patterns of consumption in the country?

Existing guidelines and regulations on AMR

- What national legislation, strategies and guidelines on AMR are in place?
- How do these address the current challenges of AMR?
- Are guidelines being followed or not, and is it possible to verify this?
- What is the political climate regarding AMR? Is there support to address the issue?
- What international strategies and guidelines are available on AMR? How do these relate to the national context?

Stakeholders and partnerships

- Who are the most important stakeholders and what are the potential partnerships?
- Who can potentially influence a project?
- Which individuals, groups or agencies should be involved?
- What role can these stakeholders play in containing AMR?
- Whose capacity needs to be built to participate in the intervention and how?

Social and environmental dynamics

- What changes in population, demographic or economic profiles and lifestyle factors affect AMR-related behaviours?
- What are the prevailing methods of communication regarding AMR?
- What types of communication channels to improve the rational use of antibiotics are most available? Which ones are most trusted, and which are least trusted?
- What is known of the target group's knowledge, attitudes, and practices with regards to AMR?

Resources

- What internal resources are available for promoting the rational use of antibiotics and related AMR drivers in terms of budget, funding sources, procurement, people, time, infrastructure and access to target groups?
- What expertise is available at the Ministry of Health and potential intervention sites to implement and/or manage the process, as well as programmatic and communications activities recommended as a result of the process?
- What external resources are available?
- Do any donors currently provide funding for AMR-related interventions? Could they be approached to support the TAP intervention?

Tool 2.3. Stakeholder mapping tool

Introduction to the tool

When you are considering how to conduct research into what you know already, consider the key stakeholders with both local and technical knowledge. Key questions to ask yourself include the following:

- Who are the most important stakeholders that might influence AMR behaviours?
- Who is currently involved directly or indirectly in AMR behaviours, including the implementation of AMR policies or practices, or beneficiaries of policies or practices? What is their role and experience?

To help you think about who you need to speak to, the stakeholder mapping exercise below will help.

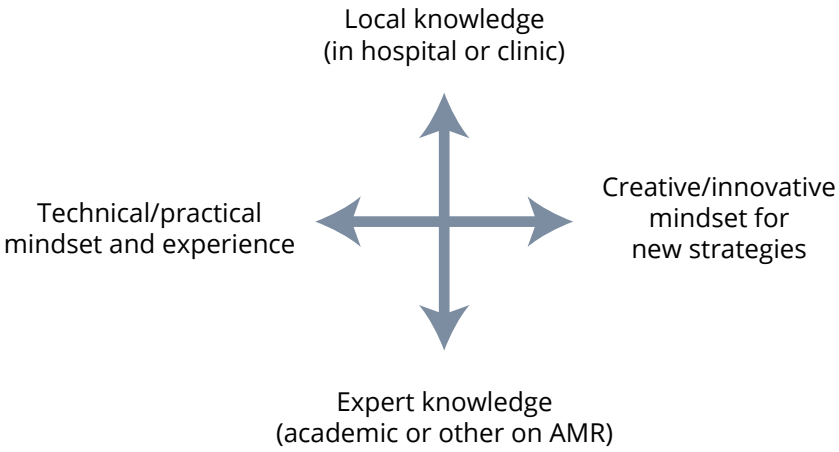
Guidance

Begin by brainstorming your key stakeholders (see Tool 1.3).

After you have listed the key stakeholders (both individuals and organizations), start to think about their added value to the research. To help you do this, use the matrix in Fig. 4 below. You can place each stakeholder on the grid based on their knowledge and expertise.

At the end of this activity, you will have a picture of what stakeholders you can turn to for specific knowledge or expertise. It might be helpful to keep a list alongside this matrix that details each stakeholder's expertise and knowledge area and what you might ask of them.

Fig. 4. Matrix for stakeholder mapping



Tool 2.4. Methods to help you conduct a key stakeholder workshop

Guidance

Engaging stakeholders is a core value of the TAP approach. How stakeholders are best engaged depends on the context and the stakeholder. It is suggested that stakeholder workshops are conducted in Stage 2. Workshops can include the following agenda points:

- a presentation to introduce the TAP approach and local process, including the COM-B framework used under the TAP;

- a presentation of the situation analysis, including population groups and behaviours that are known or suspected of contributing to the spread of AMR in your context;
- any other relevant presentations, such as previous studies or reports with relevant conclusions;
- group work with exercises to help develop the TAP project;
- plenary discussions to get people's input; and
- other interactions relevant to your context that will explore and discuss findings and seek input from invited stakeholders.

During the workshop, stakeholders can also be divided into smaller groups to have more targeted discussion on, for example, identifying target groups, behaviours, or barriers/drivers. The input from stakeholders can then be further discussed by the TAP working group after the workshop. Conclusions from workshops can be summarized and added to the situation analysis report.

(See Tools 1.3–1.5 for guidance on identifying relevant stakeholders.)

The outputs from stakeholder workshops will likely be:

- a workshop report with conclusions on the segmentation of target groups and behaviours, prioritization of research, and planning for next steps; and
- an updated situation analysis report based on workshop results.

3. Prioritize. Identifying target groups and behaviours

In line with Stage 3 in the Quick Guide, the exercises and tools in this section will help you identify a priority behaviour, target group, and research needs.

- Exercise. Defining the problem in behavioural terms
  - » Tool 3.1. Identify the behaviour
- Exercise. Mapping of behaviours
  - » Tool 3.2. Conceptual map of what influences a selected behaviour. Example: prescribing antibiotics for viral infections
- Exercise. Prioritize target behaviours and identify target groups
  - » Tool 3.3. Assess and prioritize potential target behaviours – Template
- Exercise. Designing a research plan
  - » Tool 3.4. Contents of a research protocol
  - » Tool 3.5. Ethical approval
  - » Tool 3.6. Strengths and weakness of qualitative and quantitative methods
  - » Tool 3.7. Data analysis

Exercise. Defining the problem in behavioural terms

The objectives of this exercise are to:

- identify the behaviour we wish to change.
- consider **who needs to do what differently, why, where and when and for how long?**
- identify what other behaviours are involved in supporting or preventing this change.

Guidance

As a working group, decide on the behaviour you wish to change. Be specific and do not mistake an outcome for a behaviour (e.g. reduction in drug resistance versus reducing inappropriate prescribing). Do not choose behaviours that are likely to have a limited impact on the problem of AMR. Remember to think through factors that might limit the impact of the problem and make sure you think of others in the system that can help change the behaviour. Tools 3.1–3.3 will help in this process

This exercise can be informed through a range of information sources (e.g. surveys, observation, informal or formal interviews, workshops, or published/unpublished research).

