World Health Organization
REGIONAL OFFICE FOR Europe

Rapid qualitative research to increase COVID-19 vaccination uptake

A research and intervention tool

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ABSTRACT

This qualitative tool provides step by step guidance on how to design and conduct rapid qualitative research with different target groups to understand their barriers and drivers to COVID-19 vaccination. These insights can then be used to inform the development of interventions tailored to the target groups for successful COVID-19 vaccination uptake. Whilst the document focuses on COVID-19 vaccination, the described rapid approach can be used for any vaccination programme.

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Abbreviations

COM-B	Capability, motivation, and opportunity for behaviour change model
M&E	Monitoring and Evaluation plan
RAP	Rapid assessment procedures
TIP	Tailoring Immunization Programmes approach

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1. Purpose and development of this research tool

The objectives of this tool are to provide step by step guidance on how to design and conduct rapid qualitative research with different target groups to understand their barriers and drivers to COVID-19 vaccination; and to use these insights to inform the development of interventions tailored to the target groups for successful COVID-19 vaccination uptake.

The target audience for this research and intervention tool is a national/regional group with responsibility for ensuring high COVID-19 vaccination uptake. This group may include representatives from the immunization programme, the Ministry of Health, WHO, policy makers, and other United Nations and non-governmental organization partners.

It can be used to target different groups prioritized for COVID-19 vaccination. Whilst the document focuses on COVID-19 vaccination, the described rapid approach can be used for any vaccination programme.

This is a living document adapted from, and applying the theoretical underpinning of, the following documents: Data for action: Achieving high uptake of COVID-19 vaccines *(1)*, WHO field guide to qualitative research for new vaccine introduction *(2)*, and WHO Tailoring Immunization Programmes (TIP) *(3)* including the Capability, motivation, and opportunity for behaviour change (COM-B) model.

Earlier iterations were piloted in Bosnia and Herzegovina, Estonia, Georgia, North Macedonia, Romania, Russian Federation and Ukraine. Feedback from in-country national counterparts was used to improve the tool. In its current form this approach is being piloted in Armenia and Azerbaijan.

2. Gaining insights to inform interventions

The COVID-19 pandemic has affected mental and physical well-being, social cohesion, economic stability as well as individual and community resilience and trust (4). Vaccination is key to bringing an end to the pandemic, but in this complex setting it is necessary to understand how, why and the context in which individuals and communities are responding to vaccination efforts.

To ensure high vaccination uptake among different target groups such as health workers and vulnerable patient groups, the selection and design of tailored interventions should be informed by behavioural insights into the barriers to, and drivers of, vaccination for these groups.

Qualitative research provides an understanding of a target group's points of view, what they know and don't know, their concerns and experiences. The data collection is through semi-structured discussions which encourages participants to provide perspectives and explanations of their behaviours and intentions. The advantage to this approach is that researchers can pursue insights in greater depth during the data collection whereas a quantitative survey is limited to gathering information through pre-determined criteria. By using a rapid analysis of the data, these insights can then inform tailored interventions for target groups in a timely manner.

SUMMARY OF THE PROCESS

Plan and conduct research
- ❑ Establish a core research team
- ❑ Develop a research protocol
- ❑ Obtain ethics approvals for research
- ❑ Collect and analyze the data

Intervention design
Use the data analysis outcome to:
- ❑ Link barriers to appropriate intervention types
- ❑ Select intervention types and plan activities

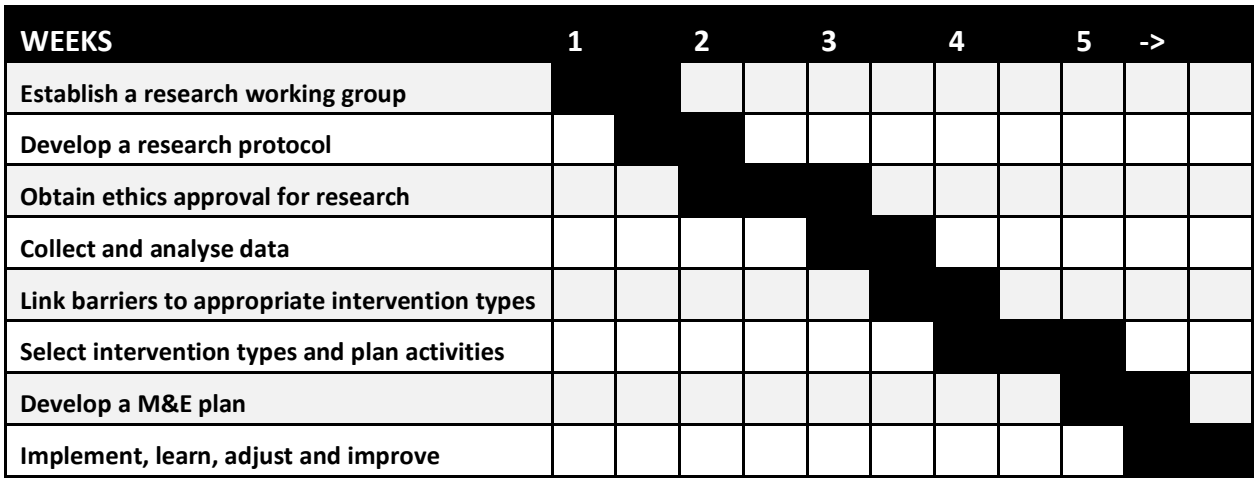
Implementation
- ❑ Develop a monitoring and evaluation plan
- ❑ Implement, learn, adjust and improve

3. Plan and conduct research

As a first step it is important to coordinate with responsible actors in COVID-19 vaccination and related areas such as the training of health workers, risk communications, community engagement, and COVID-19 vaccination programme design and implementation. You need to discuss the purpose of the research, expected timeline and commitments. It is crucial to get the support and buy in from leadership and staff of the national immunization programme as they will be responsible for implementation of many of the tailored and targeted interventions.

For best results, be sure to dedicate enough time and resources to complete each of the steps outlined in this tool. Time estimates are presented in Figure 1 and are provided in more detail in the planning tool (Annex A).

Fig. 1. Timeline for conducting research and implementing interventions



3.1. ESTABLISH A RESEARCH WORKING GROUP

Establish a research working group with the necessary commitments in supporting research activities and implementing identified interventions. This working group will include the research team and key stakeholders.

Consider including the following:

- immunization programme representatives
- Ministry of Health
- WHO country office
- Other policy makers
- relevant institutions for research as well as the intervention design and implementation
- international organizations.

