USER GUIDE: Rapid assessment to identify barriers to and opportunities for immunization

A guide for Ministries of Health, NGOs, and researchers to help evaluate perspectives about immunization in health systems and communities.

PATH

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Abbreviations

CHV	community health volunteer
CHW	community health worker
CSO	civil society organization
EPI	Expanded Program on Immunization
HCW	health care worker
IDP	internally displaced person
MNCH	maternal, newborn, and child health
ODK	Open Data Kit
PHC	primary health care
RA	rapid assessment
RED/REC	Reaching Every District/Reaching Every Community
REDCap	Research Electronic Data Capture
RI	routine immunization
SOP	standard operating procedure
TWG	technical working group
UNICEF	United Nations Children's Fund
WHO	World Health Organization

Introduction

As global, regional, and national policymakers focus on reaching zero-dose and under-immunized children at the subnational level, it is critical to understand the context-specific barriers and opportunities that may impact communities that have low vaccine coverage. These efforts are informed by knowledge of immunization supply and demand barriers, including those related to sex, as well as opportunities that can be leveraged to improve vaccine coverage. This user guide includes a set of rapid assessment (RA) questionnaires designed to identify context-specific barriers to and opportunities for immunization. By using information generated from this RA, subnational routine immunization programs can identify where and how to best leverage resources so that children in locations with declining or stagnant immunization coverage rates can be effectively and efficiently reached with lifesaving vaccines.

The RA tool can be used to generate data for the following purposes:

- An initial assessment to understand and document the current immunization context (e.g., as a baseline and/or situation analysis).
- A monitoring and evaluation tool for implemented interventions.
- A part of quality improvement and quality control of current immunization systems.

The tool is designed to identify sex and parity-related immunization system barriers from the demand and supply perspectives.

Users: The RA tool (guidance document and questionnaires) is designed for national or subnational (regional, district, and community) immunization program personnel, local nongovernmental organizations or civil society organizations (CSOs) working in immunization, and researchers focused on immunization barriers within a country. Extensive experience with qualitative research and training in statistical analysis are an asset but are not required.

This guide describes the following:

- How to plan for the assessment (objective setting and timelines).
- Ethical review requirements.
- Questionnaires.
- Sampling of sites and respondents.
- Data collection, entry, and cleaning.
- Sample report outline (including guidance on qualitative analysis).

Methodology

The RAs are based on rapid evaluation methods with the following common characteristics to inform the methodologies.

The methodology referenced in this user guide does not involve hypothesis testing, nor does it aim to produce generalizable results from a statistically representative sample. Instead, this RA is descriptive, implementation-focused, and relies on purposive sampling. Both the adaptation of questions in the data collection tools, and the selection of health facilities and community characteristics require some knowledge of immunization service availability and general accessibility, current immunization coverage trends, and the sociocultural characteristics of populations in the area.

Key steps

The following activities are key steps to carry out the RA:

- Analyze the initial landscape of immunization context, including coverage and local stakeholders.
    1. Formulate and confirm objectives and implementation plan with relevant stakeholders.
    2. Confirm ethics review process and implement, if required.
    3. Review questionnaires overview and adapt, as needed.
    4. Review and choose sampling methods for populations of interest.
    5. Conduct data collection.
        a. Data collector training.
        b. Data entry and cleaning.
    6. Analyze data and write report.
    7. Disseminate data and share results.
    8. Determine next steps for interventions, implementation, and scalability.

Analyze initial landscape of immunization context

As part of the RA process, it is useful to conduct a brief but systematic landscape analysis to gather information that can help refine the assessment objectives and inform decisions about which modules from each questionnaire will be most appropriate. The landscape analysis identifies information already available, for example, current trends in immunization coverage in the general geographic areas of interest, population diversity in these areas, and CSOs working in immunization and/or related health areas. A list of suggested landscape topics and questions is included in Appendix C and can be adapted as needed. These are questions that the assessment team members may be able to answer directly and/or that can be asked of key stakeholders. The RA team is not expected to formally analyze responses, but discussions of these topics can help the team focus the assessment on topics with the biggest information gaps.

Formulate the objective

Before undertaking the RA, it is imperative to determine the objective of the work. This will inform where the RA should take place, how questions may need to be adapted, and which questionnaires/audiences will achieve the objective. More than one objective may be identified.

When setting your objective(s), it is important to identify your priorities based on a mapping of what is already known about the context. Appendix C, covering landscape analysis questions, offers considerations to review before detailed RA planning to help identify the biggest information gaps. Use these gaps to determine the assessment objective(s) and to guide your sampling decisions.

Data collection sites can be identified based on priority information gaps and RA objective(s). The following questions can guide RA site selection:

- Are sites diverse enough across the country to necessitate including a variety of locations (e.g., rural, urban, semirural, urban slum, and hard-to-reach areas)?
- Are any specific populations (low-, middle-, and high-income; ethnic; religious; language-specific; refugee or internally displaced; men/women-imbalanced; undocumented; etc.) of particular concern within each area, or an area of particular concern (hard-to-reach, urban slums, under-served areas etc.)?

Additional guidance for selecting the number and type of health facilities, as well as communities, is contained in the sampling section of this guide. If evaluating a program/intervention, the criteria used to select intervention areas can be used to select sites. Once the objective(s) and sites are identified, the intended stakeholders for the assessment can be determined. Further information on the types of stakeholders to include in the RA will be discussed in the overview of the questionnaires.

Ethics review

The RA team will want to confirm whether an ethical review procedure is needed in the locations where the RA will be conducted. Whether a requirement or not, the process for survey respondent recruitment should include sharing the purpose and nature of the survey, that they are not obliged to participate, that they need not answer any questions that they so choose, what type of individual identifying information (if any) will be collected, how it will be safeguarded, and other basic elements of consent.

Questionnaire overview and adaptation

There are five questionnaires designed to identify barriers to and opportunities for immunization driven by both supply and demand perspectives.

The questionnaires are primarily quantitative with mostly close-ended questions and categorical responses that should be adapted if needed to ensure the options are appropriate to the country/cultural/local context. Some questions also contain text fields where interviewers can probe for rationale as it relates to the question topic or can document responses that are not included in the list of categorical responses. Each questionnaire includes a limited number of open-ended qualitative questions.

The mixture of qualitative and quantitative questions is intended to allow for efficient identification/enumeration of barriers to and opportunities for immunization while retaining flexibility to identify an issue that is not included in a predetermined list.

Specific considerations

An increasing body of evidence points to myriad ways in which barriers based on a person's sex contribute to the under-immunization of children. Questions to identify these specific barriers to both the delivery and uptake of immunization services are integrated into various modules of the questionnaires. The goal of including these questions is to increase acceptance that a person's sex alone is not always a barrier, but it is the interaction with other barriers that can create a challenge. The questions reflect the domains included in relevant frameworks published by UNICEF and key global guidance documents. Questions that can directly provide information about how immunization supply and demand might be impacted by a person's sex include asking caregivers about who in the household makes decisions regarding child immunizations; whether it matters to them if the health care worker (HCW) who comes to give immunizations is a woman or a man; asking community leaders if it is more difficult for women or men to get transportation to reach the immunization center, and asking HCWs which parent they typically communicate with about child immunizations. Sex-disaggregated data analysis on a range of questions can also help to identify important immunization barriers and facilitators. Additional considerations for sex-disaggregated data analysis are described in more detail in the suggested report outline found in Appendix D.

A more detailed description of the questionnaires follows.

Supply perspective questionnaires

There are three questionnaires focused on facilitators and barriers to child immunization from the perspective of supplying services, as follows:

- Health facility in-charge questionnaire (Appendix E)
- Community health worker or health care worker questionnaire (Appendix F)
- Community health volunteer questionnaire (Appendix G)

Health facility in-charge questionnaire

The health facility questionnaire is designed to be used with the individual who oversees the health facility management but is not necessarily immunizing children. The objective of this questionnaire is to gather background information on the location of the health facility, when immunization/outreach sessions occur, vaccine stockouts at the facility, information on local community groups, resource gaps, special populations served, and questions on immunization planning/budgeting at the health facility. This questionnaire is intended to be completed once for each health facility where community health workers (CHWs) or health care workers (HCW) will be interviewed. By gathering this information from the health facility management, there are fewer questions asked of the CHWs/HCWs and community health volunteers (CHVs).

Community health worker or health care workers questionnaire

For this questionnaire, CHWs/HCWs are defined as a person who:

- Actively immunizes children as a part of their duties/job description.
- Has direct interaction with caregivers who are accessing services.
- May have management responsibilities in their health clinic/center/facility.

- May participate in outreach activities.

In different contexts or countries, this individual may be an HCW, a nurse, a pharmacist, or a doctor. Most importantly, these personnel are responsible for immunizing children and are directly interacting with caregivers.

The objective of this questionnaire is to gather information from the perspective of CHWs/HCWs who an essential part of the health system are and can be both a barrier and an opportunity to immunization. CHWs/HCWs vaccinate children and their beliefs about—and actions to promote—immunization have a profound impact on vaccine coverage. We therefore emphasize the need to gather as much information as possible to identify barriers and opportunities while also being mindful that they are often overworked, underpaid, and understaffed.

Community health volunteers

CHVs are defined as individuals who:

- Do not deliver vaccines.
- Have direct interaction with caregivers who access immunization services.
- Provide information on vaccination/immunization services.
- May participate in outreach activities.

These volunteers may not exist in all immunization systems; however, where they do exist, they can provide important information about community perceptions and opportunities to increase immunization coverage.

Modules/topics

The modules included in the questionnaires reflect common themes where both barriers to and opportunities for immunization exist across diverse national settings. A user may select all the modules listed or only those of most interest to the context being evaluated. The format of this questionnaire allows for adaptation to the local context and prioritizes information gathering on specific topics.

- Zero-dose or under-immunized children.
- Vaccine access.
- Vaccine coverage and tracking of children’s immunization status.
- Vaccine stockouts.
- CHW/HCW role in immunization decision-making.
- CHW/HCW perception of community immunization knowledge.
- Communication and knowledge gaps.
- Planning/budgeting for immunization resource needs.
- Special populations: Internally displaced persons (IDPs)/refugees.
- Role of local community groups or CSOs in immunization.

Not all topics are included in every questionnaire. The selection of topics included in each questionnaire is based on the different roles each respondent group plays in the immunization system. For more details regarding the modules and questions in each questionnaire, please see Appendix A.

Demand perspective questionnaires

There are two questionnaires focused on the facilitators and barriers to demanding or accessing child immunization services, as follows:

- Caregiver questionnaire (Appendix H)
- Community leader/champion questionnaire (Appendix I)

Caregiver questionnaire

For this questionnaire, a caregiver is defined as a person who:

- Is a parent, relative, or guardian responsible for the health and well-being of a child, including seeking relevant health services at a health facility or a mobile/outreach vaccination point.
- May have decision-making power regarding a child's immunizations.

The objective of this questionnaire is to gather information from the caregiver's perspective. The caregiver who brings a child to be immunized may not have the decision-making power in the household. It is important to understand what influences their actions toward accessing immunizations.

Community leader/champion questionnaire

For this questionnaire, a community leader/champion is defined as a person who is:

- Acknowledged by multiple people in the community as a trusted leader or someone influential within the community.
- Living in the community or within very close proximity to be considered a "community leader".

A community is a group of people living in the same place or having a common characteristic (e.g., tribe, clan, religion). Examples of community leaders may include tribal leaders, priests or imams, heads of village/hamlets, religious leaders, school leaders, heads of women's groups, and CSO contact points that serve the community.

Community leaders/champions are a critical source of information about community norms and opinions. As such, they may provide a unique perspective of a community's perception regarding immunization. They also provide different perspectives that can be triangulated with the data provided by other respondents.

Modules/topics

The RA modules reflect themes of immunization barriers and opportunities that exist across diverse national settings. A user may select all the modules listed or only those of most interest to the evaluation context. The format of this questionnaire is to allow for adaptation to the local context and prioritize information gathering on relevant topics:

- Community knowledge of immunization/communication.
- Zero-dose and under-immunized children.

- Immunization decision-making.
- Role of CSOs and other local community groups in immunization.
- Vaccine access.
- Recording and tracking children.
- Special populations: IDPs/refugees.

Depending on the questionnaire, certain modules are sub-divided into subcategories to allow the user to further adapt the tool by only including those subcategories of most interest.

As each group of respondents has a different role within the immunization system, not all topics are included in every questionnaire. For more details regarding the modules in each questionnaire, please see Appendix B. Additionally, a list of information types and the questions to be answered by the information in each module are included in the table in Appendix B.

Sampling health facilities and communities

Sampling health facilities

Health system questionnaires (i.e., health facility in-charge, community health worker/health care worker and community health volunteer) are used to assess supply-side barriers and opportunities that may contribute to community vaccine coverage estimates. Health facility performance and the catchment populations served should both be considered in the selection criteria. Health facilities with consistently low vaccination coverage, in communities that may be of lower socioeconomic levels, may be different than facilities with low vaccine coverage in communities of high socioeconomic levels. Therefore, facility performance cannot be considered standalone when selecting facilities for the assessment. The location and context (e.g., geographic, rural versus urban, community served) of the facility is an important consideration.

When selecting health facilities to include it is important to keep the objective of the assessment in mind. If the assessment is focused on an individual health facility's performance, it is not necessary to identify community-focused outcomes (e.g., vaccine coverage across a community served by multiple health facilities). The selected sample ought to gather the data and information needed to inform the assessment objective.

Sampling communities

Community questionnaires (i.e., caregiver questionnaire and community leader/champion questionnaire) are used in communities within the service areas of the health facilities identified in the health systems tools. This pairs the supply and demand barriers and opportunities for the same community. Community members may not access the health facility for immunization services, but this is not a deterrent to include them in the assessment. Often, practical considerations (e.g., timeline and budget) will determine the number of communities included in an assessment.

However, to achieve informative results, it is important to consider the number of communities included based on additional factors such as community similarities in terms of size, ethnic diversity, economic status, community leadership, distance to the closest health facility providing vaccines, level of infrastructure, perceived vaccine misinformation (or acceptance) of the population, current coverage of

pentavalent and measles immunizations, and other characteristics that could impact the diversity of responses.

We recommend that the study team gather this information for all communities being considered for the assessment. Once this information is gathered, the study team can consider how restricting or expanding the number of communities included will impact on the diversity of observations, opinions, and experiences reported. The above information, combined with the demographic data collected during the formulation of the objective, can guide the assessment team to determine how many and which communities should be prioritized to identify caregivers and community leaders/champions. Additionally, we encourage the consideration of communities that have a wide range of vaccine coverage estimates as these questionnaires are designed to identify both immunization barriers and opportunities.

Sample sizes and respondent selection guidance

Each RA tool focuses on gathering critical information from a specific stakeholder (i.e., respondent) group. From a practical perspective, the total number of interviews conducted for the RA will likely be influenced by the amount of time and resources available, as well as the number, size, and accessibility of the communities included in the assessment.

A non-probability (i.e., purposive) sampling[1] approach can be used when the intention and scope of the assessment are descriptive and when inferential statistical analysis[2] will not be used. This approach aligns with the purpose of the RA, which is to efficiently and easily gather information that can be used immediately to adapt messaging, conduct microplanning activities, and inform CHW/HCW training materials. From a methodological perspective, using purposive sampling means that the exact number of individuals to be interviewed does not need to be determined from a sample size calculation. Instead, when determining the number of respondents to interview within each category, the assessment team ought to consider how many respondents they think will be needed to reach saturation (i.e., enough useful information) on key questions. Saturation refers to the concept that after a certain number of interviews, no additional insights are identified from key questions. There are many questions in the assessment tools, and some may be more critical than others in a specific setting.

For example, an assessment team may determine that an important question is about caregivers' perceptions of how HCWs influence immunization decision-making. If the team observes little or no variation in caregivers' responses to these questions, the team can think about efficiencies and not continue to sample more respondents.

The table below offers suggested sample sizes for each respondent group based on a general estimate of how many interviews may be needed to achieve the objective of the assessment (i.e., questionnaire), based on the particular group and practical considerations. The sample sizes per stakeholder group can be adapted based on the sufficiency of data collected and the amount of new information generated from additional respondents (e.g., whether most respondents in a specific group are answering the survey questions the same way), and practical considerations.

It is ideal to strive for a balance of men and women participants between respondents within each group. This may require deliberately inviting specific individuals to participate in an interview and/or

[1] Intentionally select participants for a study based on their specific characteristics and relevant knowledge, relying on their judgment rather than random selection, making it a type of non-probability sampling where the sample is not representative of the larger population but is chosen "on purpose" to best fit the study's objectives.
[2] A method used to draw conclusions about a larger population based on data collected from a smaller sample.

adapting the time or location of sampling in ways to help the assessment team reach an approximate balance in respondents per stakeholder group.

Table 1. Suggested sample sizes per respondent category.

Questionnaire tool	Respondent group (stakeholder group)	Number	Considerations
Health facility questionnaire (one per selected health facility)	The individual who oversees the management of the health facility where HCWs will be interviewed.	1 per health facility.	Health facility selection is based on an enumeration of all health facilities in the selected area considering geography (urban versus rural, mountainous versus lowlands, etc.), type and size of the health facilities delivering vaccination, and vaccination coverage for pentavalent and measles-containing vaccines. Consider selecting health facilities in areas with predominantly low vaccine coverage and a range of other characteristics (e.g., geography, type, and size). A couple of health facilities should be chosen from high-coverage areas. Use this questionnaire with the individual who oversees each selected health facility.
Community health worker /health care worker questionnaire	CHW/HCWs at the health facility are responsible for immunizing children and are directly interacting with caregivers. This could be an HCW, a nurse, a pharmacist, or a doctor.	Up to 5–7 per health facility.	When considering the number of HCW interviews per health facility, think of the number of children the health facility vaccinates per month/per year and the number of HCWs at the health facility who provide vaccination services. It may be beneficial to interview more HCWs at larger facilities. Seek balance/representation of HCWs in terms of different identities, ethnicities, ages, seniority levels, number of years working at that health facility level, health education/training levels, and any other factors that may be important in the context.
Community health volunteer questionnaire	CHVs who do not vaccinate children but have direct engagement with caregivers and provide information about immunization services. They may participate in outreach activities.	Up to 10–15 per catchment area.	Consider selecting more CHVs in larger catchment areas. Consider selecting more CHVs in catchment areas facing the greatest barriers to immunization (based on immunization coverage) as well as some from higher immunization coverage areas. Seek balance/representation in terms of different identities, ethnicities, ages, seniority levels, number of years of service in the community, number of years living in the community, health education/training levels, and any other factors that may be important in the context.