Tool 3.1. Identify the behaviour

As a group, go through the questions for each step in Table 5 to define the behaviour, and identify individuals/groups to consider and contexts in which the behaviour is performed.

Table 5. Questions to consider for behaviour context

Steps	Questions
Identify the *specific* behaviour	What behaviours are driving antimicrobial resistance in your country (e.g. overuse of medication or misuse)? What is influencing these behaviours? How do you think you need to address the behaviour? Would you need to stop or start a particular behaviour, increase or decrease its frequency, duration and/or intensity, or change its form?
List the individuals and groups for consideration **Prioritize groups for the intervention**	Who or what group is engaged in the behaviour? Who is helping to drive this problem? What is the role of health professionals, communities, families or patients in propagating this behaviour? Are there any particular at-risk groups?
List the locations or venues where the behaviour takes place	Where is this behaviour taking place? Are there other locations that influence this behaviour?
List when the behaviour takes place	When is the behaviour taking place and for how long? Are there significant instances before and after the behaviour that might also offer opportunities to influence change?

Exercise. Mapping of behaviours

Objective

- The objective of this exercise is to map out the context of a behaviour (or subbehaviour) and consider where you would like to intervene.

Guidance

When an overall behaviour has been identified (see Exercise *Defining the problem in behavioural terms*), a more detailed mapping of this behaviour can be conducted. Mapping involves thinking holistically about the overall behaviour in order to include (i) associated or subbehaviours, (ii) individuals or groups connected or engaged in the overall behaviour, or (iii) contexts relating to the behaviour. For example, if you are looking at a pediatrician's antibiotic prescribing behaviour, a related behaviour could be parents' health seeking behaviour, a connected group could be pharmaceutical companies (and their behaviour of advertising to doctors), and a context could be seasonal changes in illnesses.

The mapping exercise can be done with a group of stakeholders or target group representatives, based on expert input, or it can be based on data collected through additional research. The level of detail used in the exercise depends on context, evidence, and the expected output. Tool 3.2 below provides guidance on mapping in two steps.

Tool 3.2. Conceptual map of influences on a behaviour

1. Prepare a conceptual map of a behaviour

A conceptual map of behavior includes the following steps.

- Write out a description of the behaviour you would like to explore in the centre of a large poster, whiteboard, flipchart, or other surface you can write on easily.
- Within your group, brainstorm what is connected to this behaviour, what influences it, and how and where it happens. Write each item down around the behaviour and connect it with a line. For each item, write in as much detail as possible about where and what is done, who does it, who is involved, and how the item contributes to the behaviour.
- Do not be afraid to use new or additional sheets, or recategorize items as you think of them.
- Once you are satisfied that you have thought through the behaviour and its context thoroughly, you will have a map of the behaviour (see example in Fig. 4 below).
- Looking at your behavioural map, you can now decide where in the map you wish to intervene. This involves making a judgement about which behaviours are most likely to be influenced by an intervention. To make your decision, ask yourself if an intervention will:
  - be **acceptable and appropriate** for the selected target group and other stakeholders involved?
  - be **practical** and easily delivered to the target group?
  - be **effective** and work in a real-world context?
  - be **cost-effective**?
  - be **affordable** to deliver to the target group within budget?
  - have any **side effects** (positive or negative)?
  - be **equitable**, or in other words, will it increase or decrease differences between disadvantaged sectors of society?

The example in Fig. 5 below shows results for a mapping exercise around general practitioners (GP) behaviour of antibiotic prescribing for viral infections. This example focuses on what influences the behaviour.

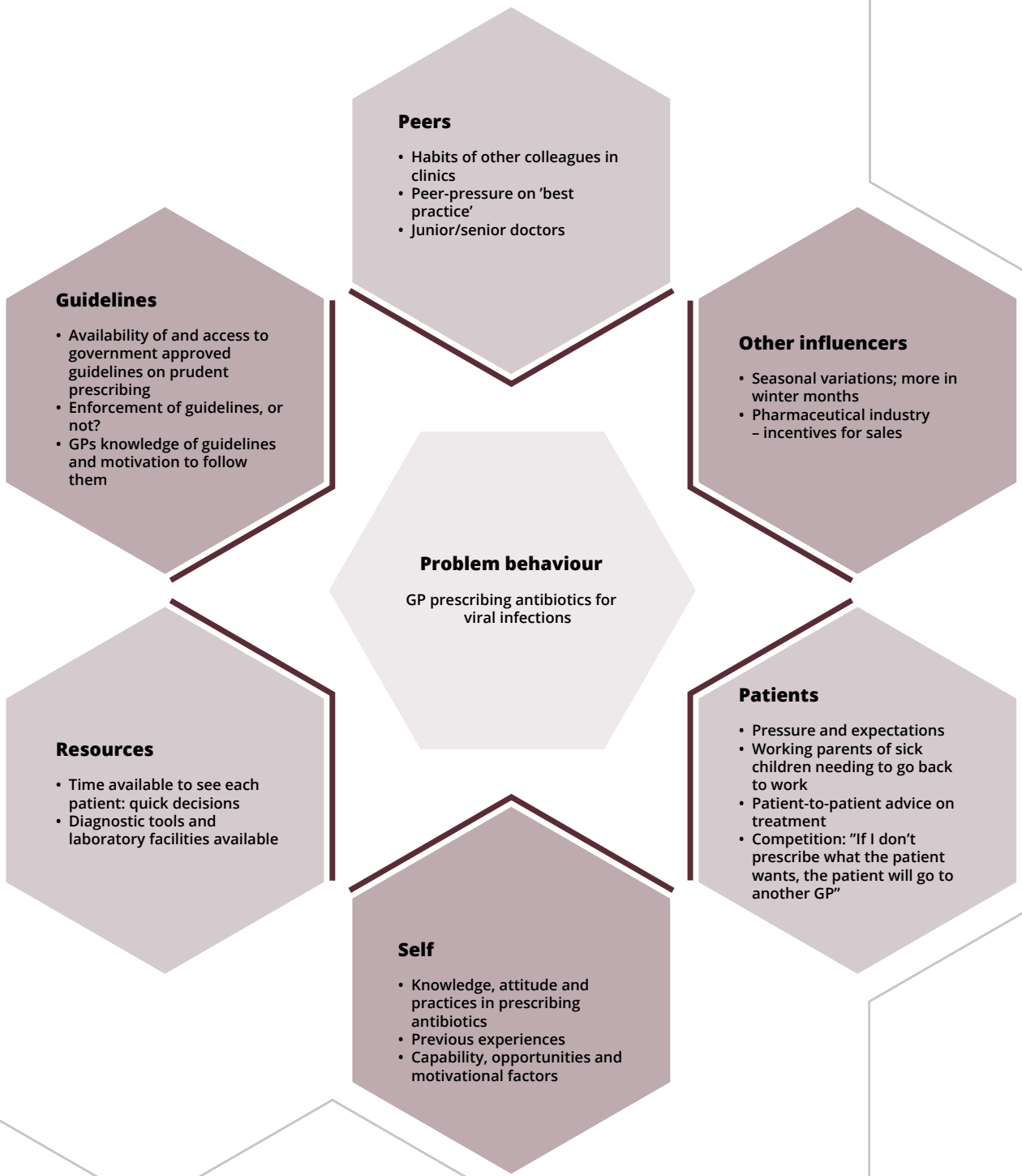
2. Prepare a behavioural timeline (if applicable)

After you have selected where you would like to intervene, you can prepare a timeline or sequence of events involved in the performance of the behaviour selected. This will be different for each behaviour, and do not worry if it is not possible to do this for the behaviour you have selected.