The research team (led by a primary investigator) leads the implementation of the study, including engaging a research company to carry out the recruitment, data collection and analysis if resources allow.

3.2. DEVELOP A RESEARCH PROTOCOL

Base your research on the COVID-19 vaccination strategy and uptake situation in your country to tailor your research aims, objectives and data collection to specific target groups of concern.

(a) Select your target groups

You first need to select your target groups for the research. They may be specific population groups that currently have low vaccination uptake, vaccination priority groups or professional groups (e.g. health workers) that have an important role in the vaccination programme.

When examining vaccination uptake data, compare it with vaccine dose utilization over a determined period of time (e.g. the previous six weeks) to determine if uptake is influenced by supply and availability of vaccines. Where there is low vaccination uptake and low dose utilization, likely there may be access and/or demand and acceptance challenges among those groups. Compare with any behavioural insights research (e.g. population surveys) to help you select the target groups.

(b) Write your research aims and objectives

Formulate general aims and specific research objectives that will inform the discussion guides and data analysis. The aims need to specify 1) the target group (e.g. health workers); 2) the target behaviour (e.g. recommending COVID-19 vaccination); and 3) any within target group comparisons you plan to do (e.g. doctors versus nurses).

The objectives are more specific and should enable you to achieve your aims. They relate to particular topics you want to explore (e.g. knowledge, access, social support, attitudes and motivation). Examples of general research aims and specific objectives for selected target groups are presented in Example box 1.

Example box 1: Examples of research aims and objectives for selected target groups

For health workers	**For target groups in the population**
AIMS • To investigate the views of health workers on the barriers and drivers to receiving COVID-19 vaccination for themselves and for recommending and delivering it to the public • To examine whether and how the barriers and drivers vary across and within urban/rural locations and for different professional roles (doctors versus nurses) OBJECTIVES To explore health workers': • knowledge and health literacy of COVID-19 vaccines and vaccination; • attitudes and intentions towards COVID-19 vaccines and vaccination; • social support and social norms for receiving and recommending COVID-19 vaccination; • access to receiving and delivering COVID-19 vaccination.	AIMS • To investigate the views of older adults (65 years +) on their barriers and drivers to receiving COVID-19 vaccination • To investigate the views of adults (<65 years) with underlying condition(s) on their barriers and drivers to receiving COVID-19 vaccination • To examine whether and how the barriers and drivers vary across and within urban/rural locations and for men and women OBJECTIVES To explore older adults'/adults with underlying conditions': • knowledge and health literacy for COVID-19 vaccines and vaccination • attitudes and intentions to receiving COVID-19 vaccination • social support and social norms for receiving COVID-19 vaccination • access to COVID-19 vaccination

(c) Select your research method(s)

To gather the insights two common and effective qualitative research methods are often used. 1) focus group discussions and 2) individual in-depth interviews. They have different purposes and strengths *(5).*

A focus group discussion is a moderated conversation with a group of people from the same target group. They allow people to exchange opinions. This exchange may be stimulated by the presence of others. You can also gather many opinions in a short time. Focus group discussions typically last 60-90 minutes.

An individual in-depth interview is a one-on-one conversation. They are often used when the participant has special knowledge or a unique point of view, where the topic is sensitive and the participant may not feel comfortable speaking openly in a group, or when it is difficult to bring a group together. Interviews typically last 30-60 minutes.

(d) Choose your sample

Purposive sampling of the target group(s) is recommended *(5)*. This means that you intentionally select participants that represent a mix of characteristics within your selected target group; such as age, gender, ethnicity, occupation, education, religious affiliation, geographic location and vaccination status which are likely to provide a diversity of views and experiences that you can compare in the data analysis. Examples of sampling decisions are presented in Example Box 2. You may have others that fit your context better.

Decide which characteristics are most important to sample and which are less important. The most important characteristics are those you will want to compare and, therefore, in case of focus group discussions organize into separate groups. The less important characteristics should be included as a representative mix within a target group. In the examples you will see a prioritization by profession and location for health workers and location for the older adults/adults with underlying conditions (indicated by *). This means that the focus groups discussions/interviews are deliberately organized to achieve the comparison based on the most important sampling criteria.

The next step is to decide how many focus group discussions or in-depth interviews you plan to conduct.

The more target groups and participant characteristics you want to include, the more focus group discussion/interviews you will need. There is no precise way to decide on this number. We recommend to conduct 2-4 focus group discussions or 10 interviews for each target group. If you have multiple characteristics that you want to sample, you should increase the number accordingly.

You will know if you have done enough focus group discussions/interviews because you will no longer be hearing new things from your participants. Examples of research participant numbers are presented in Example Box 2.

While in-person focus group discussions can have as many as 12 participants in a discussion, online discussions are more manageable with 4 to 7 participants per discussion.

Example box 2: Examples of sampling decisions and research participant numbers

For health workers

Sampling decisions: Research participants will be a mix of:

1. Professions*: doctors and nurses working in primary health care and hospitals;
2. Locations*: urban and rural locations of health facilities where the health workers are based;
3. Genders: men and women;
4. Age-groups: younger health workers/newer to the profession and older/more experienced health workers. Participants will be at least 18 years old.

Research participant numbers:

- 3 focus group discussions with doctors (1 with doctors from urban primary health care, 1 with doctors from an urban COVID-19 hospital, 1 with doctors from rural primary health care/hospitals);
- 3 focus group discussions with nurses (1 with nurses from urban primary health care, 1 with nurses from an urban COVID-19 hospital, 1 with nurses from rural primary health care/hospitals);
- Up to 6 interviews (3 doctors/3 nurses) may be conducted with health workers who are reluctant to share their views in a group discussion.

Within each focus group discussion (and across the interviews) we will include men and women across the age groups.

For other target groups in the population

Sampling decisions: Research participants (older adults/adults with underlying conditions) will be a mix of:

- Location*: Urban and rural locations where participants live
- Gender: Men and women.
- Age-groups: Older and younger people. Participants will be at least 18 years old
- Education: secondary and university education

Research participant numbers:

- 4 focus group discussions with older adults (65 years +) (2 urban, 2 rural)
- 10 interviews with adults (<65 years) with underlying conditions (6 urban, 4 rural)

Within each focus group discussion (and across the interviews) we will include men and women across the age groups, with different levels of education.

