

THE TAP MANUAL

An in-depth guide for planning and implementing
Tailoring **A**ntimicrobial Resistance **P**rogrammes



THE TAP MANUAL

An in-depth guide for planning and implementing
Tailoring **A**ntimicrobial Resistance **P**rogrammes

Abstract

The rise and spread of antimicrobial resistance (AMR) is affected by multiple factors, making it a difficult and complicated issue to address locally and globally. The WHO Regional Office for Europe has developed this Tailoring Antimicrobial Resistance Programmes (TAP) Manual to assist Member States with using a behavioural insights approach to identify appropriate and feasible interventions to begin tackling AMR in their contexts. Readers are first provided with guidance on using the Manual and information on the background and theoretical basis of the TAP process. The second part of the Manual leads readers through the five stages of the TAP process, from inception to intervention delivery and evaluation, providing instructive examples and exercises.

Two separate publications, a TAP Quick Guide and Toolbox, have also been developed on the basis of this Manual. These documents distil information in the TAP Manual, the former acting as a user-friendly reference on the five stages of the TAP process and the latter providing exercises and tools to assist with each stage of the process. The TAP Manual, Quick Guide and Toolbox have been inspired by the WHO Regional Office for Europe Tailoring Immunization Programmes (TIP) approach, which supports countries in achieving high and equitable vaccination uptake.

Keywords

ANTIMICROBIAL RESISTANCE
INTERVENTION DEVELOPMENT
BEHAVIORAL INSIGHTS RESEARCH
QUALITATIVE RESEARCH

ISBN: 978-92-890-5823-0

© World Health Organization 2022

Some rights reserved. This work is available under the Creative Commons Attribution-NonCommercial-ShareAlike 3.0 IGO licence (CC BY-NC-SA 3.0 IGO; <https://creativecommons.org/licenses/by-nc-sa/3.0/igo>).

Under the terms of this licence, you may copy, redistribute and adapt the work for non-commercial purposes, provided the work is appropriately cited, as indicated below. In any use of this work, there should be no suggestion that WHO endorses any specific organization, products or services. The use of the WHO logo is not permitted. If you adapt the work, then you must license your work under the same or equivalent Creative Commons licence. If you create a translation of this work, you should add the following disclaimer along with the suggested citation: "This translation was not created by the World Health Organization (WHO). WHO is not responsible for the content or accuracy of this translation. The original English edition shall be the binding and authentic edition: The TAP manual: an in-depth guide for planning and implementing tailoring antimicrobial resistance programmes. Copenhagen: WHO Regional Office for Europe; 2022".

Any mediation relating to disputes arising under the licence shall be conducted in accordance with the mediation rules of the World Intellectual Property Organization. (<http://www.wipo.int/amc/en/mediation/rules/>).

Suggested citation. The TAP manual: an in-depth guide for planning and implementing tailoring antimicrobial resistance programmes. Copenhagen: WHO Regional Office for Europe; 2022. Licence: CC BY-NC-SA 3.0 IGO.

Cataloguing-in-Publication (CIP) data. CIP data are available at <http://apps.who.int/iris>.

Sales, rights and licensing. To purchase WHO publications, see <http://apps.who.int/bookorders>. To submit requests for commercial use and queries on rights and licensing, see <http://www.who.int/about/licensing>.





Third-party materials. If you wish to reuse material from this work that is attributed to a third party, such as tables, figures or images, it is your responsibility to determine whether permission is needed for that reuse and to obtain permission from the copyright holder. The risk of claims resulting from infringement of any third-party-owned component in the work rests solely with the user.

General disclaimers. The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of WHO concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.

The mention of specific companies or of certain manufacturers' products does not imply that they are endorsed or recommended by WHO in preference to others of a similar nature that are not mentioned. Errors and omissions excepted, the names of proprietary products are distinguished by initial capital letters.

All reasonable precautions have been taken by WHO to verify the information contained in this publication. However, the published material is being distributed without warranty of any kind, either expressed or implied. The responsibility for the interpretation and use of the material lies with the reader. In no event shall WHO be liable for damages arising from its use.

Contents

Acknowledgements	v
Abbreviations	vi
Introduction.....	1
About the TAP Manual.....	1
Background.....	1
What is TAP?.....	2
TAP values and principles.....	2
TAP theoretical model.....	3
COM-B: the key factors influencing behaviour.....	4
The TAP process	8
 Stage 1. Engage: are you ready?.....	12
Thinking about AMR context.....	12
Considering available resources.....	13
Developing a plan	14
Output: TAP assesment report	20
 Stage 2. Analyse: what do we know already?.....	22
Situation analysis: review of data and existing studies	22
Output: situation analysis report.....	28
 Stage 3. Prioritize: what is the priority behaviour to address?	30
Presenting findings and identifying target behaviour(s)/population(s).....	31
Planning research	33
Conducting additional research.....	35
Output: reporting research.....	40
Exercise 1. Defining the problem in behavioural terms	41
Exercise 2. Mapping of behaviours.....	42
Exercise 3. Prioritize target behaviours and identify potential target groups	45
Exercise 4. Developing research objectives using COM-B.....	46
 Stage 4. Design: build your strategy and intervention.....	48
Designing an intervention	48
Making an intervention plan.....	51
Output: intervention plan with M&E framework.....	56
Exercise 5. Selecting barriers/drivers to target in your behaviour change intervention.....	57
Exercise 6. Identify potential intervention functions for selected barriers or drivers.....	60

Exercise 7. Consider possible activities within your interventions.....	62
Exercise 8. Prioritizing and selecting activities.....	65
Exercise 9. Considering how policy can support activities.....	67
Exercise 10. Documenting the intervention development process	68
Exercise 11. Considering process and impact targets/indicators	69



Stage 5. Do it: implement and evaluate..... 72

Implement planned activities and policy actions.....	73
Monitor and evaluate	73
Output: intervention reporting.....	74

References..... 76



Acknowledgements

The Tailoring Antimicrobial Resistance Programmes (TAP) Manual is inspired by the Tailoring Immunization Programmes (TIP) guide and was developed at the WHO Regional Office for Europe to support countries in using a behavioural insights approach to identify appropriate and feasible interventions to begin tackling antimicrobial resistance in their contexts. The TAP Manual is accompanied by a user-friendly TAP Quick Guide and TAP Toolbox.

This Manual was prepared by Marie Louise Wright (formerly WHO Regional Office for Europe) and Sahil Warsi (WHO Regional Office for Europe) under the technical guidance of Ketevan Kandelaki (WHO Regional Office for Europe) and Danilo Lo Fo Wong (WHO Regional Office for Europe).

Input and review were provided by Siff Malue Nielsen (WHO Regional Office for Europe), Katrine Bach Habersaat (WHO Regional Office for Europe), Nils Fietje (WHO Regional Office for Europe) and Masse Helstrom (WHO Regional Office for Europe).

Significant contributions for the technical concept were made by Karen Mah (WHO headquarters), Ponnu Padiyara (WHO headquarters), Chantal den Daas (National Institute for Public Health and the Environment, the Netherlands) 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

ABR	antibiotic resistance
AMR	antimicrobial resistance
BCW	Behaviour Change Wheel (model)
CAESAR	Central Asian and European Surveillance of Antimicrobial Resistance
COM-B	Capability, Opportunity and Motivation for Behaviour change (framework)
EARS-NET	European Antimicrobial Resistance Surveillance Network
FGDs	focus group discussions
GPs	general practitioners
HAIs	health-care-acquired infections
M&E	monitoring and evaluation
SWOT	strengths, weaknesses, opportunities and threats
TAP	Tailoring Antimicrobial Resistance Programmes
TIP	Tailoring Immunization Programmes



Introduction

About the TAP Manual

This Tailoring Antimicrobial Resistance Programmes (TAP) Manual is intended to be used by public health professionals working on antimicrobial resistance (AMR) and anyone involved in designing and planning a health promotion activity or health intervention to reduce AMR. The Manual will also be useful to policy-makers and decision-makers.

This Manual has two parts. The first introduces readers to the behaviour-related drivers of AMR and provides an overview of the TAP model, defining the values and principles on which the TAP model is built and describing its theoretical foundation. The second part provides a detailed step-by-step walkthrough of the TAP process, from capacity assessment (Stage 1) to the implementation and evaluation of the TAP behaviour change intervention (Stage 5).

It is recommended that the Manual be read and used from beginning to end, but specific elements can also be used as a reference source depending on needs and how far individual projects have progressed. A TAP Quick Guide and TAP Toolbox that build on the Manual have also been developed. These documents serve as a quick reference to information presented here and provide additional guidance. Corresponding exercises and tools in the Quick Guide and Toolbox are referenced throughout the Manual.

In addition to the figures and tables in the TAP Manual, two types of boxes appear throughout, each providing readers with relevant information:

- **inspiration boxes:** these provide inspiration on how to carry out a suggested activity or suggest what to consider in planning and implementing steps in the process; and
- **example boxes:** these give concrete examples of how other TAP projects have approached a given step or activity.

TAP is a work in progress. As it is implemented in more countries and contexts, feedback on how this Manual and the process as a whole can be made more effective, more efficient and easier to implement is welcome.

Feedback and comments can be supplied directly to: euantimicrobials@who.int; or eupress@who.int

Background

The Manual is based on a shared behavioural insights approach called Tailoring Immunization Programmes (TIP). This approach was developed by the WHO Regional Office for Europe to support countries in achieving high and equitable vaccination uptake through understanding the barriers to vaccination among population groups with suboptimal coverage. The TIP inspired the development of the Manual.

The TAP approach is based on the belief that people's health behaviours can change, and that health goals can be reached only if health programmes achieve a genuine understanding of people's needs, perspectives and the reasons why they do not always engage in recommended behaviours. It further

assumes that health authorities will use these insights to change the way services are delivered and the means through which healthy behaviours are enabled, supported and promoted.

With regard to AMR, guidelines, restrictive measures and best practice advice are not always implemented effectively in practice. This is a key policy challenge that requires re-thinking on how AMR interventions are tailored to specific contexts. This Manual is a tool to assist researchers, policy-makers and others in bridging the practice-behaviour gap and effectively change behaviours contributing to AMR in their national and local contexts.

What is TAP?

TAP is a stepwise guide on how to design and implement a behaviour change intervention for specific target groups to contain drivers of AMR.

TAP is structured as a five-stage approach built on a set of core values and principles and supported by a peer-reviewed theoretical model. The approach has been developed as part of an overall vision of integrating people-centred research and social science methods into health programme planning and policy.

The five TAP stages are outlined in subsequent sections. While it is recommended that they be followed in order, the TAP approach is flexible and can be adjusted to contextual needs and available resources.

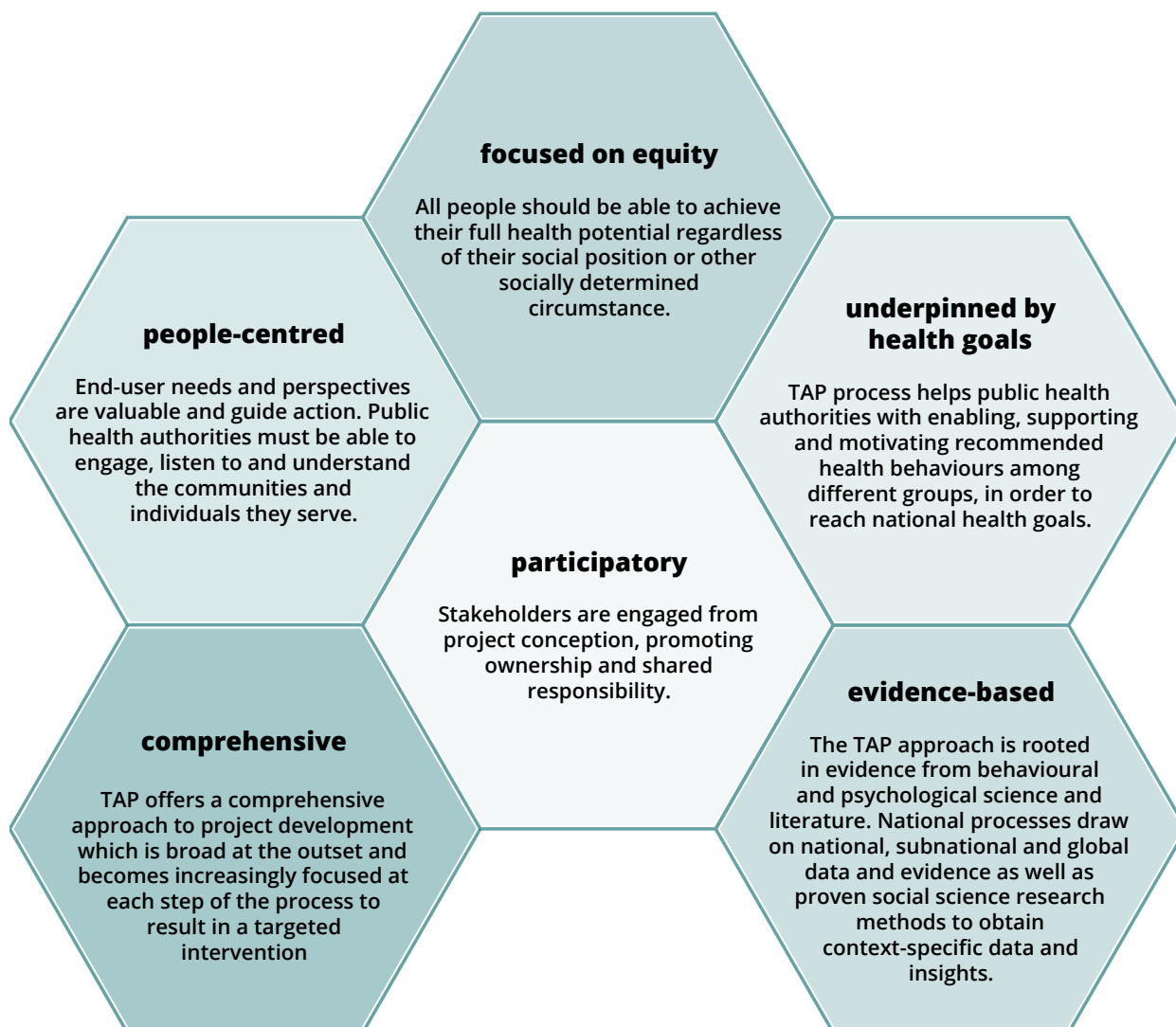
TAP is coordinated by WHO Regional Office for Europe in close collaboration with countries and national AMR experts. The TAP model currently is being piloted in multiple countries worldwide.

TAP values and principles

The interrelated set of values and principles that guide the TAP project planning and implementation process are explained in Fig. 1.



Fig. 1. TAP values and principles



Source: WHO Regional Office for Europe (1).

TAP theoretical model

The TAP process provides a systematic approach to understanding and addressing drivers of, and barriers to, AMR-related health behaviour. It is based in part on the Behaviour Change Wheel (BCW) model for understanding health behaviours in complex interventions (2). The BCW is designed to help a range of users, including practitioners and researchers, apply behaviour change theory to their work. At the core of the BCW model is the Capability, Opportunity and Motivation for Behaviour change (COM-B) framework.

The BCW/COM-B model was chosen for TAP because it takes a comprehensive approach to identifying and addressing individual and contextual drivers and barriers to AMR-related behaviours. The BCW links the COM-B factors to nine common intervention functions and seven policy categories to enable intervention development. COM-B factors, intervention design and policy categories therefore are interlinked and support and influence each other (2).