The preparation of the behavioural timeline includes the following.

- As a group, begin listing the steps leading up to the performance of the selected behaviour.
- Also list the steps or results that occur after the behaviour is performed.
- For each step (for before and after the performance), write down influences, emotions and lost opportunities. Highlight where interventions might encourage change.
- The more detailed you can be in making this timeline, the more information you will have to help identify barriers and drivers of behaviour performance.
- By the end of the exercise, you will have a step-by-step description of how the behaviour takes place and what happens after the behavior is performed. You can use this information to identify the step at which your intervention would be most appropriate, feasible and effective.

Fig. 5. Example of a partial SWOT analysis for OTC antibiotic sales



Exercise. Prioritize target behaviours and identify target groups

Objective

- The objective of this exercise is to assess and prioritize potential target behaviours.

Guidance

- Work with the group to prioritize target behaviours and target groups using Tool 3.3.
- Make sure that you are focusing on behaviours and not on outcomes.
- Do not choose behaviours likely to have limited impact.
- Think broadly in terms of the intervention target group, and consider others outside the target group who are involved in or influence the behaviour.

Depending on your needs, this exercise can be completed based on various kinds of evidence, such as stakeholder discussions and expert opinions, data presented in the situational analysis, or a more extensive literature review of selected behaviours.

The steps of the exercise

1. Assess your selected behaviours

- Place each of the identified behaviours in the table under Tool 3.3 and score each of the selected behaviours using the criteria in Table 6 below.

Table 6. Criteria and suggested scales for assessing behaviours

Criteria		Suggested scale
Impact	How much of an impact could addressing this barrier/driver have?	None, Low, Medium, High, Very high
Changeable	How likely is it that the behaviour can be changed?	Not changeable, Not likely, Maybe, Likely, Very likely
Spillover	How likely is it that the behaviour will have a positive or negative impact on other related behaviours?	None, Not likely, Maybe, Likely, Very likely
Measurable	How easy will it be to measure the behaviour?	Not measurable, Not easy, Easy

- You can score behaviours using the suggested scales above or simpler scales, such as using colours (e.g. red, yellow, green) or numbers (1,2,3). An example of a completed table is provided in Table 7 below.
- Ask each person in the group to score behaviours individually or in small groups and then discuss together as a working group.
- Agree as a group on the final rating for each criterion for each behaviour.

Tool 3.3. Assess and prioritize potential target behaviours – Template

Table 7. Example of completed table to assess, prioritize and select a behaviour

Potential target behaviour	Impact	Changeable	Spillover	Measurable
Patient attitude toward antibiotics use	Very high	Not likely	Very likely	Not easy
Pharmacist/patient communication about treatment	Very high	Likely	Likely	Not easy
Pharmacist/doctor communication about treatment	High	Unlikely	Very likely	Not easy
Pharmacist information seeking about antibiotics	High	Not likely	Likely	Not easy
Pharmacist decision-making (individual)	Very high	Likely	Very likely	Easy
Selected target behaviour(s)	Pharmacist decision-making in selling antibiotics to patients without prescriptions			

2. Prioritize potential target behaviours dependent on assessment

- Having filled out Table 8 below, discuss with the group which of the following apply most to each target behaviour.
  - » The behaviour appears very promising as the target behaviour.
  - » The behaviour is quite promising as the target behaviour.
  - » The behaviour appears unpromising but is worth considering as a target behaviour.
  - » The behaviour is not acceptable as the target behaviour.

- On the basis of this discussion, select the behaviour(s) you will focus on in your TAP project. Make a written record of which behaviour(s) you have selected and why.

Table 8. Table template for assessing and prioritizing target behaviours

Potential target behaviour	Impact	Changeable	Spillover	Measurable
Selected target behaviour(s)*				

* list one or more target behavior(s) from the list of potential behavior(s) identified.

Exercise. Using the COM-B framework to understand drivers of and barriers to a behaviour and to identify research objectives

Objective

- The objective of this exercise is to use the COM-B framework to explore drivers of and barriers to the performance of a selected behaviour and use this information to identify research priorities and objectives. You will use these objectives to develop your research plan in the next exercise.

Guidance

- This is a group exercise that should be carried out in a workshop setting over at least one day. It can be done with the TAP working group, TAP advisors, or other stakeholders as necessary.

- Before beginning the exercise, provide participants with an explanation of the COM-B framework and how it relates to research.

The steps of the exercise

1. Introducing the COM-B framework and selected behaviour/target group

- Present the COM-B framework. Explain that this provides a systematic approach for identifying and understanding factors that influence a behaviour, and for identifying the best approach to address them.

- Briefly review the COM-B framework for all participants, and clarify any participant questions related to the COM-B framework.

- Remind participants which target behaviour and target group have been selected.

- Briefly ask participants for examples of questions relating to COM-B factors for the identified behaviour, and give 1–2 examples if they cannot identify any. One example might be 'Level of understanding of target group X with regard to AMR'.

2. Group Work 1: Understanding the drivers behind a behaviour and questions that need answering

- Explain to workshop participants that the COM-B framework recognizes that, for a behaviour to happen, people must have the capability, opportunity and motivation to do so. Behaviour change needs all three components/enablers to be in place:
  - » Capability refers to people's psychological and physical abilities;
  - » Opportunity refers to the environment with which people interact – both physical (objects, events, time) and social (culture, norms); and
  - » Motivation refers to the influences that energize and direct behaviour including intentions and evaluations (reflective motivation) and emotions and habits (automatic motivation).

- Divide participants into 2–4 groups.

- Give each group three flipchart sheets. They will write a different title for each sheet: Capability, Opportunity, Motivation.

- On each of these C, O, and M flipchart sheets, every group should brainstorm the drivers of or barriers to the specific COM-B factor as they relate to the target behaviour. The group should also write down any questions they need to answer on each driver/barrier they identify in order to better understand the target group's performance of the behaviour.