Questionnaire tool	Respondent group (stakeholder group)	Number	Considerations
Caregiver questionnaire	These are caregivers who may be a parent, relative, or guardian responsible for bringing a child to be immunized either at a health facility or to a mobile/outreach vaccination point. The selected caregiver may or may not have decision-making power as to whether a child is immunized.	Between 15 and 25 caregivers per health facility.	We recommend that teams select caregivers who are actively attending immunization sessions at the health facility and those who may not attend immunization sessions (zero-dose children or those accessing services from other sources). To identify those not attending immunization sessions, health facilities should have line listings of children eligible for vaccination. Using line listings, it may be possible to contact caregivers and conduct interviews in a home or village. This allows for a sample that includes those actively seeking vaccination (e.g., attending more than two immunization visits) and those who may not seek vaccination. In selecting individual caregivers, strive to interview an equal number of men and women caregivers, and strive to interview caregivers with a range of characteristics, including differences in ages, ethnicities, socioeconomic statuses, and types (i.e., including parents, relatives, and guardians). **Note**: It may not be practical to interview a large number of caregivers per catchment area or to include all catchment areas. Those catchment areas with low coverage may need to be prioritized. Consider the relative size of each catchment area (i.e., consider selecting more caregivers in communities with larger population sizes).
Community leader/champion questionnaire	These are individuals who live in, or live very close to, the selected community and are acknowledged by multiple people in the community as a trusted leader or someone influential in that community. Examples include tribal leaders, priests or imams, school leaders, heads of women's groups, and CSO contact points.	Between 2 and 5 per catchment area.	Consider selecting more community leaders/champions in larger catchment areas. Consider selecting more in catchment areas facing the greatest barriers to immunization (based on immunization coverage) as well as some from higher immunization coverage. Seek balance/representation in terms of sexes, ethnicities, ages, and types of leaders (e.g., tribal leaders, religious leaders, CSO contact points, women's group leaders, and education system representatives), length of time in the community, health education/training levels, and any other factors that may be important in the context. Additionally, consider selecting these leaders based on referrals/suggestions from the health facility in-charges or community members using a snowball sampling method.

Abbreviations: CHV, community health volunteer; CSO, civil society organization; HCW, health care worker.

Adapting the questionnaires

The questionnaires will need to be adapted to the local context before they are used. The questionnaire is modular, which allows a user to choose those elements that are most appropriate to meet the specific objective. Additionally, the questionnaires predominately consist of multiple-choice questions. The answers (i.e., response categories) must be reviewed to determine appropriateness for your context.

The results from the initial landscape analysis may help determine which questionnaire and multiple-choice questions are most appropriate. We recommend that users conduct questionnaire pilots or pretests to revise answers included in the multiple-choice questions. Additionally, some questions may require revision due to local conditions. For example, the questionnaires ask how many children younger than age 5 a caregiver has. However, in some countries, it may be more appropriate for the age limit to age 6 due to programmatic reasons. Additionally, before starting data collection, it is important to decide if caregivers with more than one young child will be asked about one child only or both children separately. There are a few questions that may be impacted by this situation.

When collecting the data, teams may want to consider the best way to ask multiple-choice questions. Consider the following when field testing:

- Are most respondents literate and able to read multiple-choice questions?
- Is the number of multiple-choice options too many to read aloud to the respondents?
- Do interviewers have the requisite skills to ask a question and select the most appropriate answers based on the verbal response?

The format used to ask and record answers will depend on respondent characteristics, questionnaire design, and skill of the interviewers.

Selecting data collection teams

When assembling the data collection team, consider the identity characteristics of interviewer teams (age, sex, etc.) and seek to establish balanced teams where possible. In some instances, the sex of the interviewer may be important. In some locations, for example, women caregivers may feel most at ease speaking with women interviewers. All teams should undergo basic interviewer training and be familiar with the questionnaires they will administer.

Additionally, each interviewer should have information on where respondents can obtain services and basic information about immunization or other health needs. Interview teams should also be able to refer respondents to a local health official if they have questions. This information may be needed during conversations with respondents (especially those from the community).

Data collection, entry, and cleaning

When formulating the data collection plan, teams will want to consider the approaches that work best for the location in which they are conducting the assessment and the objectives of the assessment. For instance, if the objective of the assessment is to understand demand barriers, study teams may start with community interviews and conduct health system interviews afterward. Or, due to the geographic features of the communities and health facility locations, it may be easier to interview HCWs first because community members are only available later in the day. Simultaneous data collection between different respondent groups is also possible if enough staff and funding are available. The local context will

determine which interviews are conducted and when. There is not one right answer. It is important that interview schedules remain flexible to adapt to stakeholders' multiple obligations. It is also important to honor the time commitments shared when asking respondents to take time for the interview.

The RA data collection forms include primarily quantitative data with a smaller set of open-ended questions. In some settings, the RA team may have electronic tablets available for direct data entry. In other contexts, the RA may be done with paper and pen. Ultimately, the team will decide which approach is most practical for the assessment location(s) and which software program to use for data entry if appropriate.

Commonly used data entry template forms include ODK, REDCap, and Epi Info, but any reliable and secure data entry program using a format easily imported into a basic data analysis program will be useful. The data entry template should be formatted to align with the questionnaire, using response categories for each question that match what is in the questionnaire and string variables[3] for questions that are open-ended fields. If the assessment team is collecting data from multiple locations at the same time, all data entry must be conducted using the same template so that data from each location can be easily merged into one dataset.

Data cleaning is an important aspect of data management which requires that the individual(s) responsible for this function review variable responses. For example, how complete are the data, and do all responses make sense in isolation and in relation to skip patterns? If the data were collected using paper surveys, it may be possible to review responses to an individual survey to see if there were data entry errors that can be corrected. It is never acceptable to change data (i.e., to modify responses) from what has been indicated by a respondent.

Report writing and dissemination

After data analysis is complete, it will be necessary to disseminate findings. There will be a considerable amount of data generated from this exercise. To help with the dissemination, a sample report outline is available in Appendix D. We recommend considering a Microsoft PowerPoint slide format for the report, though a narrative report may also be helpful. Consider your audience and what is most appropriate for reaching this group of people.

For the data analysis, simple cross tabs of data from multiple-choice questions are likely needed. For the open-ended questions, qualitative data analysis methods are needed. Appendix J is a guide to the qualitative questions included in the five questionnaires as well as suggestions for analyzing the data.

Disseminating the results of the assessment is a critical way to confirm:

- If the findings resonate with the communities included in the assessment.
- If the findings may apply to other communities not included in the assessment.
- Any data inconsistencies between different respondent types. For example, caregivers may report that HCWs are consistently not conducting mobile/outreach services; however, HCWs indicate this is done on a regular basis. Both may be true, and it will be important to understand what could lead to this situation.

[3] A string variable is a data type that stores text data and can vary in length.

Additionally, the findings can be disseminated to higher levels of the health care management system as needed. The assessment objective will inform which stakeholders receive the dissemination report and/or attend dissemination meetings.

As data are disseminated and discussed among stakeholders, please consider the following:

- Highlight key findings that meet the objective of the assessment. This may be information on how to improve the routine immunization program, and depending on sample size, you may want to consider the best format to accurately reflect the data (i.e., numbers versus percentage).
- It is important to ensure that conclusions are based on the data. There is often information or influence from other sources that may not be supported by the data gathered during the assessment. While capturing this other information in the report can be helpful, it is important to ensure the information is cited correctly. It can be used to either support the conclusions within the report or point to areas where further analysis could be useful to understand the situation.
- Include a section on the next steps, which clearly articulates stakeholders who are assigned to each task with clear timelines outlined. It is critical that the findings are both communicated and acted upon.

Strengthening the immunization system and improving vaccine coverage is only possible if we clearly communicate the assessment results and identify/articulate the next steps, including who is accountable.

Conclusion

Planning for the immunization needs of subnational communities experiencing, or at risk of experiencing, a decline in child immunization coverage requires the identification of both demand and supply barriers contributing to coverage declines. This assessment is meant to efficiently gather information to identify both barriers and opportunities within the current immunization system within a country. It does not require specialized qualitative research experience and only requires staff that have basic training in data collection and data analysis.

Community stakeholders and those working in the health care system have direct knowledge about what impacts vaccine coverage. This RA toolkit can help teams uncover this information rapidly and efficiently to foster collaborative problem-solving. In addition to barriers, this tool identifies opportunities to improve vaccination coverage. This is why it is essential that both communities with low and high vaccine coverage are selected for the RA.

RA teams can use this tool to efficiently plan—and adapt—data collection, analysis, and reporting in ways that most effectively address context and needs. Moving forward with assessment results can inform decisions and solutions to stop and reverse immunization declines and help teams identify solutions to advance the coverage and impact of lifesaving child immunizations.

Appendix A. Health system questionnaire descriptions

Health facility in-charge questionnaire

Objective: Gather background information on the location of the health facility; frequency of immunization/outreach sessions; vaccine stockouts; details about local community groups; financial and human resource needs; special populations served; and identify planning/budgeting processes at the facility. This questionnaire is intended to be completed once for each health facility. It is intended to be the same facility where community health workers (CHWs)/health care workers (HCWs) are interviewed.

Table A1. Health facility in-charge questionnaire.

Module	Information obtained	Why it is important	What questions do these data answer?
Background	Sex, age, years at the facility, and education level.	It is important to understand the background characteristics of the person in charge of the health facility, as their background influences their perspective.	• How many respondents are men versus women? • What is the age range of respondents? • How long have respondents worked in their current role? • What is the educational background of the respondents?
Geography	Location of the facility (urban, rural, or semi-rural/peri-urban); level of the facility (primary, secondary, tertiary, other).	Location and level of the facility provide information on community characteristics and the level of care that may be accessible to the community.	• In what type of geographic location is the health facility located? • What is the highest level of care provided by the health facility?
Immunization session timing and outreach activities	Timing of immunization sessions and mobile/outreach sessions; how often the sessions occur; and if activities are covered in the existing budget.	Understanding when and how many immunization sessions are conducted by health facility staff determines if the number of sessions offered is sufficient and/or occurs at times convenient for most of the population.	• What time are immunization sessions held? • Which immunization sessions are most attended? • Does the health facility conduct mobile/outreach to hard-to-reach areas or communities? • How often do these mobile/outreach sessions occur? • Does the current facility budget cover mobile/outreach session costs?

Module	Information obtained	Why it is important	What questions do these data answer?
Microplanning	Information on current microplanning activities conducted at the health facility.	Accurate denominators of the target population are essential for planning immunization activities, ordering vaccines, and measuring vaccine coverage.	• Does the health facility regularly conduct microplanning? If so, how frequently? • Which parts of the microplanning process are regularly followed, and which are not? • Who is involved in microplanning? • Are microplanning activities included in the facility budget? • Are there any microplanning tools in use in the country? And how frequently are the tools used? • How are the tools useful, what are the challenges with using the existing tools, and what are some improvements that may facilitate use?
Vaccine stockouts	Frequency of vaccine stockouts, why they occur, and how facility leaders calculate vaccine needs.	Unavailability of vaccines at health facilities can lead to children missing immunizations.	• How frequent are vaccine stockouts at the health facility? • Why did previous vaccine stockouts occur? • How are vaccine requirements calculated? • Are there any constraints in vaccine and logistic storage at the facility?
Background information on immunization, including CSOs, and resources needed	Background information on what immunization visits are most likely to be missed, whether local CSOs or groups are working in immunization, and if there are specific immunization activities that would benefit from additional funding.	Background information on these topics informs how data gathered (vaccine stockouts, immunizations missed most frequently, mobile/outreach services, etc)in other questionnaires can be interpreted.	• Are there certain immunization visits (e.g, the nine-month visit) that are more likely to be missed? • Are there CSOs or other local groups that are involved in immunization or health activities in the community? • What are three activities that could increase vaccine coverage but are currently underfunded or unfunded?

Module	Information obtained	Why it is important	What questions do these data answer?
Special populations: Internally displaced persons/refugees	How are IDPs or refugees reached in the community? Is there active outreach? Can they access and be welcomed at the health facility? If there is a lack of immunization records? How are they vaccinated?	Refugees/IDPs may not be able to access health or immunization services. They may not be aware of what services are available. In some instances, a child may not be able to receive immunizations without proper identification or documentation. It is important to understand how a displaced population is able to receive immunization services.	• How do health facilities communicate with IDPs or refugees living in their catchment communities? • Do health facilities include IDPs or refugees in their target population? • Does the health facility in charge support providing services to this population? • If IDPs or refugees do not have immunization records documenting health records, can they still receive vaccinations? Why/why not? • How do HCWs determine which vaccine to administer?
Planning and budgeting for vaccination at the facility	Outline the planning and budgeting process at the facility level to understand what activities/line items are consistently not budgeted appropriately for sufficient vaccine delivery.	Identification of activities that are erroneously budgeted can inform future budget requests and allocation to ensure all activities are included in the budget.	• Do facilities have a planning/budgeting process for immunizations? • What items are included in the facility immunization budget? • What are the challenges with budget development? • What is the funding source for immunization costs? • Does the facility need a budget tool to help develop comprehensive budget plans?

Abbreviations: CSO, civil society organization; HCW, health care worker; IDP, internally displaced person.

Community health worker or health care worker questionnaire

Objective: Gather information from the perspective of CHWs/HCWs who an essential part of the immunization health system are and can be a barrier and opportunity to immunization. They are responsible for immunizing children, and their beliefs and actions have a profound impact on vaccine coverage. We emphasize the need to gather as much information as possible to identify barriers and opportunities while also being mindful that they are incredibly busy.

Table A2. Community health worker or health care worker questionnaire.

Module	Information obtained	Why it is important	What questions do these data answer?
Background	Sex, age, years at the facility, and health training/education level.	A person's demographic characteristics may influence their positions and beliefs about vaccines.	• How many respondents are men or women? • What is the age range of respondents? • How long have respondents worked in a facility in their current position? • What is the educational background of the respondents?
Zero-dose or under-immunized children	Reasons that impact a child's vaccination status; vaccines that may be routinely refused by caregivers; and reasons that contribute to missed follow-up visits. Children vaccinated with or without immunization records; children vaccinated outside of session hours; and vaccines that do/do not require a minimum number of children to deliver.	To better understand the reasons that children may be under- or un-immunized, and how current CHW/HCW practices may contribute to these reasons.	• What are the most common reasons that children are not immunized? • Are there any vaccines that have higher refusal rates, and why? • What are the most common reasons that children do not come in for immunization visits? • Are there current CHW/HCW practices that may contribute to a child not being immunized? • Why do these current practices exist? • Are there any policies that contribute to these practices?
Vaccine access	Health facility location relative to population served; caregiver access to transportation; immunization hours at varying times and the potential impact on access; days and times potentially more convenient for	Information on community access to immunization services helps to identify accessibility challenges; identifies if there is an opportunity to integrate other PHC services with existing immunization outreach sessions;	• Is the health facility centrally located relative to the population served? • Do women or men experience transportation challenges accessing the health facility? • Can immunization sessions on different days or at varying times increase vaccine coverage?

Module	Information obtained	Why it is important	What questions do these data answer?
	caregivers; PHC services or other immunization activities offered with mobile/outreach sessions; and frequency of vaccine stockouts and impact on missing vaccines or delayed vaccinations.	and clarifies if vaccine stockouts contribute to children missing vaccinations.	• Do mobile/outreach sessions include provision of other PHC services? • Have there been vaccine stockouts in the past month that resulted in children turned away from vaccination? • Will caregivers return for missed vaccines after a stockout?
Vaccine coverage and tracking children's immunization status	Frequency of vaccine coverage calculations; how the information is used by the CHW/HCW; efficiencies and challenges of the immunization tracking system; and strategies that remind caregivers of follow-up visits.	Understand how immunizations are recorded, and vaccination coverage is calculated. Ascertain if there are barriers to tracking children's immunization status and how caregivers are reminded to bring children for immunization.	• Do CHWs/HCWs review vaccination coverage estimates on a regular basis? • Do CHWs/HCWs use the data to improve performance or for evaluation purposes? • What is the CHW/HCW perception of the immunization tracking system? • What are the most common barriers to tracking immunization status? • Are caregivers reminded to bring in their children for their next immunization visit? If yes, what are the most common methods for reminder outreach?
CHW/HCW role in immunization decision-making	CHW/HCW perception of their role in caregiver decision-making; does CHW/HCW identity influence decision-making; who do CHWs/HCWs engage with regarding vaccine information; what information convinces caregivers to vaccinate children; and caregiver characteristics that may influence decision-making.	It is important to evaluate the CHW/HCW perception of their role in caregiver decision-making by understanding their interactions with caregivers and any biases that may influence their role.	• Do CHWs/HCWs see themselves as influential to immunization decision-making? • Are there caregiver biases about CHWs/HCWs that influence the way information is shared and received? • What information convinces caregivers to vaccinate their children? • Do CHWs/HCWs perceive that caregiver sociodemographic characteristics influence the decision to vaccinate?

Module	Information obtained	Why it is important	What questions do these data answer?
CHW/HCW perception of community immunization knowledge	Which caregiver is most likely to bring a child in for vaccination; CHW/HCW perception of caregiver immunization knowledge, based on identifying characteristics; and determining if gathering information on vaccine benefits is understood.	It is important to understand CHW/HCW perception of community knowledge, including reasons for vaccine refusals or delays and sources of immunization information. Also, it is an opportunity to understand if there are CHW/HCW knowledge gaps.	• Which caregiver is most likely to bring a child in for immunization? • Do mothers and fathers understand the benefits of vaccination, and is there a knowledge difference between these types of caregivers? • What contributes to mothers and fathers misunderstanding about vaccination, and is there a difference between these types of caregivers?
Communication and information gaps	Most recent CHW/HCW training for immunization or vaccine-specific communication; information that was not covered in the training; local beliefs that could influence messaging; social media as a source of vaccine/immunization information; information most requested by mothers and fathers; and sources of immunization information accessed by mothers and fathers.	It is important to know when CHWs/HCWS were last trained on strategies for communication about vaccines/immunizations; identify community knowledge and information gaps; understand where community vaccine knowledge originates; and if there are local beliefs that can be reflected in communication materials.	• How many CHWs/HCWs have received communication training in the last 6 months, 12 months, more than 1 year, and more than 2 years? • Is there a need for new/additional training about immunization/vaccine communication? • What local beliefs could strengthen immunization messaging? • Do CHWs/HCWs obtain immunization information from social media, and from which platforms? • What information is most requested by mothers and fathers, and does this differ by caregiver? • What are the sources of information accessed by mothers and fathers, and does this differ by caregiver?
Role of other local community groups or CSOs in immunization	CHW/HCW engagement with local groups or CSOs; CHW/HCW recognition and willingness to engage with community/CSO groups; and potential activities for local partners.	Understand if there are community groups currently engaged with immunization or any that could provide support and if CHWs/HCWs acknowledge and welcome their involvement. Understand if there are specific activities in which the CSOs can engage.	• Are there local groups already engaged in immunization? • Do CHWs/HCWs accept the role of local groups in immunization? • What activities do local groups already take in immunization? • What immunization activities could local groups undertake in the future?

Abbreviations: CHW, community health worker; CSO, civil society organization; HCW, health care worker; PHC, primary health care.