** Note: Indicates the characteristics considered to be most important to sample on for these example studies.*

(e) Develop your discussion guide(s)

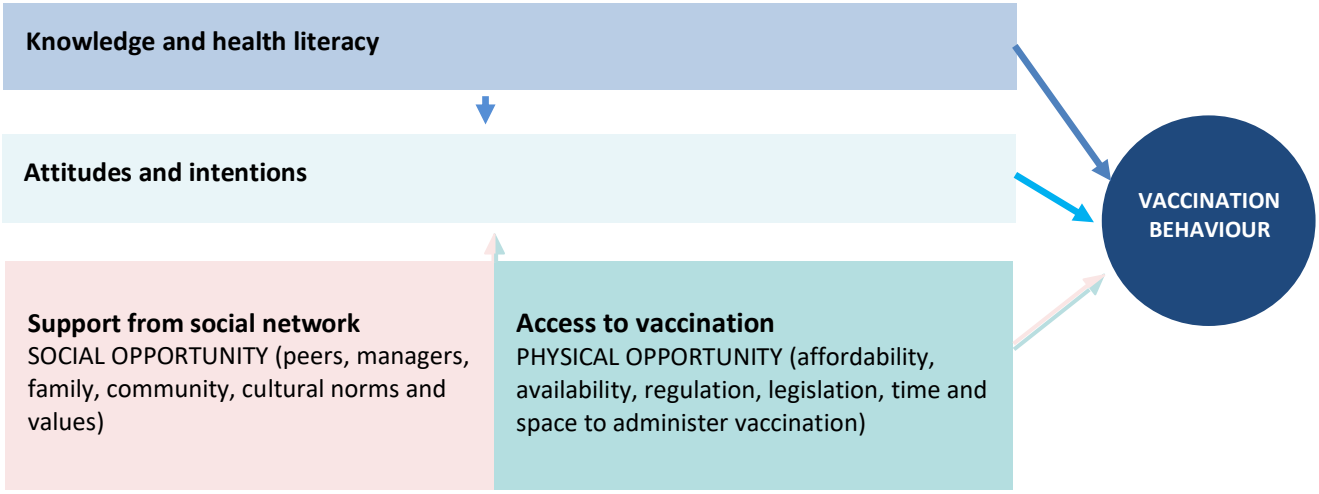
A discussion guide is a list of questions to be asked of participants in focus group discussions or interviews and needs to cover all the research aims and objectives. An example of a discussion guide for health workers is presented in Example Box 4. This can be used for focus group discussions or interviews. It will take longer to use in a focus group discussions because you have more people to offer their opinions than in an interview. An example of a discussion guide for older adults/adults with underlying conditions is provided in Annex B. Both guides have been designed using the capability, motivation, and opportunity for behaviour change (COM-B) model *(6)*, which is a framework for understanding health behaviours including vaccination behaviours.

The COM-B model recognizes that there are multiple factors affecting whether an individual will perform (or not perform) a specific health behaviour. Some of these are related to the individual him- or herself, and some of them are connected to the environment (Fig. 2). The questions in the discussion guide for health workers have been designed to capture these different factors affecting whether a health worker receives, recommends, and/or delivers COVID-19 vaccination.

Adapt these discussion guides to address your research aims and objectives for your selected target groups. Use all the COM factors to ensure that you do not miss hearing something important.

Once the discussion guide has been developed, pilot test it with two or three people who are fluent in the language that the focus group discussion/interview will be conducted in. This will help identify any questions that are not clear or do not elicit the type of response intended and show where the question ordering needs to be changed.

Fig. 2. The COM-B Model adapted to vaccination



For more information on the modified COM-B model, please refer to the following publications: TIP: Tailoring Immunization Programmes *(3)* and Understanding vaccine acceptance and demand—and ways to increase them *(6)*

Example box 4: Example of a discussion guide

For health workers

Questions are for unvaccinated participants. If participants are vaccinated, adjust the wording accordingly.

- Primary question
- ○ Optional follow-up question to pursue topic further

Opening question: Please share a little about yourself.

Knowledge and health literacy about COVID-19 vaccines and vaccination

- What have you heard about COVID-19 vaccines?
  - ○ What did you think about that information?
  - ○ What have you heard about the different COVID-19 vaccines?
  - ○ What else have you heard?
  - ○ Who did you hear this from (or where did you see it)?
- What have you heard about the COVID-19 vaccination programme in your country?
- Is there anything else you think you need to know about COVID-19 vaccines?
  - ○ From whom would you like to receive this information?
- Is there anything else you think you need to know about the COVID-19 vaccination plan?
  - ○ From whom would you like to receive this information?

Access to COVID-19 vaccination

- If you were to get a COVID-19 vaccine, can you take me through how you would get one? Start at the beginning
  - ○ Where would you go to get it?
  - ○ Would it matter to you which vaccine you were getting? Why?
  - ○ How would you get there?
  - ○ Are there any other things you would need to do (e.g. find care for young children, find someone to take care of livelihood / get up earlier to take care of household duties)?
  - ○ Would there be any cost involved for you (not just for the vaccine, but things like transport)
  - ○ What would (or does) make it easy for you to get a COVID-19 vaccine?

Social support from social network for COVID-19 vaccination

- Take me through how you would decide whether to get the COVID-19 vaccine.
  - ○ Would there be anyone else involved in the decision?
  - ○ Who do you think you might discuss it with?
- How do your health worker colleagues feel about COVID-19 vaccines?
  - ○ What about your family and friends?

- Would a recommendation to get vaccinated from a health worker colleague influence your decision? Why/why not?
    - What about a recommendation from a religious or community leader?

Attitudes and intentions related to COVID-19 infection and vaccination

- Are you concerned about getting COVID-19?
    - Why do you feel that way?
    - Have you had COVID-19 infection before?
    - How likely do you think it is that you could become infected (again)?
    - How severe do you think it would be?
- How do you feel about the COVID-19 vaccine?
    - What are your thoughts about the safety of the vaccine?
    - What are your thoughts on it being a new vaccine?
    - What are your thoughts on its effectiveness?
    - What are your thoughts on the different COVID-19 vaccines?
- Would getting a COVID-19 vaccine change things for you? How?
    - Seeing family and friends?
    - Going out in public?
    - Going back to work?
- Do you want to get the COVID-19 vaccine? Why/why not?
- (If unsure or resistant) What would convince you to get it?
    - Who could convince you to have it?

Concluding questions *(Exit questions)*

- What else do you want us to know about your perspectives or the perspectives of people you know regarding COVID-19 vaccines?