- Each group should present their results to the entire working group so that everyone can see what they identified under the COM-B factors.

3. Group Work 2: Turning questions into objectives

- Divide the workshop participants into three groups. Assign all the C flipcharts to one group, all the O flipcharts to the second group, and all the M flipcharts to the third group.

- Give each group two blank flipchart sheets.

- Instruct groups to write 'Questions for [insert COM-B factor assigned to the group]' at the top of their first flipchart sheet.
  - » Instruct each group to use the questions in the set of flipchart sheets they received to identify a final set of concrete questions for which they need more information or research.

- Instruct groups to then take the second flipchart sheet and at the top write: 'After this research we will know…'
  - » Instruct groups to take each question identified on the first sheet and turn it into a declarative statement to complete the statement 'After this research we will know…'. For example: 'What are sources of information for target group X on the behaviour?' will become 'After this research, we will know what are target group X's sources of information on the behaviour'. The statements on this flipchart are statements that could be 'objectives for research'.

- Hold a plenary discussion with all groups together.
  - » One-by-one, each group presents the identified objectives for the COM-B factor they were assigned.
  - » Other participants not presenting give comments, ask questions, or make suggestions.
  - » All participants discuss and agree on a final set of research objectives for each COM-B factor.

- One person is made responsible for recording the agreed upon objectives for inclusion in the research protocol.

Exercise. Designing a research plan

After completing exercises *Defining the problem in behavioural terms–Prioritize target behaviours and identify target groups*, you may have identified areas that require further research. You should expect to have questions on behaviour, context or practice that you would like to explore in more depth before designing a behaviour change intervention.

Objective of the exercise

- To provide an overview of the steps you need to take to plan research.

Guidance

- Consider your needs. You might need to gather further information to help identify or better understand target behaviours, or to better understand the scale and context of the problem.

- If you decide as a working group that further research is required, you will need to develop a research protocol.

- It is helpful to involve relevant stakeholders in developing and conducting research. This includes involvement in protocol development workshops or giving them the opportunity to provide input on the research protocol.

The steps of the exercise:

1. Develop a research protocol

- A research protocol is a detailed plan that includes a research rationale, clear aims and objectives, a step-by-step plan for data collection and analysis, and an explanation of what will happen after the research is finished (e.g. dissemination of results). See Tool 3.4 below for the contents of a research protocol.

2. Gain ethical approval

- You will need to consider whether you need ethical approval. This will depend on the kind of research and the regulations of the country where the research is being conducted. If you plan to publish findings, you will normally be required to have received ethical approval. See Tool 3.5 below for further guidance on obtaining ethical approval.

3. Conduct research, and collect and analyse information

- Data collection can be done using qualitative, quantitative or mixed methods. The choice depends on the question that needs to be answered and the evidence that already exists that is related to the question. Tool 3.6 below gives a summary of the strengths and weaknesses of qualitative and quantitative methods.

Overview of qualitative methods

- Qualitative methods give in-depth information on the barriers to and drivers of a behaviour. They can help you understand why a behaviour happens and any fears or assumptions made by the target group. It can also give some insight into social norms. Below are three different methods that might be considered.
  - » A Focus group discussion (FGD) is a moderated conversation with a group (usually 5–8 participants) sampled to represent a particular social or priority group you are seeking to better understand. They are particularly useful for identifying social norms and can help you to see the differences of opinion about a topic. Discussions are moderated according to a discussion guide, but it is important for the moderator to be able to follow the conversation and allow issues that may not have been considered during the design phase to be considered. FGDs have limitations to be mindful of, including the need for careful management to encourage a diversity of opinion without losing focus on the topic at hand. Non-verbal cues can also be important when observed and explored by a skilled researcher.
  - » Individual in-depth interviews (IDIs) involve a one-to-one conversation with a moderator. They can be useful if the participant has special knowledge or to discuss sensitive topics.
  - » Observation studies involve researchers watching and recording people in their natural setting. They help enrich data collected through FGDs and IDIs, but must be conducted by experienced researchers and may take longer to do.

Overview of quantitative methods

- Quantitative methods gather data through standardized means, such as questionnaires with predefined questions. These can be done face-to-face, by telephone, paper or electronically, and data can be collected from a large number of people. Usually, surveys will be distributed to a sample of the target population. The size of this group depends on resources and the need to be representative of the population you are seeking to understand.

Overview of mixed methods

- Mixed methods allow you to combine both quantitative and qualitative methods together to capture information and increase confidence in findings.

Overview of data analysis

- The analysis of data needs experienced researchers. Ideally the method of analysis will be planned in advance and will depend on the type of data collected and the aims. Table 10 in Tool 3.7 provides more detail on approaches to analysis.

- If data collection or analysis methods are changed, that's fine as long as a detailed record is kept explaining why and the potential impact on the findings and results.

Tool 3.4. Contents of a research protocol

The research protocol is an essential part of any research project. It is a detailed description of how the research will be conducted and should be used as a handbook to ensure researchers adhere to the methods.

The following sections should be included in a research protocol for a qualitative, quantitative, or mixed methods study. The details in each section will vary depending on the type of research. The sections are:

- **general information** – title of research project; version and date of protocol; name and contact details of funder, sponsor and lead researcher;

- **background and rationale** – a statement of the problem that is the basis for the TAP process; existing knowledge; gaps in knowledge and reasons for doing the research;

- **research questions, aims and objectives** – the overall questions or aims of the research, and specific objectives for addressing these;

- **study design** – the overall study design (e.g. a longitudinal, qualitative, face-to-face interview study); the theoretical model that is being used (e.g. TAP adaptation of COM-B);

- **study setting, participants and recruitment** – where the study will be conducted; where and how research participants will be recruited; inclusion and exclusion criteria; how participants will be informed about the study; and how informed consent will be collected (participant information sheet and consent form to be included as appendices);

- **data collection** – the content of the data collection tools (e.g. interview topic guide, postal questionnaire); how they will be developed or if existing validated tools will be used; pilot testing and final administration (data collection tools to be included as appendices);

- **data analysis** – the planned quantitative (statistical) or qualitative analysis; for a mixed methods study, a description of how the quantitative and qualitative data will be synthesized;

- **data management** – where the data will be stored; who will see the data; how data will be transferred; how confidentiality will be ensured; how national regulations on data management will be met;

- **ethical and other approvals** – which ethics committee will review the research; other necessary approvals;

- **dissemination** – reports and papers that will be produced, including a short summary for the participants;

- **timeline** – clear deadlines for each step of the research project;

- **references**; and

- **appendices** – participant information sheet; consent from; data collection tools.