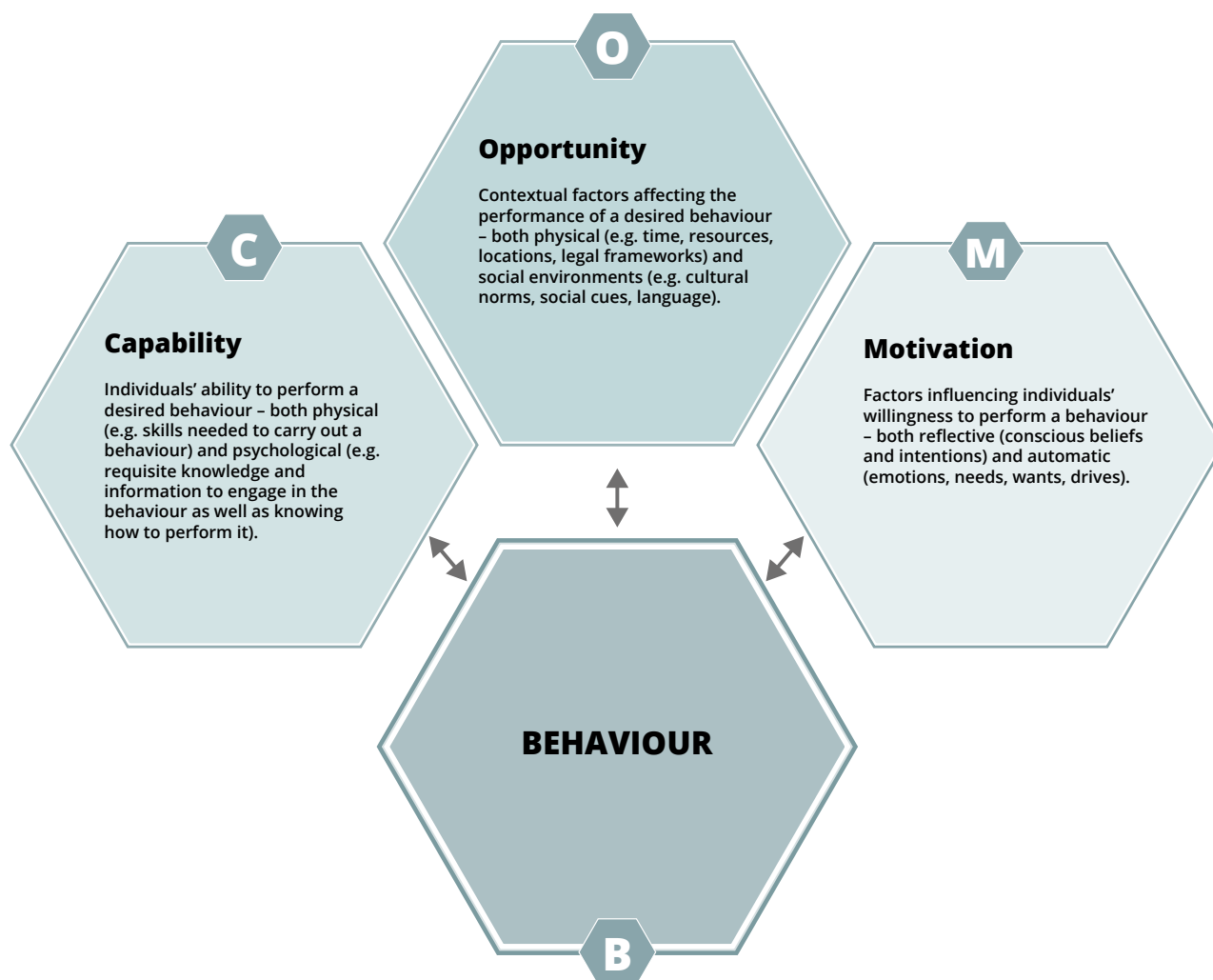
Employing the BCW model and systematically exploring the COM-B factors at different stages of the process:

- ensures a systematic and comprehensive approach to understanding public health behaviours and designing targeted interventions;
- helps avoid blind spots in the process;
- provides a structure for discussions, studies, analyses and prioritization; and
- helps establish hypothesized causal pathways that describe how specific components of an intervention will affect health behaviour and help identify effective interventions.

COM-B: the key factors influencing behaviour

COM-B highlights three factors affecting behaviour change, as illustrated in Fig. 2. Health behaviour is understood to be constituted through factors related to individual performance (capability and motivation) and factors related to contextual influences (opportunity).

Fig. 2. The COM-B factors



Source: WHO Regional Office for Europe (1).

Each of the three factors can be broken down into specific aspects to help target analysis and intervention development, as shown in Table 1.

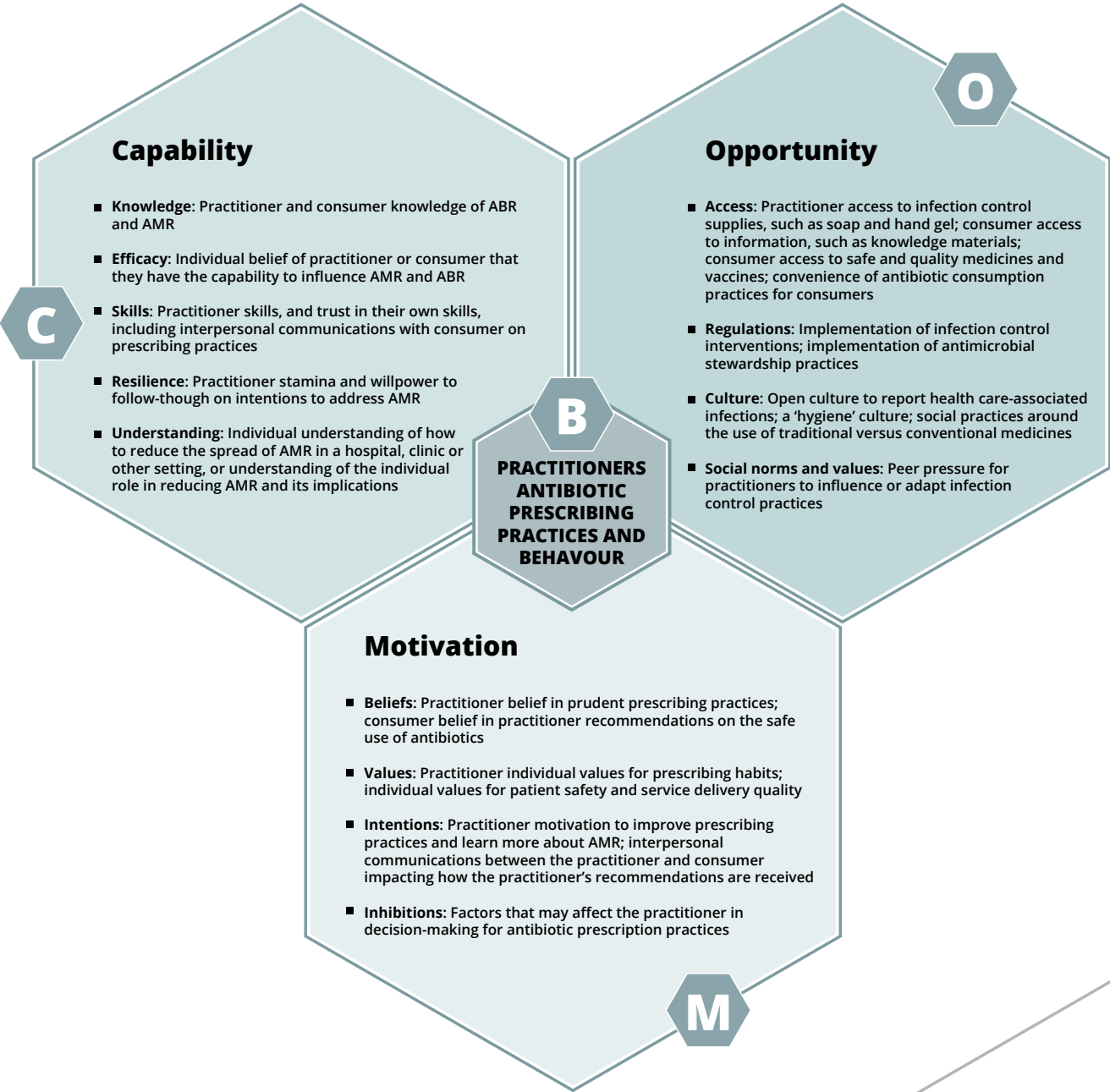
Table 1. Aspects of COM-B factors

Aspect	Description
Physical capability	Individuals' skills, strengths, stamina
Psychological capability	Individuals' knowledge, efficacy, psychological skill, mental ability
Physical opportunity	Contextual factors of access, costs, rights, affordability, regulations, environment, resources etc.
Social opportunity	Sociocultural norms, values and interpersonal dynamics
Reflective motivation	Individuals' planning, evaluations, beliefs, intentions and decision-making processes
Automatic motivation	Individuals' emotional reactions, desires, impulses, inhibitions, drives and reflex responses

COM-B factors can be barriers to, as well as drivers of, performance of a health behaviour. As you go through the stages of the TAP process, you will identify which COM-B factors are relevant to the behaviour(s) and context(s) you have selected. Fig. 3 presents some considerations when thinking through practitioners' antibiotic prescribing practices and behaviour. This is just an example, and other considerations could be added related to aspects in Table 1.



Fig. 3. Example considerations in thinking through COM-B factors for AMR



ABR: antibiotic resistance.
 Source: WHO Regional Office for Europe (1).





The TAP process

TAP is a five-stage systematic approach to designing and implementing a behaviour change intervention (Table 2 and Fig. 4). This section presents objectives, methods and outputs for each stage. Remember, the stages can be conducted in order, but consider your contextual needs and available resources when deciding where you might need to start, which stages to include, or if stages may need to be repeated.

Table 2. The TAP five-stage systematic approach

Stage	Description
Stage 1. Engage	The initial stage involves undertaking a capacity assessment to determine the feasibility, scope and scale of a proposed TAP project. In this stage, a TAP working group is established. The TAP working group is responsible for project oversight, engaging stakeholders and preparing a project plan.
Stage 2. Analyse	A situation analysis that explores a proposed AMR topic in depth by drawing on available literature, reports, input from stakeholder discussions and other relevant data is conducted. This stage is integral to the process even when TAP working group members or advisors have a deep understanding of the context.
Stage 3. Prioritize	To bridge gaps in evidence and further prioritize and plan an intervention, additional qualitative/quantitative research is conducted with a target population(s). This research is focused on understanding drivers and barriers to performing a specific behaviour(s) within a target population(s).
Stage 4. Design	Data gathered from the previous two stages are used systematically to design and plan a behaviour change intervention.
Stage 5. Do it	After designing the intervention, it is now time for it to be implemented, monitored and evaluated. Depending on needs and capacity, the intervention is adjusted and sometimes scaled-up.

Fig. 4 . TAP process






1

The TAP process





Stage 1. Engage: are you ready?

The objectives of Stage 1 are to:

- bring people together to discuss whether TAP is the right approach for the behavioural challenge you wish to explore;
- build support among stakeholders, confirming the timing is right and that necessary human and financial resources are available to move forward; and
- build the programme structures, teams and momentum for undertaking the TAP process.

The working methods for Stage 1 are:

- meetings and internal discussions.

The key output from Stage 1 is:

- the development of a TAP assessment report and process plan.

Before the initiation of a TAP project, you will need to consider its focus and whether the necessary financial and human resources are available. If undertaking a TAP project is considered feasible, the next step is to prepare a TAP process plan, including details on the proposed scope, timeline and budget of the TAP project.

These steps can be taken through meetings and internal discussions between the host organization, such as the ministry of health, the WHO country office, the WHO Regional Office for Europe and other relevant stakeholders expected to take part in TAP coordination.

Thinking about AMR context

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

- at national and subnational levels, to generate a general understanding of trends in AMR; or
- within a particular area of the country or in a subpopulation with a high AMR risk or priority, to examine issues as they relate to that population.

Based on this review, you can:

- conduct a preliminary analysis based on identified challenges around AMR;
- consider the strengths, weaknesses, opportunities and threats (SWOT) in current practices on AMR at national or subnational levels;
- identify important stakeholders and potential interventions;
- determine key challenges in reducing the spread and pace of AMR and converting these challenges into strategic priorities; and
- recognize where the gaps in information about the problem or issue lie and plan for additional research that can be applied to the intervention.

Further guidance on considering the most important AMR challenges to address is provided in tools 1.1 and 1.2 of the TAP Toolbox (3).

Considering available resources

A complete TAP process requires **investment in time, human resources and funds**. It therefore is essential to plan well in advance and complete a thorough assessment of implementation context and available resources. Inspiration Box 1 provides some suggestions for issues to consider in a capacity assessment, and further guidance is available in tools 1.2 and 1.3 of the TAP Toolbox.

The more comprehensive the capacity assessment and planning before the TAP project starts, the less time will be lost later, when resources and expectations might need readjustment.

Inspiration Box 1. Things to consider in a TAP capacity assessment

- **Context**

- » Is the topic relevant or urgent to the context in which it is proposed?
- » What is the expected scope of TAP before/after potential scale-up?
- » Who are the stakeholders? Have they been identified, or do they need to be mapped?
- » Is there political momentum and support? How will it be maintained/created?

- **Resources required**

When thinking about resources, consider the availability of human, financial, physical or material, and intellectual resources. You could ask yourself about the following.

People: who is needed for day-to-day management, specialized expertise (for instance, on the topic, social and behavioural science, policy or health promotion) and conducting research?

Financial: what are the estimated costs? Is funding available? Are additional funds needed?

Time: how many hours are available for support from the WHO country office, the Regional Office, the TAP working group, specialized consultants and national stakeholders?



Developing a plan

Once it is agreed to initiate a TAP project, the process has to be planned in detail by producing a TAP process plan. The plan includes the estimated scope of the TAP project, a timeline, a budget, funding options available and key roles and responsibilities. Monitoring and evaluation (M&E), especially what process indicators will be used as milestones for stages 2–4, should also be considered in the planning. In addition to writing out the process plan, a TAP working group should be formed before moving on to Stage 2.

Remember, it is better to use available resources and capacity efficiently rather than plan something that is not feasible, replicable or able to be scaled up. A well planned TAP project is targeted with a well defined scope. Starting small and then scaling-up is the recommended approach.

Organization – key stakeholders and working group

The TAP process usually is coordinated by a TAP working group consisting of representatives from the ministry of health, leading universities and/or think-tanks, public health organizations and a WHO consultant. The TAP working group leads the planning and implementation of the TAP project from start to finish and appoints a lead from within the group who is responsible for overall coordination and communication with WHO and key stakeholders.

A TAP advisory group can also be established to support and inform the TAP process through providing expert consultation and offering valuable insights and perspectives on a given health behaviour. This group can consist of health worker representatives, community leaders, opinion leaders or other relevant national experts. Once a target population is confirmed, the advisory group can be expanded to include representatives from this group.

Expectations for the TAP working group and advisory groups should be clarified by establishing terms of reference and getting ministerial approval if needed.

Higher-level decision-makers and managers can be engaged throughout the TAP process where relevant and feasible. This group should be kept informed on the TAP progress and expected next steps. Fig. 5 provides a suggested model of TAP organization and governance.



Fig. 5. Suggested TAP governance structure and stakeholder engagement



Source: WHO Regional Office for Europe (3).

Participation of all relevant stakeholders is a core value of TAP and is ensured primarily through stakeholder workshops, discussions and group work. The relevant stakeholders and how best to engage them depends on the context. Some will actively be engaged in the core planning group, while others will be consulted only once or twice. Inspiration Box 2 provides some ideas about which stakeholders to consult and engage. Additional guidance on identifying stakeholders and planning their involvement is given in tools 1.3–1.5 of the TAP Toolbox.

Inspiration Box 2. Suggested stakeholders to consult

Relevant stakeholders include those with expertise and experience within relevant areas (Table 3).

Table 3. 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 (such as 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

Source: WHO Regional Office for Europe (3).

Timeline

The total time it will take to design and implement a TAP project will vary across contexts. Exactly how much time you need will depend on the issue selected, your context, and available resources and evidence. While the initial TAP phases can be fairly quick to plan and conduct, both the initial planning and implementation phases can take longer if research is required. You might also choose not to do each stage depending on the type of project or information available. Remember, the TAP is a flexible process, so it may make sense to start with a shorter, smaller, targeted project that could then be scaled-up into something bigger.

With dedicated staff, available data and funding, an intensive TAP project can be planned in a matter of weeks. **It is important to be realistic about the timeline, as implementing a TAP project can take longer than expected.** Table 4 provides estimated timeframes for planning and implementing different stages of a TAP project.



Table 4. Estimate planning and implementation timeframe for each TAP stage

Stage	Estimated time (months)
Engage – are you ready?	2–6
Analyse – what do you know already?	3–12
Prioritize – what is the priority behaviour and the drivers and barriers we need to address?	3–12
Design – build your strategy and interventions	1–6
Do it – implement and evaluate	6–18

Source: WHO Regional Office for Europe (1).

Budget

The cost of a TAP project also depends on context. When assessing whether necessary financial resources are available, the TAP working group should consider the overall TAP process from Stage 1 to Stage 5.

At the beginning of the TAP process, it might not be possible to know precise costs of expected research and interventions. It is advised that an estimate be provided or a ceiling for expenditure set, and discussions on how requisite financial support will be attained should be taken forward. Inspiration Box 3 offers an overview of potential budget items to use for TAP planning. Further resources are available in the TAP Toolbox under the exercise “Budgetary considerations for the TAP process” and Tool 1.6. **It is important to be realistic when making a budget, as costs can be higher than anticipated.** Further exercises on budget development are provided in the TAP Toolbox.



Inspiration Box 3. Cost items related to a TAP project

Table 5 lists items you might include in your TAP budget. Also consider what additional items should be included in your context.