3.3. OBTAIN ETHICS APPROVAL FOR THE RESEARCH

Before starting the research, it is necessary to obtain ethical approval to conduct the research from an independent local ethics committee. You need to write a research protocol which details a plan for all steps of the research: your research aims and objectives, your target groups and sampling, your qualitative research method(s), your plans for data collection and analysis. A suggested list of content required for a research protocol is provided in Annex C. Check with your local ethics committee on their requirements because they can vary slightly by country.

3.4. COLLECT AND ANALYSE THE DATA

(a) Collect your data

Once ethical approval has been obtained and participants have been recruited, begin data collection. You need to audio-record the focus group discussions/interviews and obtain approval for this from participants. All data collected should be anonymized (names of people and places are removed) and respect local principles of data protection.

(b) Analyse your data

To quickly identify key findings from the focus group discussions and interviews, you can analyse the data using a rapid analysis process *(7)*. This approach will enable you to quickly identify key barriers and drivers to positive vaccination behaviours for your target groups and allow you to develop tailored interventions for each group.

This process uses rapid assessment procedure (RAP) sheets to organize the focus group discussion/interview data for analysis instead of the more traditional and time-consuming method of converting the focus group discussion/interview recordings into word-for-word text format (transcripts) for analysis. To further accelerate the process a member of the research team could sit in on the focus group discussions/interviews and start completing the RAP sheet simultaneously with the discussion. They would need to listen to the audio-recording afterwards to check and refine their notes. At least two people from your research team (ideally more) should perform the data analysis in this 3-step rapid analysis process.

STEP 1: Develop the RAP sheet(s)

The RAP sheets will be organized by topics (primary questions) from your discussion guide (corresponding with the COM-B factors). You will need one RAP sheet per target group and all the of the FGDs/IDIs for that target group go into this one RAP sheet. Example RAP sheets for the health worker and older people/people with underlying conditions discussion guides are provided in Annex D. You should have different columns for the key comparisons of characteristics that you want to do e.g. urban versus rural, doctor versus nurse.

STEP 2: Practice using the RAP sheet(s) using one focus group discussion/interview recording

Each person in the analysis team should listen to the same selected focus group discussion/interview recording and fill in the RAP sheet independently. Instructions on how to complete a RAP sheet are provided in Figure 3 and an example of a completed topic for one COM-B factor (attitudes and intentions) in a RAP sheet is presented in Example Box 5.

Once completed, compare the RAP sheets. If there are differences, discuss how to ensure greater consistency. You may need to update the RAP sheet following this discussion, e.g., rename a topic to be clearer in its meaning for the team.

STEP 3: Organize all the focus group discussion/interview data in the RAP sheet(s)

Allocate the remaining focus group discussion/interview recordings amongst your analysis team. Assign one (or more) team member to each target group. The time needed to complete the RAP sheet can be up to twice the length of the audio-recording, so 2 hours may be needed to complete the RAP sheet for a 1-hour focus group discussion, depending on the experience of the team members and whether the RAP sheets were started during data collection.

Fig. 3. How to complete a RAP sheet

Each analysis team member listens to the first selected audio- recording and fills out the RAP sheet independently as follows:

- Type a summary of what is discussed in the relevant box for each topic. This summary needs to describe the finding (e.g., for the topic on *Knowledge about COVID-19 vaccines*, you might type "participant says they know a lot about the different COVID-19 vaccines".
- If you are listening to a focus group discussion, you need to listen carefully for the popular (majority) view and also any views that are offered by just one or a few people (minority). We need to know about both. For example, for the topic *Knowledge about COVID-19 vaccines*, you might type "most demonstrate they know a lot about the different COVID-19 vaccines but one admits poor knowledge".
- If part of the discussion seems especially important to your research objectives, write the ID for the focus group discussion/interview in the "interesting discussion and quotes" box to come back to later.
- If you hear a quote by a participant that nicely illustrates a particular topic, note down the focus group discussion/interview ID and the time in the recording you heard it in the relevant "interesting discussion and quotes" box. You can come back to this when you write the report. You do not need to find a quote for every topic.
- Complete as many summaries as you can from the first focus group discussion/interview. There may be some empty boxes if these topics were not discussed.

After comparing RAP sheets and making any necessary adjustments, divide up the remaining recordings. With the next focus group discussion/interview recording:

- Update the summaries. You may find that you hear more of the same views for many topics and so the summary does not change, alternatively you may hear something new that you need to add. You may find that you start a summary in a box that was empty.
- You do not need to write down what each participant says or which focus group discussion or interview they were in.
- You may hear another interesting discussion or good quote to add into the relevant box.

Repeat this process for all your allocated audio-recordings

- As you build your summaries to include more focus group discussions/interviews you need to constantly keep in mind if something is now becoming a majority view or remains a minority view.

Example of building a summary

Topic	**Summary**		**Summary**		**Summary**
	(from Focus group discussion 1)		*(after Focus group discussion 2)*		*(after Focus group discussion 3)*
How concerned about getting COVID-19 infection	Some have had COVID-19, consensus that antibodies are protective.	→	Most have had COVID-19, some very ill with it. Consensus that antibodies are protective.	→	Most have had COVID-19, some very ill with it. Consensus that antibodies are protective. Those who haven't had it are concerned they will be infected.

Try to keep your summaries precise but brief – do not repeat information or include unnecessary information. The RAP sheet should not be more than a few pages.

Example box 5:
Example of a completed topic for one COM-B factor in the health worker RAP sheet

Topic	URBAN				RURAL			
	Doctors		Nurses		Doctors		Nurses	
	Summary	Interesting discussion and quotes	Summary	Interesting discussion and quotes	Summary	Interesting discussion and quotes	Summary	Interesting discussion and quotes
COM-B FACTOR: Attitudes and intentions to COVID-19 vaccination								
How concerned are you about getting COVID-19 infection?	Most concerned about infection early in pandemic as all unknown and were seeing patients. Consider it as a serious disease, risk to them and their families. Less worried now as protective procedures in place and online consultations.		Most have had COVID-19, some very ill with it. Consensus that antibodies are protective. Those who haven't had it are concerned they will be infected.	Good quote: Focus Group Discussion 4 @ 21.37 minutes	Concerned at the start but numbers of COVID-19 patients coming to facility was low, and still low, and then moved to online consultations.		Concerned as continued to see patients in person. Some worried that would take COVID-19 infection into their families, but in reality saw very few infected patients.	Good discussion: Focus Group Discussion 6 @12.57 minutes
Would getting a COVID-19 vaccine change things for you? How?	Most saw vaccination as the only way out of the pandemic.	Good quote: Focus Group Discussion4 2 @35.21 minutes	Think change will be limited by reluctance of population to get vaccinated due to safety concerns		Consensus vaccination is vital to end pandemic		All hopeful vaccination will end the pandemic.	