Tool 3.5. Ethical approval

Depending on the rules and standards of the country in which the research takes place, and on the nature of the study, ethical approval should be sought from an independent ethical committee.

Ethical approval is usually required for publishing study findings in a peer-reviewed journal, according to the:

- World Medical Association Declaration of Helsinki: Ethical Principles for Medical Research Involving Human Subjects. In: Bulletin of the World Health Organization. 2001;79(4):373–4 (https://www.who.int/bulletin/archives/79(4)373.pdf, accessed 10 May 2021).; and

- Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation). OJ L 119, 4.5.2016, p. 1–88 (https://eur-lex.europa.eu/eli/reg/2016/679/oj, accessed 10 May 2021).

Ethical approval is initiated to ensure that the rights of any participating individual person, as well as their dignity, safety and well-being, are considered above all else.

The contents of an application for ethical approval depend on the requirements of the individual ethical committee.

For TAP research, the following types of information are often required:

- the aims and objectives of the study;

- the study design and methods, including possible statistical methods and method of analysis;

- the number of participants and recruitment methods, including how they will be identified (mentioning inclusion and exclusion criteria) and approached;

- how consent will be obtained from participants, and possible incentives or reimbursement of expenses;

- how data will be used, including how and where data will be transferred and stored;

- processes to ensure anonymity and confidentiality;

- details on the dissemination of the findings; and

- details on all stakeholders involved in the study and their roles.

Ethical approval cannot usually be granted retrospectively.

If an ethical committee does not exist for social science research, an *ad hoc* committee should be established for the purpose of reviewing and approving the TAP study proposed.

Tool 3.6. Strengths and weaknesses of qualitative and quantitative methods

Table 10 below provides an overview of differences in qualitative and quantitative research methods that might help you decide if and how you want to incorporate them in your research.

Table 9. Comparison of qualitative and quantitative research methods

	Qualitative methods	Quantitative methods
Strengths	● Can provide in-depth understanding of people's concerns/needs, personal experiences, and how/why they behave in certain ways ● Valuable for describing complex phenomena ● Data can be rich in detail ● Useful for generating a hypothesis to be tested in quantitative studies	● Useful to examine behaviour frequency and influencing factors ● Can test hypotheses and assess cause-and-effect relationships ● If well-designed with representative sample population, it can give generalizable findings ● Can allow comparison of base- and end-line data to assess intervention effects
Limitations	● Difficult to generalize results to a wider population ● The time required for data collection, analysis and interpretation can be lengthy	● Not suitable to uncover complexity of people's experiences, perceptions and knowledge ● Needs larger number of participants
When to use	● Usually in formative stages	● Usually in later stages
Data, sampling, and design	● Smaller, usually purposive sampling ● Emergent design ● Data can be in many forms (e.g. words, images, objects)	● Larger, usually random sampling ● Design determined in advance ● Data is numerical
Tools	● The researchers are the tools. They use a method to make meaning from data collected via, for example, interviews, focus groups, and observation.	● Specific tools or instruments (e.g. tests, equations) are used to generate meaning from numerical data collected

Tool 3.7. Data analysis

Qualitative data

Table 10 presents an overview of how different types of qualitative data are analysed. Recording and analysis will depend on resources available (e.g. time, people, funding).

Table 10. Analysis of qualitative data

Data type	Analysis
Audio recording (interviews, focus groups)	All interviews/discussions must be transcribed verbatim in the original language before analysis, and translated if needed. A standard format should be used for all transcripts.
Notes	Notes can be typed or handwritten, but should be prepared in a standardized format before analysis.
Images or video	It is unlikely these will be used in TAP research. They can often capture contextual information missed in notes/recordings. Image/video analysis will depend on the research aims and should be specified in the research protocol. A standard method for naming and saving files should be followed.

All qualitative data needs to be coded before analysis. Coding is done according to themes and there are many ways to code data.[1, 2, 3] Qualitative data can be analysed by hand or using specialised qualitative data analysis software. There are many software available, differing in price and range of functions. **NVivo** and **Atlas.ti** are examples.

Quantitative data

Quantitative data is usually collected and organized in datasets. This can be done manually or by using specialized scanning software. Before analysis, all data should be cleaned, which involves looking at data to remove or amend errors (e.g. duplicates, mis-entered data, skipped questions).

There are various models to analyse qualitative data, and what is chosen depends on research aims and the information collected. The following are two approaches that might be taken.

- **Descriptive:** Data is described in a very accurate manner to provide information about a data set. Researchers usually include some descriptive statistics (e.g. frequency, range) before further analysis.

- **Inferential:** Data is analysed through complex mathematical calculations to identify trends and relationships in the data and to develop generalized observations.

Quantitative data analysis is often done using specialized software, such as **R**, **SPSS and STATA**.

1 Braun V, Clarke V. Using thematic analysis in psychology. Qualitative Research in Psychology, 2006, 3(2):77–101. doi:10.1191/1478088706qp063oa.

2 Creswell JW. Qualitative inquiry and research design: choosing among five approaches, third edition. Los Angeles, Calif. London New Dehli Singapore. Washington DC, SAGE, 2013 (http://www.ceil-conicet.gov.ar/wp-content/uploads/2018/04/CRESWELLQualitative-Inquary-and-Research-Design-Creswell.pdf, accessed 28 April 2021).

3 Neal JW et al. Expediting the Analysis of Qualitative Data in Evaluation: A Procedure for the Rapid Identification of Themes From Audio Recordings (RITA). American Journal of Evaluation, 2015, 36(1):118–132. doi:10.1177/1098214014536601.

4. Design your intervention. How can you respond?

In line with Stage 4 in the Quick Guide, the exercises in this section will help you design your intervention:

- Exercise. Selecting barriers/drivers to target in your behaviour change intervention
- Exercise. Select intervention functions for selected barriers or drivers
- Exercise. Consider possible activities within your interventions
- Exercise. Prioritizing and selecting activities
- Exercise. Considering how policy can support activities
- Exercise. Documenting the intervention development process

Exercise. Selecting barriers/drivers to target in your behaviour change intervention

Objectives

The objectives of this exercise are to:

- prioritize between identified barriers/drivers of a behaviour; and
- agree on three barriers/drivers that you wish to address with your behaviour change intervention.

Guidance

This is a group exercise that should be carried out in a workshop setting over at least 1 day.

1. Prepare an overview of barriers and drivers

- At this point, you have conducted research and analysis according to the plan developed in stage 3, and have generated a research report that identifies COM-B barriers and drivers to the problem behaviour(s) for your target group(s). Use this information to populate Table 11. Remember:
  - » people often focus on reducing barriers to behaviours, but you can also focus on strengthening drivers of behaviours; and
  - » if you have more than one target group (e.g. parents and health workers), a separate table will be required for each group.