Table 5. Example of TAP process costs

Item	Costs
TAP working group fees (3–5 persons)	If appropriate/necessary, part-time for one year or more
TAP working group meetings (5–10 meetings, 3–6 people)	Venue and catering, or virtual meeting platform costs
	Transportation
	Printing
Stakeholder workshops (2–3 workshops, 10–30 people)	Venue and catering, or virtual meeting platform costs
	Transportation
	Printing
Research (one or more studies)	Researcher or research company fees
	Costs related to implementation of studies (venue, catering, virtual meetings, transportation, participant fees or incentives, printing, distribution, and collection of questionnaires, software for data analysis and more)
Advocacy	Printing and distribution of materials
	Dissemination of results
Implementation of the intervention – activities, evaluation and scale-up	Costs related to activities (such as change of health services, development of new training curricula, development of materials, education of health workers)
Evaluation	Costs related to undertaking an evaluation of the behaviour change intervention

Process indicators for M&E

Process indicators describe the milestones in your TAP project and help ensure that desired outcomes are reached. Indicators for the TAP intervention itself are set during the design stage, but it is also highly recommended that indicators are agreed for the whole TAP process before it starts. These would include indicators for important milestones in preparation, research and post-intervention follow-up.

Exact indicators will depend on the context and the timeline, budget and scope agreed by the TAP working group. Inspiration Box 4 provides an example of some TAP process indicators. Further guidance is available in Tool 1.7 of the TAP Toolbox.

Inspiration Box 4. Setting up TAP process indicators

Table 6 is an example TAP process monitoring framework. In an actual framework, the activities described would be targeted and subactivities would be included, along with specific dates. An actual framework should also include columns for “input” before “output”, and “expected impact” after “outcome”. Information on the timeline in the example below is in the format of “quarters” (Q) and “years” (Y) – for example, “Q1, Y1” is the first quarter of year one. The process indicators in this case are the “outputs”.

Table 6. Example of a long-term TAP plan with indicators

Activity	Timeline	Output	Outcome	Responsible
Stage 1				
Do capacity assessment	Q1, Y1	TAP capacity assessment report	Informed decision made on TAP initiation	WHO
Establish TAP working group	Q1, Y1	Working group set up and terms of reference signed	Working group starts coordination responsibilities	Ministry of health
Prepare process plan	Q2, Y1	TAP process plan (report)	TAP process planned and ready to begin	TAP working group
Stage 2				
Review data and existing studies	Q2–3, Y1	Analysis for situational report	Baseline understanding of problem area	TAP working group, consultants
Engage stakeholders	Q3–4, Y1	Analysis for situational report	Input from stakeholders on problem identified	TAP working group, consultants
Situational analysis	Q4, Y1	Develop situational report	Comprehensive understanding of problem area	TAP working group, consultants
Stage 3				
Prioritize and plan research	Q4, Y1	Research protocol	Research planned and approved	TAP working group, consultants
Conduct research	Q1–2, Y2	Interviews and focus group discussions completed	Comprehensive understanding of problem behaviours	TAP working group, consultants
Report findings	Q2–3, Y2	Research report	Analysis of research for intervention planning	TAP working group, consultants



Table 6 contd

Activity	Timeline	Output	Outcome	Responsible
Stage 4				
Design intervention	Q3, Y2	Intervention design	Tailored intervention on basis of behavioural insights	TAP working group, consultants
Plan intervention	Q3, Y2	Intervention plan with M&E framework	Intervention planned and ready to implement	TAP working group, consultants
	Q4, Y2	Intervention pilot	Intervention is tested and adjusted	TAP working group
Stage 5				
Implement intervention	Q3, Y2–Q3, Y3	Monitoring data	Intervention implemented	TAP working group
Evaluate intervention	Q4, Y3	Evaluation report	Summary of key results and recommendations for scale-up	TAP working group, WHO
Scale-up	Q1, Y4	Plan for adjustment and/or scale-up	–	TAP working group, ministry of health


Output: TAP assesment report

The main output of Stage 1 is the TAP assessment report. This can be completed by a WHO consultant or a member of the TAP working group. The report should include a summary of each of the above items of consideration (context, available resources, milestones, people, budget and process indicators) and provide clear recommendations on whether to initiate a TAP project.

If it is decided that currently there is no capacity to undertake a TAP project, the assessment report should include recommendations on which steps could be taken to improve capacity so that a TAP project can be done at a later stage.

The decision to do a TAP project always lies with the country and/or host organization, and a TAP project can be done independently of the Regional Office. If the Regional Office is expected to assist by, for example, providing expert consultants or helping coordinate at country level through the WHO country office, then it will take part more actively in the assessment.

Please note you may need to revisit this TAP assessment report after gathering data to better define your target behaviour, target group or other factors relating to the TAP process. The next stage, Analyse, may also reveal gaps in your knowledge for framing adequately the research purpose and objectives. Don't be concerned. Evidence (or a lack of it) can help frame analysis and sharpen problem definition in subsequent phases.



Stage 2. Analyse: what do we know already?

The objectives of Stage 2 are to:

- gain an in-depth understanding of the problem to be addressed by obtaining:
 - » an overview of evidence regarding AMR in the country and in specific population groups; and
 - » stakeholder input and support to inform the situation analysis and strengthen stakeholder ownership and support for the TAP process.

The working methods for Stage 2 are:

- TAP working group meetings
- data review and analysis
- stakeholder workshop(s) and/or interviews.

The key output from Stage 2 is:

- a situation analysis.

Gaining an in-depth understanding of a given AMR problem in a country through a thorough examination of data and literature is necessary before designing and implementing a behaviour change intervention. At the end of Stage 2, the TAP working group will have produced a situation analysis report that gives a preliminary outline and identifies key issues to guide the development of the TAP project.

Stakeholders can play an important role in Stage 2 by contributing their expertise and experience to develop a more targeted and informed analysis. Including stakeholders at this stage can strengthen their overall involvement and ownership of the TAP project.

Situation analysis: review of data and existing studies

Developing a situation analysis is encouraged: it is a crucial part of the TAP process. This can be done through data review via desk research and literature reviews, and by engaging relevant stakeholders through meetings, discussions or interviews to shape the research scope and identify relevant sources of information (further information on research methods that can be used is provided in the section on Stage 3).



While members of the TAP working group and advisors might have a deep understanding of their country context, taking time to undertake Stage 2 thoroughly ensures:

- the TAP project will be grounded in global evidence
- the knowledge of the TAP working group is confirmed and any gaps filled
- the focus explored in subsequent TAP stages is appropriate to the context.

The TAP working group is responsible for coordinating the review and developing the report but might choose to outsource activities to a consultant(s) with specific expertise.

Scope of the review

Before starting the review, the scope of the research should be considered. **It is recommended that a TAP project begins with a focused topic rather than addressing AMR broadly. It will be possible to undertake future TAP projects to explore further aspects of AMR.** This will be a decision the TAP working group will need to make, taking country context into account. Examples of focus areas are:

- surveillance activities
- infection prevention and control
- antibiotic prescribing at primary-, secondary- or tertiary-care level
- antibiotic dispensing practices (through pharmacies or online sale)
- antibiotic consumption practices among high-risk groups
- antibiotic susceptibility testing
- population-level awareness and perceptions of AMR.

The choice of focus area might depend on policy priorities, funding, available evidence, stakeholder priorities and engagement, or TAP working group and advisory group preferences. Prioritization of factors should be relevant to the country context. It is possible to change the focus area of a TAP project during stages 2 and 3 or adjust the scope depending on research findings. In contexts in which there are few resources or available data, the focus should be on what is easily explorable and is as evidence-based as possible. Inspiration Box 5 lists suggested questions to guide the initial data gathering and review.

Inspiration Box 5. 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?

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?

Inspiration Box 5 contd

Stakeholders and partnerships

- Who are the most important stakeholders and what are the potential partnerships?
- Who potentially can 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 rational use of antibiotics are available most readily? Which ones are most trusted, and which ones are least trusted?
- What is known of the target group's knowledge, attitudes and practices with regard to AMR?

Resources

- What internal resources are available for promoting 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 and any 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?

Data and information sources

The review of data can be based on a variety of sources, including research databases, documents published by international and national institutions, or national/international datasets. Some examples are given in Inspiration Box 6. Not all sources mentioned in Inspiration Box 6 might be relevant in each context, and sources selected will depend on the identified topic and scope.

Before starting the review, the TAP working group should discuss what information is available and what additional information might be needed. There may not always be national or regional data on a specific topic, the TAP working group might not have access to specific peer-reviewed journals, certain information may not be publicly available, or some information might only be available in a language not used by the TAP working group. Gathering sufficient, relevant information is important to ensuring the development of a robust plan and avoiding any duplication of existing research. Questions that might help guide the data review can be found in Tool 2.2 of the TAP Toolbox.

Inspiration Box 6. Data and information sources

The data and information sources listed below can be reviewed as part of the situation analysis. Note that there might be additional relevant sources in your context.

Surveillance data and surveys

- AMR surveillance data: the European Antimicrobial Resistance Surveillance Network (EARS-NET) and Central Asian and European Surveillance of Antimicrobial Resistance (CAESAR) data
- Surveillance data on health-care-acquired infections (HAIs)
- National-, regional- and district-level AMR data
- Disease surveillance data
- Data on the sale of antibiotics and antimicrobial medicines
- Health service utilization data
- Population health data
- Lifestyle data and reports

Surveys

- Population health surveys, analyses and studies
- Data from the Global Health Observatory
- United Nations Children's Fund Multiple Indicators Cluster Surveys
- United States Agency for International Development demographic and health surveys
- Surveys, strategies and action plans related to the health area or relevant population groups

Strategy and analysis documents

- Equity analyses
- Strategies and action plans for health behaviour and 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

- Media coverage related to the health behaviour or relevant population groups
- Social media coverage related to the health behaviour or relevant population groups

Academic research

- Peer-reviewed academic publications related to the health area, the country or relevant population groups; it would be worth conducting a literature search using Pub Med (4) and also looking at the Cochrane Library for systematic reviews (5).

Analysis

Since the review is the basis for further research and intervention focus, it is very important to ensure it is comprehensive and based on data of the highest quality. A systematic method of analysis should be followed to collect and analyse the data. The specific method used will depend on the context and resources available. If there are multiple sources or contradictory evidence, data should be triangulated



and results considered critically. An example of how a review was conducted in Hungary is provided in Example Box 1.

To focus on equity and allow for later segmentation of population groups, it is recommended that data are broken down by characteristics like socioeconomic factors (such as income and education), cultural factors (like ethnicity, nationality and religion) and location (urban, rural and geographical area).

Example Box 1. TAP pilot project in Hungary

In 2017, the Ministry of Human Capacities in Hungary published an evidence-based policy brief (6) that brought together global and local research evidence on antibiotic use in Hungary and presented three policy options. The policy brief served as the situational analysis report, and a TAP project was initiated with the Regional Office to guide and plan implementation of one policy option: to increase public knowledge and awareness on prudent antibiotics use and risks of antibiotic resistance.

Review steps

The following steps were taken in preparing the evidence brief:

- the Ministry of Human Capacities selected the topic;
- a working group of representatives from the clinical field, pharmacology, public health and health-care management was convened;
- terms of reference for the evidence brief, particularly the framing of the problem and the options for addressing it, were specified;
- research evidence on the problem, options and implementation considerations were identified and synthesized;
- key informants were interviewed about local implementation considerations;
- a text and presentation on the global and local research evidence was drafted in concise and accessible language; and
- the evidence brief for policy was finalized, based on inputs from several stakeholders.

Review method

A full-text review of published literature (English and Hungarian) was conducted of sources found on research databases. Documents included systematic reviews, meta-analyses, economic evaluations and studies published between 2010 and 2016. Certain key publications outside these dates were included on expert advice.

The search strategy was stratified by three dimensions (problem, policy options and implementation considerations) and guided by 19 keywords (including antibiotic, overuse and strategy). Research published recently or conducted in-country was prioritized.

Grey literature from websites of leading international and national organizations (such as WHO and the Centers for Disease Control and Prevention in the United States of America) was searched. Data on the specific AMR problem were obtained from national and international datasets and from surveillance reports.

More information on the method is available in the policy brief (6).



Engaging stakeholders

Stakeholders can be engaged in different ways depending on the purpose and expected results determined by the TAP working group. Examples of consultations include assisting in determining the review scope, identifying relevant sources, informing stakeholders of the TAP process and inviting them for future engagement.

Activities to engage stakeholders could include:

- meetings in smaller groups with higher-level decision-makers (advocacy);
- workshops on competency-building, especially for people taking more active part in the TAP coordination process;
- group work and exercises during workshops to reach consensus on a topic;
- presentations on TAP methodology, findings from situational analyses and behaviour change/AMR to share information with a wider audience; and
- panel discussions for dialogue and decision-making.

Additional guidance on stakeholder mapping and engagement is provided in tools 2.3 and 2.4 of the TAP Toolbox.

TAP working group members should agree beforehand on reasons for, and expectations of, engaging stakeholders and what the potential outputs could be. These expectations should also be communicated to stakeholders so they understand their role and how their contributions will inform the process (see Example Box 2).

Example Box 2. TAP pilot project in North Macedonia

A TAP project on infection prevention and control was initiated in North Macedonia in 2017. After completing the situational analysis report, the TAP working group organized a meeting to inform stakeholders about the current national infection prevention and control and AMR contexts, share the main findings of the report and get their input on selecting a key topic area and target group for further research.

Twenty-five people took part in the meeting, representing the Ministry of Health, public health research institutes, think tanks, university faculties, doctors' unions, private sector associations and others. Participants were split into groups to do a SWOT analysis of research findings, through which they identified key problem areas and potential target groups for research. Each group presented their findings and a discussion was held in joint plenary.

At the end of the meeting, all input was summarized and participants were informed of the next steps in the TAP process. The data gathered were used to update the situation analysis report and TAP process plan.