Community health volunteer questionnaire

Objective: Understand community health volunteer (CHV) perceptions and identify opportunities to increase vaccine coverage. Not all health systems include CHVs. For those that do, CHVs do not deliver immunizations but are an important part of the health system and community.

Table A3. Community health volunteer questionnaire.

Module	Information obtained	Why it is important	What questions do these data answer?
Background	Sex, age, years as a volunteer, health training/education, and years lived in the community.	It is important to understand the demographic characteristics of CHVs, as it may influence their work.	• How many respondents identify as men or women? • What is the age range of respondents? • How long have respondents volunteered in their current position? • What is the educational background of the respondents? • How long have they lived in the community?
Zero-dose or under-immunized children	Reasons that contribute to children being un- or under-vaccinated; vaccines that may be routinely refused by caregivers; and reasons that children may not come for follow-up visits.	Understand some of the reasons why children may be under- or un-immunized.	• What are the most common reasons that children are not immunized? • Are there any vaccines that have higher refusal rates, and why? • What are the most common reasons that children miss immunization visits?
Health facility transportation barriers	Health facility location relative to community catchment; and caregiver access to transportation.	Understanding how the community accesses immunization services helps to identify access challenges.	• Is the health facility centrally located in the catchment area? • Do women or men experience challenges reaching the health facility?
CHV perception about community immunization knowledge	Caregiver most likely to bring a child for vaccination; CHV perception of caregiver understanding of vaccination benefits; and insights as to why benefits may not be understood.	It is important to understand CHV perception of community knowledge, reasons for immunization refusals or delays, and sources of information on immunizations or vaccines.	• Who is most likely to bring a child for immunization visits? • Do mothers and fathers understand the benefits of vaccination? Is there a difference between these types of caregivers' knowledge? • What contributes to mothers and fathers misunderstanding the benefits of vaccination, and is there a difference between these caregivers?

Module	Information obtained	Why it is important	What questions do these data answer?
Communication and information gaps	Most recent CHV training for immunization communication or vaccine-specific messaging; information that was not covered by the training; local beliefs that could influence messaging; social media use to obtain vaccine/immunization information; and SOPs to help convey immunization information.	It is important to know when CHVs were trained to communicate about vaccines/immunizations; identify information gaps in community knowledge; know where the community obtains vaccine information; and determine if there are local beliefs that can make communication materials more influential.	• How many CHVs have been trained in the last 6 months, 12 months, more than 1 year, and more than 2 years? • What are the training gaps regarding immunization/vaccine information? • What local beliefs can be incorporated into immunization messaging? • Do CHVs obtain immunization information from social media, and from which platforms? • Do CHVs have SOPs to help them convey information?
Information requested by caregivers	Information most requested by mothers and fathers; sources of immunization information accessed by mothers and fathers.	It is important to understand if CHVs get the same requests for information from specific caregivers.	• What information is most requested by mothers and fathers, and does this differ by caregiver? • What are the sources of information accessed by mothers and fathers, and does this differ by caregiver?
Resource identification and local community engagement	Resources needed to reach more caregivers; engagement with local groups on immunization; and nature of engagement with local partners.	It is important to understand if CHVs have adequate resources to carry out their duties; clarify if there is engagement between CHVs and local partners; and determine the nature of partnership.	• What resources do CHVs need to accomplish their tasks? • Are there local groups that are already engaged in immunization? • Do the CHVs interact with those local groups on immunization activities? • On which immunization activities do they interact with local groups?

Abbreviations: CHV, community health volunteer; SOP, standard operating procedure.

Appendix B. Community questionnaire descriptions

Caregiver questionnaire

Objective: Identify and enumerate the immunization systems barriers and opportunities from the perspective of caregivers.

Table B1. Caregiver questionnaire.

Module	Information obtained	Why it is important	What questions do these data answer?
Background	Sex, age, education level, years lived in the community, how many children younger and older than 5 years of age, and ethnic or religious background.	It is important to understand the background characteristics of caregivers, as it influences their engagement with the immunization system.	• How many respondents are of a specific sex? • What is the age range of respondents? • How long have they lived in the community? • What is the educational background of the respondents? • How many children of a certain age group do they have? • What is their ethnic or religious background?
Community immunization knowledge and communication	Importance caregivers place on child immunizations; sources of information; caregivers' questions regarding vaccines; and whether language of informational materials impacts effective communications.	These questions can illuminate the information-related barriers faced by caregivers. The caregiver perspective on the importance of immunization helps to inform caregiver experiences.	• Do caregivers value immunization services? • Are there information sources being underutilized? • What kinds of information (or lack of information) might cause confusion about immunization? • Are information sources accessible in the appropriate languages? • When analyzed by sex of the respondent, are there differences between men and women caregivers regarding potential information-related barriers?
Zero-dose and under-immunized children	Vaccine safety and other health concerns voiced by caregivers (particularly among caregivers whose children are not fully vaccinated); understanding the consequences of not vaccinating a child; which specific vaccines (if	The questions provide insights on caregivers' immunization concerns; their perceptions and experiences of immunization services; and refusal tendencies related to specific vaccines.	• What misconceptions most commonly contribute to caregivers' reluctance to vaccinate their children? • What health system barriers do caregivers encounter? • Which specific misconceptions or health system barriers are most reported among caregivers who routinely refuse vaccines?

Module	Information obtained	Why it is important	What questions do these data answer?
	any) do caregivers tend to refuse; and caregivers' experiences accessing and receiving health care.		• When analyzed by sex of the respondent, do men caregivers have specific vaccine safety concerns that differ from women caregivers? • Do different types of caregivers experience different types of health system barriers?
Immunization decision-making	Within families, who is the main decision-maker about child immunizations; to what extent are CHWs/HCWs perceived as influential in these decisions; and who do caregivers trust most regarding childhood immunization information?	These questions tell us who is making decisions about child immunizations, the extent to which caregivers trust HCWs with immunization information, and whether the sex of the HCW influences the caregiver's perception of the trustworthiness of the information. There are questions about the role of community leaders in decision-making and the trustworthiness of community leaders.	• Who do caregivers trust about child immunizations? Does this vary depending on caregiver age, identity, the number of children they have, or other factors? • Does HCW sex influence caregivers' perceptions of trustworthiness about immunization services? • Do women and men caregivers have equal decision-making power for child immunizations? • Do community leaders influence decision-making? If yes, which community leaders? • What information do caregivers want from community leaders? • Does the sex of the community leader increase or decrease their trustworthiness?
Role of CSOs and other local community groups in immunization	Information on CSOs or local community groups working in the community. Do local organizations work on immunization-related activities; do caregivers perceive them as trustworthy; and what can they do to support caregivers to access child immunizations?	The questions tell us how aware caregivers are of CSOs in their area and provide an indication of the potential role of CSOs in immunization, including the extent to which the organizations are trusted by caregivers.	• What CSOs are working in the community? • What types of support from CSOs do caregivers value? • Do men and women caregivers or caregivers of different ages have different perceptions about CSOs' trustworthiness?
Vaccine access	Immunization hours at different times and the impact on access to vaccination; which days and times	Information about caregiver access to immunization services is needed to	• Is the health facility located centrally relative to the catchment area?

Module	Information obtained	Why it is important	What questions do these data answer?
	may be more convenient for caregivers; and frequency of vaccine stockouts. Are children missing vaccinations due to stockouts; what PHC services or other immunization activities are offered with mobile/outreach sessions; and is the sex of the HCW a determinant in vaccine acceptance?	understand accessibility challenges; identify if there are opportunities to combine PHC services with existing immunization outreach sessions; and understand if vaccine stockouts contribute to children missing vaccinations.	• Do women or men experience transportation challenges accessing the health facility? • Could immunization sessions on different days or times increase vaccine coverage? • Do mobile/outreach sessions include the provision of other PHC services? • Have there been vaccine stockouts in the past month resulting in children being turned away from vaccination? • If caregivers are unable to have a child vaccinated due to a stockout, will they return to get the missed vaccine(s)?
Recording and tracking children's immunization status	Processes to remind caregivers about follow-up visits. How can the process improve? For paper-based systems, are immunization cards carried each time a child is vaccinated?	This module seeks to understand how caregivers are reminded to bring children for immunization, if this process can be improved, and if they bring in the child's immunization card or record with them to immunization visits.	• What processes are used to remind parents to bring their child in for immunizations? • What can be done to improve the reminder process; are there other ways caregivers prefer to get reminders? • For paper-based systems, do parents remember to bring their child's immunization card? • If caregivers forget to bring in their card, what can be done to remind them for the next time?
Special populations: Internally displaced persons/ refugees	Are child refugees/IDPs receiving vaccines; do they have access to immunization records; can children be vaccinated without records; and where can refugees vaccinate children, receive reminders for vaccination, and address other concerns?	This section is meant to understand how IDPs/refugees are contacted, accounted for, and able to access the existing immunization system.	• Are children vaccinated at their current residence? • Do caregivers have (or have access to) immunization records? • Are children given vaccines when they do not have immunization records? • Do they restart vaccination of EPI vaccines? • Do caregivers know where to take their children for vaccination? • How do HCWs remind caregivers of follow-up visits? • What are the caregiver concerns, if any, about vaccinating their children in the new place of residence/community?

Abbreviations: CSO, civil society organization; EPI, Expanded Program on Immunization; HCW, health care worker; IDP, internally displaced person; PHC, primary health care.

Community leader/champion questionnaire

Objective: Obtain information about immunization barriers and opportunities from the perspective of community leaders.

Table B2. Community leader/champion questionnaire.

Module	Information obtained	Why it is important	What questions do these data answer?
Background	Sex, age, education level, years lived in the community, how many children younger and older than 5 years of age, and ethnic or religious background.	It is important to understand the background characteristics of community leaders, as their background influences their perspectives, experiences, and answers.	• How many respondents are men or women? • What is the age range of respondents? • How long have they lived in the community? • What is the educational background of the respondents? • How many children do they have older or younger than a certain age? • What is their ethnic or religious background?
Community immunization knowledge	Community leaders' understanding of vaccination benefits; and common reasons for vaccine refusals by caregivers.	It is important to understand community leaders' perception of community caregiver knowledge and reasons why vaccines may be refused.	• What is the perception of the community leader regarding caregivers' knowledge of immunization? • What does the community leader think is the reason for immunization knowledge gaps? • How does the community leader perceive caregiver reasons to refuse immunizations?
Communication	Sources of immunization information; types of caregiver questions about vaccines; and cultural beliefs that impact effective communications.	These questions can highlight the information barriers that caregivers confront. It is useful to understand the way caregivers prioritize information.	• Are there information sources being underutilized? • What kinds of information (or lack of information) might cause confusion about immunizations? • When analyzed by sex of the respondent, are there differences between women and men caregivers regarding potential information-related barriers? • Are there any cultural beliefs that impact immunization?

Module	Information obtained	Why it is important	What questions do these data answer?
Immunization decision-making	Who takes a child to their immunization visits most frequently; who is the main family decision-maker about child immunizations and to what extent are other caregivers perceived as influential in the decisions; and who do caregivers trust most regarding child immunization?	This elucidates who makes decisions about child immunizations; the extent of caregivers' trust in HCWs regarding immunization information; and whether the sex of the HCW influences caregivers' feelings of trust regarding immunization.	• What is the community leader's perception of who takes children to immunization visits? • Who makes immunization decisions? • Do women and men caregivers have equal decision-making power concerning child immunizations? • What information influences caregivers to immunize? • Who do caregivers trust regarding child immunizations? • Does sex play a role in caregivers' perceptions of HCW trustworthiness for immunization services? • What can community leaders do to ensure that caregivers receive accurate information about immunization?
Role of CSOs or other local community groups in immunization	What CSOs or other local groups are operating in the area; do the groups work in immunization; if not, are there activities these groups can undertake to support immunization?	This module seeks information on CSOs or local community groups that operate in the area and if they work on immunization-related activities. It assesses whether these groups could increase direct engagement with the community on immunization-related activities.	• Which CSOs or other local groups operate in the community? • Do any groups work in immunization? • What activities could CSOs, or local partners conduct in the community to assist immunization?
Vaccine access	Transportation challenges to access immunization sessions; frequency of mobile vaccination; if immunization sessions are leveraged to provide additional PHC services in a community.	This module seeks information about community leader knowledge on vaccine access and how the community seeks immunization.	• Do women or men have challenges with transportation to access immunization? • Do CHWs/HCWs conduct mobile vaccination visits? If they do, are other services or activities conducted at the same time as that visit?

Module	Information obtained	Why it is important	What questions do these data answer?
Recording and tracking children's immunizations	Do community leaders receive information on vaccine coverage, and how do they use that information?	This module identifies if community leaders routinely receive information on vaccination and if they use that information to advocate for immunization.	• Do community leaders receive information on vaccine coverage? • Do any other community members receive this information? • How does the community leader use that data? • How accurate is the information?
Special populations: Internally displaced persons/refugees	Presence of IDPs/refugees in the community; registration status of IDPs/refugees; access to health care in the community; source of funding for health care; and vaccine availability for IDPs.	This module is meant to understand how IDPs/refugees are contacted, accounted for, and able to access the existing immunization system.	• Are IDPs/refugees in the community? • Have they been registered? If not, why not? • Can they access health care services, including immunization? • What is the funding source that covers their access to health care? • Do health facilities carry enough vaccines to vaccinate chi IDPs? • If there are not enough vaccines, how is the problem resolved?

Abbreviations: CHW, community health worker; CSO, civil society organization; HCW, health care worker; IDP, internally displaced person; PHC, primary health care.

Appendix C. Landscape analysis questions

Table C1. Landscape analysis questionnaire.

Topic	Questions
General questions	• What are the vaccine coverage rates over time for the sites selected for the rapid assessment (in the last two to three years)? • Are there refugees or IDPs in these areas? If so, how many people, and what percentage refugees/IDPs of this population is currently residing in these areas? • Is the area ethnically or religiously diverse? If so, what ethnic/religious groups reside in these areas? • Are there considerable human resource gaps (e.g., HCWs, CHVs) in these areas? • Do the areas of the proposed rapid assessment have similar access to immunization services, or are some categorized as “hard to reach” or have special populations?
Rapid assessment of immunization barriers and opportunities	• What information do we already have on subnational immunization barriers? • Are there other stakeholders (national, subnational) who have conducted similar assessments (including work related to immunization barriers at any level—national or subnational—and any work addressing barriers to zero-dose immunization)? Based on these findings, which sections of the questionnaires should be prioritized or adapted? • What aspects of the immunization policy are set by national, subnational, and local policymakers? • Who are the decision-makers regarding immunization in the geographic project area? • What is the approximate/general estimate of women to men of decision-makers? To what extent is HCW multitasking (as result of integration of immunization into broad PHC service responsibilities) a barrier or opportunity to increasing immunization coverage?
CSO capacity-building (including when you are considering CSO engagement for immunization)	• In these subnational areas, are there immunization- or MNCH-specific CSO partners? What has been the traditional role of these partners (generally speaking)? (More information to gather in assessment.) • What is the CSO relationship with the community? • How do we know those CSOs, and what experience do we have working with them? • Are there potential CSO partners that are women led, or address sex-specific barriers related to immunization?

Topic	Questions
	• Are there other stakeholders (national, subnational) who have implemented similar CSO capacity-building work for immunization? • What is the "traditional" role of CSOs—are they delivering health services (MNCH, immunization, or otherwise)? Do they attend subnational meetings? What about larger TWG meetings? How are they connected to the larger immunization/health space? How are they connected to CHWs/health officials? How are they recognized at the national level? How are they funded?
Budget tool (including when you are considering the use of the following budget tool)	• Are immunization resources integrated in broader PHC financing/planning, or are they standalone resources? • Which provinces and districts might benefit the most from the budget tool—and how do we identify them? What are their pressing problems with budgets? • Who are the focal points at the province and district levels regarding exploring the budgeting procedures, and who does the budgeting?
Microplanning (including when you are using the microplanning module in the health facility questionnaire)	• How is microplanning conducted at the national and subnational levels currently? How often are microplans updated? • What microplanning tools are currently used in country? • Who is responsible for collecting data used for microplanning at each level? • Which data are already sex-disaggregated? • How often are HCWs or others responsible for microplanning trained on RED/REC strategy or using microplanning tools? • How are data from microplans used in country? • Are paper-based tools used to gather data? If so, are they digitized, at what level, and by whom?

Abbreviations: CHV, community health volunteer; CHW, community health worker; CSO, civil society organization; IDP, internally displaced person; MNCH, maternal, newborn, and child health; PHC, primary health care; RED/REC, Reaching Every District/Reaching Every Community; TWG, technical working group.

Appendix D. Suggested report outline

I. Introduction

i. Describe what the rapid assessment is about. (Why was it created; what is the purpose and rationale of the assessment?)

ii. Provide a brief description of the country and/or sub country context regarding immunization (e.g., immunization coverage trends over time, known challenges and areas of progress, and equity-related aspects of immunization).

iii. Describe the assessment team (including the identification and role of different organizations that conducted the assessment, and the total number and balance of men and women interviewers).

iv. Describe the ethics review processes and approvals (as necessary).

II. Methodology

i. Data collection summary.

a. Identify the locations where data collection occurred.

- Criteria (if any) is used to determine data collection locations.
- Locations of health facilities; identification of whether this was a rural, semirural, or urban location and level of health facilities, as well as other characteristics used in the selection of health facilities (e.g., high versus low vaccine coverage).
- Names of communities where interviews were conducted.

b. Identify the dates when the data collection occurred for each location.

c. Identify the languages used.

ii. Data management and analysis.

a. What was the process used to create the analyzed dataset?

- Which data software program(s) were used?
- Who did the data entry?

b. What data cleaning/data checks were conducted?

c. What analysis steps were undertaken? (In general, not for each variable.)

- Quantitative
- Qualitative
- Triangulation

III. Results

The following structure is intended as an information summary to be presented based on the use of the full set of questionnaires. Assessment teams may need to adjust sections to reflect questionnaire adaptation. To increase coherence when reporting on a specific topic, review results from each of the questionnaires that included the same topic and consider whether and how different stakeholder groups viewed the topic similarly or differently and in what ways. For example, there are questions in multiple questionnaires about whether the location of vaccination points makes it difficult for caregivers and their children to reach the services. In writing the results, it is helpful to summarize how each stakeholder group responded to the question, identify the similarities and differences in stakeholder responses, and what this might mean for immunization planning.

Due to the large volume of results the assessment can generate, the assessment team will need to decide which disaggregated results are the most meaningful. For example, it may not be necessary to present percentage breakdowns of respondent answers to a question according to age group if there are no differences across age groups. It can suffice to mention the lack of difference in respondent ages.

Sex-disaggregated data are very important for identifying sex-related barriers to immunization services supply and demand. Assessment teams should review sex-disaggregated results as suggested in the following sections, report on any differences that appear meaningful when summarizing results by section, and synthesize sex-related findings in the conclusions and recommendations section of the report.

i. Summary of survey respondents.