2. Do an initial screening of the identified barriers/drivers

- Quickly go through your completed table(s) from Tool 4.1 and select the barriers/drivers that you agree (i) have an important impact on the behaviour, and (ii) can realistically be changed. You might consider using the criteria used in Tool 3.3 to assess the different options.

- If you do not agree as a group on a specific barrier/driver, it is better to keep it on the list at this stage. However, we recommend you select no more than 10 barriers/drivers.

- Any barriers or drivers you do not select at this stage will no longer be considered for the TAP project.

- If you have more than one target group (e.g. parents and health workers), then repeat this step for each group.

3. Discuss selected barriers/drivers in-depth and rate them

- Use Table 12 from Tool 4.2 to rate each of the selected barriers/drivers. This time, take your time to discuss each of them in depth.

- Use the following criteria.
  - » Need/urgency – how important is it to address this barrier or driver?
  - » Feasibility – how realistic and practically possible is it to address this barrier/driver?
  - » Evidence – do you know enough about this barrier/driver to develop interventions (e.g. from formative research, your situational analysis and other insights)?

- You can use the scheme most convenient for you to rate barriers/drivers. Common schemes include using colour coding (red = low, amber = medium, green = high) or numbers from 1 (low) to 5 (high). The important thing is to keep a record of your decisions and reasons for decisions.

- You may want to work in small groups to do the exercise and then come together to discuss your ratings and agree which barriers/drivers to select.

- At this point, you may also decide that you need more information to complete this exercise (e.g. you may need to talk to some key stakeholders about feasibility or do more research to have more evidence by speaking to a small number of people).

4. Use your rating to select which barriers/drivers to address

- At the end of the exercise, create a final version of Table 11 including only the barriers/drivers you have selected for your TAP project.

- How many barriers/drivers you select will depend on the resources available for the intervention.

- Remember, some of the barriers or drivers can be addressed in the same intervention – for example, training could target a lack of knowledge (psychological capability) and negative attitudes (reflective motivation).

Tool 4.1. Summary of findings organized by COM-B factors

This is a template with one example. More rows can be added as needed under each COM-B barrier or driver.

Table 11. Template for summarizing findings by COM-B factors

COM-B Barrier/ driver	Barriers	Drivers
Physical capability		
Psychological capability	*Health workers do not get enough information on X, Y, Z via the university curriculum.*	*Some individual health workers access information on X, Y, Z through the Ministry of Health website.*
Physical opportunity		
Social opportunity		
Reflective motivation		
Automatic motivation		

Tool 4.2. Selecting barriers/drivers

Table 12 is a template with one example. More rows should be added as needed.

Table 12. Template for selecting barriers/drivers

Barrier/driver	COM-B factor	Need /urgency	Feasibility	Strength of evidence
Lack of information on X, Y, Z in curriculum	*Psychological capability*	*Important as X, Y, Z information is crucial to fight AMR in country*	*Feasible – the national curriculum can be easily amended to include information and training on X, Y, Z.*	*International studies in situation analysis highlighted this problem, as did findings of formative research in Stage 3.*
Selected barriers/drivers and associated COM-B factor(s):				

Exercise. Select intervention functions for selected barriers or drivers

Objectives

- Identify the intervention functions relevant to selected barriers/drivers.

Guidance

1. Review possible intervention functions

- Take a look at Tools 4.3–4.4 below to familiarize yourself with the full range of possible intervention functions that you can use, and how intervention functions are linked to different COM-B factors.
- Allow team members some time to read through descriptions and clarify any questions as they arise.

- In Tool 4.4, the marked boxes represent the recommended intervention functions for each COM-B factor. For example, if you have identified a psychological capability barrier, a relevant intervention function would be training. Remember, not all suggested intervention functions need to be used to address the specific COM-B factor. You can decide which is best suited for your context.

2. Link your selected barriers/drivers with intervention functions

In Exercise *Selecting barriers/drivers to target in your behaviour change intervention*, you already identified barriers/drivers associated with specific COM-B factors. This step will help you to start deciding how best to address them.

- Use Tool 4.4 to identify which intervention functions are recommended for the COM-B factor(s) associated with the selected barriers or drivers.

- Complete Table 15 in Tool 4.5 to link selected barriers/drivers with their COM-B factors and the relevant intervention functions. This will provide an overview of the possible intervention functions for the barriers/drivers identified in Exercise *Selecting barriers/drivers to target in your behaviour change intervention*.

Tool 4.3. List of intervention functions, with definitions and examples

Table 13 provides definitions and examples of intervention functions you should familiarize yourself with.

Table 13. Intervention functions with definitions and examples

Intervention function	Definition	Examples of activities
Information/ education	Increasing knowledge or understanding	Poster campaign on the risks of HAIs Facts on the safety and effectiveness of hand hygiene, provided on employee payslips Leaflets containing Information on infection control measures (i.e. United Kingdom's National Health Service's Catch it, Kill it, Bin it)
Persuasion	Using communication to induce positive or negative feelings or stimulate action	Poster campaign using loss/gain framing messaging to influence feelings and action (i.e. how would you feel if someone in your family could not be treated with antibiotics when critically ill?)
Incentivization	Creating an expectation of a reward	Incentives can be modest, such as free movie tickets or meal tokens Additional annual leave or small salary increment (which could move into coercion depending on the size of the incentive)
Coercion	Creating an expectation of punishment or cost	Strict regulations and enforcement of antibiotic consumption at primary, secondary and tertiary healthcare levels
Training	Imparting skills	Training microbiologists in doing antimicrobial susceptibility training Training nurses in correctly taking blood samples for culturing

Table 13 cont'd

Intervention function	Definition	Examples of activities
Restriction	Using rules to reduce the opportunity to engage in the target behaviour (or to increase the target behaviour by reducing the opportunity to engage in competing behaviours)	Health staff that have not complied with hand hygiene guidelines will not be allowed in wards
Environmental restructuring	Changing the physical or social context	Provide messaging prompts and visible information posters to indicate where soap and hand gel are available
Modelling	Providing an example for people to aspire to or imitate	Identify key influencers among health workers and use them as ambassadors to promote behaviours that reduce AMR

Tool 4.4. Matrix linking COM-B factors with intervention functions

The matrix provided in Table 14 below illustrates how different intervention functions are linked to various COM-B factors.

Table 14. COM-B factors and their related intervention functions

Intervention function	COM-B Factors					
	Physical capability	Psychological capability	Physical opportunity	Social opportunity	Automatic motivation	Reflective motivation
Information/ Education		X				X
Persuasion					X	X
Incentivisation					X	X
Coercion					X	X
Training	X	X	X		X	
Restriction			X	X		
Environmental restructuring			X	X	X	
Modelling				X	X	

Tool 4.5. Overview of barriers/drivers with COM-B factors and intervention functions

This is a template with one example. More rows should be added as needed.