Do you want to get the COVID-19 vaccine? Why/why not?	Mixed views – safety concerns due to rapid development (especially for AZ – blood clots) and uncertainty of effectiveness. Others confident in development testing and regulatory processes.	Good debate in Focus Group Discussion 1 @54.01 minutes	Very few want it – mainly related to concerns about safety including fertility, and protective effect of antibodies from previous infection.		Yes, all want it, even if feel a bit uncertain on some safety issues or lack of evidence of effectiveness	Good quote: Focus Group Discussion 3 @ 41.10 minutes	All but 1 nurse plans to be vaccinated. This 1 nurse is currently pregnant and is worried her baby will be harmed.	Good quote Focus Group Discussion 6 @39.55 minutes
What would convince you to get it?	More evidence of safety and effectiveness over time and from other countries		More evidence of safety and effectiveness over time and from other countries, knowing that no longer have protective antibodies.		All already convinced – interested to see increasing evidence of safety and effectiveness		Already convinced except for pregnant nurse who says nothing will convince her at the moment	

STEP 4: Meet as a team to discuss your summaries and agree on the key finding(s) for each topic

Once you have organized all the data into the RAP sheet(s) you need to meet as an analysis team. For each target group, go through each topic and agree on your key finding(s). Be clear about the majority/minority views – you do not want to conclude that everyone said the same thing if this is not true. Minority views expressed by different participants can be just as important as majority views. Don't forget to do your comparisons by your key characteristics e.g. doctors versus nurses, urban versus rural.

If you disagree on the key findings for a topic, then carefully review everyone's summaries for that topic. You may even need to go back and listen to the audio-recording.

If you have different target groups that you want to compare, this is the time to do that. As you discuss each topic, look at the summary for target group 1 e.g. older people and compare it with target group 2 e.g. people with underlying conditions. Are the key findings the same or are they different?

See Example box 6 for examples of key findings from a rapid analysis.

Example Box 6: Example of key findings for health worker' attitudes and intentions to COVID-19 vaccination

COM-B factor: Attitudes and intentions

Most health workers were concerned about catching COVID-19 early in the pandemic. They were still seeing patients face to face, the virus was unknown, and they were worried about risks to themselves and families. As time went on, they were less concerned. Doctors moved to online consultations and rural health workers were seeing very few patients with COVID-19. Most urban nurses felt protected by antibodies from COVID-19 infection, but those who had not been infected were concerned.

The consensus amongst doctors was that vaccination was the only way to end the pandemic. Rural nurses were hopeful about the impact of vaccination whilst urban nurses generally thought that too many people would decline COVID-19 vaccination due to safety concerns for it to make a difference.

Overall rural health workers wanted to be vaccinated against COVID-19. There was just one exception, a pregnant nurse who said nothing would convince her to be vaccinated whilst pregnant. In contrast there were mixed views amongst urban doctors and the urban nurses were reluctant. Some doctors were unconvinced about evidence of safety (mentioning blood clots for AZ vaccine), and effectiveness for these rapidly developed vaccines. Others trusted the development, testing and regulatory processes. More global evidence over time was seen as reassuring. The urban nurses discussed safety concerns, focusing on the impact of fertility. They also questioned the need to be vaccinated whilst they have protective antibodies.

STEP 5: Write up the key findings organized by the COM-B factors

This should be a maximum 2-page report, or you could put these findings directly onto slides ready for a presentation.

You need to organize the key findings as barriers or drivers for vaccination for each of the COM-B factors. Then you can focus on the barriers to identify potential intervention types (see 4.1). The COM-B factor for each topic is marked on the RAP sheet to facilitate organizing the findings.

Do not forget to highlight any differences you see between target groups, and be clear about majority/minority views.

You may need to write a more comprehensive report. If so, you should include the best quotes that you identified before in your RAP sheet.

4. Intervention design

4.1. LINK BARRIERS TO APPROPRIATE INTERVENTION TYPES

The advantage of using the COM-B model is that is allows you to link identified barriers to the types of intervention that are known to be effective in removing that kind of barrier, thereby enabling COVID-19 vaccination. Table 1 shows the types of interventions that match to each COM-B factor. For example, if a barrier is a lack of knowledge about COVID-19 vaccines then possible intervention types are information/education and training. An example of linking barriers for health workers to intervention types is presented in Example Box 7.

Use Table 1 to identify potential intervention types for the barriers that exist for each of your target groups *(3)*.

Table 1. Linking COM-B factors to intervention types *(6)*

COM-B factor	Intervention type	Definition
Knowledge and health literacy; Attitudes and intentions	Information/education	Increasing knowledge or understanding
Attitudes and intentions	Persuasion	Using communication to induce positive or negative feelings or stimulate action
Attitudes and intentions	Incentivization	Creating an expectation of a reward
Knowledge and health literacy; Access; Attitudes and intentions	Training	Imparting skills
Access; Social support	Restriction	Using rules to reduce the opportunity to avoid the target behaviour
Access; Social support; Attitudes and intentions	Environmental restructuring	Changing the physical or social context
Social support; Attitudes and intentions	Modelling	Providing an example for people to aspire to or imitate

4.2. SELECT INTERVENTION TYPES AND PLAN ACTIVITIES TO IMPLEMENT

Meet as a research working group with other key stakeholders to review the research findings and potential intervention types to address the barriers to COVID-19 vaccination. In that meeting you can agree on the **key** barriers and select the intervention types that will be implemented for each target group.

Once you have agreed on this, you need to design the specific activities for each intervention type. To do this, you may need to go back to your RAP sheets to inform the details of the activities. As an

example, if health workers expressed a lack of knowledge about COVID-19 vaccines you may decide to design an intervention using information or education.

The RAP sheet should indicate what the specific knowledge gaps are for health workers and how they would prefer to have information delivered to them. An example of matching attitude and intention barriers to intervention types and activities is presented in Example Box 7.

More ideas of activities for all of the COM-B factors targeting health workers, older people and people with underlying conditions are offered in Annex E.