Summarize who was interviewed and their background characteristics. Characteristics may include: the location of the health facility, community name, sex of the respondent, age, education, years lived in the community, years in the position, religion, language, and ethnicity. Assessment teams should decide which characteristics are most relevant to their context. For example, in some contexts, it may be more relevant to identify the language used by participants rather than their ethnic group. Although it is important to include full information, teams should consider the best way to present information using the most relevant format to convey the information (e.g., tables, charts, and/or narrative).

ii. Availability of vaccines and immunization services.

Identify the main challenges related to vaccine availability and stockout challenges from the perspectives of the health facility in-charge(s), health care workers (HCWs), community health volunteers (CHVs), and caregivers. Please summarize observations regarding the availability of vaccines, including the **types of vaccines** that are not normally available as part of the routine immunization program according to different stakeholder groups. It will be important to summarize details regarding vaccine stockouts and if this results in missed vaccinations.

Additionally, other potential reasons for not administering and/or accepting vaccines should be summarized.

iii. Availability of immunization services including mobile/outreach vaccination.

Identify the main challenges related to the availability of immunization services, including outreach services, from the perspectives of the health facility in-charge(s), HCWs, CHVs, and caregivers.

iv. Availability and use of immunization services for refugees and internally displaced persons (or vulnerable populations).

Summarize the number of refugees/internally displaced persons served in the health facility catchment area, the services provided by the health facility, and whether immunization is included in service delivery. Summarize if this population accesses services from the health facility (why or why not) as well as the influence of immunization documentation or health records on receiving immunizations.

v. Logistic and facility-based barriers.

Identify the most prevalent logistic barriers reported by health facility in-charges, HCWs, CHVs, community leaders, and caregivers. Please describe.

a. **Location**. Describe and compare how prevalent the geographic **location(s)** of the health facilities were, according to different stakeholders. Where applicable, identify any notable differences by location and sex of the respondent. For each stakeholder group, summarize any reasons provided as to why respondents thought the location is or is not a challenge.

b. **Access to transportation**. Describe how stakeholders view the varying difficulties that mothers and fathers face in accessing transportation to reach the health facility. Where applicable, identify any notable differences by location. Identify any notable differences according to the sex of the respondents within each stakeholder group.

c. **Frequency and timing of services**. Describe if the **frequency and timing** of immunization services is a prevalent concern from both a community and/or health system perspective. Where applicable, identify any notable differences when the sex of the caregiver is considered as well as the sex of the respondent.

d. **General access barriers**. Summarize the challenges faced by caregivers when trying to reach/attend immunization sessions and if it is more challenging to bring children for vaccination as children get older (according to caregivers).

vi. Caregiver demand for immunization services.

a. **Caregivers who bring their child/children for immunization**. Identify who, most commonly, brings their children for immunization services (i.e., mothers alone, fathers alone, mothers and fathers together, grandmothers, and other family members of the child), and if there are differences by facility type or location.

b. **Vaccine demand and schedule adherence**. Describe why caregivers/children miss certain vaccine doses, how they are reminded to bring in their children, what would be the most useful way for caregivers to receive reminders, and HCW willingness to vaccinate if a child is delayed in accessing a vaccine.

c. **Demand for specific vaccines**. For each location, identify which vaccines are most often missed or routinely refused according to different stakeholder groups and the reasons provided. Describe if there are any notable differences due to age, sex, or location.

vii. Caregiver knowledge, beliefs, influences, and preferences.

a. **Immunization knowledge**. Summarize responses from caregivers about how important they believe vaccines are for child health, if there are negative consequences for a child's health if they are not vaccinated, most reported sources of information on vaccines, what are the main benefits of vaccination, and the questions that are of most interest to caregivers. Report any notable differences by age, sex, education, religious group, ethnicity, or location.

b. **Belief and perception-based barriers to vaccine demand among caregivers**. Summarize the most commonly noted reasons that contribute to caregiver decisions not to vaccinate their children according to each stakeholder group. Report any notable differences by age, sex, education, religious group, ethnicity, or location.

viii. Caregiver immunization decision-making.

Summarize feedback from various stakeholder groups' perceptions about how caregivers decide whether to have their child/children immunized. Including who are the most, the second most, and third most identified decision-makers in households, what role—if any—HCWs play in decision-making, and the role of community leaders in decision-making. Report any notable differences by age, sex, education, religious group, ethnicity, or location.

ix. Communicating with caregivers.

Summarize the status of HCW training on communication, caregiver trust in HCW information, what information most influences caregivers to vaccinate, and any HCW biases regarding caregiver characteristics that influence their decision to vaccinate. Report any notable differences by age, sex, education, religious group, ethnicity, or location. Pay particular attention to sex differences between caregivers.

x. The role of civil society organizations (CSOs).

a. **Stakeholders' awareness and opinions about CSOs**. Describe whether different stakeholder groups (health facility in-charges, caregivers) are aware of CSOs, the types of CSOs most often mentioned, and the types of activities they think that CSOs do and/or can implement, including immunization-awareness activities. Report any notable differences by location.

b. **Engagement of CSOs**. Describe how different stakeholder groups view CSO engagement in immunization activities. Include which activities they already engage in with CSOs and activities in which CSOs can effectively engage in the future. It is important to document the role that CSOs could play in immunization information dissemination and if CSOs are a trusted source of information by the community. Report any notable differences by location.

xi. Immunization record keeping/planning practices and challenges.

a. **Tracking individual children's immunization status**. Describe HCW perspectives on whether existing child immunization tracking systems are adequate and any challenges with the tracking system.

b. **Tracking immunization coverage**. Synthesize HCW practices and perspectives on immunization recordkeeping, including how often HCWs review immunization coverage in their catchment areas, who supports or oversees the review of immunization coverage, and how this informs their immunization plans.

c. Describe how they **calculate vaccine quantities needed** and constraints to **vaccine storage**.

d. Identify the percentage of community leaders/facilitators who indicate they think HCWs have an accurate count of how many children or pregnant women are in the communities where they (the community leaders/facilitators) are located.

e. Describe if community leaders/facilitators routinely receive immunization coverage data, and how do/would they use such data.

f. **Paper-based systems**. [This section applies only where paper-based systems are used.] Describe if there is a paper-based vaccination system in your country, then please describe any challenges to bringing vaccination records by caregivers.

xii. Budgetary/resource planning practices and challenges.

a. **Planning and budgeting practices**. Briefly note the response(s) of the health facility in-charge(s) in answering whether there is a yearly planning and budgeting process in place, and if not why, as well as the items included in planning and budgeting. Add any other information you have gathered during the landscape analysis that can help describe existing context-specific approaches to planning and budgeting, including any tool that is currently used. Also, briefly summarize the response(s) of the health facility in-charge(s) to identify sources of funding for vaccination at the health facility.

b. **Mobile/outreach vaccination costs**. Summarize responses from the health facility in-charge(s) regarding costs for mobile/outreach vaccination, whether there is regular budget planning for mobile/outreach vaccination, sources of funding, and costs covered/uncovered.

c. **Resource gaps**. Describe the most cited resource gaps identified by the health facility in-charge(s) and whether shortage/stockout is due to a lack of planning and/or under-allocated/distributed resources.

d. **Planning and budgeting challenges**. Briefly note the response(s) of the health facility in-charge(s) in describing challenges in the development of plans and budgets for vaccination. Add any other information you gathered during the landscape analysis that may help describe existing context-specific approaches to planning and budgeting. Indicate the ways that a tool to develop a vaccination budget plan could be useful, including any specific parts of a tool, according to the health facility in-charge(s).

e. **Microplanning**. If the health facility in charge has indicated that they do not conduct microplanning exercises, describe the reasons why this is not currently happening. If the health facility in-charge indicates that they conduct microplanning work at the health facility, describe the processes and challenges (if any) that the in-charge mentioned.

IV. Conclusions and recommendations

i. Summarize the most pressing conclusions from the data.

   a. Where and what are the biggest barriers to closing immunization coverage gaps in the specific health facility areas that were included? Describe supply and demand side barriers.

   b. Where and what are the biggest opportunities for closing immunization coverage gaps in the specific health facility areas that were included? Describe supply and demand side opportunities.

ii. Synthesize key observations about the sex-related barriers (and opportunities) to improve immunization coverage.

   a. Consider HCW and CHV perspectives about sex-related barriers

   b. Consider community leader perspectives about sex-related barriers

   c. Consider caregiver behaviors and perspectives (differences among women and men respondents).

iii. Recommendations for integrating key results into immunization activities.

   a. Include any changes to existing policies that may contribute to either zero-dose or under-immunized children. For instance, policies to reduce the wastage of multidose vials may result in children being turned away for immunization.

   b. Criteria for prioritizing your recommendations may include:

      - Which recommendations are most likely to lead to an increased uptake of the vaccine?
      - Which ones can be implemented within the next three to six months?
      - Which take advantage of existing opportunities? Are there existing [sex-related] activities that you can build on to get results more quickly?
      - Which can be implemented with existing resources?
      - Which will require advocacy with stakeholders to roll out?
      - Which recommendations would require policy changes?

Appendix E. Health facility in-charge questionnaire

The objective of this tool is to evaluate the immunization system via the identification and enumeration of health system immunization barriers and opportunities.

Questionnaire design

All of the questionnaires are a mix of quantitative and qualitative questions. Most questions are multiple choice, and the answer choices should be adapted if needed to ensure the options are appropriate to the country/cultural/local context. Within the multiple-choice questions, there is an option for other answers. To gather information in the most impactful way, it is important to review the questions and adapt the multiple-choice answers based on the local context.

The mixture of qualitative and quantitative questions is intended to allow for quick identification/enumeration of barriers and opportunities for immunization, while retaining the flexibility to identify an issue that is not included in a multiple-choice list.

The health facility in-charge questionnaire is designed to be used with the individual who oversees the management of the health facility but not necessarily immunizing children. The objective of this tool is to gather background information on the location of the health facility, when immunization/outreach sessions occur, vaccine stockouts at the facility, information on local community groups, resources needed, special populations served, and finally, questions on planning/budgeting for the health facility. This questionnaire is intended to be completed once for each health facility where community health workers (CHWs)/health care workers will be interviewed. By gathering this information from the health facility management, it allows fewer questions to be asked of the CHWs/HCWs and community health volunteers.

Table E1. Health facility in-charge questionnaire.

Background
1. Do you identify as a woman, man, or do you prefer not to say? (Adjust answers according to country context.) a. Woman b. Man c. Prefer not to say
2. What is your current age? _____ years
3. What is the highest level of health training you have received (e.g., medical school, nursing school)? _____.
4. How long have you lived in this community? _____ years
5. How long have you been in charge of this facility? _____ years
Geography
1. Where is the health facility located? a. Rural

b. Semirural/Peri-urban
c. Urban

2. What is the level of the health facility?
   a. Primary
   b. Secondary
   c. Tertiary
   d. Other: _____.

Module A: Immunization session timing and outreach activities

1. When are routine child immunizations given in your facility? Provide day(s) of the week (M/Tu/W/Th/F/Sa/Su) _____, and select one below.
   a. Morning
   b. Afternoon
   c. Evening
2. When do most people come to get their children vaccinated? Provide day(s) of the week (M/Tu/W/Th/F/Sa/Su) _____, and select one below.
   a. Morning
   b. Afternoon
   c. Evening
3. Does mobile/outreach vaccination occur in the catchment area of the health facility?
   a. Yes
   b. No
   c. If Yes, how often do mobile/outreach vaccination teams go into the community? Every _____ (number of) weeks/Every _____ (number of) months.
4. If applicable, when traveling as a part of mobile/outreach vaccination activities, is the cost covered by your budget for your health facility?
   a. Yes
   b. No
   c. Partially
   d. If Yes, what costs are covered for which item(s), and where is the budget from?
   e. If No or Partially, please tell us how this activity is funded. (This is an open-ended question.)

Module B: Microplanning

1. Has your health facility ever created a microplan for the immunization program?
   a. Yes
   b. No
   c. If No, why? _____. Skip to the next module.
2. How often is microplanning for routine immunization conducted at the health facility?
3. What processes does the health facility follow in microplanning? (If the respondent forgets or has difficulty answering, the interviewer may probe by mentioning the options below.)

a. Data collection and estimation of target numbers.
b. Calculation of vaccine and immunization logistic requirements.
c. Creation of a community health facility work area map.
d. Determination of priority areas.
e. Identification of obstacles and solutions.
f. Preparation of an activity plan.
g. Use of previous year's vaccination history.
h. Other: _____.

4. For which immunization programs does microplanning occur? Select all that apply.
   a. Routine immunization.
   b. Introduction of new antigens.
   c. National Immunization Month.
   d. School-age immunization.
   e. Adult immunization, including women of childbearing age.
   f. Catch-up immunization.
   g. Outbreak response activities.
   h. Other: _____.
5. Who is involved in the microplanning process? Select all that apply.
   a. Health care workers.
   b. Community health volunteers.
   c. Other non-immunization health care workers
   d. Cross-sector representatives (village officials, religious leaders, subdistrict officials, etc.).
6. Does your facility conduct activities to identify/validate a target population number for microplanning?
   a. Yes
   b. No
   c. If Yes, which cost items of such activities are covered, and where is the budget from?
   d. If No, what may be the reason(s)?
7. Do you use the current (insert name of microplanning tool used in country) form for microplanning?
   a. Yes
   b. No
   c. If No, which tool do you use? And have you heard about the microplanning tool? Why are you not using the (insert name) microplanning tool? Skip to the next section.
8. If the answer is “Yes” to question 7, how frequently do you use this form?
   a. Annually
   b. Quarterly
   c. Monthly
   d. Every vaccination session
9. Do you think the form is helpful for your work in making microplanning?
   a. Yes
   b. No
   c. If No, why not? (Probe some aspects to explore challenges: time-consuming, CHW's skills, training, etc.)

10. What modules do you think the tool is still missing?
11. What improvements can be made to this tool to better support your work?
12. What should the project or national immunization program do to implement the tool successfully? (This is referring to the microplanning tool.)

Module C: Vaccine stockouts

1. Do you experience stockout of vaccines?
    a. Yes
    b. No
    c. If Yes, how often do stockouts occur? _____ (number of) times in the last six months. (If once a year: “0.5”.)
2. Do you experience stockout of other logistics (syringes, safety boxes, etc.)?
    a. Yes
    b. No
    c. If Yes, how often do stockouts occur? _____ (number of) times in the last six months. (If once a year: “0.5”.)
3. If stockouts occurred, what may be the reason(s)? Select all that apply.
    a. District/province determines how much vaccine, and injection supplies and sends without consulting the health facility first.
    b. There is periodic consultation, but the volume received usually does not meet the submitted demand.
    c. The actual demand exceeds the planned and received volume.
    d. There is no/inadequate budget allocated to purchase injection supplies/other logistics for the health facility.
    e. Other: _____.
4. How do you calculate the vaccine needed in one month? (Please confirm these answers are appropriate for your community/context.)
    a. Records from earlier months.
    b. Microplanning results.
    c. District/province determines how much vaccine is sent.
    d. Survey of pregnant women accessing other services at the health facility.
    e. Other: _____.
5. What is the main/biggest constraint to storing vaccines and related supplies? (open-ended)

Module D: Background information on immunization, including CSO groups and resources needed

1. Based on the visits to your health facility/your visits in the community, which immunization visits are most likely to be missed? List immunization visits by country.
2. Does the community have local civil society organizations (CSOs) or community groups?
    a. Yes
    b. No
    c. If Yes, what are they? (Open-ended; this could include women’s or mothers’ groups, youth groups, or other organizations engaged in health outreach activities.)

3. What three additional resources could help you reach more children with vaccination? Select three resources. (Please confirm these answers are relevant for your country/area/community.)
    a. Funding for outreach.
    b. Improved transport options.
    c. Increased human resources support from (the next administrative level).
    d. More communication materials.
    e. Increased staffing.
    f. Increased salary.
    g. Additional training, education, or supervision.
    h. Improved cold chain equipment/dry storage areas.
    i. Other: _____.

Module E: Special populations: Internally displaced persons/refugees

This module is meant to understand how internally displaced persons (IDPs) and/or refugees are contacted, accounted for, and invited to access the existing immunization system.

1. How do you reach/communicate with IDPs to encourage them to come in for immunization?
    a. Mobile/outreach vaccination in areas where IDPs/refugees reside.
    b. Demand generation activities designed to increase awareness of immunization services.
    c. Direct outreach to these populations via other organizations (CSOs, community-based organizations, international nongovernmental organizations, the World Health Organization, UNICEF, the United Nations High Commissioner for Refugees, the American Red Cross, the International Committee for the Red Cross, Doctors Without Borders, etc.).
    d. Other: _____.
2. How do you calculate the IDP/refugee population in your community?
    a. Registration records.
    b. Microplanning.
    c. Communication with other organizations working with these populations (CSOs, community-based organizations, international nongovernmental organizations, the World Health Organization, UNICEF, the United Nations High Commissioner for Refugees, the American Red Cross, the International Committee for the Red Cross, Doctors Without Borders, etc.).
    d. Other: _____.
3. Do you support the health system providing vaccinations and other essential health services to local IDP and refugee populations?
    a. Yes
    b. No.
    c. If No, why not?
4. Is there at least one speaker of every local dialect in the health facility, or do most community members speak (insert local language)?
    a. Yes
    b. No
5. Do you vaccinate IDPs if they do not have medical records and do not remember when they were vaccinated?

a. Yes.
b. No.
c. If Yes, how do you determine the timing and necessary vaccine?
d. If No, why not?

Module F:

This module seeks to understand the process of planning and budgeting at the facility level and will be used to understand what elements are consistently not budgeted, underbudgeted, or overbudgeted at the facility level for vaccine delivery. It should be used in Ukraine and Vietnam only.

Identifying the budgeting cycle and what line items are included in the budgeting plans

1. Does your health facility conduct planning and budgeting for vaccination regularly (e.g., yearly)?
   a. Yes, it is required by the higher level for national/provincial planning and budgeting.
   b. Yes, it is not required by the higher level, but we do it for our own planning and budget allocation.
   c. No, but we want to.
   d. No, it is not necessary because _____.
2. If the answer to the previous question is "Yes", what do you include in the planning and budgeting document? Do the funding/quantities requested match what is received? Complete the section below.