Table 15. Template for linking selected barriers/drivers with COM-B factors and intervention functions

Barrier/driver	COM-B Factor	Recommended intervention functions
Lack of information on X, Y, Z in curriculum	*Psychological capability*	*Information/education, training*

Exercise. Consider possible activities within your interventions

Objective

- To initiate discussion on possible activities related to the selected drivers/barriers.

Guidance

1. For each barrier/driver, consider what activities your intervention might include

Think freely and expansively at this stage. Activities will be prioritized in Exercise *Prioritizing and selecting activities*. This exercise is only for initial discussions, and activities can be revised and refined later.

Complete the first three columns of Table 16 in Tool 4.6. For column 3, discuss what the possible activities might be.

These activities will be informed by the intervention functions selected in Exercise *Select intervention functions for selected barriers or drivers*, but there may be additional activities the group decides to include based on other insights.

Examples in Tool 4.3 can be referred to for inspiration.

2. Decide on the content and delivery for each activity

- Here are some useful questions to prompt your thinking.
  - What is the content of the activity?
  - When will the activity be delivered?
  - Where will the activity be delivered?
  - Who will deliver the activity?

- Answer these questions for each activity and input them into the relevant column in Table 16.

- You may first want to work in small groups and then come together to discuss ideas and decide on content and delivery.

Table 16 below has been provided as a template with some examples that you could use for this exercise.

Tool 4.6. Details of activities

This is a template with one example. More rows should be added as needed.

Table 16. Template for considering possible intervention activities

Barrier/ driver	Intervention function (identified in exercise *Select intervention functions for selected barriers or drivers*)	Activity	What? (content)	When? (delivery)	Where? (delivery)	Who? (responsibility)
Lack of health worker knowledge	*Education*	*Revise curriculum*	*More information on X, Y, Z for graduate/ post-graduate students*	*Dates when curriculum should be changed, approved, and implemented*	*Institutions that will use the revised curriculum*	*Persons responsible for developing new content, approving content, and ensuring incorporation/ publication/ etc.*
Lack of health worker knowledge	*Training*	*Deliver training module to health workers*	*Develop training content* *Manual for delivery* *Presentations and handouts*	*Dates when material needs to be developed* *Time needed for printing materials* *Time needed for organizing trainings* *Dates to deliver trainings*	*Location where materials will be developed* *Location for printing* *Location where trainings will be delivered*	*Persons responsible for developing trainings, approving trainings, printing materials, and coordinating and/or delivering trainings*

Exercise. Prioritizing and selecting activities

Objectives

- The objectives of this exercise are to discuss and prioritize activities using five key criteria.

Guidance

1. Rate each activity

- Rate each activity from Exercise *Consider possible activities within your interventions* using the following criteria (from low to high).
  1. How acceptable is the activity? How appropriate is it for the selected target group and other stakeholders involved?
  2. How practical is the activity? How easily can it be delivered to the target group?
  3. How effective is the activity? How well does it work in a real-world context?
  4. How cost-effective is the activity? How well does it work in a real-world setting in relation to the activity cost?
  5. How affordable is the activity? Can be it delivered to the target group within budget?
  6. What side effects might there be from the activity? Positive and negative?
  7. How equitable is the activity? Will it increase or decrease differences between disadvantaged sectors of society?

- More information might be needed to address these criteria. A suggested approach includes the following steps.
  - » Find out what scientific literature and case reports exist for similar interventions.
  - » Set up a working group to review evidence and form a collective judgement ensuring transparency.
  - » Set up consultations with stakeholders.
  - » Consider additional research or data needs.
  - » Drop any interventions that that do not meet or rank too low on any one criterion.

- It may be best to do this exercise in small groups that then come together to discuss ratings and agree on which activities to select.

- Remember, if there is more than one target group, this exercise should be repeated for each group.

2. Prioritize activities

- Complete Table 17 using ratings from the first step.

- You can colour code the ratings (red = low, amber = medium, green = high) or score them from 1 (low) to 5 (high).

- Discuss and agree on a few activities which you consider to be affordable, practicable, effective, cost-effective, **and** acceptable.

- Remember, one activity might be able to address more than one barrier/driver.

- How many activities you select will depend on the resources available.

- It is advised to select 1–2 activities. Later, if this is deemed to be too many/few, this exercise can be repeated to reduce/increase the number of activities selected.

Tool 4.7. Prioritizing activities

This is a template. More rows should be added as needed. Score each criterion or colour code.

Table 17. Template for prioritizing activities

Activities from Exercise *Prioritizing and selecting activities*	Acceptable	Practical	Effective	Cost-effective	Affordable	Equitable
Selected activities:						

Exercise. Considering how policy can support activities

Objective

- The objective of this exercise is to identify relevant policy actions to support selected activities.

Guidance

1. Review possible policy actions

A policy action is a measure, often initiated by authorities, which supports and enacts interventions. Take a look at Table 18 under Tool 4.8 to see the full range of possible policy actions available. Allow team members time to read through and understand.

2. Link selected activities with policy actions

Using Tool 4.9, go through the activities selected from Exercise *Prioritizing and selecting activities* and discuss which policy actions would be essential or helpful to support each activity (e.g. guidelines, fiscal measures, regulations, environmental measures).

Identify the stakeholders who need to be engaged to make this possible, and how they will need to be involved.

Complete Table 19 in Tool 4.9 as an overview of the selected activities and related policy actions.

Tool 4.8. Definitions of policy actions

Table 18. Definitions of policy actions

Policy actions	Definition
Guidelines	Creating documents that recommend or mandate practice. This includes all changes to service provision
Fiscal measures	Using the tax system to reduce or increase the financial cost

Table 18 cont'd

Policy actions	Definition
Regulation	Establishing rules or principles of behaviour or practice
Legislation	Making or changing laws
Environmental/ social planning	Designing and/or controlling the physical or social environment
Service provision	Adding new services to the existing service delivery

Tool 4.9. Overview of activities and policy actions

This is a template. More rows should be added as needed.

Table 19. Template for an overview of the selected activities and related policy actions

Activity	Policy action(s)	Details *(Why is it relevant?)* *(Who to involve?)* *(How to involve them?)*

Exercise. Documenting the intervention development process

Objective

- The objective of this exercise is to create an overview of the decisions made in Exercises *Selecting barriers/drivers to target in your behaviour change intervention–Considering how policy can support activities* for reporting and for documentation. This will also be used later for evaluation purposes.