Example box 7: Example of matching health workers' attitude and intention barriers to intervention types and activities

Barrier to positive vaccination behaviour	COM-B factor	Selected intervention type	Examples of activities
Urban nurses unsure that COVID-19 vaccination will end the pandemic (as too many people will refuse it) Some have concerns about vaccine safety and effectiveness (more evident amongst urban health workers) Urban nurses and some urban doctors are reluctant to be vaccinated themselves (vaccine hesitancy)	Attitudes and Intentions	Information/education Training	**Online/face-to-face training for health workers** • Technical – provide safety and effectiveness data • Communication skills – for conversations with patients • Train-the trainer model • Decision aid to guide health workers through a decision-making process for COVID-19 vaccination **Educational campaigns for health workers** • Posters - encouraging vaccination to protect themselves and patients
		Persuasion	**Institutional recommendation** • Health worker's institution formally encourage vaccination amongst staff e.g. letter, memorandum • Trusted health organisation e.g. Ministry of Health formally encourage vaccination amongst health workers e.g. letter, memorandum
		Incentivization	**Incentives** • Incentives to health workers for being vaccinated themselves • Incentives for health workers/health facilities for achieving patient vaccination update targets

5. Implementation

5.1. DEVELOP A MONITORING AND EVALUATION (M&E) PLAN

You now need to design a Monitoring and Evaluation plan. This plan will monitor implementation of each activity, and evaluate the impact. Both are important to do on an ongoing basis, e.g. monthly. This is to enable you to constantly learn, adjust and improve. M&E is not a one-time activity.

The suggested M&E plan here is a minimum standard and a template is provided in Annex F. An example for a health worker activity is presented in Example Box 8.

For guidance on conducting a more thorough M&E, refer to Tailoring Immunization Programmes *(3)*.

Example box 8: Example of a completed M&E plan for a health worker activity

TARGET GROUP 1: ***Health workers***			
	Review date 1: ***1 November 2021***	**Review date 2:** ***1 December 2021***	**Review date 3:** ***1 January 2022***
Which activities are you implementing?	Online technical and communication training for COVID-19 vaccination		

ACTIVITY 1: Online technical and communication training for COVID-19 vaccination			
	Review date 1: ***1 November 2021***	**Review date 2:** ***1 December 2021***	**Review date 3:** ***1 January 2022***
What was implemented?		4 online sessions (3 hours each)	4 online sessions (2.5 hours each)
When was it implemented?		1 session per week in November 2021	1 session per week in December 2021
Who implemented it?		Ministry of Health, supported by WHO Euro	Ministry of Health, supported by WHO Euro
Who did it reach? (e.g. number of health workers attending training)		Session 1: 87 Session 2: 102	Session 1: 42 Session 2: 53

		Session 3: 64 Session 4: 211 Data on health workers (profession/location) collected	Session 3: 70 Session 4: 31 Data on health workers(profession/location) collected
Any feedback on how to improve the activity?		Suggestion to shorten session and send resources in advance	All positive feedback
What change did you make to the activity based on the feedback?		For next round of training: Session reduced to 2.5 hours. Slides sent in advance.	None
IMPACT			
Did you measure any short-term impact? (e.g. knowledge)		Pre-post evaluation showed improvement in knowledge of technical and communication strategies	Pre-post evaluation showed improvement in knowledge of technical and communication strategies
COVID-19 vaccination coverage (by key characteristic e.g. doctor/nurse and urban/rural)	Urban nurses 56% Urban doctors 65% Rural nurses 66% Rural doctors 73%	Urban nurses 66% Urban doctors 78% Rural nurses 75% Rural doctors 76%	Urban nurses 74% Urban doctors 85% Rural nurses 83% Rural doctors 88%
What action did you take after reviewing the impact data?		Aim to reach more urban nurses. Extend training to rural health workers now.	All groups still important to train, especially urban nurses

5.2. IMPLEMENT, LEARN, ADJUST AND IMPROVE

The scale and timing for implementing your activities with the target groups will need to be planned with stakeholders. This will depend on the urgency of the situation and the capacity of the organisations who are responsible for implementation. Don't forget to constantly monitor and evaluate your activities, so that you can learn, adjust and improve.

References

1. World Health Organization. (2021). Data for action: achieving high uptake of COVID-19 vaccines: gathering and using data on the behavioural and social drivers of vaccination: a guidebook for immunization programmes and implementing partners: interim guidance, 1 April 2021. World Health Organization. (https://apps.who.int/iris/handle/10665/340645, accessed 11 January 2022)

2. World Health Organization. Regional Office for Europe. (2017). A field guide to qualitative research for new vaccine introduction. (https://apps.who.int/iris/handle/10665/345953, accessed 11 January 2022)

3. World Health Organization. Regional Office for Europe. (2019). TIP: tailoring immunization programmes. (https://apps.who.int/iris/handle/10665/329448, accessed 11 January 2022

4. Habersaat, K.B., Betsch, C., Danchin, M. et al. Ten considerations for effectively managing the COVID-19 transition. Nat Hum Behav 4, 677–687 (2020). (https://doi.org/10.1038/s41562-020-0906-x, accessed 11 January 2022)

5. Ritchie J, Lewis J, McNuaghton Nicholls C, Ormston R. (2014) Qualitative Research practice. A Guide for Social Science Students & Researchers. Sage Publications Ltd: London.

6. Habersaat KB, Jackson C. Understanding vaccine acceptance and demand—and ways to increase them. *Bundesgesundheitsblatt - Gesundheitsforschung - Gesundheitsschutz*, 2020, 63(1):32–39. (http://link.springer.com/10.1007/s00103-019-03063-0, accessed 6 August 2020)

7. Vindrola-Padros C, Chisnall G, Cooper S, et al. Carrying Out Rapid Qualitative Research During a Pandemic: Emerging Lessons From COVID-19. Qualitative Health Research. 2020;30(14):2192-2204. doi:10.1177/1049732320951526 (https://journals.sagepub.com/doi/full/10.1177/1049732320951526, accessed 11 January 2022)

Annex A. Planning tool

Task	Responsible officer	Start date	Completion date	Comments
PLAN AND CONDUCT RESEARCH (WEEKS 1-3)				
1. Establish research working group a. Assign roles to researchers b. If research company is needed, identify and contract **c.** Draft timeline of project using this planning and monitoring tool				
2. Develop a research protocol a. Agree target groups(s) b. Write research aims and objectives c. Select your research methods d. Select your sample e. Develop the discussion guide(s)				
3. Obtain ethics approvals for research				
4. Collect and analyse data a. Conduct focus group discussions/interviews b. Analyse data using rapid analysis process				
5. Summarize findings, prepare report				
DESIGN INTERVENTION ACTIVITIES (WEEKS 4-5)				
6. Link barriers to appropriate intervention types a. Review findings and potential intervention types as a research working group with key stakeholders				
7. Plan specific activities to implement				
IMPLEMENTATION (WEEK 6)				
8. Develop M&E plan				
9. Implement, learn, adjust and improve				

Annex B. Example of a discussion guide for a population target group

Older adults (65+) AND Adults (<65) with underlying conditions

Adjust the introductory text to be appropriate for focus group discussion/individual in-depth interviews.