Items included?	Funding/quantities received match the plan?
Projected population and vaccines need: ☐ Yes ☐ No	☐ Yes ☐ No
Stock information: ☐ Yes ☐ No	
Injection supplies: ☐ Yes ☐ No	☐ Yes ☐ No
Cold chain equipment: ☐ Yes ☐ No	☐ Yes ☐ No
Equipment maintenance: ☐ Yes ☐ No	☐ Yes ☐ No
Waste management: ☐ Yes ☐ No	☐ Yes ☐ No
Transportation (vehicles, fuel, etc.): ☐ Yes ☐ No	☐ Yes ☐ No
Personnel: ☐ Yes ☐ No	☐ Yes ☐ No
Training: ☐ Yes ☐ No	☐ Yes ☐ No
Social mobilization: ☐ Yes ☐ No	☐ Yes ☐ No
Surveillance: ☐ Yes ☐ No	☐ Yes ☐ No
Outreach activities: ☐ Yes ☐ No	☐ Yes ☐ No

Facility overheads: ☐ Yes ☐ No	☐ Yes ☐ No

3. What are the challenges in the development of plans and budgets for vaccination? Select all that apply.
   a. Lack of a tool.
   b. Lack of instruction to use the tool/form.
   c. The currently used tool/form consumes a lot of work to complete.
   d. Lack of data for the projection.
   e. Other priority activities are competing for these resources.
   f. Staff do not have enough time to complete (or the task is beyond their paid scope of work).
   g. Other: _____.
4. What are the sources of funding for vaccination at your facility? Select all that apply.
   a. Provincial/district budget for routine immunization.
   b. Provincial/district budget for the health facility operation.
   c. Facility revenues.
   d. Donor.
   e. Other: _____.
5. How could a tool help you develop a vaccination budget plan? What are the integral pieces/parts of that tool that would be most useful? (open-ended)

Appendix F. Community health worker or health care worker questionnaire

The objective of this tool is to evaluate the immunization system via the identification and enumeration of health system immunization barriers and opportunities.

Questionnaire design

All of the questionnaires are a mix of quantitative and qualitative questions. Most questions are multiple choice, and the answer choices should be adapted if needed to ensure the options are appropriate to the country/cultural/local context. Within the multiple-choice questions, there is an option for other answers. To gather information in the most impactful way, it is important to review the questions and adapt the multiple-choice answers based on the local context.

The mixture of qualitative and quantitative questions is intended to allow for quick identification/enumeration of barriers and opportunities for immunization while retaining the flexibility to identify an issue that is not included in a multiple-choice list.

This second tool is intended for community health workers (CHWs)/Health care workers (HCWs). For the purpose of this tool, CHWs/HCWs are defined as a person who:

- Is actively immunizing children as a part of their duties/job description.
- Has direct interaction with caregivers who are accessing services.
- May or may not have management responsibilities in their health clinic/center/facility.
- May or may not participate in outreach activities.

In different contexts or countries, this individual may be a HCW, a nurse, a pharmacist, or a doctor. The most important criteria are that they are responsible for immunizing children and are directly interacting with caregivers.

The objective of this questionnaire is to gather information from the perspective of CHWs/HCW who are an essential part of the immunization health system and can be both a barrier and an opportunity to immunization. As they are responsible for immunizing children, their beliefs and actions to promote immunization have a profound impact on vaccine coverage. We, therefore, emphasize the need to gather as much information as possible from them to identify barriers and opportunities while also keeping in mind that they are incredibly busy individuals. The CHW/HCW questionnaire is the longest of the three questionnaires; as such, we organized it into seven modules:

A. Zero-dose or under-immunized children

B. Vaccine access

C. Vaccine coverage and tracking children’s immunization status

D. CHW/HCW role in immunization decision-making

E. CHW/HCW perception of community immunization Knowledge

F. Communication and information gaps

G. Role of other local community groups or civil society organizations (CSOs) in immunization

These modules reflect common themes where both barriers to and opportunities for immunization exist across diverse national settings. A user may select all the modules listed or only those that are of most interest to the context being evaluated. The format of this questionnaire is to allow for adaptation of the questionnaire to the local context and prioritize information gathering on relevant topics.

Some modules are further subcategorized to reflect multiple aspects of the barriers or opportunities. The subcategories allow the user to further customize the tool to focus on those aspects that are of most interest as subcategories and can be used independently to identify barriers or opportunities of most interest.

Table F1. Community health worker and health care worker questionnaire.

Background
1. Do you identify as a woman, man, or do you prefer not to say? (Adjust answers according to country context.) a. Woman b. Man c. Prefer not to say 2. What is your current age? _____ years. 3. What is the highest level of health training have you received (e.g. medical school, nursing school etc)? 4. How long have you lived in this community? _____ years. 5. How long have you been a CHW/HCW in this community? _____ years.
Module A: Zero-dose or under-immunized children
This module explores why there may be either zero-dose or under-immunized children in a catchment area due to multiple reasons, including policies and practices adopted by CHWs/HCWs.
Zero-dose or under-immunized children: This section identifies reasons why children may be under-immunized due to lack of information through identification of vaccines that are refused, why caregivers may not come back for follow-up visits, and finally, if current policies or practices regarding immunization visits contribute to under-immunization.
1. In your opinion, which of the following contributes to decisions to not vaccinate children? Select the top three reasons. (Adjust answers according to country context.) a. Fear of short-term vaccine side effects (e.g., fever, rash). b. Concern about multiple injections at one visit. c. Rumors about specific vaccines. Which ones? _____ d. New vaccines that are unknown to caregivers. e. Belief that infection-induced (i.e., natural) immunity is stronger than vaccine-induced immunity. f. Disease is not perceived as serious. g. Concerns about the long-term impact on the child, fertility, or health.

h. Caregiver has incorrect or limited understanding.
i. Other: _____.

2. Are there any vaccines that caregivers routinely refuse?
   a. Yes
   b. No
   c. If Yes, which ones, and why? List all vaccines in routine immunization, and indicate which of those are routinely refused.
3. Why do you think the caregivers do not come to the health facility for follow-up immunization visits? Select all that apply. (Adjust answers according to country context.)
   a. Forgot about the immunization visit.
   b. Low literacy or low education level.
   c. Irresponsible.
   d. Low priority, as the child was previously vaccinated.
   e. Health facility is too far away.
   f. Transportation is expensive or difficult to navigate.
   g. Not allowed by husband, mother-in-law, or other relative.
   h. Busy/working/other children at home.
   i. Other: _____.

Current practice: Here we assess the CHW/HCW willingness to vaccinate children when they are coming in late for vaccinations and when fewer than three children are waiting for immunizations. This could identify situations where children are missed or unvaccinated despite visiting a health facility. These questions are more relevant for facility-based vaccination.

4. If a caregiver forgets the child's immunization card, are you still able to vaccinate that child?
   a. Yes
   b. No
   c. If Yes, how do you know what vaccines to administer?
   d. If No, why not?
5. If the time between vaccinations is longer than recommended—for instance, a caregiver misses the third dose of pentavalent vaccine, but comes in when the child is older, perhaps 24 months (as opposed to the appropriate age—will you still vaccinate them?
   a. Yes
   b. No
   c. If No, why not?
6. If only one child is waiting, do you open any vaccine vials?
   a. Yes
   b. No
   c. If Yes, which ones? Show the list of RI vaccines to choose from **and** indicate which of those vials are opened when only one child is waiting.
7. What vaccine vials do you wait to open until more than three children are waiting? List vaccines given in RI.

Module B: Vaccine access

This module seeks information on how the community accesses vaccination services.

Health facility location transportation barriers: Geographic location of the health facility relative to population distribution to understand if and how households reach immunization services within one hour of household location.

1. Do you think the location of the health facility is challenging for caregivers (mothers, fathers, other caregivers) to access immunization services?
   a. Yes
   b. No
   c. If Yes, why?
   d. If No, why not?
2. Is it more difficult for women than men to get transportation to reach the health facility?
   a. Yes
   b. No
3. Is it more difficult for men than women to get transportation to reach the health facility?
   a. Yes
   b. No

Immunization session hours: This section seeks to understand when immunizations are given and if alternative times could increase coverage.

4. Do you think offering vaccination at different times and days would increase immunization rates?
   a. Yes
   b. No
   c. If Yes, why are RIs held on the days and times you shared earlier instead of the alternative timing you think would work better? (open-ended)

Mobile/outreach vaccination: This section assesses if either mobile or outreach activities are regularly conducted to reach either geographically or socially defined hard-to-reach populations. We also assess if other activities are also carried out and whether outreach activities are covered within the health facility.

5. While you are in the community/conducting outreach visits, do you conduct other immunization- or primary health care (PHC)-related activities? Select all that apply. (Please confirm these answers are relevant for your country/area/community, add or remove options, as needed.)
   a. Microplanning checks.
   b. Information sharing about RI and the importance of bringing children for their routine checks.
   c. Health checkup for children.
   d. Health checkup for women.
   e. Health checkup for men.
   f. Other: _____.

Vaccine and other logistic stockouts: This section assesses how stockouts impact whether caregivers come back for vaccination if there are stockouts. It also evaluates reasons for stockouts (microplanning and storage).

6. Over the last year, how often did you run out of vaccines at the end of the month? _____
7. Over the last year, how often did you have leftover vaccines at the end of the month? _____
8. Over the last year, how often did you have to turn away caregivers due to not having vaccines available? Number of times in the last six months: _____
9. Generally, do caregivers come back if there is no vaccine?
    a. Yes
    b. No
    c. Both Yes and No
    d. Not sure/do not know

Module C: Vaccine coverage and tracking children's immunization status

This module seeks to understand how immunizations are recorded and how vaccination coverage is calculated; the barriers to tracking children's immunization status; and how caregivers are reminded to bring children for immunization.

Vaccine coverage: Here we evaluate if and how often vaccine coverage is calculated for evaluation purposes, who supports that review, and finally, if they think the denominator (target population) calculations are accurate.

1. How often do you review vaccine coverage in your catchment area? Every _____ (number of) weeks/Every _____ (number of) months.
2. Who supports or oversees your review of vaccine coverage? (Adjust answers according to country context.)
    a. Supervisor
    b. Primary health facility officer/district health officer
    c. Other: _____.
3. How do you use the information from vaccine coverage in your immunization plans? (open-ended)

Immunization status: Here we evaluate if current immunization systems track the immunization status of children and if caregivers are reminded to bring their children in for their next immunization visit. This section addresses understanding if caregivers are bringing in the child's immunization card and the impact this has on HCW workload.

4. Do the current systems allow for children's immunizations to be effectively tracked?
    a. Yes
    b. No
5. What are the most common challenges with tracking children's immunization status? Select all that apply. (Adjust answers according to country context.)
    a. Parents/caregiver forgot the card, so more time is needed to identify vaccination history.
    b. System is paper based, so we cannot identify children easily.
    c. App used to track children's immunization status does not work.
    d. Internal migration of families with children makes it difficult to track children.

e. Other: _____.

6. How are caregivers reminded to bring a child back for their next immunization visit? Select all that apply. (Adjust answers according to country context.)

   a. We tell them when to come for their next visit.
   b. We have schedules posted on the clinic walls showing when they should come in.
   c. We send text messages.
   d. We ask _____ to remind caregivers to bring in children for vaccination.
   e. Other: _____.

Module D: CHW/HCW role in immunization decision-making

This module seeks to evaluate CHW/HCW perceptions of their role in decision-making through their interactions with caregivers and biases that may hinder that role.

1. Do you think CHWs/HCWs have a role in decisions about the vaccination of a child?

   a. Yes
   b. No
   c. If Yes, why?
   d. If No, why not? Skip to the last two questions in this module.

2. Do you think mothers see women CHWs/HCWs or men CHWs/HCWs as more trustworthy about child immunization information?

   a. Mothers believe women CHWs/HCWs are more trustworthy about child immunization (compared to men HCWs).
   b. Mothers believe men CHWs/HCWs are more trustworthy about child immunization (compared to women HCWs).
   c. Mothers believe women and men CHWs/HCWs are equally trustworthy about child immunization.

3. Do you think fathers see women CHWs/HCWs or men CHWs/HCWs as more trustworthy about child immunization information?

   a. Fathers believe women CHWs/HCWs are more trustworthy about child immunization (than men CHWs/HCWs).
   b. Fathers believe men CHWs/HCWs are more trustworthy about child immunization (than women CHWs/HCWs).
   c. Fathers believe women and men CHWs/HCWs are equally trustworthy about child immunization.

4. Who do you communicate with regarding the decision to vaccinate a child? Select only one; if a joint decision, then please list it under “Other” (e.g., “Both mother and father”). (Adjust answers according to country context.)

   a. Mother
   b. Father
   c. Grandmother
   d. Grandfather
   e. Other family member: _____.
   f. Village elder: _____.
   g. Other: _____.

5. In your experience, what information helps convince parents/caregivers to vaccinate their children? Select all that apply. (Adjust answers according to country context.)
   a. Benefits of vaccination for child and family.
   b. Safety of vaccination.
   c. Vaccines prevent disease/diseases prevented by vaccination.
   d. Vaccine is free of charge.
   e. Mildness of adverse events following immunization.
   f. Personal stories or connections with vaccines.
   g. Informing parents of the consequences of not vaccinating children.
   h. Other: _____.
6. In your experience, are there personal factors that influence a parent's/caregiver's decision about immunization of their child (e.g., age, education level, economic circumstances, religion, tribe affiliation)?

   Please explain: _____.
7. How do you change information based on the personal factors you observe?

   Please explain if the information does or does not:
   _____.

Module E: CHW/HCW perception of community immunization knowledge

This module seeks to understand CHW/HCW perception of community knowledge regarding immunizations; reasons for refusals or delays in immunization; and the source of immunization information or vaccine stockouts. It is also an opportunity to understand if there are information gaps in HCW immunization knowledge.

CHW/HCW perception of caregiver knowledge: Here we evaluate caregiver knowledge of immunization as perceived by the CHW/HCW, why they may not understand benefits of immunization, as well as the most common reasons why they may refuse vaccination. This set of questions may also identify biases common among CHWs/HCWs regarding the population accessing their services.

1. Who brings children to be immunized here most often? Select one response only.
   a. Mothers alone.
   b. Fathers alone.
   c. Mothers and fathers together.
   d. Grandmothers.
   e. Other family members of the child: _____.
2. In your opinion, how well do mothers understand what vaccines are and the benefits of having a child immunized?
   a. Very well—Skip the next question if they answer very well.
   b. Somewhat well
   c. Not very well
   d. Do not know—Skip the next question if they answer that they do not know.
3. If the answer to the previous question is "Somewhat well" or "Not very well", what do you perceive as the most common reasons for a mother's limited understanding? Select all that apply. (Please confirm these answers are relevant for your country/area/community; add or remove options, as needed).
   a. Information is not in a language the mother can understand.

b. Mother has not been given information during previous visits to the health facility or by CHWs/HCWs/community health volunteers (CHVs).
c. Mother delivered the baby at home and did not get information on available vaccines at the health facility.
d. Mother only has a primary education or no education.
e. Mother is too busy working to get information about vaccines.
f. Mother has heard misinformation/contradictory information about vaccines.
g. Mother is not as interested in immunization information as other child health information. (She believes other child health issues are more important, such as nutrition.)
h. Other: _____.

4. In your opinion, how well do fathers understand what vaccines are and the benefits of having a child immunized?
   a. Very well—Skip the next question if they answer very well.
   b. Somewhat well
   c. Not very well
   d. Do not know—Skip the next question if they answer that they do not know.
5. If the answer to the previous question is “Somewhat well” or “Not very well”, what do you perceive as the most common reasons for a father’s limited understanding? Select all that apply. (Please confirm these answers are relevant for your country/area/community; add or remove options, as needed).
   a. Information is not in a language the father can understand.
   b. Father has not been given information during previous visits to the health facility or by CHWs/HCWs/CHVs.
   c. Mother delivered the baby at home, and father did not get information on available vaccines at the health facility.
   d. Father only has a primary education or no education.
   e. Father is too busy working to get information about vaccines.
   f. Father has heard misinformation/contradictory information about vaccines.
   g. Father is not as interested in immunization information as other child health information. (He believes other child health issues are more important, such as nutrition.)
   h. Other: _____.

Module F: Communication and information gaps

This module seeks to understand when CHWs/HCWs were last trained to convey information on vaccines/immunization, information gaps in community knowledge, where community knowledge of vaccines originates, and if there are local beliefs that should be included in communication materials.

CHW/HCW communication training: Here we evaluate how long it has been since they have received training on communication, topics covered by training, and what information was most important to them.

1. When was the last time you received communication training for vaccine information?
   a. Less than one month ago
   b. Less than six months ago
   c. Less than one year ago
   d. More than one year ago
   e. More than two years ago

2. What information, if any, do you think was missed or absent from the training? Select all that apply. (Please confirm these answers are appropriate for your country/context; add more options, if needed.)
    a. How to identify, handle, and report adverse events following immunization from vaccination.
    b. How to talk about vaccines that can be given together and which vaccines can be given together.
    c. How to talk with mothers about supporting immunization for their children.
    d. How to engage fathers in supporting immunization for their children.
    e. How to provide current information about vaccines to caregivers (mothers or fathers) who are misinformed or concerned about side effects so that they can be more confident about the vaccine.
    f. Other: _____.
3. Are there any local beliefs that need to be incorporated into communication messages about the benefits/need of vaccination, that are not already included in messaging? (Beliefs here refer to religious, cultural, or health beliefs that either could encourage or discourage immunization of a child.)
    a. Yes
    b. No
    c. If Yes, what are those beliefs?
4. Do you get child immunization information from the internet or social media? (This includes WhatsApp, Viber, TikTok, Instagram, Telegram, Facebook, or other information-sharing channels.)
    a. Yes
    b. No
    c. If Yes, which ones?

Information requested by caregivers: Here we evaluate what information is most requested by caregivers; if there are any biases regarding knowledge that caregivers have, and where that knowledge comes from; and topics that CHWs/HCWs should be well versed in and be comfortable speaking to caregivers about.

5. What are the most common questions asked by mothers? Select all that apply. (Adjust answers according to country context.)
    a. Will vaccines cause disease?
    b. Is the vaccine safe for my child?
    c. Why is my child being given so many vaccines at one time?
    d. What vaccines can we skip?
    e. What are the side effects of vaccination?
    f. Will there be any long-term impact from the vaccine(s)?
    g. Other: _____.
6. What are the most common questions asked by fathers? Select all that apply.
    a. Will vaccines cause disease?
    b. Is the vaccine safe for my child?
    c. Why is my child being given so many vaccines at one time?
    d. What vaccines can we skip?
    e. What are the side effects of vaccination?
    f. Will there be any long-term impact from the vaccine(s)?
    g. Other: _____.

7. From whom do mothers receive most of their information about child immunization (i.e., what child immunizations are, where and how to get children immunized, and safety questions)? Select all that apply. (Adjust answers according to country context.)

   a. CHV
   b. Doctor
   c. Nurse
   d. Child's school
   e. Child's father
   f. Other family member
   g. Neighbor
   h. Community organization
   i. Radio announcements
   j. TV announcements
   k. Social media, and if so, which sites or applications are accessed?
   l. Other: _____.

8. From whom do fathers receive most of their information about child immunization (i.e., what child immunizations are, where and how to get children immunized, and safety questions)? Select all that apply. (Adjust answers according to country context.)

   a. CHV
   b. Doctor
   c. Nurse
   d. Child's school
   e. Father's mother (Grandmother of child)
   f. Other family member
   g. Neighbor
   h. Community organization
   i. Radio announcements
   j. TV announcements
   k. Social media, and if so, which sites or applications are accessed?
   l. Other: _____.