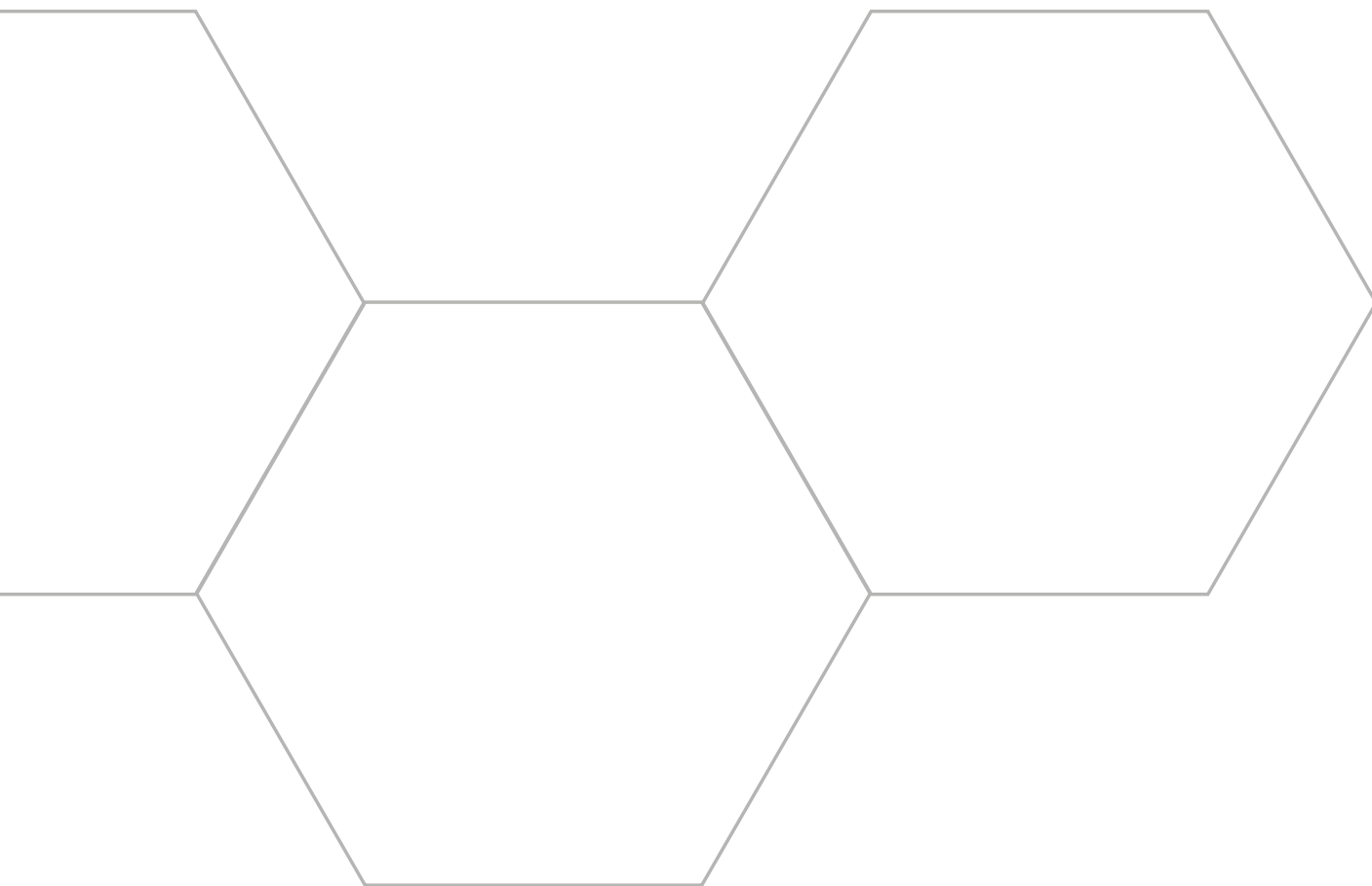
Output: situation analysis report

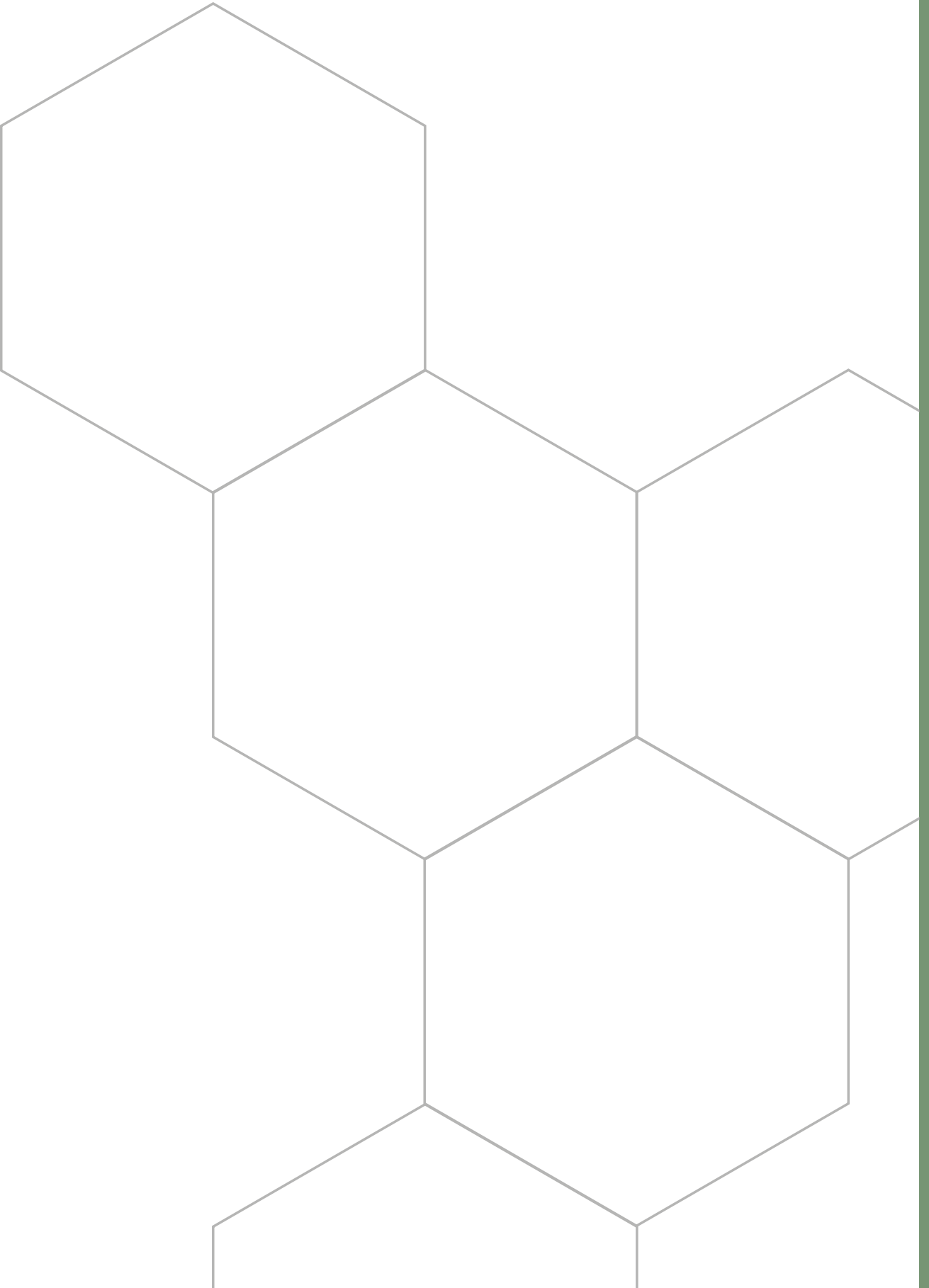
The situation analysis report should present key findings in a coherent and structured way. If the Regional Office is expected to take part in TAP project coordination, it is preferred that the report is also made available in English.


The specific format of a situation analysis report will depend on the country context and area identified. The situational analysis could include:

- an introduction to the problem area
- country context
- summary of key findings from the review
- a detailed stakeholder map
- a SWOT analysis of findings
- recommendations on areas for further research
- references.

The report can be shared among the TAP working group members and advisory group and be presented to relevant decision-makers and managers.







Stage 3. Prioritize: what is the priority behaviour to address?

The objectives of Stage 3 are to:

- consolidate and use the information from the situation analysis and stakeholder consultations to:
 - » define the problem, target behaviour(s) and population group(s) to be addressed by the TAP project;
 - » identify if further research is required to better understand the problem; and
- conduct further research (if required) to more closely define the problem.

The working methods for Stage 3 are:

- TAP working group meetings
- stakeholder engagement
- qualitative and quantitative research.

The key outputs from Stage 3 are:

- specification of the parameters of the TAP project;
- presentation of findings, identifying the priority behaviour(s) and target population(s) and considering further research needs;
- research to understand and prioritize the target behaviour is planned as required; and
- research is conducted and findings summarized.

At the end of this stage, you will have a summary of findings that presents the COM-B barriers/drivers to the selected target group's performance of the identified behaviour.



Presenting findings and identifying target behaviour(s)/population(s)

There is no set way to prioritize a focus area or behaviour for a TAP project. Ultimately, it is the responsibility of the TAP working group to select a focus. It is important that this decision be grounded in the evidence base and be appropriate to the context and resources available. You therefore will need first of all to present your findings from the situation analysis, including a summary of the data and any preliminary conclusions on target behaviours, knowledge gaps or research priorities, to the TAP working group.

Following a situation analysis, and based on the knowledge and data it generates, you should work with the TAP working group to define the problem to be addressed in the TAP project. To do this, work through exercises 1–3 at the end of this section. These exercises will assist you in:

- defining problems in behavioural terms (**Exercise 1**);
- mapping behaviours (**Exercise 2**);
- prioritizing a target behaviour and population (**Exercise 3**); and
- developing COM-B-based research objectives for a research protocol (**Exercise 4**).

The exercises can be conducted by the TAP working group and with other stakeholders, adjusted to context as relevant, and supplemented with other exercises and group work if needed. Input to Exercise 3 should be based on evidence and expert opinion, and the exercise can be revisited after research to reassess the TAP focus. Further guidance can be found in section 3.A of the TAP Quick Guide and tools 3.1–3.3 in the TAP Toolbox.

Please note: engaging stakeholders at this stage can assist in prioritizing behaviours or problems to explore through further research (see Example Box 3). Stakeholders from potential target groups (such as health workers, hospital cleaners and carers) can be particularly helpful in offering a more detailed understanding of AMR-related problems or behaviours.

There can be many challenges to deciding on a focus area for the TAP project. A situation analysis and stakeholder consultation might highlight multiple focus areas and behaviours, literature on the problem area might be limited, or consensus might not be reached on research. It is also possible that stakeholders at different levels have differing views, opinions or understandings of problems and behaviours relating to AMR.

Example Box 3. TAP pilot project in Kazakhstan, prioritizing research behaviour

In 2017, a TAP working group in Kazakhstan identified that the sale of antibiotics over the counter was a problem on which the country initially could focus a TAP project. A workshop was convened with stakeholders to define the behaviour to be addressed and to prioritize and select a focus and target group for further research. Exercises 1 and 3 were conducted (see Tables 7 and 8). It is important to note that input in these exercises represents stakeholders' perceptions, not evidence. The working group took this input and considered it against the evidence collected in Stage 2, and ultimately it was decided to focus the TAP project on exploring pharmacist behaviour on selling antibiotics to patients without prescriptions.

Example Box 3 contd

Table 7. Kazakhstan TAP pilot results of Exercise 1 on defining the behaviour

Question	Response
What is the behaviour?	Sales of antibiotics without a prescription
Who performs the behaviour?	Pharmacists Non-trained/non-educated pharmacy staff Drug-store staff Community doctors Online vendors (Patients/consumers on the receiving end)
Where does the behaviour take place?	Pharmacies Drug stores Non-licensed drug stores Health clinics Online/websites
When is the behaviour performed?	Specific patients (parents or older people) might demand antibiotics during particular seasons Training or readily available guidelines at the counter on dealing with such requests might help address the practitioners' behaviour

Table 8. Kazakhstan TAP pilot results of Exercise 3 on assessing target behaviours

Potential target behaviour	Impact ^a	Changeable ^b	Spillover ^c	Measurable ^d
Patient perceptions on antibiotics	Very high	Unlikely	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
Pharmacists seeking information about antibiotics	High	Unlikely	Likely	Not easy
Pharmacist decision-making (individual)	Very high	Likely	Very likely	Easy
Selected target behaviour(s)	Pharmacists' decision-making in selling antibiotics to patients without prescriptions			

^a Impact: how much impact could addressing this behaviour have on reducing AMR?

^b Changeable: how likely is it that the behaviour can be changed?

^c Spillover: how likely is it that the behaviour will positively/negatively impact related behaviours?

^d Measurable: how easy will it be to measure the behaviour?



Planning research

Research requires thorough planning. If it is determined after identifying a research area and behaviour that further research is needed, the TAP working group should develop a research protocol. This subsection addresses developing the protocol and getting ethical approval. The following subsection on “Conducting research” provides information on data collection and analysis that should also be considered when developing the research protocol.

Stakeholders (including those from potential target populations) can be involved at this stage (as appropriate to context) to strengthen the research planning by, for instance, participating in protocol development workshops or commenting on a developed protocol.

Developing 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 (dissemination of results, for example) (7). Inspiration Box 7 provides guidance on the contents of a research protocol.

To facilitate intervention development in Stage 4, it is important to begin framing the selected behaviours within the COM-B framework when developing the research protocol. Exercise 4 at the end of this section can be used to guide the development of research objectives using the COM-B framework.

Questions that can help guide the TAP working group in developing a protocol are as follows.

- What are the overall questions to which answers are required?
- Will a quantitative, qualitative or mixed-methods study be conducted, and if so, why?
- Which members of the target group will be targeted, how many, and where? How will they be recruited?
- Where will the research be conducted?
- Who will be in the research team and what will be their roles and responsibilities?
- Who will develop data-collection tools (surveys, guides, questionnaires)?
- How will data be analysed?
- What is the timeline?
- What is the budget?
- Where should ethical approval be sought?

Inspiration Box 7. Contents of a research protocol

The following sections should be included in a research protocol. The detail in each section will vary depending on the type of research:

- **general information** – title of the 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 TIP 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 (for example, a longitudinal, qualitative, face-to-face interview study) and the theoretical model being used (TIP 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);

Inspiration Box 7 contd

- **data collection** – the content of the data-collection tools (such as the interview topic guide or 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 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 and how national regulations on data management will be met;
- **ethical and other approvals** – which ethics committee will review the research and other necessary approvals;
- **dissemination** – reports, papers that will be produced, including a short summary for participants;
- **timeline** – clear deadlines for each step of the research project;
- **references**; and
- **appendices** (participant information sheet, consent form and data-collection tools).

Ethical approval

Depending on the kind of study and the regulations of the country in which the research takes place, further research should be approved by an independent ethical committee. Ethical approval usually is also required for publishing study findings in a peer-reviewed journal. Inspiration Box 8 offers guidance on obtaining ethical approval.

Inspiration Box 8. Ethical approval

Research should be conducted according to the standards outlined in two key documents:

- the Declaration of Helsinki: ethical principles developed by the World Medical Association to guide physicians and other participants in medical research involving human subjects (8); and
- the European Union General Data Protection Regulation (GDPR) 2016/679 on the processing and free movement of personal data (9).¹

Ethical approval is initiated to ensure the dignity, rights, safety and well-being of research participants are adequately considered and secured. The contents of an ethical approval application depends on individual ethical committee requirements.

The following types of information often feature:

- research rationale, aims and objectives
- study design and methods (including data collection and analysis)
- participant recruitment (how they will be identified and approached)
- participant consent methods and possible incentives or reimbursement of expenses
- processes to ensure anonymity and confidentiality
- data use, transfer and storage
- dissemination plans for research findings
- details on all stakeholders involved in the study and their roles.



Inspiration Box 8 contd

Usually, ethical approval cannot be granted retrospectively.

In some countries, an ethical committee does not exist for social science research. In such cases, an ad hoc committee should be established for the purpose of reviewing and approving the TIP study proposal.

¹ The GDPR is applicable only to European Union countries; it may not be a valid regulation in your country context, but can serve as an example of best practice.

Conducting additional research

Conducting research includes both collecting and analysing the data. The objective of research in Stage 3 is to obtain more insight into what enables or prevents an identified behaviour among a specified target population. The information provided in this subsection should be taken into consideration when developing the research protocol discussed above.

Once data have been collected and analysed in Stage 3, research findings should be summarized in a report. Research findings will guide the next steps in intervention development. Depending on findings, it is possible that the TAP scope and process plan may have to be re-assessed.

Aside from further research in Stage 3, the methods described below can also be used in the situation analysis as part of stakeholder consultation and/or if available data are limited.

Data collection

Data can be collected using qualitative, quantitative or mixed-study designs. The choice depends on: the type of information needed to answer the research questions; and what research already exists on the topic (see Example Box 4 for how research methods were determined in Georgia). Qualitative and quantitative research methods are used for a range of reasons and have different strengths and limitations, as summarized in Table 9. Below are descriptions of some tools that can be used in qualitative and quantitative research.

Table 9. Using qualitative and quantitative research methods

	Qualitative methods	Quantitative methods
Strengths	<ul style="list-style-type: none"> ● 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 hypothesis to be tested in quantitative studies 	<ul style="list-style-type: none"> ● Useful to examine behaviour frequency and influencing factors ● Can test hypotheses and assess cause-and-effect relationships ● Can give generalizable findings if well designed with a representative sample population ● Can allow comparison of baseline and endline data to assess intervention effects

Table 9 contd

	Qualitative methods	Quantitative methods
Limitations	<ul style="list-style-type: none"> ● Difficult to generalize results to a wider population ● The time required for data collection, analysis and interpretation can be lengthy 	<ul style="list-style-type: none"> ● Not suitable to uncover complexity of people’s experience, perceptions and knowledge ● Needs larger number of participants
When to use	<ul style="list-style-type: none"> ● Usually in formative stages 	<ul style="list-style-type: none"> ● Usually in later stages
Data, sampling and design	<ul style="list-style-type: none"> ● Smaller, usually purposive sampling ● Emergent design ● Data can be in many forms (words, images, objects etc.) 	<ul style="list-style-type: none"> ● Larger, usually random sampling ● Design determined in advance ● Data are numerical
Tools	<ul style="list-style-type: none"> ● The researchers are the tools; they use a method to make meaning from data collected, such as interviews, focus groups and observation 	<ul style="list-style-type: none"> ● Specific tools or instruments (such as tests and equations) are used to generate meaning from numerical data collected

Qualitative research

Qualitative methods provide rich, in-depth information on the barriers and drivers to a behaviour. Qualitative research is conducted to understand a target group’s points of view and experiences. In the TAP context, it explores reasons why people make certain choices and adopt specific behaviours and gives insights into what a target group knows (or does not know), their fears and worries, hopes and desires, and more complex issues, such as their access to health services and social norms. Popular qualitative research methods include focus group discussions (FGDs), individual in-depth interviews and observation studies.

FGDs

An FGD is a moderated conversation with a group of people sampled to represent a particular social grouping. FGDs are especially useful for identifying social norms and can reveal both agreement and differences of opinion about a relevant topic. Participants may be stimulated by the presence of others to share and exchange opinions and concerns, including myths, rumours or stories that may be circulating in the community.