Moderator: Hello and thank you for talking with us today. My name is ... and this is (name) who is assisting me. We work at … But our job today is to listen to you.

We are asking for help from people like you to understand barriers and facilitators to vaccination in the country. We are particularly interested in hearing your experience and views.

Everybody's input is important, and we hope everybody will join in the discussion. We hope to create an atmosphere of acceptance of each other's views and practices which might or might not be different. There are no wrong opinions. You are the experts and we will learn from you.

I would like to emphasize that everything said in this discussion will remain secret and should not be shared outside the group.

We will be recording and taking notes on the discussion for research purposes only. We will not record any personal information that can identify you, and we will not include any such information in our report.

(For focus group discussions) We have a few guidelines for us to follow to make our discussion inclusive and productive for everyone.

1. *Please do not talk at the same time as someone else or interrupt so that we can hear each of you without difficulty.*
2. *If you want to say something, please wait until the person speaking is finished. If someone else begins to talk before you, do not worry. I (the moderator) will ask each time if anyone else wants to comment before moving on to the next question.*
3. *Please do not start separate discussions among yourselves. We want everyone to be a part of one discussion only.*
4. *This is an open discussion, and we expect you to be respectful but also disagree since you may have different opinions or experiences.*
5. *Please do not use each other's names if you know them so that we can keep this discussion confidential.*

Do you have any questions?

Let's begin.

Select wording depending on whether the participants are vaccinated or not.

- Primary question
  - Optional follow-up question if participants don't say much

OPENING QUESTIONS:

1. Could you describe your experience of the pandemic?
2. How has the pandemic affected you personally?
3. Have there been hardships or difficulties? What were the biggest challenges?
4. What do you think will be the most important action to help end the pandemic?

SECTION 1: Knowledge and health literacy about COVID-19 vaccines and vaccination

- What have you heard about COVID-19 vaccines?
    - What did you think about that information?
    - What have you heard about the different COVID-19 vaccines?
    - What else have you heard?
    - Who did you hear this from (or where did you see it)?
- What have you heard about the COVID-19 vaccination programme in your country?
- Is there anything else you think you need to know about COVID-19 vaccines?
    - From whom would you like to receive this information?
- Is there anything else you think you need to know about the COVID-19 vaccination plan?
    - From whom would you like to receive this information?

SECTION 2: Access to COVID-19 vaccination

- When you decided/decide to get a COVID-19 vaccine, can you take me through how you got one/would get one? Start at the beginning
    - Where did/would you go to get it?
    - Did/would it matter to you which vaccine you were having? Why?
    - How did/would you get there?
    - Are there any other things you needed/need to do (e.g. find care for young children, find someone to take care of livelihood / get up earlier to take care of household duties)?
    - Was there/would there be any cost involved for you (not just for vaccine, but things like transport)
    - What made it/would make it easy for you to get a COVID-19 vaccine?

SECTION 3: Social support for COVID-19 vaccination

- Take me through how you decided/would decide whether to get the COVID-19 vaccine.
    - Was/would there be anyone else involved in the decision?
    - Who did/do you think you might discuss it with?
- What kind of influence did/would it have on you to have another health worker recommend that you get the vaccine?
- If a COVID-19 vaccine is recommended by a health worker, what do you think other people that you know will do?
    - Family and friends?
    - What about the recommendation from a religious or community leader?
- What was/do you think your health worker's recommendation will be to you about the COVID-19 vaccine?

SECTION 4: Attitudes and intentions to COVID-19 vaccination

- Tell me, are you concerned about being infected with COVID-19?
    - Why do you feel that way?
    - How likely do you think it is?
    - How severe do you think it would be?
- How did you/ do you think you'll feel about the COVID-19 vaccine when it became/becomes available to you?
    - What were/are your thoughts about the safety of the vaccine?
    - What were/are your thoughts on it being a new vaccine?
    - What were/are your thoughts on its effectiveness?
    - What were/are your thoughts on the different COVID vaccines?
- How did/do you think getting a COVID-19 vaccine might change things for you?
    - Seeing family and friends?
    - Going out in public?
    - Going back to work?
- Did/would you want the COVID-19 vaccine? Why/why not?
- What did/would convince you to have it?
    - Who did/would convince you to have it?

Concluding questions *(Exit questions)*

- What else do you want us to know about your perspectives or the perspectives of people you know regarding COVID-19 vaccines?

Annex C. Contents of a research protocol for ethics approval

The contents of a protocol for ethics approval depend on the requirements of the individual ethics committee. For a qualitative research study, the following types of information are often required:

- Aims and objectives of the study
- Study design and methods, including details of data collection (the discussion guide) and data analysis
- Recruitment methods including how participants will be selected (inclusion and exclusion criteria) and approached
- How consent will be obtained from participants, possible incentives, or reimbursement of expenses
- How data will be used, including how and where data will be transferred and stored, processes to ensure anonymity and confidentiality
- Details on the dissemination of the findings
- Details on all stakeholders involved in the study and their roles

Annex D. Example RAP sheets for health workers and population target groups

Topic	URBAN				RURAL			
	Doctors		Nurses		Doctors		Nurses	
	Summary	Interesting discussion and quotes	Summary	Interesting discussion and quotes	Summary	Interesting discussion and quotes	Summary	Interesting discussion and quotes
COM-B FACTOR: Knowledge and health literacy about COVID-19 vaccines and vaccination								
What heard about COVID-19 vaccines								
What heard about the COVID-19 vaccination programme								
What more need to know about COVID-19 vaccines								
What more need to know about the vaccination plan								
COM-B FACTOR: Access to COVID-19 vaccination								
If were to decide to get a COVID-19 vaccine, how would get one								
COM-B FACTOR: Social support from social network for COVID-19 vaccination								
How will decide whether to get the COVID-19 vaccine								

Influence of health worker recommendation								
If a COVID-19 vaccine is recommended by a health worker, what would other people do								
What think own health care provider's recommendation is								
COM-B FACTOR: Attitudes and intentions to COVID-19 vaccination								
How concerned about getting COVID-19 infection								
How getting a COVID-19 vaccine might change things								
Wanted the COVID-19 vaccine - Why/why not?								
What would convince to have it								
Concluding questions *(Exit questions)*								
Anything else to say about COVID-19 vaccines								