The steps of the exercise

- Complete Tool 4.10 using Table 20, summarizing the outcomes of exercises *Selecting barriers/drivers to target in your behaviour change intervention–Considering how policy can support activities*.
- You will need a separate table for each target group, and each target behaviour.

Tool 4.10. Summary of exercises *Selecting barriers/drivers to target in your behaviour change intervention–Considering how policy can support activities*

Table 20. Template to provide summary of activity outputs determining activities for selected barriers/drivers

Target group				
Behaviour				
Selected barriers/drivers (Exercise *Selecting barriers/drivers to target in your behaviour change intervention*)	Associated COM-B factor (Exercise *Selecting barriers/drivers to target in your behaviour change intervention*)	Selected intervention functions (Exercise *Select intervention functions for selected barriers or drivers*)	Selected activities (Exercises *Consider possible activities within your interventions* and *Prioritizing and selecting activities*)	Selected policy actions (Exercise *Considering how policy can support activities*)

5. Implement and evaluate. Start doing!

The exercise in this section will help you design your intervention:

- Exercise. Considering process and impact targets/indicators
  - » Step 1. Select process indicators and targets (for activities and policy actions)
  - » Step 2. Select intermediate impact indicators
  - » Step 3. Select long-term impact and equity indicators

Exercise. Considering process and impact targets/indicators

Objective

- The objective of this exercise is to select process indicators/targets and impact indicators/targets (intermediate, long-term) for the intervention.

Guidance

1. Select process indicators and targets (for activities and policy actions)

- The indicators that are relevant for the selected activities/policy actions depend on the nature of each activity and policy action.
- At a minimum, select indicators which will help to indicate whether the activities and policy actions were conducted or not.
- If resources are available, it may be relevant to add more indicators (for some or all activities or policy actions) that can help measure:
  - » the quality of the activities;
  - » the acceptability of the activities for those targeted; and
  - » the contextual factors affecting implementation (e.g. political situation, existing legislation, organizational norms, pre-existing skill levels of staff).
- After determining the indicators, targets must be set for each activity/policy action. Targets are the change you wish to see for each measure.
- Finally, discuss as a group how data will be collected to evaluate the change, who will collect data, and when.
- Tool 5.1 provides an example of how this information can be recorded.

2. Select intermediate impact indicators

- Intermediate indicators allow you to explore whether any change has occurred relating to the key barriers/drivers identified.
- They provide some information on the short-term impact of the intervention.
- For example, if capability (e.g. knowledge of AMR) was identified as a key barrier, improving this knowledge is an important intermediate target.
- At a minimum, select one indicator for each of the selected barriers.
- If feasible, a baseline should be included.
- After identifying indicators, agree on targets.
- Finally, discuss how data will be collected that will allow you to evaluate the change, who will do it, and when. To assess the intermediate impact (capability, opportunity, motivation), data may include, among others:
  - participant surveys, questionnaires and tests
  - participant interviews.
- Tool 5.2 provides an example of how this information can be recorded.

3. Select long-term impact and equity indicators

- Long-term impact indicators allow you to see if you have achieved your overall intervention goal. Data collected can document change related to:
  - the barriers identified, relating to the COM-B factors (intermediate impact); and
  - the overall goal set for the TAP project, relating to the wider AMR problem (long-term impact).
- It may take several years to see changes in the overall goal, and this will be influenced by other aspects outside the intervention.
- It is important to build in an assessment of equity (to ensure that the intervention does not negatively impact health equity). Among the TAP working group and other stakeholders, discuss which social determinants of health could be measured in the intervention.
- At a minimum, select one indicator for the long-term impact.
- A baseline should also be included.
- Agree on a target after selecting an indicator.
- Finally, discuss how data will be collected that will allow you to evaluate the change, who will do it, and when. To assess the long-term impact, data may include, among others:
  - monitoring data
  - surveillance data
  - data reported from health facilities.
- Tool 5.3 provides an example of how this information can be recorded.

Tool 5.1. Example of recording process indicators and targets

Table 21 is a template with an example for the activity, training of health workers, which has three indicators identified. You might identify more or fewer indicators for activities you select. Table 21 can be completed for each activity/policy action that you include.

Table 21. Recording process indicators and targets

Activity: Training of health workers				
Indicators	**Targets**	**Data sources**	**Data collection**	**Timing**
Number of cascade trainings	>5 cascade trainings conducted	Training registration lists	Registration lists sent to project coordinator	At end of each training
Number of facilities receiving training	>50 trainings conducted in facilities	Training registration lists	Registration lists sent to project coordinator	At end of each training
Number of quality measures approved per training	>90% of quality measures approved for each training observed	Quality observation checklist, conducted for 10% of trainings	Quality check lists sent to project coordinator	At end of each training

Tool 5.2. Example of recording intermediate impact indicator and target

Table 22 can be completed for each COM-B barrier/driver to consider intermediate indicators and targets.

Table 22. Recording intermediate impact indicators and targets

Impact	Intermediate
COM-B barrier/driver	
Indicator	
Baseline	
Target	
Data sources	
Data collection	
Timing	

Tool 5.3. Example of recording long-term impact and equity indicator and target

Table 23 can be completed for each COM-B barrier/driver to consider long-term indicators and targets.

Table 23. Recording long-term impact indicators and targets

Impact	Long-term
Aim	
Indicator	
Baseline	
Target	
Data sources	
Data collection	
Timing	

The WHO Regional Office for Europe

The World Health Organization (WHO) is a specialized agency of the United Nations created in 1948 with the primary responsibility for international health matters and public health. The WHO Regional Office for Europe is one of six regional offices throughout the world, each with its own programme geared to the particular health conditions of the countries it serves.

Member States

Albania
Andorra
Armenia
Austria
Azerbaijan
Belarus
Belgium
Bosnia and Herzegovina
Bulgaria
Croatia
Cyprus
Czechia
Denmark
Estonia
Finland
France
Georgia
Germany
Greece
Hungary
Iceland
Ireland
Israel
Italy
Kazakhstan
Kyrgyzstan
Latvia
Lithuania
Luxembourg
Malta
Monaco
Montenegro
Netherlands
North Macedonia
Norway
Poland
Portugal
Republic of Moldova
Romania
Russian Federation
San Marino
Serbia
Slovakia
Slovenia
Spain
Sweden
Switzerland
Tajikistan
Turkey
Turkmenistan
Ukraine
United Kingdom
Uzbekistan

World Health Organization
Regional Office for Europe

UN City, Marmorvej 51,
DK-2100 Copenhagen Ø, Denmark
Tel.: +45 45 33 70 00 Fax: +45 45 33 70 01
Email: eurocontact@who.int
Website: www.euro.who.int

ISBN 978-92-890-5557-4