About 5–8 participants usually are involved in an FGD. Discussions are moderated according to a guide, but it is important to follow emerging dynamics in the discussion and attend to information or directions of research that might not have been considered when developing the discussion guide. Focus groups must be moderated to ensure all participants are engaged and feel able to express themselves.

Individual in-depth interviews

In an individual in-depth interview, a moderator has a one-on-one conversation with one person, usually face to face. Individual interviews are useful where the participant has special knowledge or a unique point of view. They can also be used with sensitive topics, where a participant might feel uncomfortable speaking in a group, or if it is difficult to bring a larger group together.

Observation

Observation research is a social research technique in which a researcher observes ongoing behaviour. This involves watching and recording people in a natural setting. Observation designs are particularly relevant when it is important to understand how people talk and act in an everyday context. Observation



data are often combined with interviews or FGDs in which participants can discuss the observed behaviours. Observation enriches data collected in interviews and overcomes potential limitations of participants' poor recall and desire to present themselves well. To increase objectivity, it is better to conduct observation multiple times over a longer period of time. Researchers must be trained in observation and have clear guidelines for recording their observations.

Example Box 4. Determining research methods in Georgia

In 2021, a TAP working group in Georgia developed a protocol for research on uptake of a planned three-year antimicrobial stewardship programme on surgical antibiotic prophylaxis in 10 hospitals.

The TAP working group identified research questions exploring each COM-B factor using Exercise 4. They then considered whom they would need to involve in research to answer each question (see "Research participants" column in Table 10), what method of research to use with each group, and why. Considering that quantitative information on antibiotic use would be available at each hospital but little information was available on why decisions on antibiotics were being made, qualitative methods were selected to understand the dynamics behind research participants' behaviour.

Considering available resources, the working group determined the minimum number of research activities to conduct with each group (additional activities could be conducted if needed). This information was included in their research protocol and is presented in Table 10.

Table 10. Research methods selected for TAP research in Georgia

Research participants	Method	Rationale	Frequency
Hospital administrator	Interview	Individual in-depth view, sensitive topics	At least 1 activity in 5 hospitals in years 1, 2, 3
Hospital AMR champion	Interview	Individual in-depth view, sensitive topics	At least 1 activity in 5 hospitals in years 1, 2, 3
Surgeons	FGD	Need broader input across group to triangulate data	At least 1 activity in 5 hospitals in years 1, 2, 3
Epidemiologist	Interview	Few available, need to get in-depth views	At least 1 activity in 5 hospitals in years 1, 2, 3
Study nurse	Interview	Few available, need to get in-depth views	At least 1 activity in 5 hospitals in years 1, 2, 3
Hospital pharmacists	Interview	Few available, need to get in-depth views	At least 1 activity in 5 hospitals in years 1, 2, 3
Physicians	FGD	Need broader input across group to triangulate data	At least 1 activity in 5 hospitals in years 1, 2, 3
Professional association representatives	Interview	Need in-depth overview of activities	At least 2 activities with different associations in years 1, 2, 3
Pharmaceutical company representatives	Interview	Few available, need to get in-depth views	At least 2 activities with different companies in years 1, 2, 3

Quantitative research

Quantitative research is based on structured collection and analysis of numerical data. Quantitative methods can provide information on the frequency of certain behaviours, beliefs and knowledge. Using statistical tests, quantitative research methods can determine if the findings are likely to be real or due to chance. If data are collected from a representative sample, it is possible to generalize results to a larger population.

Quantitative research is appropriate when:

- barriers or drivers to a health behaviour are clearly defined and measurable;
- research seeks to understand which barriers or drivers are most common or if they vary in different population groups; or
- data need to be compared over time, such as to measure interventions' effectiveness.

Surveys

Surveys are a common quantitative method of gathering data on barriers to, and drivers of, health behaviours. They allow relatively easy data collection from a large population. Data are collected through standardized questionnaires with predefined, usually closed-ended, questions. Questionnaires can be administered face to face, by telephone or remotely, on paper or electronically. Self-completed written or Internet/email-based questionnaires are cheaper than surveys administered face to face or by telephone.

Questionnaires must be pre-tested to identify problems that may lead to biased answers. If scales are used in a survey, it is important that they are pre-tested for validity (do they accurately measure what they need to and are they reliable?).

As it is not practical to collect information from the whole population of interest, surveys usually are distributed to a sample of the population, the size of which will depend on available resources. To generalize survey results, the sample should be representative of the population.

Mixed methods

When resources are available, it is useful to conduct qualitative and quantitative research together. Combining different methods (triangulating) allows the capture of information breadth (quantitative) and depth (qualitative) and increases confidence in research findings. Qualitative and quantitative research can be carried out at the same time or in sequence. Examples of sequential studies include using qualitative interview data to inform the development of a quantitative survey questionnaire and using qualitative interviews to explore interesting or unexpected findings from a quantitative survey.

Action research

If the situation analysis provides sufficient information to allow design of interventions and is based on research studies conducted before the TAP process, a TAP working group might decide to go straight to designing and implementing an intervention. The testing and evaluation of the intervention then becomes the research study. This is called action research. This type of study could deploy any of the above-mentioned research methods, such as FGDs, to evaluate information products produced or use observation to evaluate the impact of training.

Data analysis

Once data have been collected, they need to be analysed and findings summarized in a report. The report should present findings related to the selected research target groups. **For each target group, the barriers and drivers should be summarized and structured by the COM-B factors.** This will be



important in Stage 4 of the TAP process. If possible, analysis should prioritize the barriers and drivers identified in the research.

Data analysis methods will depend on the type of data collected and the research aims. All qualitative data collected should be coded and analysed using a standard analysis framework and method defined ahead of data collection. Under TAP, it is advised that the COM-B framework be used as the basis of the analytical framework. Quantitative data analysis methods also need to be decided before data collection. Inspiration Box 9 presents more information on approaches to data analysis.

Regardless of what kind of data are collected, the following should always be ensured:

- researchers analysing data are qualified and experienced;
- a standard data analysis process is defined prior to undertaking research and followed as described in the protocol; and
- data analysis is recorded and documented so others can learn from the process and have confidence in the results.

It is okay if the data-collection or analysis method needs to be changed at some point or does not go as planned. This will not necessarily negate the research findings. A record should be kept, however, to explain what was altered, why, and how it might impact the research findings.

Inspiration Box 9. Resources for planning data analysis

Qualitative data

Different qualitative data can be collected. Recording and analysis will depend on resources available (including time, people and funding) (Table 11).

Table 11. Analysis of qualitative data

Data type	Analysis
Audio recording (interviews, FGDs)	All interviews/discussions will need to be transcribed verbatim in the original language before analysis and translation, if needed A standard format should be used for all transcripts
Notes (observation of context, interviews, FGDs)	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, but they often can 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 will need to be coded before analysis (10–12). Coding usually is done according to themes; there are many ways to code data, some taking longer than others.

Inspiration Box 9 contd

Qualitative data can be analysed by hand or by using specialized qualitative data-analysis software. Many kinds of software are available, differing in price and functions. NVivo (QRS International, Burlington (MA), United States) and Atlas.ti (Scientific Software Development GmbH, Berlin, Germany) are examples.

Quantitative data

Quantitative data usually are 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 (such as duplicates, misentered data and skipped questions).

The choice of model to analyse qualitative data will depend on the research aims and information collected. Two approaches that might be taken are:

- descriptive: data are described in a very accurate way to provide information about a dataset; researchers usually include some descriptive statistics (such as frequency and range) before further analysis; and
- inferential: data are analysed through complex mathematical calculations to identify trends and relationships in the data and develop generalized observations.

Quantitative data analysis is often done using specialized software (12,13) such as R (The R Foundation, Vienna, Austria), SPSS (IBM Corp., Armonk (NY), United States) and STATA (StataCorp LLC, College Station (TX), United States).

Output: reporting research

Once research is completed, the TAP working group should prepare a report summarizing the findings. The report could present the following:

- background to the research
- methods used to collect and analyse data and any changes/discrepancies
- results of research activities
- conclusion.

The conclusion should describe the barriers and drivers to the selected target group's performance of the selected behaviour for each COM-B objective (identified through Exercise 4 and stated in the protocol).



Exercise 1. Defining the problem in behavioural terms



Objective

The objective of this exercise is to:

- define the problem, as identified in the situation analysis, in behavioural terms.

Guidance

- This exercise can be done in the early stages of TAP to help guide the scope and planning of further research and can be re-visited after the research has been completed.
- Responses can be specific or broad, depending on the amount/quality of data collected.
- The exercise can also be used as a behaviour mapping tool with target groups and repeated for multiple behaviours if applicable.

The steps of the exercise

1. Identify the specific behaviour

- What behaviours are driving AMR in your country (for example, overuse or misuse of medication)? 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?

2. List the individuals and groups for consideration

- Who or what group(s) is engaged in the behaviour? Who is helping to drive this problem?

3. Prioritize the groups for the intervention

- What is the role of health professionals, communities, families or patients in propagating this behaviour? Are there any at-risk groups?

4. List the locations of venues where the behaviour takes place

- Where is this behaviour taking place? Are there other locations that can influence this behaviour?

5. List when the behaviour takes place

- When is the behaviour taking place and for how long? Are there significant instances before or after the behaviour that might also offer opportunities to influence change?

Table E1.1 provides an example of how to do this exercise. The example used here is on sale of antibiotics without prescriptions.

Table E1.1. Identifying a behaviour – sale of antibiotics without prescription

Question	Response
What is the behaviour?	Sales of antibiotics without a prescription
Who performs the behaviour?	Pharmacists Non-trained/non-educated pharmacy staff Drug-store staff Community doctors Online vendors (Patients/consumers on the receiving end)
Where does the behaviour take place?	Pharmacies Drug stores Non-licensed drug stores Health clinics Online/websites Rural/urban areas
When is the behaviour performed?	Specific patients (parents or older people) might demand antibiotics during particular seasons Training or readily available guidelines at the counter on dealing with such requests might help address the practitioners' behaviour



Exercise 2. Mapping of behaviours

Objectives

The objectives of this exercise are to:

- prepare a map of behaviours to help guide the scope and design of further research; and/or
- organize data collected to prepare for the intervention design.

Guidance

- When an overall behaviour has been identified (see Exercise 1), a more detailed map/brainstorm of this behaviour can be prepared.
- This can include any associated or sub-behaviours related to the overarching behaviour.
- This exercise can be done with a group of stakeholders or target-group representatives based on expert input, or through the TAP working group based on data collected from further research.
- The level of detail used in the exercise depends on context, evidence and the expected output. For example, if this exercise is done to guide the scope of the research through consultations with target-group representatives, it can be more informal and broader. If done in the TAP working group based on data collected through interviews and FGDs, the mapping can be more detailed and will reference the evidence collected.



The steps of the exercise

1. Prepare a conceptual map of a behaviour

- Write out a description of the behaviour you would like to explore in the centre of a large poster, whiteboard, flipchart or other surface on which you can write easily.
- Within your group, brainstorm what is connected to this behaviour, what influences it, and how and where it happens. Note down each item 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. E2.1).
- 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); and
 - » be equitable (or, in other words, will it increase or decrease differences between disadvantaged sectors of society?).

The example in Fig. E2.1 shows results for a mapping exercise around general practitioners' (GPs) behaviour in antibiotic prescribing for viral infections. This example focuses on what influences the behaviour.

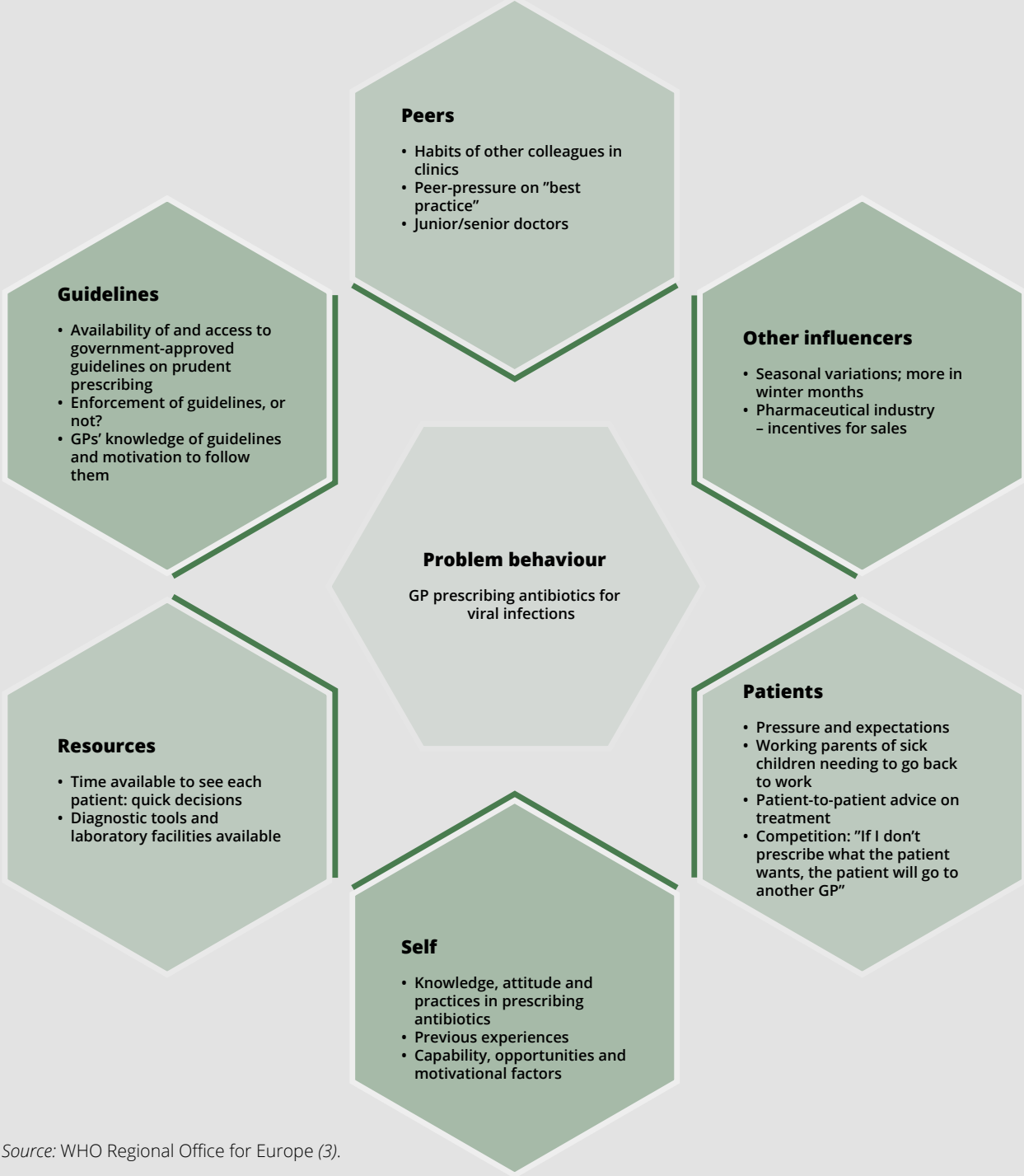
2. Prepare a behavioural timeline (if applicable)

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.

- 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. You should 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 behaviour is performed. You can use this information to identify the step at which your intervention would be most appropriate, feasible and effective.

This is a different form of the conceptual map described above, but can be useful when mapping behaviours that normally are associated with a strict sequence of events, such as diagnostic processes for GPs.

Fig. E2.1. Conceptual map of what influences a selected behaviour – example: prescribing antibiotics for viral infections



Source: WHO Regional Office for Europe (3).



Exercise 3. Prioritize target behaviours and identify potential target groups



Objective

The objective of this exercise is to:

- assess and prioritize potential target behaviours.

Guidance

You should:

- work with the group to prioritize target behaviours and target groups, using Table E3.1;
- make sure you are focusing on behaviours and not on outcomes;
- not choose behaviours likely to have limited impact; and
- think broadly in terms of the intervention target group and consider others outside the target group who are involved in (or influence) the behaviour.

The steps of the exercise

1. Assess your selected behaviours

- Use Table E3.1 to assess and rate each of the selected behaviours.
- Use the criteria and suggested scales for assessing behaviours in Table E3.2.
- You can score behaviours using the suggested scales above or simpler scales, such as using colours (like red, yellow and green) or numbers.
- Ask each person in the group to score behaviours individually or in small groups and then discuss together as a group.
- Agree as a group on the final rating for each criterion for each behaviour.
- The table can be completed based on various levels of evidence depending on needs: for instance, it could be filled out on the basis of stakeholder discussions and expert opinions, or data presented in the situational analysis, or according to a more extensive literature review of selected behaviours.

2. Prioritize potential target behaviours based on assessment

- Decide which of the following most applies 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; or
 - » 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 E3.1. Template for assessing potential target behaviors

Potential target behaviour	Impact ^a	Changeable ^b	Spillover ^c	Measurable ^d
Selected target behaviour(s)				

^a Impact: how much impact could addressing this behaviour have on reducing AMR?