Topic	URBAN				RURAL			
	Men		Women		Men		Women	
	Summary	Interesting discussion and quotes	Summary	Interesting discussion and quotes	Summary	Interesting discussion and quotes	Summary	Interesting discussion and quotes
COM-B FACTOR: Knowledge and health literacy about COVID-19 vaccines and vaccination								
What heard about COVID-19 vaccines								
What heard about the COVID-19 vaccination programme								
What more need to know about COVID-19 vaccines								
What more need to know about the vaccination plan								
COM-B FACTOR: Access to COVID-19 vaccination								
If were to decide to get a COVID-19 vaccine, how would get one								
COM-B FACTOR: Social support from social network for COVID-19 vaccination								
How will decide whether to get the COVID-19 vaccine								
Influence of health worker recommendation								

If a COVID-19 vaccine is recommended by a health worker, what would other people do								
What think own health care provider's recommendation is								
COM-B FACTOR: Attitudes and intentions to COVID-19 vaccination								
How concerned about getting COVID-19 infection								
How getting a COVID-19 vaccine might change things								
Wanted the COVID-19 vaccine - Why/why not?								
What would convince to have it								
Concluding questions *(Exit questions)*								
Anything else to say about COVID-19 vaccines								

Annex E. Examples of intervention types and activities linked to barriers and COM-B factors

(adapted from *Data for action: Achieving high uptake of COVID-19 vaccines*[1])

HEALTH WORKERS

Barrier to vaccination behaviour	COM-B factor	Selected intervention type	Examples of activities
Lack detailed knowledge of COVID-19 vaccines and vaccination	Knowledge and health literacy	Information/education Training	**Online/face-to-face training for health workers** • Technical – provide safety and effectiveness data • Communication skills – for conversations with patients • Train-the trainer model • Decision aid to guide health workers through decision-making process for COVID-19 vaccination **Educational campaigns for health workers** • Posters - encouraging vaccination to protect themselves and patients
Lack confidence in COVID-19 vaccines Have concerns about vaccine safety and efficacy	Attitudes and Intention	Information/education Training	Training and education activities as above
		Persuasion	**Institutional recommendation**

[1] Adapted from Data for action: achieving high uptake of COVID-19 vaccines: gathering and using data on the behavioural and social drivers of vaccination: a guidebook for immunization programmes and implementing partners: interim guidance, 3 February 2021. Geneva: World Health Organization; 2021 (https://apps.who.int/iris/handle/10665/339452, accessed 19 January 2022).

Reluctant to recommend COVID-19 vaccination to patients Reluctant to be vaccinated themselves			• Health worker's institution formally encourage vaccination amongst staff e.g. letter, memorandum • Trusted health organisation e.g. Ministry of Health formally encourage vaccination amongst health workers e.g. letter, memorandum
		Incentivization	**Incentives** • Incentives to health workers for being vaccinated themselves • Incentives for health workers/health facilities for achieving patient vaccination update targets
COVID-19 vaccination is not supported in health workers' professional social circles	Support from social network	Modelling	**Vaccination champions** • Respected health workers promote COVID-19 vaccination with their colleagues **Health workers share their COVID-19 vaccination status with colleagues/patients** • Health workers wear a badge/sticker to show they are vaccinated
COVID-19 vaccination is not convenient to access for health workers	Access to vaccination	Environmental restructuring	**On-site vaccination** • Offer COVID-19 vaccination at workplace and at convenient times Take vaccination to the health workers using a mobile clinic **Reminders and recall** • Remind and invite health workers to attend for COVID-19 vaccination – emails/telephone/face-to-face

OLDER ADULTS AND ADULTS WITH UNDERLYING CONDITIONS

Barrier to positive vaccination behaviour	COM-B factor	Selected intervention type	Examples of activities
Lack awareness of COVID-19 infection risk Lack knowledge of COVID-19 vaccines, where to receive them and how to register	Knowledge and health literacy	Information/education	**Targeted and tailored educational campaign** • Letter sent to these target groups from trusted information source addressing these knowledge gaps. **Health risk appraisal questionnaire in health consultations** • Health workers complete this questionnaire with patients to demonstrate their risk of COVID-19 infection **Targeted and tailored TV/media adverts** • Adverts to directly address the knowledge gaps in these target population groups
		Training (for health workers)	Technical and communication skills training for health workers (see health worker table above)
Perceived low risk of COVID-19 infection Have concerns about vaccine safety and efficacy	Attitudes and Intentions	Information/education	Information/education activities as above
		Persuasion	**Trusted health worker recommendation** • Health worker explicitly recommends vaccination to patients – in consultations and/or emails/phone calls **Message framing in educational activities above** • Patient information emphasizes the risks of not being vaccinated with COVID-19 vaccine
		Incentivization	**Incentives** • Incentives to patients for being vaccinated

COVID-19 vaccination is not supported in patients' social circles	Support from social network	Modelling	**Vaccination champions** • Respected people e.g. community/faith leaders, teachers promote COVID-19 vaccination with their communities **Respected community leaders share their COVID-19 vaccination status with their community** • Respected people e.g. community/faith leaders, teachers tell people/wear a badge/sticker to show they are vaccinated
COVID-19 vaccination is not convenient to access	Access to vaccination	Environmental restructuring	**Reminders, recall and booking** • Reminders and invitations to patients to attend for COVID-19 vaccination – via emails/telephone/face-to-face • Simple online/telephone booking system patients **Multiple vaccination sites and times** • Multiple sites/dates and times for vaccination appointments • Walk-in clinics • Opportunistic vaccination within existing health appointments • Outreach vaccination/Mobile vaccination units

Annex F. Template for monitoring and evaluation plan

Adjust the template to include all your target groups, activities and review dates.

TARGET GROUP 1: ***Type in here***			
	Review date 1: *Type in here*	Review date 2: *Type in here*	Review date 3: *Type in here*
Which activities are you implementing?			

ACTIVITY 1: ***Type in here***			
	Review date 1: *Type in here*	Review date 2: *Type in here*	Review date 3: *Type in here*
What was implemented?			
When was it implemented?			
Who implemented it?			

Who did it reach? (e.g. number of health workers attending training)			
Any feedback on how to improve the activity?			
What change did you make to the activity based on the feedback?			
IMPACT			
Did you measure any short-term impact? (e.g. change in knowledge)			
COVID-19 vaccination coverage (by key characteristics e.g. urban/rural)			
What action did you take after reviewing the impact data?			

World Health Organization
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.

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