Module G: Role of other local community groups or civil society organizations in immunization

This module seeks information on CSOs or local community groups that are operating in an area and if they work on immunization-related activities. It assesses whether these groups could be an opportunity to increase direct engagement with the community on immunization-related activities.

CSO's potential role and CHW/HCW acceptance: Here we assess the potential role of local organizations in supporting immunization coverage and improving the acceptance of organizations that are well connected to the community.

1. Do you engage with community groups for immunization-related activities? (Use list from health facility questionnaire for identified community groups/CSOs.)

a. Yes. Skip to question 3.

b. No. Proceed to the next question.

2. Do you think there is a role for local organizations or groups to support and engage with the community about immunization?

   a. Yes. Proceed to the next question.

   b. No.

   c. If No, why not? _____. Skip the next question.

3. If Yes for questions 1 or 2, what activities do/could local community groups or organizations undertake in the immunization space? Select all that apply and skip the next question. (Adjust answers according to country context.)

   a. Microplanning.

   b. Mobilizing community members to take children for vaccinations or well-child checks.

   c. Sharing information, building trust, and dispelling rumors.

   d. Reaching vulnerable or hard-to-reach groups with information about vaccines and health services.

   e. Other: _____.

4. If the reasons you just listed for community groups to not have a role are addressed, what activities could local organizations engage in to help you reach more children and help you do your job more effectively/efficiently?

   a. Microplanning.

   b. Mobilizing community members to take children for vaccinations or well-child checks.

   c. Sharing information, building trust, and dispelling rumors.

   d. Reaching vulnerable or hard-to-reach groups with information about vaccines and health services.

   e. No role for community groups seen, even if concerns are addressed.

   f. Other: _____.

Appendix G. Community health volunteer questionnaire

The objective of this tool is to evaluate the immunization system via the identification and enumeration of health system immunization barriers and opportunities.

Questionnaire design

All of the questionnaires are a mix of quantitative and qualitative questions. Most questions are multiple choice, and the answer choices should be adapted as needed to ensure the options are appropriate to the country/cultural/local context. Within the multiple-choice questions, there is an option for other answers. To gather information in the most impactful way, it is important to review the questions and adapt the multiple-choice answers based on the local context.

The mixture of qualitative and quantitative questions is intended to allow for quick identification/enumeration of barriers and opportunities for immunization, while retaining the flexibility to identify an issue that is not included in a multiple-choice list

This tool is intended for community health volunteers (CHVs). CHVs are defined as individuals who:

- Do not deliver vaccines.
- Have direct interaction with caregivers, who access immunization services.
- Provide information on vaccination/immunization services.
- May or may not participate in outreach activities.

These CHVs may or may not exist in all immunization systems; however, where they do exist, they represent an opportunity to understand community perceptions, as well as identify opportunities to increase immunization coverage.

Table G1. Community health volunteer questionnaire.

Background
1. Do you identify as a woman, man, or do you prefer not to say? (Adjust answers according to country context.) a. Woman b. Man c. Prefer not to say
2. What is your current age? _____ years.
3. What is the highest level of health training have you received?
4. How long have you lived in this community? _____ years.
5. How long have you been a CHV in this community? _____ years.
Module A: Zero-dose or under-immunized children

This module explores why there may be either zero-dose or under-immunized children in a catchment area due to multiple reasons, including policies and practices adopted by CHWs.

1. In your opinion, which of the following contributes to decisions to not vaccinate children? Select the top three reasons. (Adjust answers according to country context.)
    a. Fear of short-term vaccine side effects (e.g., fever, rash).
    b. Concern about multiple injections at one visit.
    c. Rumors about specific vaccines.(Which ones?)
    d. New vaccines that are unknown to caregivers.
    e. Belief that infection-induced (i.e., natural) immunity is stronger than vaccine-induced immunity.
    f. Disease is not perceived as serious.
    g. Concerns about the long-term impact on the child, fertility, or health.
    h. Caregiver has incorrect or limited understanding.
    i. Other: _____.
2. Are there any vaccines that parents/caregivers routinely refuse?
    a. Yes
    b. No
    c. If Yes, present the full list of vaccines in routine immunization, indicate those refused, and provide reasons that are given for refusal?
3. Why do you think the caregivers do not come to the health facility for follow-up immunization visits? Select all that apply. (Adjust answers according to country context.)
    a. Forgot about the immunization visit.
    b. Low literacy or low education level.
    c. Irresponsible.
    d. Low priority, as the child was previously vaccinated.
    e. Health facility is too far away.
    f. Transportation is expensive or difficult to navigate.
    g. Not allowed by husband, mother-in-law, or other relative.
    h. Busy/working/other children at home.
    i. Other: _____.

Module B: Health facility ransportation barriers

The module addresses geographic location of the health facility relative to population distribution to understand if and how households reach immunization services within one hour of household location.

1. Do you think the location of the health facility makes it challenging for caregivers (mothers, fathers, other caregivers) to access immunization services?
   a. Yes
   b. No
   c. If Yes, why?
   d. If No, why not?
2. Is it more difficult for women than men to get transportation to reach the health facility?
   a. Yes
   b. No
3. Is it more difficult for men than women to get transportation to reach the health facility?
   a. Yes
   b. No

Module C: Community health volunteer perception of caregiver knowledge

This module evaluates caregiver knowledge of immunization as perceived by the CHV, why they may not understand the benefits of immunization, as well as the most common reasons why they may refuse vaccination.

1. Who brings children to be immunized here most often? Select one response only.
   a. Mothers alone.
   b. Fathers alone.
   c. Mothers and fathers together.
   d. Grandmothers.
   e. Other family members of the child: _____.
2. In your opinion, how well do mothers understand what vaccines are and the benefits of having a child immunized?
   a. Very well-- Skip the next question if they answer very well
   b. Somewhat well
   c. Not very well
   d. Do not know—Skip the next question if they answer that they do not know.
3. If the answer to the previous question is “Somewhat well” or “Not very well”, what do you perceive as the most common reasons for a mother’s limited understanding? Select all that apply. (Adjust answers according to country context.)
   a. Information is not in a language the mother can understand.
   b. Mother has not been given information during previous visits to the health facility or by CHWs/CHVs.
   c. Mother delivered the baby at home and did not get information on available vaccines at the health facility.
   d. Mother only has primary education or no education.
   e. Mother is too busy working to get information about vaccines.

f. Mother has heard misinformation/contradictory information about vaccines.
g. Mother is not as interested in immunization information as other child health information. (She believes other child health issues are more important, such as nutrition.)
h. Other: _____.

4. In your opinion, how well do fathers understand what vaccines are and the benefits of having a child immunized?
   a. Very well-- Skip the next question if they answer very well
   b. Somewhat well
   c. Not very well
   d. Do not know—Skip the next question if they answer that they do not know.
5. If the answer to the previous question is “Somewhat well” or “Not very well”, what do you perceive as the most common reasons for a father’s limited understanding? Select all that apply.
   a. Information is not in a language the father can understand,
   b. Father has not been given information during previous visits to health facilities or by CHWs/CHVs.
   c. Mother delivered the baby at home, and the father did not get information on available vaccines at the health facility.
   d. Father only has primary education or no education.
   e. Father is too busy working to get information about vaccines.
   f. Father has heard misinformation/contradictory information about vaccines.
   g. Father is not as interested in immunization information as other child health information. (He believes other child health issues are more important, such as nutrition.)
   h. Other: _____.

Module D: Community health volunteer communication training

This module evaluates how long it has been since they have received training on communication, topics covered by training, and what information was most important to them.

1. When was the last time you received communication training for vaccine information?
   a. Less than one month ago
   b. Less than six months ago
   c. Less than one year ago
   d. More than one year ago
   e. More than two years ago
2. What information, if any, do you think was missed or absent from the training? Select all that apply. (Adjust answers according to country context.)
   a. How to talk with mothers about supporting immunization for their children.
   b. How to engage fathers in supporting immunization for their children.
   c. How to provide current information about vaccines to caregivers (mothers or fathers) who are misinformed or concerned about side effects so that they can be more confident about the vaccine.
   d. Other: _____.

3. Are there any local beliefs that need to be incorporated into communication messages about the benefits/need of vaccination that are not already included in messaging? (Beliefs here refer to religious, cultural, or health beliefs that either could encourage or discourage immunization of a child.)
    a. Yes
    b. No
    c. If Yes, what are those beliefs?
4. Do you get child immunization information from the internet or social media? (Probe on relevant social media platforms specific to your country: WhatsApp, Viber, TikTok, Telegram, Instagram, Facebook, or other information-sharing channels.)
    a. Yes
    b. No
    c. If Yes, which ones?
5. Do you have any standard operating procedures or job aids for vaccination communication?
    a. Yes
    b. No
    c. If Yes, how useful are they?
    d. If No, what kind of aids or standard operating procedures would be useful (e.g., list of frequently asked questions, information guide, or script of information to be shared for each vaccine)?

Module E:Information requested by caregivers

This module evaluates what information is most requested by caregivers; if there are any biases regarding knowledge that caregivers have and where that knowledge comes from; and topics that CHVs should be well versed in and be comfortable speaking to caregivers about.

1. What are the most common questions asked by mothers? Select all that apply. (Adjust answers according to country context.)
    a. Will vaccines cause disease?
    b. Is the vaccine safe for my child?
    c. Why is my child being given so many vaccines at one time?
    d. What vaccines can we skip?
    e. What are the side effects of vaccination?
    f. Will there be any long-term impact from the vaccine(s)?
    g. Other: _____.
2. What are the most common questions asked by fathers? Select all that apply.
    a. Will vaccines cause disease?
    b. Is the vaccine safe for my child?
    c. Why is my child being given so many vaccines at one time?
    d. What vaccines can we skip?
    e. What are the side effects of vaccination?
    f. Will there be any long-term impact from the vaccine(s)?
    g. Other: _____.

Module F: Resource identification and local community engagement

This module identifies resources that would allow CHVs to carry out their duties more effectively and if they engage with local community groups.

1. What resources would help you reach more children or do your job more efficiently? Are there changes that the district/province could make that would help you in the role? (open-ended)
2. Do you engage with community groups for immunization-related activities? (Use list from health facility questionnaire for identified community groups/CSOs.)
   a. Yes
   b. No
   c. If Yes, which ones?
3. If the answer to the previous question is “Yes”, how do you engage with community groups for these immunization-related activities? (open-ended)

Appendix H. Caregiver questionnaire

The objective of this questionnaire is to evaluate the immunization system via the identification and enumeration of barriers/opportunities from the perspective of the community.

Questionnaire design

All of the questionnaires are a mix of quantitative and qualitative questions. Most questions are multiple choice, and the answer choices should be adapted as needed to ensure the options are appropriate to the country/cultural/local context. Within the multiple-choice questions, there is an option for other answers. To gather information in the most impactful way, it is important to review the questions and adapt the multiple-choice answers based on the local context.

The mixture of qualitative and quantitative questions is intended to allow for quick identification/enumeration of barriers and opportunities for immunization while retaining the flexibility to identify an issue that is not included in a multiple-choice list.

This tool is focused on questions that would be asked of women and men caregivers of immunization-age children. For the purpose of this questionnaire, a caregiver is defined as someone who:

- May be a parent, relative, or guardian who is responsible for bringing a child to be immunized either at a health facility or a mobile/outreach vaccination point.
- May or may not have decision-making power as to whether a child is immunized.

The questionnaire is organized around seven broad categories:

A. Community knowledge of immunization

B. Zero-dose and under-immunized children

C. Immunization decision-making

D. Role of civil society organizations (CSOs) and other local community groups in immunization

E. Vaccine access

F. Recording and tracking children's immunization status

G. Special populations: Internally displaced persons (IDPs)/refugees

These modules reflect common themes where both barriers to and opportunities for immunization exist across diverse national settings. A user may select all the modules listed or only those that are of most interest to the context being evaluated. The format of this questionnaire is to allow for adaptation of the questionnaire to the local context and prioritize information gathering on relevant topics. Some modules may be subcategorized, to allow the user to further adapt the tool by only including those subcategories of most interest given the large number of questions in this module.

Table H1. Caregiver questionnaire.

Background/demographic characteristics

This section is meant to gather background and demographic information on the respondent that may be used to categorize responses to the other sections of this questionnaire.

1. Do you identify as a woman, man, do you prefer not to say?
    a. Woman
    b. Man
    c. Prefer not to say
2. How old were you on your most recent birthday? _____ years.
3. Have you ever attended school?
    a. Yes. Proceed to the next question.
    b. No. Skip the next question.
4. What is the highest level of school you attended?
    a. Primary school
    b. Secondary school/high school
    c. Post-secondary school training (not university)
    d. University
    e. Other: _____.
5. What is your religion? (Create a multiple-choice list based on context.)
6. What is your ethnic group? (Create a multiple-choice list. Response categories must be determined based on context; can be tailored to context as “tribal group” or other group identification in place of ethnicity; and may be more appropriate as “language groups” in some contexts.)
7. How long have you been continuously living in this [region]? _____ years. (Teams should adapt as needed if the area of interest is “community”, “region”, or another geographic entity more relevant to the immunization planning process.)
8. Are you the parent or primary caregiver of any children who are younger than 5 years old?
    a. Yes
    b. No
    c. If Yes, how many children?
9. Are you the parent or primary caregiver of any children who are 5 years or older?
    a. Yes
    b. No
    c. If Yes, how many children?
10. Have the children you take care of ever been vaccinated? (This refers to any vaccine and is not disease-specific.)
    a. Yes, all of my children are vaccinated.
    b. Yes, some of my children are vaccinated.
    c. No, none of my children are vaccinated.

Module A: Community knowledge of immunization

This module seeks to understand community and caregiver knowledge regarding immunizations, reasons for refusals or delays in immunization. and the source of immunization information.

1. How important do you believe vaccines are for child health?
    a. Very important
    b. Somewhat important
    c. Not at all important
2. Where do you get information on vaccines? Select all that apply.
    a. The child's other parent (mother/father).
    b. Other family members.
    c. Staff at the school/daycare my child attends.
    d. The hospital where my child was born.
    e. Previous visits to the health facility for older children.
    f. Information is given by community health workers (CHWs)/health care workers (HCWs) during regular visits to the community.
    g. Information is given by local community groups or CSOs that visit the community.
    h. Printed material at the health facility provided information on vaccines.
    i. News or television media (including radio or printed newspapers).
    j. Social media (including X, Facebook, Viber, or YouTube).
    k. Other: _____.
    l. Never have received information about vaccines.
3. Which of the following questions have you asked, or would you want to ask, HCWs/community health workers (CHWs/HCWs)? (Please confirm these answers are appropriate for your country/context; add more options, if needed. Please also confirm the appropriate type of vaccinator—CHW/HCW, doctor, nurse, etc.—is referenced in the question.)
    a. Will vaccines cause the disease the child is being vaccinated for?
    b. Why is my child being given so many vaccines at one time?
    c. What vaccines can we skip?
    d. What are the side effects of vaccination?
    e. Will there be any long-term impact from the vaccine(s)?
    f. Other: _____.
4. Do you think materials or messages in the local language may help to communicate information on vaccines better?
    a. Yes
    b. No
    c. If No, why not?

Module B: Zero-dose and under-immunized children

This module identifies reasons why children may be under-immunized due to lack of information through identification of vaccines that are refused, why caregivers may not come back for follow-up visits, and finally, if current policies or practices regarding immunization visits contributes to under-immunization.

SKIP the first two questions if all of the children the respondent cares for have been vaccinated as indicated in the previous module (A).

1. If some or none of your children are vaccinated, what are some of the concerns that influence you to not vaccinate your child? Select all that apply. (Please confirm that these answers are appropriate for your country/context; add more options, if needed.)
   a. Fear of short-term vaccine side effects (fever, rash, etc.).
   b. Concern about multiple injections at one visit.
   c. There are rumors about specific vaccines. (Which ones?)
   d. There are multiple new vaccines that I have not given to my other children.
   e. Infection-induced (i.e., natural) immunity is stronger than vaccine-induced immunity.
   f. Some diseases are not perceived as serious.
   g. Concerns about the long-term impact on the child, fertility, or health.
   h. Other: _____.
2. Are there any negative consequences for a child's health if they are not vaccinated?
   a. Yes
   b. No
   c. If Yes, what are they?
   d. If No, why not?
3. Do you (routinely) refuse any specific vaccines? Present the full list of vaccines in routine immunization, indicate which are refused and provide reasons for refusal.
4. What challenges have you ever experienced in trying to reach/attend immunization sessions? Select all that apply. (Please confirm these answers are appropriate for your country/context; add more options, if needed.)
   a. Did not know where to go for immunization session.
   b. Did not know the immunization session times.
   c. Did not know the schedule for immunizations.
   d. There are too many vaccines, and each schedule is difficult to remember.
   e. Just visited the health facility for different reasons and did not wish to return.
   f. Health facility is too far away.
   g. Transportation is expensive or difficult to navigate.
   h. Not allowed by husband, mother-in-law, or other relative.
   i. Busy/working/other children at home.
   j. Forgot to take the child to the immunization session.
   k. It was harvest time.
   l. Was not interested.
   m. Other: _____.
5. Does it get more challenging to bring children for vaccination as they get older?
   a. Yes
   b. No
   c. If Yes, why?
   d. If No, why not?

6. If the time between vaccinations is longer than recommended, for instance, your child was supposed to receive their third vaccination, but you are a few weeks late, will the HCW still vaccinate your child?
    a. Yes
    b. Sometimes
    c. No
    d. Do not know
7. Do HCWs do any of the following? Select all that apply.
    a. Ask why you could not vaccinate your child on time.
    b. Scold or shame you about missing the visit.
    c. Inform you of the next visit, and provide a way to remind you about the visit.
    d. Any other reaction you would like to share, please provide details: _____.

Module C: Immunization decision-making

This module seeks to identify the main decision-makers regarding immunization, the concerns expressed as decisions are made, and the role CHWs/HCWs or community leaders can play in the immunization decision-making process.

1. Who **makes decisions** regarding children's immunization in your household? Select all that apply. (Please confirm these answers are relevant for your country/area/community and adapt as needed.)
    a. Mother
    b. Father
    c. Grandmother
    d. Grandfather
    e. Other family member: _____.
    f. Village elder/religious leader/community leader
    g. Other: _____.
2. Do HCWs influence your decisions regarding vaccination?
    a. Yes
    b. No
    c. If Yes, why?
    d. If No, why not?
3. How much do you trust the HCWs, who give children vaccines? Would you say you trust them?
    a. Not at all
    b. A little
    c. Moderately
    d. Very much
4. When it comes to vaccinating your child/children, and information about vaccines, who do you trust the most?
    a. Women HCWs.
    b. Men HCWs.
    c. There is no difference between women and men HCWs in how much you trust them.