^b Changeable: how likely is it that the behaviour can be changed?

^c Spillover: how likely is it that the behaviour will positively/negatively impact related behaviours?

^d Measurable: how easy will it be to measure the behaviour?

Table E3.2. 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

Source: WHO Regional Office for Europe (3).

Exercise 4. Developing research objectives using COM-B

Objective

The objective of this exercise is to:

- use the COM-B framework to develop research objectives for exploring drivers and barriers to performance of a selected behaviour by a specific target group.

Guidance

- This is a group exercise that 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.
- Present the COM-B framework as illustrated in Fig. 3 (page 6) either as a handout or as a projection on a screen during the exercise.

- Optional: a handout with example research questions based on COM-B factors can be prepared ahead of time and shared with participants.



The steps of the exercise

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

- Briefly review the COM-B framework for all participants, present Fig. 3 (see guidance above) and clarify any participant questions on the COM-B framework.
- Remind participants of the identified behaviour and selected target group.
- Briefly ask participants for examples of questions relating to COM-B factors for the identified behaviour, giving 1–2 examples if they cannot identify any.

2. Group work 1. Developing research questions

- Explain to all participants, “Now we will think of what we need to know to understand [insert behaviour identified]. We will use the three COM-B categories to consider the determinants of this behaviour”.
- Divide participants into 2–4 groups. Provide participants with a handout of example research questions based on the COM-B factors (see guidance above).
- Give each group three flipchart sheets. They will write a different title for each sheet: “Capability” (“C”), “Opportunity” (“O”), “Motivation” (“M”).
- The groups should brainstorm on the flipchart sheets questions they want research to answer for each COM-B factor to enable them to better understand the target group’s performance of the behaviour.
- Every 15 minutes, groups should be encouraged to move to the next COM-B factor if they have not already done so.
- Hold a plenary with all groups. One person from each group will present their flipcharts, so that first all the “C” flipcharts are presented, then all “O” then all “M”.

3. Group work 2. Turning questions into research objectives

- Collect the flipchart sheets into separate sets, so that all “C” sheets are in one set, all “O” sheets in a second set and all “M” sheets in a third set.
- Divide participants into three groups. Assign each group one set of flipchart sheets: “C”, “O” or “M”.
- Give each group two blank flipchart sheets.
- Instruct groups, “At the top of one flipchart sheet, write: ‘Research questions for [insert COM-B factor assigned to the group]’”.
- Instruct groups, “Use the questions in the set flipchart sheets you received to identify a final set of concrete questions you think research should answer”.
- Allow 30–40 minutes for brainstorming.
- Instruct groups, “Now take the second flipchart sheet and at the top write: ‘After this research we will know ...’”.
- Instruct groups, “Take each question you 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’”.
- Hold a plenary with all groups:
 - » one by one, each group presents the identified objectives for the COM-B factor they were assigned
 - » participants who are not presenting give comments, ask questions or make suggestions
 - » all participants discuss and agree a final set of research objectives for each COM-B factor.
- One person is made responsible for recording the agreed objectives for inclusion in the research protocol.



Stage 4. Design: build your strategy and intervention

The objectives of Stage 4 are to:

- design and plan a pilot behaviour change intervention
- develop an M&E framework
- engage stakeholders to obtain input and support throughout the process.

The working methods for Stage 4 are:

- TAP working group meetings
- stakeholder workshop.

The key output from Stage 4 is:

- an intervention plan with an M&E framework.

The main output of Stage 4 is an intervention plan for a pilot behaviour change intervention (including M&E). To develop this plan, the TAP working group undertakes a series of steps and exercises, with active participation of relevant stakeholders, to consolidate findings from stages 2 and 3 and design an intervention tailored to the selected target group.

Target group representatives should be involved closely in designing, adjusting and planning the intervention to make sure it is applicable and feasible in the proposed context.

If feasible, it is recommended that a small-scale test of the intervention be done before launching, using experiences gained to adjust the full-scale TAP intervention.

Designing an intervention

The BCW model provides a means to tailor intervention design to the needs and context of a selected target group. This section includes a series of exercises based on the BCW model to assist in designing an intervention plan.



TAP working group members are advised to read through all information and exercises below before beginning intervention development.

Intervention building blocks: intervention functions, activities and policy actions

The intervention is an overall effort to address a specific behaviour among a target population. The intervention can consist of a number of activities and policy actions that are identified based on the specific intervention functions determined by the TAP working group.

Activities can be small- or large-scale. They are conducted to achieve the overall aim of the intervention. Activities include training, service delivery improvements, changes in laws or guidance, information products and many other things.

Policy actions, often initiated by authorities, are undertaken to support, enable or enact intervention activities and support the intervention as a whole. For example, if a selected activity is to introduce a new GP prescribing system, guidelines and oversight mechanisms might need to be introduced to make sure all GPs are aware of, and adhere to, the new system.

Intervention functions are categories of activities that aim to change behaviour (Table 12). An intervention type can be applied at individual, group or population levels. An intervention will use one or more intervention types that the TAP working group will select based on relevance and context. A description of the different intervention functions is provided below. More details on the intervention functions and how they relate to COM-B factors is provided in Exercise 6 at the end of this section.

Table 12. COM-B intervention functions descriptions

Intervention function	Description
Information/education	Increasing knowledge or understanding
Persuasion	Using communication to induce positive or negative feelings or stimulate action
Incentivization	Creating an expectation of a reward
Coercion	Creating an expectation of punishment or costs
Training	Imparting skills
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)
Environmental restructuring	Changing the physical or social context
Modelling	Providing an example for people to aspire to or imitate

Working methods and suggested exercises

There is no set way of designing a behaviour change intervention. The TAP working group's behavioural insights from stages 2–3 are used to develop an appropriate intervention, considering contexts, needs and available expertise.

Broadly, the TAP approach to intervention development is:

1. mapping the COM-B factor drivers and/or barriers related to the identified behaviour and selecting specific drivers/barriers to address in the intervention;
2. developing activities to address these drivers/barriers;
3. determining what policy actions could support the intervention activities; and
4. documenting the process for transparency.

The first step initially will use the same process described in stages 2 and 3. Exercises 5–11 provided at the end of this section will help complete the process. These steps can be carried out over a series of meetings or workshops. Inspiration Box 10 provides an example of how a workshop might be planned. Additional resources and support can be found in sections 4 and 5 of both the TAP Quick Guide and TAP Toolbox.

Inspiration Box 10. Example plan for intervention development

An example plan for intervention development is shown in Table 13.

Table 13. Example plan for intervention development

Stage	Activity
Day 1–3	TAP working group meeting to consolidate outcomes from stages 2–3 and translate into a suggested intervention
Day 4	Stakeholder workshop to present outcomes of stages 2–3 and get feedback on the suggested intervention
Day 5	TAP working group meeting to refine the intervention based on input obtained from stakeholders
Day 6–7	TAP working group meeting to develop monitoring and evaluation framework
Weeks 2–4	Planning of intervention; the project lead or consultant: <ul style="list-style-type: none"> ● writes final intervention plan, including activities and policy actions, timeline, budget and details on roles and responsibilities ● writes final M&E framework ● documents outcome of meetings/workshops

Exercises 5–11 can assist the TAP working group to systematically develop stages 2 and 3 findings into an intervention. The exercises are best carried out in sequence, but their order can also be adapted as needed. They provide guidance on:

- selecting drivers and barriers to address for selected behaviours and target groups (Exercise 5)
- identifying intervention functions for selected barriers and drivers (Exercise 6)
- considering activities to deliver within the intervention (Exercise 7)
- prioritizing and selecting activities for the intervention (Exercise 8)
- considering policy actions to support the intervention activities (Exercise 9)
- summarizing and documenting the intervention development process (Exercise 10)
- developing indicators for an M&E plan (Exercise 11).



Making an intervention plan

Once the TAP working group has agreed on an intervention design, it should prepare a detailed intervention plan. This plan will include an M&E framework with clear process and impact indicators for each proposed activity. The plan should also include information on the sustainability of the intervention and how it could be adjusted and scaled-up if successful.

It is important to invest time at this stage of developing an intervention plan. A good plan on how to implement the intervention and assess its outcomes and impacts will support the implementation process and could also help secure internal and external funding.

After developing the intervention plan, ethical approval from the relevant national body probably also will be needed. For information on ethical approval, please refer to Stage 3.

Preparing a project plan for the intervention

The intervention plan is prepared by the TAP working group. It is recommended that the TAP advisory group provides feedback on the plan and assists in adjusting and refining it based on the group's expert experience.

The intervention plan should include details on the planned activities, policy actions, budget, timeline, roles and responsibilities, and an M&E plan. Inspiration Box 11 provides a list of key elements to consider.

Inspiration Box 11. Project plan for the behaviour change intervention

The contents and format of the project plan depend on the context and the project. Some key elements to include are:

- introduction;
- background (summary of findings from stages 2, 3 and 4);
- aims and objectives;
- target group(s);
- overall presentation of the behaviour change intervention: intervention functions, activities and policy actions;
- detailed description of each activity: scope, purpose, timing, location, roles and responsibilities at all levels;
- detailed description of each policy activity: scope, purpose, timing, location, roles and responsibilities at all levels;
- M&E framework (see step below);
- budget, broken down by activity; and
- timeline with milestones.

A summary table can be developed, an example of which is shown in Table 14.

Inspiration Box 11 contd

Table 14. Template for intervention project plan

	Scope	Timing	Location	Roles and responsibilities
Intervention function 1:				
Activity A				
Activity B				
Policy activity X				
Intervention function 2:				
Activity C				
Activity D				
Policy activity Y				

Discussing sustainability early, even if the intervention is yet to be implemented, is very important. Discussions with stakeholders can, for example, engage decision-makers and raise awareness, which will make talks easier at later stages. Inspiration Box 12 presents questions to consider when thinking about sustainability and scale-up.

Inspiration Box 12. Sustainability and scale-up

The following areas and questions are examples of what can be considered in a discussion on the short- and long-term sustainability of the planned intervention and its activities and policy actions.

Human resources

- Are the necessary human resources available in the short and long terms?
- Is the necessary expertise and capacity available in the short and long terms?
- Are the roles and responsibilities clear? Are they clear if the project is scaled-up to additional target groups or additional geographical areas?
- Do any external support opportunities exist, such as volunteers or staff from local or nongovernmental organizations?

Financial resources

- Is sustainable funding of this activity realistic in the short and long terms?
- What funding sources exist (internal and external donors)?
- Could a budget increase be obtained through budget negotiations?
- Could resources be reallocated, so that other activities are scaled down?
- Are there opportunities for joint funding with other institutions/programmes/ministries?

Inspiration Box 12 contd

Supporting systems and processes

- Are there any existing health system structures or processes to support sustainability?

Content resources

- Can any existing tools (training programmes, information materials, guidelines, standard operating procedures, project descriptions) be used, making it unnecessary to develop new tools from scratch? Consider, for example, other countries or other health programmes.
- Do similar projects exist in other countries or other institutions that could be adapted for your project, or through which resources could be available?

Political will

- Is the necessary political and management support in place to ensure long-term sustainability?
- How can advocacy activities ensure political and management support? How can partners (international organizations, local opinion leaders, community leaders, others) help advocate for the project?

Developing an M&E framework

The objective of this step is to define how the implementation and impact of the intervention will be monitored and evaluated. Having a strong M&E system in place allows you to:

- track and document lessons learned
- continuously refine and improve the intervention
- assess whether the intervention was a success
- explore reasons behind intervention outcomes
- highlight opportunities to adjust, improve and scale-up
- advocate for continued investment.

The M&E framework defines the data to be collected and describes when, where and how this is done. The core of the framework is a set of indicators and targets:

- process M&E: analysis of the implementation of the intervention, its quality and acceptability
- impact M&E: analysis of the intermediate and long-term impact of the intervention.

It is suggested that a TAP working group meeting organized for Stage 4 should be used to agree on the indicators and targets. Process and impact indicators are discussed further below, and Exercise 11 can be used to guide discussion.

The M&E framework should include an overview of indicators and guidance on how the intervention is monitored and how its impact will be evaluated. Inspiration Box 13 provides guidance on possible components of an M&E framework.



Inspiration Box 13. Components of the M&E framework

The M&E framework can include the following:

- an overview of indicators and targets:
 - » process indicators and targets (related to intervention functions, activities and policy actions)
 - » intermediate impact indicators and targets (related to COM-B factors)
 - » long-term impact indicators and targets (related to health goals)
- guidance on how the process is monitored and measured, when and by whom;
- guidance on how the impact is evaluated, when and by whom;
- context, risks and possible confounding factors that need to be considered;
- confounding factors and external factors outside of your control that may impact the success of the intervention in a negative or positive way;
- economic and value-for-money factors to help assess intervention cost-effectiveness;
- special considerations for equity; and
- special considerations for doing no harm (how can it be assessed whether the intervention has had any unintended negative impacts?).

Process and impact indicators

Indicators are the type of data or information used to measure change. You will need to consider two types of indicators: process and impact.

Process indicators help you understand how or why an intervention does or does not work, the quality of intervention implementation and its acceptability among targeted stakeholders. Inspiration Box 14 provides information on process M&E.

Inspiration Box 14. Process M&E

Process monitoring may focus on the:

- quantity of activities (how many activities);
- extent of activities (how many people are engaged, how many are in the target group);
- acceptability of activities (satisfaction among participants);
- quality of activities (satisfaction among evaluations, objective quality criteria); and/or
- successes and shortcomings in the process and implementation of activities or policy actions.

Data-collection methods can be quantitative or qualitative:

- registration list or form;
- participant evaluation form;
- observation with checklist, such as checking for quality, level of participation, participant response and engagement;
- stakeholder interviews, survey or workshop;
- implementer interviews or reports; and/or
- participant interviews.

Inspiration Box 14 contd

It is also relevant to monitor and document contextual factors that may affect implementation and its impact. This will help you assess if any possible change, success or failure was due to the intervention itself or to external factors. Contextual factors may include other activities implemented in parallel. They may also feature legislative, political, societal, structural or other changes affecting the implementation context.



Impact indicators help show you if an intervention has worked, and whether it has had the desired output (intermediate impact) and outcome (long-term impact). Inspiration Box 15 provides information on impact M&E.

Inspiration Box 15. Impact M&E

For impact evaluation, the data collected should document any change related to:

- the barriers identified, relating to the COM-B factors (intermediate impact)
- the overall goal set for the TAP project, relating to the wider AMR problem (long-term impact).

To do this, a baseline (documentation of the situation before the intervention) should be established to compare with the situation during and/or after the intervention.

Data-collection methods are often quantitative but can also be qualitative.

To assess the intermediate impact (capability, opportunity, motivation), data may include, among others:

- participant surveys, questionnaires, tests
- participant interviews.

To assess the long-term impact, data may include, among others:

- monitoring data
- surveillance data
- data reported from health facilities.

Exercise 11 will assist you to identify and select process and impact indicators for the M&E framework.

Engaging stakeholders

Using stakeholders' experiences and expertise to inform intervention design and planning will strengthen the intervention's applicability and feasibility.