5. What information can HCWs share that would help you decide to vaccinate your child/children? Select all that apply. (Adjust answers according to country context.)
   a. Benefits of vaccination (e.g., protecting a child from disease/keeping a child healthy).
   b. Safety of vaccination.
   c. Vaccines prevent disease/diseases prevented by vaccination.
   d. Vaccine is free of charge.
   e. Mildness of vaccination side effects.
   f. Other: _____.
6. Do community leaders influence your decisions regarding vaccination?
   a. Yes
   b. No
   c. If Yes, why, and which community leader?
   d. If No, why not?
7. If the answer to the previous question is "Yes", what information or assistance can community leaders provide that would help you decide to vaccinate your child/children? (open-ended)
8. Do you trust community leaders more if:
   a. They are women?
   b. They are men?
   c. It does not matter.

Module D: Role of CSOs or other local community groups in immunization

This module seeks information on CSOs or local community groups that are operating in an area and if they work on immunization-related activities. It assesses whether these groups could be an opportunity to increase direct engagement with the community on immunization-related activities.

1. Are there any local community groups or organizations that provide information on health topics including immunization?
   a. Yes
   b. No
   c. If Yes, who/what are they? (This could include women's or mothers' groups, youth groups, or other organizations engaged in health outreach activities.)
2. If your answer to the previous question is "Yes", what activities do CSOs or other local groups currently carry out in your community/village? Select all that apply. (Adjust answers according to country context.)
   a. Mobilizing community members to take children for vaccinations or well-child checks and to accept vaccines.
   b. Sharing information, building trust, dispelling rumors, and answering questions.
   c. Reaching vulnerable or hard-to-reach groups with information about vaccines and health services.
   d. Other: _____.
3. Do you, or would you, trust these local groups or organizations to provide you with information on immunizations?
   a. Yes
   b. No
   c. Sometimes.

d. If yes, why?

e. If No, why not?

f. If sometimes, what topics?

4. If the answer to the previous question was “Yes” or “Sometimes”, is there anything that local groups could do to support you more regarding immunizations?

Module E: Vaccine access

This module seeks information on how the community accesses vaccination services and if there are both barriers and opportunities for vaccination.

Immunization session hours: This section identifies when immunizations are given and if alternative times could increase coverage.

1. Do you know when child immunizations are given at the health facility? Please identify the regular access point for immunization services and use that in place of “health facility”, if necessary.

   a. Yes

   b. No

2. If the answer to the previous question is “Yes”, provide the day(s) of the week (M/Tu/W/Th/F/Sa/Su) _____, and select one below.

   a. Morning

   b. Afternoon

   c. Evening

3. What time of day is easiest for you to go to the health facility to get your child vaccinated? Provide the day(s) of the week (M/Tu/W/Th/F/Sa/Su) _____, and select one below:

   a. Morning

   b. Afternoon

   c. Evening

4. Are there particular days or times that are more convenient for you to bring your child for immunizations? Provide the day(s) of the week (M/Tu/W/Th/F/Sa/Su) _____, and select one below:

   a. Morning

   b. Afternoon

   c. Evening

Vaccine stockouts: This section describes current practices.

5. Have you ever been turned away on immunization days due to vaccines not being available?
   a. Yes, once
   b. Yes, more than once. How many times? _____.
   c. No
6. Have you ever gone to the health facility/immunization center and found that the CHW/HCW is not present, or the immunization session starts late?
   a. Yes, once. Circle one: (1) Not present, or (2) Late.
   b. Yes, more than once. How many times? _____. Circle which one occurred more often: (1) Not present, or (2) Late.
   c. No
7. Does the CHW/HCW ever ask you to wait or come back for certain immunizations if there are not enough children to open a vaccine vial?
   a. Yes
   b. No
   c. If Yes, how many times has this happened? _____.
8. Have you ever gone to the health facility for another reason and asked to have your child immunized on a non-vaccination day?
   a. Yes
   b. No
9. If your answer to the previous question is “Yes”, did they vaccinate your child?
   a. Yes
   b. No. Why not? _____.

Mobile/outreach vaccination: This section assesses if either mobile or outreach activities are regularly conducted to reach either geographically or socially defined “hard-to-reach” populations. We also assess if other activities are carried out and whether outreach activities are covered within the health facility.

10. Have HCWs ever come to your village to provide child vaccinations?
    a. Yes
    b. No
    c. If Yes, how many times in the last year did they come to your village? _____.
11. While there, did they offer any other services? Select all that apply. (Adjust answers according to country context.)
    a. Asked about the number of children or pregnant women in a household.
    b. Shared information about routine immunization and the importance of bringing children for their routine checks.
    c. Health checkup for children.
    d. Health checkup for women.
    e. Health checkup for men.
    f. Other: _____.

12. If the answer to the previous question is “Yes”, are the HCWs who come to your community to provide child vaccinations mostly men, women, or both?
    a. Mostly men
    b. Mostly women
    c. Both
13. Does it matter to you if the HCW who comes to your community to provide child vaccinations is a man or woman?
    a. No, this does not matter to me at all.
    b. Yes, it matters: it should be men who provide child vaccinations. Why?
    c. Yes, it matters: it should be women who provide child vaccinations. Why?

Module F: Recording and tracking children’s immunization status

This module seeks to understand how caregivers are reminded to bring children for immunization, if this process can be improved, and if they bring in the child’s immunization card or record with them to immunization visits.

1. How are you reminded to bring your child back for their next immunization visit? Select all that apply. (Adjust answers according to country context.)
    a. HCWs tell me when to come for the next visit.
    b. There are schedules posted on the clinic walls showing when I should come in.
    c. I receive text messages.
    d. Other: _____.
2. What would be the most helpful way to be reminded to bring your child in for their next immunization visit? Please explain.

The next two questions should be asked in settings where the immunization records are managed through a paper-based system.

3. Do you usually have your child’s immunization card or record when you return for their immunization visits?
    a. Yes
    b. Sometimes
    c. No
4. If the answer to the previous question is “Sometimes” or “No”, what could be done to help you remember?

Module G: Special populations: Internally displaced persons/refugees

This module is meant to understand how IDPs/refugees are contacted, accounted for, and welcomed to access the existing immunization system.

1. Do you continue to vaccinate your children in your new place of residence?
    a. Yes
    b. No
    c. If No, why not?

2. Do you have a hard copy of the vaccination records or access to those records electronically?
    a. Yes. Skip the next question.
    b. No.
    c. If No, how do you know which vaccines your child needs?
3. If you do not have access to your child's vaccination cards, what actions did the CHW/HCW take to vaccinate your child? Have you been able to pick up your children's medical records?
4. Do you know where to take your child for vaccination where you live now?
    a. Yes. Proceed to the next question.
    b. No.
    c. If No, why not? Skip the next question.
5. How does the health facility follow up to ensure your child is vaccinated?
    a. Health facility contacts you to remind you to bring in your child for vaccination.
    b. Made appointments for you to bring in your children for immunization when you registered.
    c. They do not contact us.
    d. Other: _____.
6. Do you have any other concerns not already expressed about taking your child for vaccination in your current place of residence?

Appendix I. Community leader/champion questionnaire

The objective of this tool is to evaluate the immunization system via the identification and enumeration of barriers/opportunities from the perspective of the community.

Questionnaire design

All of the questionnaires are a mix of quantitative and qualitative questions. Most questions are multiple choice, and the answer choices should be adapted as needed to ensure the options are appropriate to the country/cultural/local context. Within the multiple-choice questions, there is an option for other answers. To gather information in the most impactful way, it is important to review the questions and adapt the multiple-choice answers based on the local context.

The mixture of qualitative and quantitative questions is intended to allow for quick identification/enumeration of barriers and opportunities for immunization while retaining the flexibility to identify an issue that is not included in a multiple-choice list.

This questionnaire includes questions to be asked of community leaders or champions. For the purpose of this questionnaire, a community leader/champion is defined as follows:

- They are acknowledged by multiple people in the community as a trusted leader of that community or someone who is influential within the community.
- They live in the community or within very close proximity to be considered a “community leader”.
- The community they lead is a group of people living in the same place or having a common characteristic (e.g., tribe, clan, religion). Examples may include tribal leaders, priests or imams, school leaders, heads of women’s groups, or civil society organization (CSO) contact points that serve the community.

The questionnaire is organized around seven broad categories that overlap but do not necessarily match the other questionnaires:

A. Community knowledge of immunization

B. Communication

C. Immunization decision-making

D. Role of CSOs or other local community groups in immunization

E. Vaccine access

F. Recoding and tracking children’s immunization status

G. Special populations: Internally displaced persons (IDPs)/refugees

These modules reflect common themes where both barriers to and opportunities for immunization exist across diverse national settings. A user may select all the modules listed or only those that are of most interest to the context being evaluated. The format of this questionnaire is to allow for adaptation of the questionnaire to the local context and prioritize information gathering on relevant topics. The longest module has seven questions; therefore, we have not used subcategories for any of the modules.

Table I1. Community leader/champion questionnaire.

Background

1. Do you identify as a woman, man, do you prefer not to say?
   a. Woman
   b. Man
   c. Prefer not to say
2. How old were you on your most recent birthday? _____ years.
3. Have you ever attended school?
   a. Yes. Proceed to the next question.
   b. No. Skip the next question.
4. What is the highest level of school you attended?
   a. Primary school
   b. Secondary school/high school
   c. Post-secondary school training (not university)
   d. University
   e. Other: _____.
5. What is your religion? (Create a multiple-choice list, based on context.)
6. What is your ethnic group? (Create a multiple-choice list. Response categories must be determined based on context; can be tailored to context as “tribal group” or other group identification in place of ethnicity; and may be more appropriate as “language groups” in some contexts.)
7. How long have you been continuously living in this [region]? _____ years. (Teams should adapt as needed if the area of interest is “community”, “region”, or another geographic entity more relevant to the immunization planning process.)
8. Are you the parent or primary caregiver of any children who are younger than 5 years old?
   a. Yes
   b. No
   c. If Yes, how many children?
9. Are you the parent or primary caregiver of any children who are 5 years or older?
   a. Yes
   b. No
   c. If Yes, how many children?
10. Have the children you take care of ever been vaccinated? (This refers to any vaccine and is not disease-specific.)
    a. Yes, all of my children are vaccinated.
    b. Yes, some of my children are vaccinated.
    c. No, none of my children are vaccinated.

Module A: Community knowledge of immunization

This module seeks to understand community leader/champion perception of community knowledge regarding immunizations, reasons for refusals or delays in immunization, and the source of immunization information.

1. In your opinion, how well do mothers understand what vaccines are and the benefits of having a child immunized?
    a. Very well—Skip the next question if they answer very well.
    b. Somewhat well
    c. Not very well
    d. Do not know—Skip the next question if they answer that they do not know.
2. If the answer to the previous question is “Somewhat well” or “Not very well”, what do you perceive as the most common reasons for a mother’s limited understanding? Select all that apply. (Please confirm these answers are relevant for your country/context; add more options, if needed.)
    a. Information is not in a language the mother can understand.
    b. Mother has not been given information during previous visits to health facilities or by community health workers/health care workers/community health volunteers (CHVs).
    c. Mother delivered the baby at home and did not get information on available vaccines at the health facility.
    d. Mother only has primary education or no education.
    e. Mother is too busy working to get information about vaccines.
    f. Mother has heard misinformation/contradictory information about vaccines.
    g. Mother is not as interested in immunization information as other child health information. (She believes other child health issues are more important, such as nutrition.)
    h. Other: _____.
3. In your opinion, how well do fathers understand what vaccines are and the benefits of having a child immunized?
    a. Very well—Skip the next question if they answer “Very well”.
    b. Somewhat well
    c. Not very well
    d. Do not know—Skip the next question if they answer that they do not know.
4. If the answer to the previous question is “Somewhat well” or “Not very well”, what do you perceive as the most common reasons for a father’s limited understanding? Select all that apply. (Please confirm these answers are relevant for your country/context; add more options, if needed.)
    a. Information is not in a language the father can understand.
    b. Father has not been given information during previous visits to health facilities or community health workers/CHVs.
    c. Mother delivered the baby at home, and the father did not get information on available vaccines at the health facility.
    d. Father only has primary education or no education.
    e. Father is too busy working to get information about vaccines.
    f. Father has heard misinformation/contradictory information about vaccines.
    g. Father is not as interested in immunization information as other child health information. (He believes other child health issues are more important, such as nutrition.)
    h. Other: _____.

5. In your opinion, what are the common reasons for refusing vaccination? Select all that apply. (Please confirm these answers are appropriate for your country/context, add more options, if needed.)
   a. Fear of vaccine side effects.
   b. Concern about multiple injections at one visit.
   c. Rumors about specific vaccines. (Which ones?)
   d. New vaccines that are unknown to caregivers.
   e. View that infection-induced (i.e., natural) immunity is stronger than vaccine-induced immunity.
   f. Disease is not perceived as serious.
   g. Concerns about the long-term impact on the child, fertility, or health.
   h. Other: _____.

Module B: Communication

This module seeks to identify information gaps in community knowledge, where community knowledge of vaccines originates, and if there is a need to have communication materials adapted to local dialects, cultures, and religious beliefs.

1. What are the most common questions asked by mothers? Select all that apply. (Please confirm these answers are appropriate for your country/context; add more options, if needed.)
   a. Will vaccines cause disease?
   b. Is the vaccine safe for my child?
   c. Why is my child being given so many vaccines at one time?
   d. What vaccines can we skip?
   e. What are the side effects of vaccination?
   f. Will there be any long-term impact from the vaccine(s)?
   g. Other: _____.
   h. Do not know.
2. What are the most common questions asked by fathers? Select all that apply.
   a. Will vaccines cause disease?
   b. Is the vaccine safe for my child?
   c. Why is my child being given so many vaccines at one time?
   d. What vaccines can we skip?
   e. What are the side effects of vaccination?
   f. Will there be any long-term impact from the vaccine(s)?
   g. Other: _____.
   h. Do not know.
3. From whom do mothers receive most of their information about child immunization (i.e., what child immunizations are, where and how to get children immunized, and safety questions)? Select all that apply. (Adjust answers according to country context.)
   a. CHV
   b. Doctor
   c. Nurse

d. Child's school
e. Child's father
f. Other family member
g. Neighbor
h. Community organization
i. Radio announcements
j. TV announcements
k. Social media, and if so, which sites or applications are accessed?
l. Other: _____.

4. From whom do fathers receive most of their information about child immunizations (i.e., what child immunizations are, where and how to get children immunized, and safety questions)? Select all that apply. (Adjust answers according to country context.)

a. CHV
b. Doctor
c. Nurse
d. Child's school
e. Father's mother (Grandmother of the child)
f. Other family member
g. Neighbor
h. Community organization
i. Radio announcements
j. TV announcements
k. Social media, and if so, which sites or applications are accessed?
l. Other: _____.

5. Do you think materials rooted in more specific cultures/religions may help communicate information better?

a. Yes
b. No
c. If No, why not?

6. If the answer to the previous question is "Yes", what are the cultural beliefs that need to be addressed when communicating about the benefits/need of vaccination? (Open-ended; probe for religious beliefs, language, and local dialect differences.)

Module C: Immunization decision-making

This section seeks to identify community leader perceptions of who are the main decision-makers regarding immunization, the concerns expressed as decisions are made, and the role they think health care workers (HCWs) can play in the process.

1. Who most often takes children to be immunized?

a. Mothers alone
b. Fathers alone
c. Mothers and fathers together

d. Grandmothers
e. Other family members of the child

2. Who makes decisions regarding children's immunization? Select all that apply. (Adjust answers according to country context.)
   a. Mother
   b. Father
   c. Grandmother
   d. Grandfather
   e. Other family member: _____.
   f. Village elder/religious leader/community leader: _____.
   g. Other: _____.
3. What concerns influence vaccination decisions? Select all that apply. (Adjust answers according to country context.)
   a. Fear of short-term vaccine side effects (fever, rash, etc.).
   b. Concern about multiple injections at one visit.
   c. There are rumors about specific vaccines. (Which ones?)
   d. There are multiple new vaccines that I have not given to my other children.
   e. Infection-induced (i.e., natural) immunity is stronger than vaccine-induced immunity.
   f. Some diseases are not perceived as serious.
   g. Concerns about the long-term impact on the child, fertility, or health.
   h. Other: _____.
4. In your opinion, do HCWs play a role in caregivers' decisions regarding vaccination?
   a. Yes
   b. No
   c. If Yes, why?
   d. If No, why not?
5. In your opinion, how much do caregivers trust the HCWs who give children vaccines? Would you say caregivers trust them?
   a. Not at all
   b. A little
   c. Moderately
   d. Very much
6. In your opinion, when it comes to vaccinating their child/children, and information about vaccines, who do caregivers trust the most?
   a. Women HCWs.
   b. Men HCWs.
   c. There is no difference between women and men HCWs in how much caregivers trust them.
7. What activities could you undertake to help caregivers get accurate information about vaccines and how to connect with health services? Select all that apply. (Adjust answers according to country context.)
   a. Community meetings.
   b. Meeting with women's groups/other community groups.

c. Home visits.
d. Connecting specific families with health facilities.
e. Support campaigns, health days, and other mobilization activities.
f. Other: _____.

Module D: Role of CSOs or other local community groups in immunization

This module seeks information on CSOs or local community groups that are operating in an area and if they work on immunization-related activities. It assesses whether these groups could be an opportunity to increase direct engagement with the community on immunization-related activities.

1. Does the community have local CSOs or community groups?
   a. Yes
   b. No. Skip the next question.
   c. If Yes, what are they? (This could include women's or mothers' groups, youth groups, or other organizations engaged in health outreach activities).
2. Do you engage with any of these groups?
   a. Yes
   b. No
   c. If Yes, which ones?
3. Do community groups currently engage in immunization-related activities?
   a. Yes
   b. No
   c. If Yes, what activities do they do (e.g., messaging, outreach, community events, immunizations directly)?
4. Do you think there is a role for local organizations or groups to support and engage with the community about immunization?
   a. Yes. Proceed to the next question.
   b. No.
   c. If No, why not? Skip the next question.
5. If your answer is "Yes" to either of the previous two questions, what activities do or could local community groups or organizations undertake in the immunization space? Select all that apply. (Adjust answers according to country context.) Skip the next question.
   a. Mobilizing community members to take children for vaccinations or well-child checks.
   b. Sharing information, building trust, and dispelling rumors.
   c. Reaching vulnerable or hard-to-reach groups with information about vaccines and health services.
   d. No role for community groups seen, even if concerns are raised.
   e. Other: _____.
6. Are there any additional/other ways that local organizations can help reach more children to help increase confidence in vaccines or increase vaccine coverage?
   a. Mobilizing community members to take children for vaccinations or well-child checks and accepting vaccines.
   b. Sharing information, building trust, and dispelling rumors.
   c. Reaching vulnerable or hard-to-reach groups with information about vaccines and health services.

d. Other: _____.

Module E: Vaccine access

This module seeks information on how the community accesses vaccination services and if there are both barriers and opportunities for vaccination.