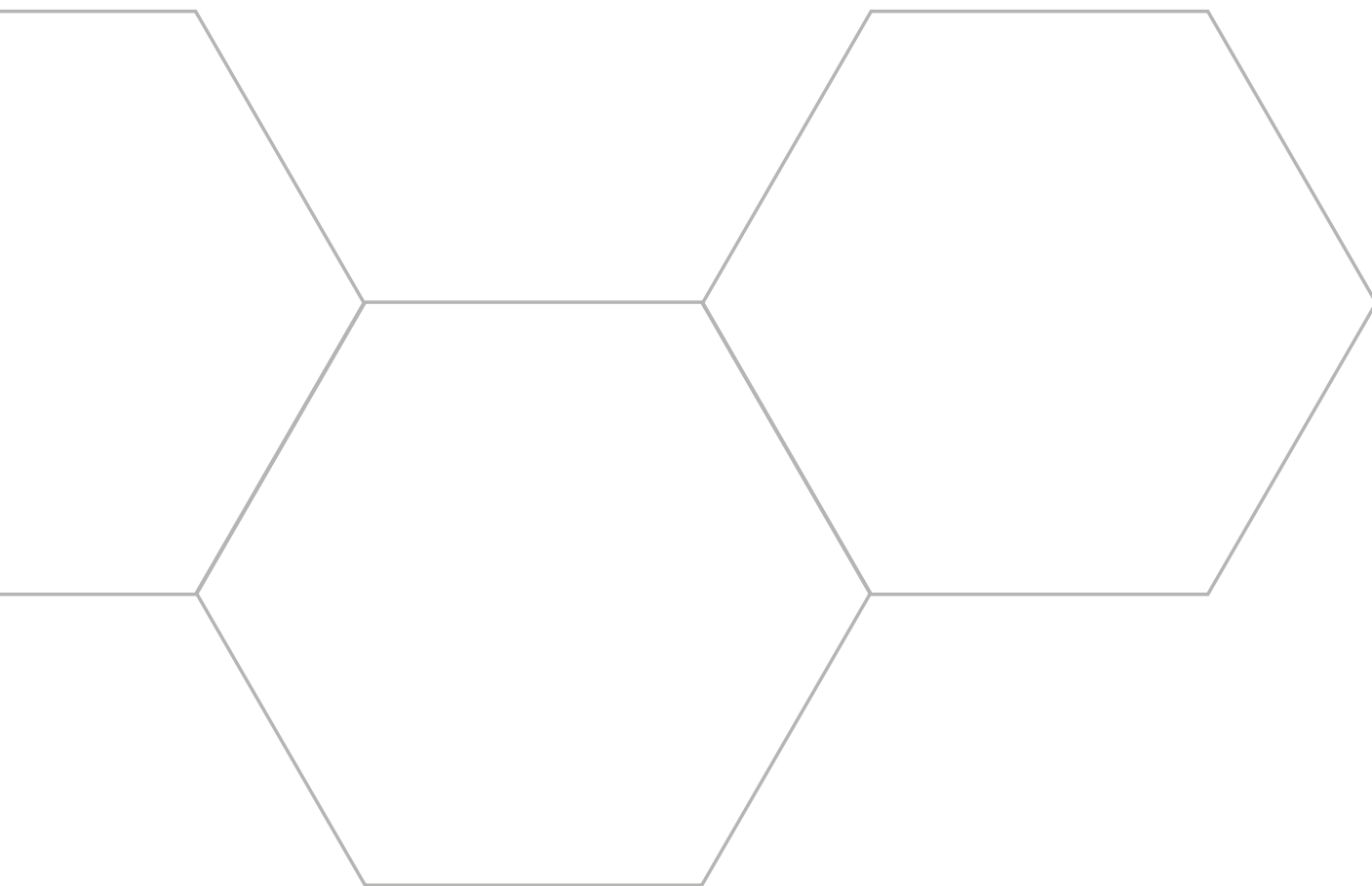
How stakeholders are engaged will depend on the type of stakeholder and the expected outputs of the consultation. Engaging stakeholders throughout the intervention design process is advised. Stakeholders that could be consulted (there might be more in your context) include:

- the **TAP advisory group**, which is engaged to provide expert opinion on the overall design and M&E plan of the intervention and to ensure that it is in alignment with the TAP process overall;
- **decision-makers and managers**, engaged for advocacy purposes, to inform on the TAP process and intended intervention and to discuss sustainability and scale-up;
- **target group representatives**, engaged to critically reflect on the applicability and feasibility of the proposed intervention; and
- **key persons involved in the day-to-day implementation of the intervention**, engaged to create ownership of the project, align expectations and ensure that the intervention is contextually appropriate.

Suggestions on activities and ways to engage stakeholders are provided in the discussion on Stage 2.

Output: intervention plan with M&E framework

The activities described above and outlined in section 4 of the TAP Quick Guide will assist you in developing a comprehensive intervention plan and M&E framework. After any requisite ethical approvals, it is time to begin implementation!





Exercise 5. 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 the barriers/drivers you wish to address with your behaviour change intervention.

The steps of the exercise

1. Prepare an overview of barriers and drivers

- In your formative research report you will have identified the COM-B barriers and drivers to the problem behaviour for your target group(s).
- Use the research report to complete Table E5.1.
- 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 (such as parents and health workers), a separate table will be required for each group.

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

- This step is supposed to be a quick screening. In-depth discussions should be saved for the next step.
- Go through Table E5.1 and select the barriers/drivers that you agree have an important impact on the behaviour and can realistically be changed. You might consider using the criteria used in Tool 3.3 of the TAP Toolbox 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, it is recommended that 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 (such as parents and health workers), then repeat this step for each group.

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

- Use Table E5.2 to rate each of the selected barriers/drivers. Take your time to discuss each of them in depth.
- Use the following criteria:
 1. **need/urgency** – how important is it to address this barrier or driver?
 2. **feasibility** – how realistic and practically possible is it to address this barrier/driver?
 3. **evidence** – do you know enough about this barrier/driver to develop interventions (from formative research, your situational analysis and other insights, for instance)?
- 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 them.
- 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 (for instance, you may need to talk to some key stakeholders about feasibility or do further research to collect 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 E5.1 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.
- It is advised that you select up to three barriers or drivers. You might later decide this is too many/few and can return to this exercise to reduce/increase the number.
- 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).

Table E5.1. Template: summary of formative research findings organized by COM-B factors^a

COM-B factor	Barriers	Drivers
Physical capability		
Psychological capability	<i>Health workers don't get enough information on X, Y, Z via the university curriculum</i>	<i>Some individual health workers access information on X, Y, Z through the Ministry of Health website</i>
Physical opportunity		
Social opportunity		
Reflective motivation		
Automatic motivation		

^a This is a template with one example. More rows might need to be added under each COM-B factor.





Table E5.2. Template: selecting barriers/drivers^a

Barrier/driver	COM factor	Need/urgency	Feasibility	Strength of evidence
<i>Lack of information on X, Y, Z in curriculum</i>	<i>Psychological capability</i>	<i>Important as X, Y, Z information is crucial to fight AMR in country</i>	<i>Feasible – the national curriculum can easily be amended to include information and training on X, Y, Z</i>	<i>International studies in situation analysis highlighted this problem, as did findings of formative research in Stage 3</i>

Selected barriers/drivers and associated com factor(s):

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





Exercise 6. Identify potential intervention functions for selected barriers or drivers

Objectives

The objectives of this exercise are to:

- get acquainted with possible overall intervention functions
- identify the intervention functions relevant to selected barriers/drivers.

Tip: an intervention function is a broad category that may include several activities that aim to change behaviour. An intervention function can be applied to an individual, group or population. It can also address more than one COM-B factor. The behaviour change intervention will use one or more intervention functions.

The steps of the exercise

1. Review possible intervention functions

- Take a look at Table E6.1 and E6.2 to see the full range of possible intervention functions 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 that arise.
- In Table E6.2, 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”.

Table E6.1. List of intervention functions, with definitions and examples

Intervention function	Definition	Examples of activities
Information/ education	Increasing knowledge or understanding	<ul style="list-style-type: none"> ● Poster campaign on the risks of HAIs ● Facts on safety and effectiveness of hand hygiene provided on employee payslips ● Leaflets containing information on infection control measures (such as the National Health Service campaign in the United Kingdom on avoiding spreading germs through coughing and sneezing – “Catch it, Bin it, Kill it”)
Persuasion	Using communication to induce positive or negative feelings or stimulate action	<ul style="list-style-type: none"> ● Poster campaign using loss-/gain-framing messaging to influence feelings and action: for instance, how would you feel if someone in your family could not be treated with antibiotics when critically ill?



Table E6.1. contd

Intervention function	Definition	Examples of activities
Incentivization	Creating an expectation of a reward	<ul style="list-style-type: none"> ● Incentives can be modest, such as free cinema tickets or meal tokens ● Additional annual leave or small salary increments (which could move into coercion depending on the size of incentive)
Coercion	Creating an expectation of punishment or cost	<ul style="list-style-type: none"> ● Strict regulations and enforcement of antibiotic consumption at primary, secondary and tertiary health-care levels
Training	Imparting skills	<ul style="list-style-type: none"> ● Training microbiologists in doing antimicrobial susceptibility training ● Training nurses on taking blood samples for culture
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)	<ul style="list-style-type: none"> ● Health staff who have not complied with hand-hygiene guidelines will not be allowed in wards
Environmental restructuring	Changing the physical or social context	<ul style="list-style-type: none"> ● 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	<ul style="list-style-type: none"> ● Identify key influencers among health workers and use them as ambassadors to promote behaviours that reduce AMR

Table E6.2. Matrix linking COM-B factors with intervention functions

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

2. Link your selected barriers/drivers with intervention functions

- In Exercise 5, you identified barriers/drivers associated with specific COM-B factors. This step will help you to start deciding how best to address them.
- Use Table E6.2 to identify which intervention functions are recommended for the COM-B factor(s) associated with the selected barriers or drivers.
- Complete Table E6.3 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 5.

Table E6.3. Template: overview of barriers/drivers with COM-B factors and intervention functions^a

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

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



Exercise 7. Consider possible activities within your interventions

Objective

The objective of this exercise is to:

- initiate initial discussions about the possible activities related to your intervention functions to help prioritize activities to be explored in Exercise 8.

The steps of the exercise

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 8. This exercise is just for initial discussions and activities and can be revised and refined later.
- Complete the first three columns of Table E7.1. Columns 1 and 2 can be transferred from Exercise 6. For column 3, discuss what the possible activities might be.
- These activities will be informed by the intervention functions selected in Exercise 6, but there may be additional activities the group decides to include based on other insights. Table E6.1 provides some examples 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 E7.1.
- You may first want to work in small groups and then come together to discuss ideas and decide on content and delivery.
- Table E7.1 has been provided as a template with some examples that you could use for this exercise.

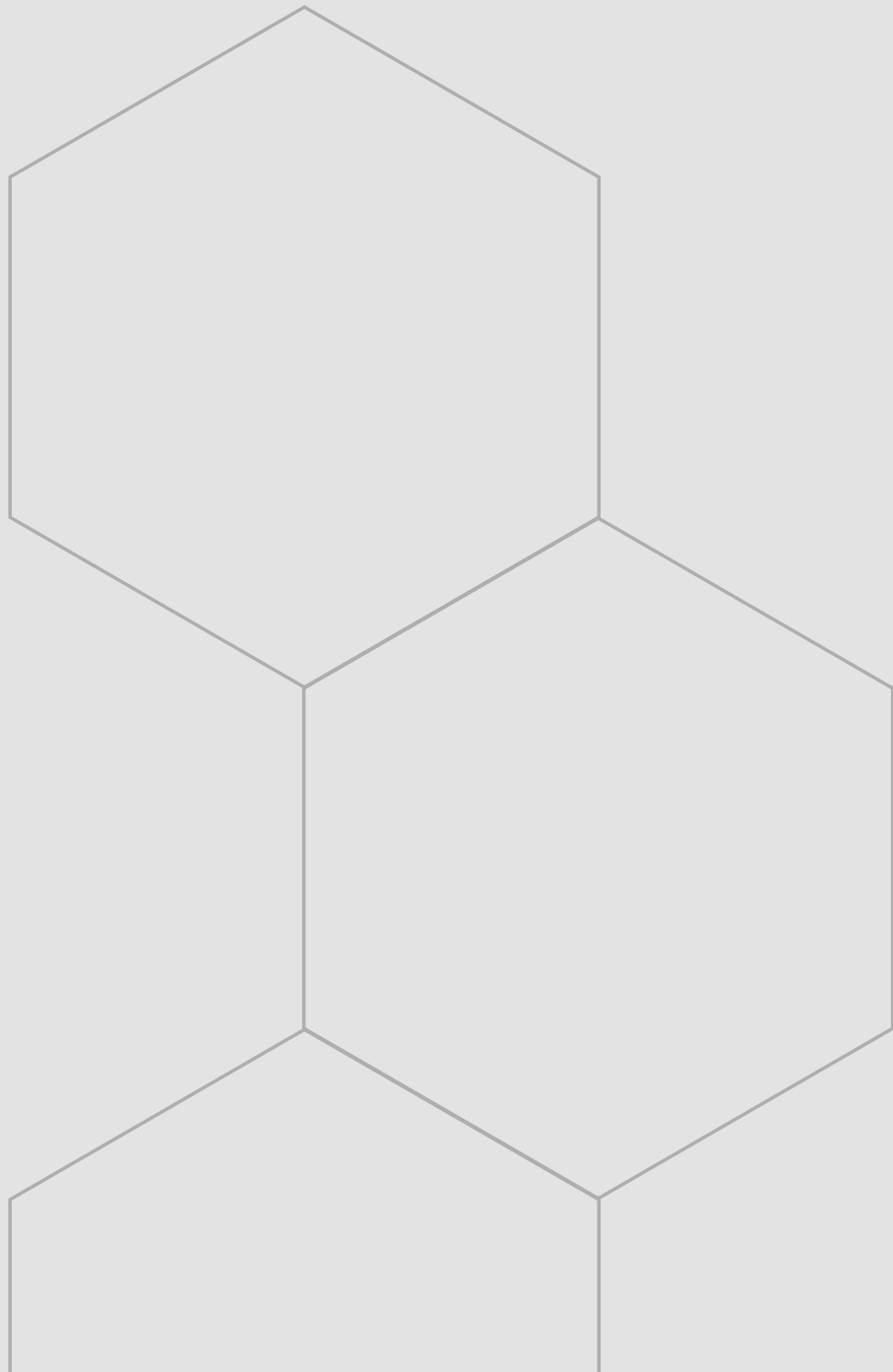


Table E7.1. Template and examples of activities and their details^a

Barrier/ driver	Intervention function (identified in Exercise 6)	Activity	What? (content)	When? (delivery)	Where? (delivery)	Who? (responsible)
<i>Lack of health-worker knowledge</i>	<i>Education</i>	<i>Revise curriculum</i>	<i>More information on X, Y, Z for graduate/postgraduate students</i>	<i>Dates curriculum should be changed, approved, and implemented</i>	<i>Institutions that will use the revised curriculum</i>	<i>Persons responsible for developing new content, approving content, and ensuring incorporation/publication etc.</i>
<i>Lack of health-worker knowledge</i>	<i>Training</i>	<i>Deliver training module to health workers</i>	<i>Develop training content Manual for delivery Presentations and handouts</i>	<i>Dates material needs to be developed Time needed for printing materials Time needed for organizing training Dates to deliver training</i>	<i>Location materials will be developed Location for printing Location where training will be delivered</i>	<i>Persons responsible for developing training, approving training, printing materials and coordinating and/or delivering training</i>

^a More rows should be added as needed.



Exercise 8. Prioritizing and selecting activities



Objective

The objective of this exercise is to:

- discuss and prioritize activities using five key criteria.

The steps of the exercise

1. Rate each activity

- Rate each activity from Exercise 7, using the following criteria (from low to high).
 - » How **acceptable** is the activity? How appropriate is it for the selected target group and other stakeholders involved?
 - » How **practicable** is the activity? How easily can it be delivered to the target group?
 - » How **effective** is the activity? How well does it work in a real-world context?
 - » How **cost-effective** is the activity? How well does it work in a real-world setting in relation to the activity cost?
 - » How **affordable** is the activity? Can be it delivered to the target group within budget?
 - » What **side-effects** might there be from the activity (positive and negative)?
 - » 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 do not meet, or rank too low on, any one criterion.
- Remember, if there is more than one target group, this exercise should be repeated for each group.

2. Prioritize activities

- Complete Table E8.1 with ratings.
- You can colour-code the ratings (low = red, medium = amber, high = green) or score them (from 1 (low) to 5 (high)).
- Discuss and agree on a few activities 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. If later this is deemed to be too many/few, this exercise can be repeated to reduce/increase the number of activities selected.

Table E8.1. Template for activity rating^a

Activities from Exercise 7	Affordable	Practicable	Effective	Cost-effective	Acceptable
Selected activities:					

^a More rows should be added as needed.





Exercise 9. Considering how policy can support activities



Objective

The objective of this exercise is to:

- identify relevant policy actions to support selected activities.

The steps of the exercise

1. Review possible policy actions

- A policy action is a measure, often initiated by authorities, that supports and enacts interventions. Take a look at Table E9.1 to see the full range of possible policy actions available. Allow team members time to read through and understand.

Table E9.1. 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
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 existing service delivery

2. Link selected activities with policy actions

- Using Table E9.1, go through the activities selected from Exercise 8 and discuss which of these policy actions would be essential or helpful to support each activity (for example, guidelines, fiscal measures, regulations or environmental measures).
- Identify the stakeholders who need to be engaged to make this possible and how they will need to be involved.
- Complete Table E9.2 as an overview of the selected activities and related policy actions.

Table E9.2. Overview of activities and policy actions^a

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

^aThis is a template. More rows should be added as needed.



Exercise 10. Documenting the intervention development process

Objective

The objective of this exercise is to:

- create an overview of the decisions made in exercises 5–9 for reporting and documentation.

This will also be used later for evaluation purposes.

The steps of the exercise

1. Complete Table E10.1, summarizing the outcome of each exercise.
2. You will need a separate table for each target group and each target behaviour.

Table E10.1. Summary of exercises 5–9

Target group				
Behaviour				
Selected barriers/drivers (Exercise 5)	Associated COM-B factor (Exercise 5)	Selected intervention functions (Exercise 6)	Selected activities (Exercise 7–8)	Selected policy actions (Exercise 9)



Exercise 11. Considering process and impact targets/indicators

Objective

The objective of this exercise is to:

- select process indicators/targets and impact indicators/targets (intermediate and long-term) for the intervention.

The steps of the exercise

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 that will help to measure whether the activities and policy actions were conducted at all.
- 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 (such as the political situation, existing legislation, organizational norms and 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 how data that will allow evaluation of the change will be collected, who will do it and when (see Inspiration Box 14).
- Table E11.1 provides an example of how this information can be recorded. It is a template with an example for the activity – training of health workers – that has three indicators identified. You might identify more or fewer indicators for activities you select. This table can be completed for each activity/policy action you include.

Table E11.1. Example of recording process indicators and targets

Activity	Training of health workers			
Indicators	Targets	Data sources	Data collection	Timing
Number of cascade training sessions	≥ 5 cascade training sessions conducted	Training registration lists	Registration lists sent to project coordinator	At end of each training
Number of facilities receiving training	≥ 50 training sessions 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 training	Quality checklists sent to project coordinator	At end of each training



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 (such as 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 that will enable evaluation of the change will be collected, who will do it and when (see Inspiration Box 15).
- Table E11.2 provides an example of how this information can be recorded.

Table E11.2. Example of recording intermediate impact indicator and target^a

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

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

3. Select long-term impact and equity indicators

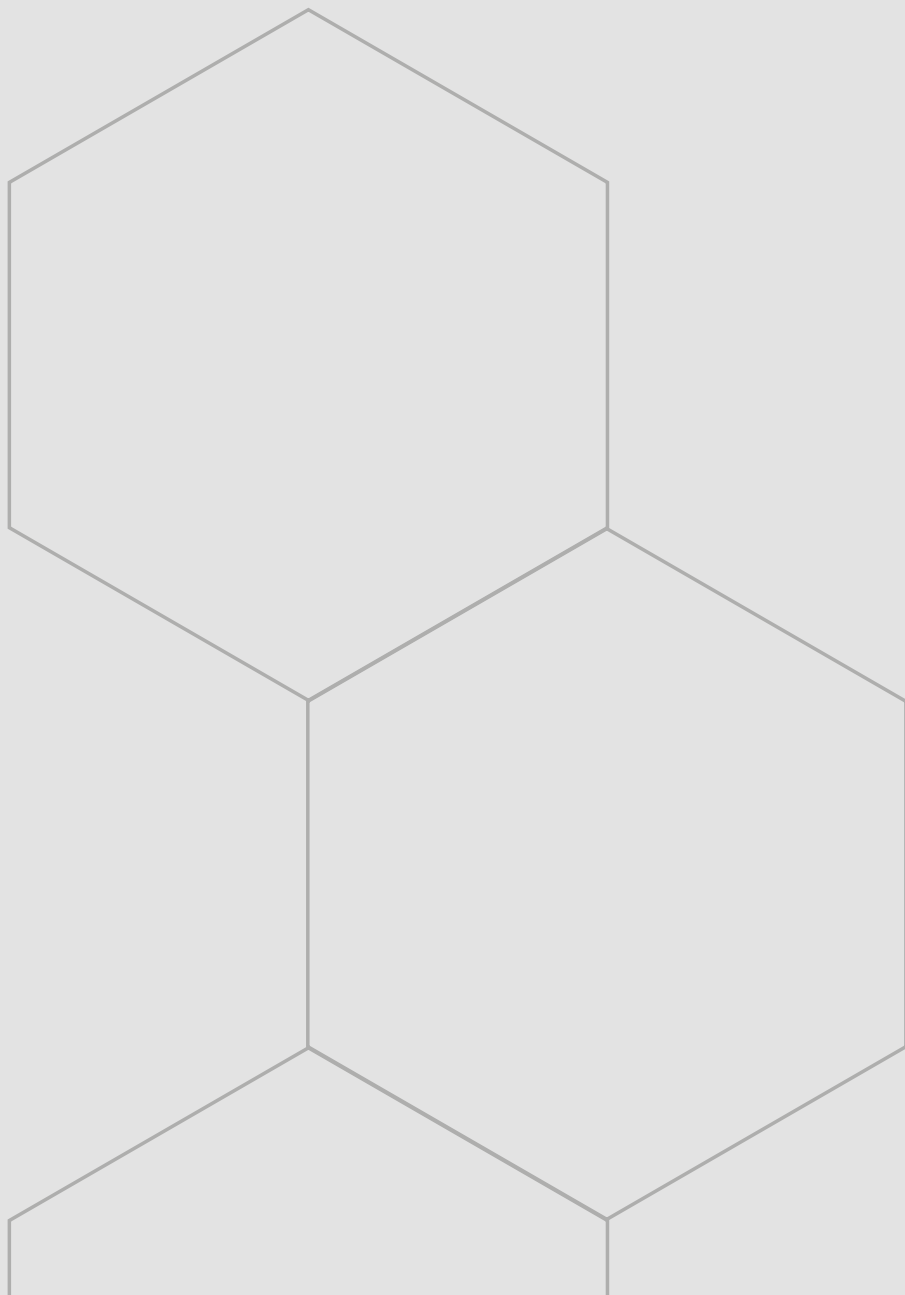
- Long-term impact indicators allow you to see if you have achieved your overall intervention goal. Data collected can document change related to:
 - » the barriers identified, relating to the COM-B factors (intermediate impact)
 - » the overall goal set for the TAP project, relating to the wider AMR problem (long-term impact).
- It may take several years to see changes in the overall goal, and this will be influenced by other factors outside the intervention.
- It is important to build in an assessment of equity (to ensure that the intervention does not negatively impact health equity). Discuss among the TAP working group and with other stakeholders 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 that will enable evaluation of the change will be collected, who will do it and when (see Inspiration Box 15). To assess the long-term impact, data may include, among others:
 - » monitoring data
 - » surveillance data
 - » data reported from health facilities.
- Table E11.3 provides an example of how this information can be recorded.



Table E11.3. Template to record long-term impact and equity indicator and target^a

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

^a More rows should be added as needed.





Stage 5. Do it: implement and evaluate

The objectives of Stage 5 are to:

- implement the behaviour change intervention and monitor it
- evaluate the intervention
- adjust and potentially scale-up the intervention.

The working methods for Stage 5 are:

- project implementation as outlined in project plan
- M&E as outlined in the M&E framework
- meetings and stakeholder workshops.

The key outputs from Stage 5 are:

- monitoring of data
- the evaluation report.

Stage 5 is where the implementation of the planned intervention takes place with its activities and policy actions. **How this is done, and how long it takes, depends on the project plan and cannot be described in full detail below.** The process may take years and, if it proves successful, should be continued for the future.

A suggested process could be:

YEAR 1: implementation with ongoing monitoring

YEAR 2: evaluation and adjustment

YEARS 3+: continued implementation, monitoring, evaluation and scale-up.

The sections below outline the process of implementation and M&E. The output of this process should be an evaluation report outlining intervention results, conclusions and recommendations for adjustments and scale-up.



Implement planned activities and policy actions

The behaviour change intervention should be implemented as outlined in the project plan (see Stage 4). The project plan will include details on all activities, budget, timeline, roles and responsibilities, and inputs and expected outputs.

Monitor and evaluate

The intervention will be monitored and evaluated on the basis of the M&E framework set up during intervention planning (see Stage 4). Monitoring will happen at different points in the implementation process for different reasons (setting a baseline for data comparison, or conducting a mid-point or final evaluation, for example). The objective of monitoring the intervention on an ongoing basis is to obtain evidence on how the planned activities are implemented.

Depending on whether you are measuring short-term, mid-term or long-term indicators, you might be collecting different information. Do not be afraid to rethink data collection if you face problems, but remember to document the rationale and solutions.

The objective of a final evaluation is to assess if the intervention has had the intended impact, demonstrate how and why it worked or didn't, and make recommendations on how to adjust the intervention and scale it up.

Monitoring and adjustment

Monitoring can be done regularly throughout the implementation process. The project lead or a consultant collects and analyses the data outlined in the M&E framework. Monitoring the implementation and quality of activities is important to ensure that the intervention is implemented well and according to budget, timeline and expectations. Monitoring data is also useful for the subsequent evaluation of the intervention. Monitoring data can be used to understand the reasons activities were successful or not.

On the basis of monitoring data, a report that feeds into the evaluation report can be developed. This report could include:

- an analysis of the data collected
- conclusions regarding the implementation of the intervention
- recommendations for improvements to the intervention.

You can use the M&E framework to monitor the intervention on an ongoing basis to understand how activities are being implemented, their quality and whether they are going according to time, budget and expectations. If you find the activities are not meeting these expectations, you should try to understand why this is happening and adjust the intervention if needed. Do not worry if this happens. You can consider returning to activities in stages 1–4 if needed. Whatever you do, make sure to document the process.

Final evaluation and scale-up

At the end of the intervention, you should develop a final report based on the analysis of the data that have been collected during the implementation period. This report might explore, for example, changes in the identified COM-B drivers/barriers, progress against the aim of the intervention and measures of equity. The details of your report will be specific to your project.

Based on the data analysis, you will be able to consider the outcomes of the intervention and whether it should be adjusted and scaled-up, if further research is required or if attention should be paid to another

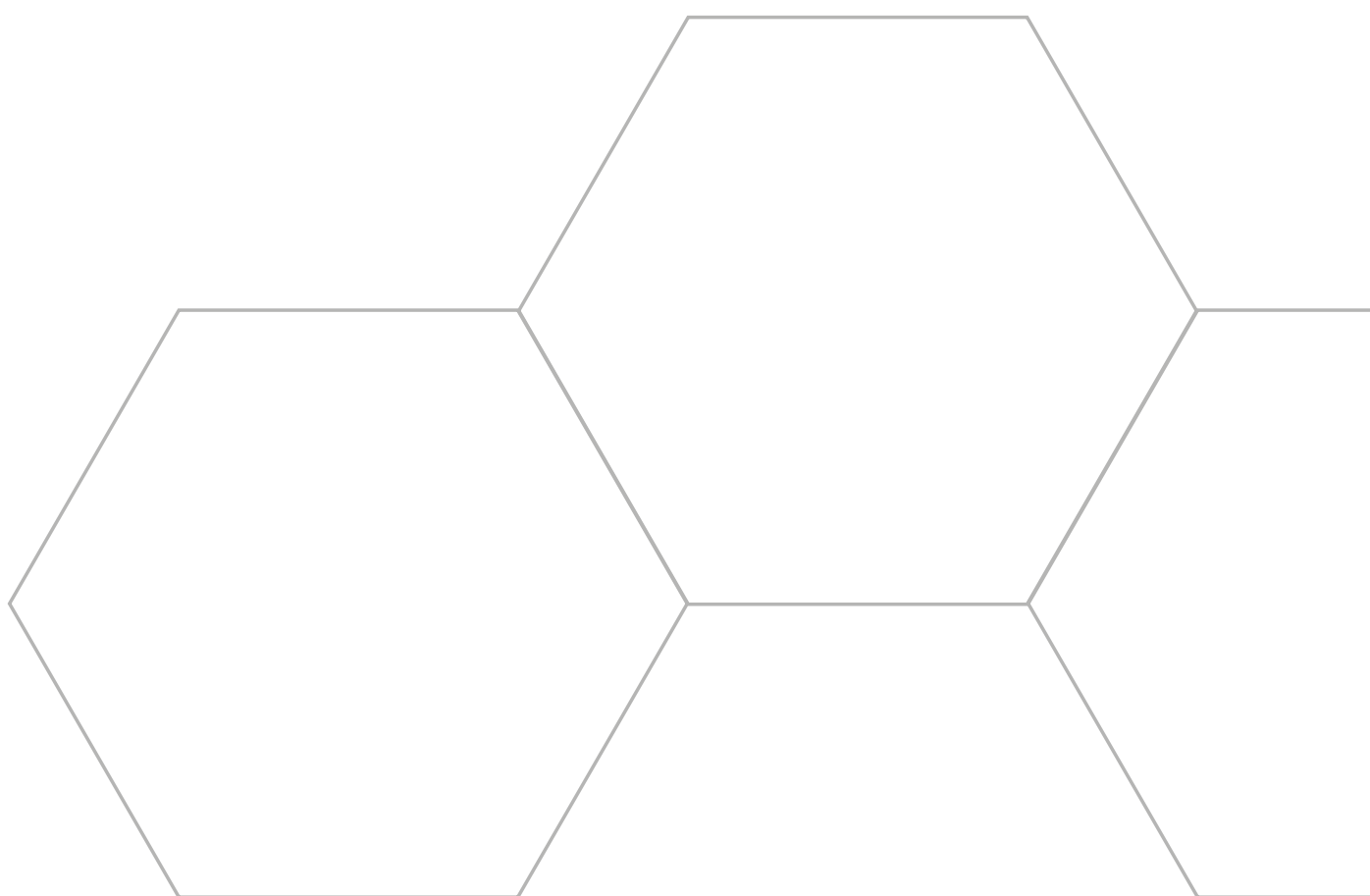
issue or behaviour. Again, your decision will be based on the results of the intervention and should be taken in discussion with the TAP working group.

Scale-up and adjustment decisions should be made through the TAP working group following a discussion of the evaluation and M&E findings. Scale-up must be considered carefully given that interventions were designed using a specific behavioural insights approach relevant to the group being targeted in a particular context.

Output: intervention reporting

By the end of the project, you will be able to assemble a series of reports, or one final report, outlining:

- the results of the M&E process
- an analysis of intervention results and outcomes
- recommendations on how to proceed, whether to scale-up or adjust, or other activities or decisions.







References¹

1. The TAP quick guide: a practical handbook for implementing tailoring antimicrobial resistance programmes. Copenhagen: WHO Regional Office for Europe; 2021 (<https://apps.who.int/iris/handle/10665/341631>).
2. Michie S, Atkins L, West R. The Behaviour Change Wheel: a guide to designing interventions, first edition. London: Silverback Publishing; 2014 (<http://www.behaviourchangewheel.com/>).
3. The TAP toolbox: exercises, tools and templates to support your tailoring antimicrobial resistance programmes plan. Copenhagen: WHO Regional Office for Europe; 2021 (<https://apps.who.int/iris/handle/10665/341632>).
4. Pub Med.gov [website]. Bethesda (MD): National Library of Medicine; 2021 (<https://pubmed.ncbi.nlm.nih.gov/>).
5. Cochrane library [website]. Chichester: John Wiley & Sons, Inc.; 2021 (<https://www.cochranelibrary.com/>).
6. Hajdu Á, Szilágyi E, Kurcz A, Benkő R, Matuz M, Székely É et al. Promoting the appropriate use of antibiotics to contain antibiotic resistance in human medicine in Hungary. Copenhagen: WHO Regional Office for Europe; 2018 (EVIPNet Evidence Briefs for Policy Series, No. 2; <https://apps.who.int/iris/handle/10665/346592>).
7. Research Ethics Review Committee (ERC). Recommended format for a “research protocol”. In: World Health Organization [website]. Geneva: World Health Organization; 2021 (<https://www.who.int/groups/research-ethics-review-committee/recommended-format-for-a-research-protocol>).
8. World Medical Association. World Medical Association Declaration of Helsinki: Ethical Principles for Medical Research Involving Human Subjects. *JAMA* 2013;310(20):2191–4. doi:10.1001/jama.2013.281053.
9. EU General Data Protection Regulation (GDPR): 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, pp. 1–88.
10. Braun V, Clarke V. Using thematic analysis in psychology. *Qual Res Psychol*. 2006;3(2):77–101 (<http://www.tandfonline.com/doi/abs/10.1191/1478088706qp0630a>).

1 All references accessed 24 April 2022.

11. Creswell JW. *Qualitative inquiry and research design. Choosing among five approaches*, third edition. Los Angeles (CA): Sage; 2013.
12. Neal JW, Neal ZP, VanDyke E, Kornbluh M. Expediting the analysis of qualitative data in evaluation: a procedure for the Rapid Identification of Themes from Audio Recordings (RITA). *Am J Eval.* 2015;36(1):118–32 (<http://journals.sagepub.com/doi/10.1177/1098214014536601>).
13. Field A. *Discovering statistics using IBM SPSS statistics: and sex and drugs and rock 'n' roll*, fourth edition. Los Angeles (CA): Sage; 2013.
14. Creswell JW. *Research design: qualitative, quantitative, and mixed methods approaches*, fourth edition. International student edition. Los Angeles (CA): Sage; 2014.



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

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.who.int/europe