1. Are the majority of people in your village/community able to travel to the immunization center within one hour using any form of transport (including walking)?
   a. Yes
   b. No
   c. Sometimes. Please explain: _____.
2. Is it more difficult for women or men to get transportation to reach the center?
   a. It is more difficult for women than men to get transportation.
   b. It is more difficult for men than women to get transportation.
   c. It is the same for women and men.
3. Have HCWs ever come to your village to provide vaccinations?
   a. Yes
   b. No
   c. If Yes, how many times in the last year did they come to your village? _____.
4. While there, did they do any other activities? Select all that apply. (Adjust answers according to country context.)
   a. Asked about the number of children or pregnant women in a household.
   b. Shared information about routine immunization and the importance of bringing children for their routine checks.
   c. Health checkup for children.
   d. Health checkup for women.
   e. Health checkup for men.
   f. Other: _____.

Module F: Recording and tracking children's immunization status

This module seeks to understand how vaccination coverage is used by community leaders and whether they think HCWs are capturing that information.

1. Do you (or does someone in the community) receive an estimate for vaccination coverage in your village?
   a. Yes
   b. No
   c. If Yes, how often? Every _____ (number of) weeks/Every _____ (number of) months.
2. If you already received this information or if you were to receive this information, how do you/would you use this information?
   a. Would not use the information.
   b. Would use the information to discuss how to improve vaccine coverage with relevant stakeholders (ask who).

c. Other: _____.

3. Do you think your HCWs have an accurate count of how many children or pregnant women there are in your village? Please explain, provide examples, and describe why.

Module G: Special populations: Internally displaced persons/refugees

This module is meant to understand how IDPs/refugees are contacted, accounted for, and welcomed to access the existing immunization system. It is relevant only if some IDPs/refugees are housed within communities; if they are located in specially designated areas or camps, these questions may not be appropriate.

1. Do you have IDPs/refugees in your community?
   a. Yes
   b. No
   c. If Yes, how many?
2. Are IDPs registered on the territory of the community?
   a. Yes
   b. No
3. Registration takes place in the administration of:
   a. Subdistrict/district/province.
   b. Village/town where they stay.
   c. Other: _____.
4. Does the local government provide medical care, including routine vaccinations, to IDPs/refugees at the expense of the local government?
   a. Yes
   b. No
5. Is the provision of medical care, including routine vaccinations, for IDPs/refugees funded by the national budget?
   a. Yes
   b. No
6. Have there been cases of lack of vaccines for vaccination for representatives of the IDPs/refugees in the community?
   a. Yes
   b. No
   c. If No, how was the problem solved? Please describe.

Appendix J. Suggestions/guidance for how to handle text-based/qualitative questions according to type of question

In the data collection tools for each type of respondent, there are a number of questions that involve text-based responses. In the table below, we have identified four types of these questions and examples of each type of question from across the data collection tools. We have also provided suggestions/guidance on how to handle these types of questions in a systematic way.

Table J1. Types of questions, sample questions, and guidance for how to handle text-based/qualitative questions.

Type of question	Examples	Analysis/suggestions/guidance
Questions to transform from "open" responses to "categorical" responses.	**Health facility in-charge**: • What is the highest level of health training you have received (e.g., medical school, nursing school)? • Based on the visits to your health facility/your visits in the community, which immunization visits are most likely to be missed? List immunization visits by country. • How often is microplanning for routine immunization (RI) conducted at the health facility? • Which (microplanning) tool do you use? Have you heard about the (insert name) microplanning tool? Why are you not using the (insert name) microplanning tool? • Does the community have local civil society organizations (CSOs) or community groups? If yes, what are they? (This could include women's or mothers' groups, youth groups, or other organizations engaged in health outreach activities.) **Community health worker**: • If only one child is waiting, do you open any vaccine vials? If yes, which ones? Provide list of RI vaccines to choose from and indicate which of those are opened when only one child is waiting." • What vaccine vials do you wait to open until more than three children are waiting? Provide list of RI vaccines to choose from and indicate which of those are opened when only one child is waiting."	• These are questions that ask respondents to list out items or indicate frequency of events based on their own experience, which could vary across locations and/or individuals within a location. • It may be difficult to create response categories for these types of questions before data collection because likely responses may be unknown to the team that is designing the tool. • During analysis, the data analysts can visually review responses to those specific questions to see if there is any clustering of responses within questions. • If so, the data analysts can create a new/additional variable for that question with the most relevant response categories. For each

Type of question	Examples	Analysis/suggestions/guidance
	Caregiver: • Do you (routinely) refuse any specific vaccines? Present the full list of vaccines in routine immunization, indicate which are refused and provide reasons for refusal. • Are there any local community groups or organizations that provide information on health topics including immunization? If yes, what are they? (This could include women's or mothers' groups, youth groups, or other organizations engaged in health outreach activities.) • Do you know when child immunizations are given at the health facility? If yes, provide the day(s) of the week, and select morning, afternoon, or evening. • What time of day is easiest for you to go to the health facility to get your child vaccinated? Provide the day(s) of the week, and select morning, afternoon, or evening. • Are there particular days or times that are more convenient for you to bring your child for immunizations? If yes, provide the day(s) of the week, and select morning, afternoon, or evening. **Community leader/champion**: • Are the majority of people in your village/community able to travel to the immunization center within one hour using any form of transport (including walking)? (Multiple options including "Some of the time".) If some of the time, please explain. (Responses could be transformed into categorical if the responses cluster around certain themes; or if the themes are all very different from each other and discussed in depth, the team may find it better to treat the text as an open-ended question.) • Does the community have local CSOs or community groups? If yes, what are they? (This could include women's or mothers' groups, youth groups, or other organizations engaged in health outreach activities.) • Do you engage with any of these groups? If yes, which one(s)?	observation, data analysts then manually input responses in the new/additional variable based on that observation's response for the original variable. This should be checked for errors by a second team member.
Questions with "other" categories.	**Health facility in-charge**: • What processes does the health facility follow in microplanning? (Multiple options, including "other".) If other, please specify • For which immunization programs does microplanning occur? (Multiple options, including "other".) If other, please specify.	• The main question has already been designed with response categories that are considered to be most likely in the context. • The number of "other" responses is likely to be limited. Nevertheless, the

Type of question	Examples	Analysis/suggestions/guidance
	• In your opinion, which of the following contributes to decisions to not vaccinate children? (Multiple options, including “other”.) If other, please specify. • If stockouts occurred, what may be the reasons? (Multiple options, including “other”.) If other, please specify. • How do you calculate the vaccine needed in one month? (Multiple options, including “other”.) If other, please specify. • What three additional resources could help you reach more children with vaccination? (Multiple options, including “other”.) If other, please specify. • How do you calculate the IDP/refugee population in your community? (Multiple options, including “other”.) If other, please specify. • What are the challenges in the development of plans and budgets for vaccination? (Multiple options, including “other”.) If other, please specify. • What are the sources of funding for vaccination at your facility? (Multiple options, including “other”.) If other, please specify. **Community health worker**: • Why do you think the caregivers do not come to the health facility for follow-up immunization visits? (Multiple options, including “other”.) If other, please specify. • In your opinion, which of the following contributes to decisions to not vaccinate children? (Multiple options, including “other”.) If other, please specify. • While you are in the community/conducting outreach visits, do you conduct other immunization- or primary health care (PHC)-related activities? (Multiple options, including “other”.) If other, please specify. • Who supports or oversees your review of vaccine coverage? (Multiple options, including “other”.) If other, please specify. • What are the most common challenges with tracking children’s immunization status? (Multiple options, including “other”.) If other, please specify. • How are caregivers reminded to bring a child back for their next immunization visit? (Multiple options, including “we ask _____ to remind caregivers to bring in children for vaccination”; and ”other”, please specify.) • Why do you think the caregivers do not come to the health facility for follow-up immunization visits? (Multiple options, including “other”.) If other, please specify.	team designing the data collection tool may also recognize that the response categories are not exhaustive and there may be some observations where “other” responses are provided. • There should be a “text field” in the dataset where the interviewer or data entry clerk has specified what the “other” response was. • If the dataset is relatively small and the number of observations with “other” responses is relatively low, the data analyst can see trends in the “other” responses in terms of how people are answering. There may be a clustering of types of responses. • If there is a clustering of responses, the data analyst may be able to simply read the text responses and report on the range of responses, noting which ones were more commonly mentioned, which were less commonly mentioned, etc. • If the dataset is large and/or the number of observations with “other” responses makes it difficult to report on, or responses are quite varied and there is no clustering of responses, the data analyst may need to use the process described in the previous section.

Type of question	Examples	Analysis/suggestions/guidance
	• Who do you communicate with regarding the decision to vaccinate a child? (Multiple options, including “other”.) If other, please specify. • What do you perceive as the most common reasons for a mother’s limited understanding [of vaccines and the benefits of having a child immunized]? (Multiple options, including “other”.) If other, please specify. • What do you think are the most common reasons for a father’s limited understanding [of vaccines and the benefits of having a child immunized]? (Multiple options, including “other”.) If other, please specify. • From whom do mothers receive most of their information about child immunization? (Multiple options, including “other”.) If other, please specify. • From whom do fathers receive most of their information about child immunization? (Multiple options, including “other”.) If other, please specify. • What do you perceive as the most common reasons for a mother’s limited understanding [of vaccines and the benefits of having a child immunized]? (Multiple options, including “other”.) If other, please specify. • What do you think are the most common reasons for a father’s limited understanding [of vaccines and the benefits of having a child immunized]? (Multiple options, including “other”.) If other, please specify. • What are the most common questions asked by mothers? (Multiple options, including “other”.) If other, please specify. • What are the most common questions asked by fathers? (Multiple options, including “other”.) If other, please specify. • What information, if any, do you think was missed or absent from the training? (Multiple options, including “other”.) If other, please specify. • What activities do or could local community groups or organizations undertake in the immunization space? (Multiple options, including “other”.) If other, please specify. • What activities could local organizations do to help you reach more children and help you do your job more effectively/efficiently? (Multiple options, including “other”.) If other, please specify.	

Type of question	Examples	Analysis/suggestions/guidance
	Community health volunteer: • In your opinion, which of the following contributes to decisions to not vaccinate children? (Multiple options, including “other”.) If other, please specify. • Why do you think the caregivers do not come to the health facility for follow-up immunization visits? (Multiple options, including “other”.) If other, please specify. • What do you perceive as the most common reasons for a mother’s limited understanding [of vaccines and the benefits of having a child immunized]? (Multiple options, including “other”.) If other, please specify. • What do you think are the most common reasons for a father’s limited understanding [of vaccines and the benefits of having a child immunized]? (Multiple options, including “other”.) If other, please specify. • What information, if any, do you think was missed or absent from the training? (Multiple options, including “other”.) If other, please specify. • What are the most common questions asked by mothers? (Multiple options, including “other”.) If other, please specify. • What are the most common questions asked by fathers? (Multiple options, including “other”.) If other, please specify. **Caregiver**: • If some or none of your children are vaccinated, what are some of the concerns that influence you to not vaccinate your child? (Multiple options, including “other”.) If other, please specify. • Who makes decisions regarding children’s immunization in your household? (Multiple options, including “other”.) If other, please specify. • How are you reminded to bring your child back for their next immunization visit? (Multiple options, including “other”.) If other, please specify. • Where do you get information on vaccines? (Multiple options, including “other”.) If other, please specify. • Which of the following questions have you asked or would you want to ask community health workers (CHWs)/health care workers (HCWs)? (Multiple options, including “other”.) If other, please specify.	

Type of question	Examples	Analysis/suggestions/guidance
	• What challenges have you ever experienced in trying to reach/attend immunization sessions? (Multiple options, including “other”.) If other, please specify. • While there [in your village], did they [i.e., HCWs] offer any other services? (Multiple options, including “other”.) If other, please specify. • How does the health facility follow up to ensure your child is vaccinated? (Multiple options, including “other”.) If other, please specify. • What activities do CSOs or other local groups currently carry out in your community/village? (Multiple options, including “other”.) If other, please specify. **Community leader/champion**: • What do you perceive as the most common reasons for a mother’s limited understanding [of vaccines and the benefits of having a child immunized]? (Multiple options, including “other”.) If other, please specify. • What do you perceive as the most common reasons for a father’s limited understanding [of vaccines and the benefits of having a child immunized]? (Multiple options, including “other”.) If other, please specify. • In your opinion, what are common reasons for refusing vaccination? (Multiple options, including “other”.) If other, please specify. • What are the most common questions asked by mothers? (Multiple options, including “other”.) If other, please specify. • What are the most common questions asked by fathers? (Multiple options, including “other”.) If other, please specify. • From whom do mothers receive most of their information about child immunization? (Multiple options, including “other”.) If other, please specify. • From whom do fathers receive most of their information about child immunization? (Multiple options, including “other”.) If other, please specify. • Who makes decisions regarding children’s immunization? (Multiple options, including “other family member” and “other”.) Please specify. • What concerns influence vaccination decisions? (Multiple options, including “other”.) If other, please specify. • While there [in your village], if you already receive this information [i.e., from HCWs], do they offer any other services? (Multiple options, including “other”.) If other, please specify.	

Type of question	Examples	Analysis/suggestions/guidance
	• What activities could you undertake to help caregivers get accurate information about vaccines and how to connect with health services? (Multiple options, including “other”.) If other, please specify. • What activities do or could local community groups or organizations undertake in the immunization space? (Multiple options, including “other”.) If other, please specify. • Are there any additional/other ways that local organizations can help reach more children to help increase confidence in vaccines or increase vaccine coverage? (Multiple options, including “other”.) If other, please specify.	
“Why/why not” questions and other two-part questions that include an open follow-on explanation.	**Health facility in-charge**: • Has your health facility ever created a microplan for the immunization programs (yes/no)? If no, why not? • Does your health facility conduct activities to identify/validate a target population number for microplanning? If yes, which cost items of such activities are covered, and where is the budget from; if no, what may be the reason(s)? • Do you think the form is helpful for your work in microplanning? If no (i.e., if the respondent does not think the named tool is helpful for their microplanning work), why not (e.g., time-consuming, training needed)? • Does your facility conduct planning and budgeting for vaccination regularly (e.g., yearly)? (Multiple options, including, “No, it’s not necessary because _____.”) **Community health worker**: • Are there any vaccines that caregivers routinely refuse (yes/no)? If yes, present the list. (Present the full list of vaccines in routine immunization, indicate which are refused and provide reasons for refusal? • If a caregiver forgets the child’s immunization card, are you still able to vaccinate that child (yes/no)? If no, why not? • If the time between vaccinations is longer than recommended, for instance, a caregiver misses the third dose of pentavalent vaccine, but comes in when the child is older perhaps 24 months (as opposed to , will you still vaccinate them (yes/no)? If no, why not? • Do you think the location of the health facility makes it challenging for caregivers (mothers, fathers, other caregivers) to access immunization services (yes/no)? Why/why not?	• These questions sometimes involve a mix of response types. • The data analysis team should analyze the binary or categorical parts of the question (e.g., the yes/no part of the question) using the typical approach for analysis of quantitative responses. • For the aspects of the question that ask the respondent to list something, the data analysis team should use the approaches described in the first section above. • For aspects of the question that ask the respondent to explain or describe something, the data analysis team should use the approaches described in the open-ended questions section below.

Type of question	Examples	Analysis/suggestions/guidance
	• Do you support the health system providing vaccinations and other essential health services to local IDP and refugee populations (yes/no)? If no, why not? • Do you vaccinate IDPs if they do not have a medical record and do not remember when they were vaccinated (yes/no)? If no, why not? • Do you think CHWs/HCWs have a role in decisions about the vaccination of a child (yes/no)? If yes, why; if no, why not? • Do you think there is a role for local organizations or groups to support and engage with the community about immunization (yes/no)? If no, why not? **Community health volunteer**: • Are there any vaccines that caregivers routinely refuse (yes/no)? If yes, present the list. (Present the full list of vaccines in routine immunization, indicate which are refused and provide reasons for refusal.) **And why**? • Do you think the location of the health facility makes it challenging for caregivers (mothers, fathers, other caregivers) to access immunization services (yes/no)? **Why/why not?** • Do you get child immunization information from the internet or social media (yes/no)? If yes, which ones? **Note**: Depending on how many unique responses are provided by respondents, this question could also be handled as a "list" question and transformed in the dataset to be a categorical variable, similar to the questions in the first category of questions above. **Caregiver**: • Do you think materials or messages in the local language may help to communicate information on vaccines better? If no, why not? • Are there any negative consequences for a child's health if they are not vaccinated? If yes, what are they? If no, why not? • Does it get more challenging to bring children for vaccination as they get older? If yes, why? If no, why not? • Do community leaders influence your decisions regarding vaccination? If yes, why? If no, why not? • Do HCWs influence your decisions regarding vaccination? If yes, why? If no, why not?	

Type of question	Examples	Analysis/suggestions/guidance
	• Does it matter to you if the HCW who comes to your community to provide child vaccinations is a man or woman? If yes, they should be men, then why? If yes, they should be women, then why? • Do you, or would you, trust these local groups or organizations to provide you with information on immunizations? If yes, why? If no, why not? If sometimes, on what topics? • Do you usually have your child's immunization card or record when you return for their immunization visits (yes/sometimes/no)? If sometimes or no, what could be done to help you remember? Please explain. • For IDPs/refugees, do you continue to vaccinate your children even without having access to your child's vaccination cards? If no, why not? **Community leader/champion**: • Do you think materials rooted in more specific cultures/religions may help communicate information better? If no, why not? If yes, what are the cultural beliefs that need to be addressed when communicating about the benefit/needs of vaccination? (open-ended) • Do community groups currently engage in immunization-related activities? If yes, what activities do they do? • Do HCWs play a role in caregivers' decisions regarding vaccination? If yes, why? If no, why not? • Do you think there is a role for local organizations or groups to support and engage with the community about immunization (yes/no)? If no, why not?	
Open-ended	**Health facility in-charge**: • What is the main/biggest constraint to storing vaccines and related supplies? • [If mobile/outreach activities are not funded by the health facility budget], please tell us how this activity is funded. • How do you reach/communicate with IDPs to encourage them to come in for immunization? (Multiple options, including "other".) If other, please specify. **Note**: Although this question could apply to the category of questions described in the section above, this particular question might generate responses that are more complex and descriptive than the simple "other" category questions and might require more description—therefore, it might be more relevant to treat this as open-ended. • What modules do you think the tool (i.e., microplanning tool) is still missing?	• These are questions that have either been structured as completely standalone, open-ended questions (i.e., no categories were provided) and/or are anticipated to generate responses that are difficult to categorize. • These questions sometimes ask about attitudes and behaviors and the responses can be a bit complicated or difficult to summarize in a few words.

Type of question	Examples	Analysis/suggestions/guidance
	• What improvements can be made to this tool to better support your work? • What should the project or national immunization program do to implement the project successfully? • How could a tool help you develop a vaccination budget plan? What are the integral pieces/parts of that tool that would be most useful? **Community health worker**: • If the answer is "yes" to the question, "Do you think offering vaccination at different times and days would increase immunization rates", why are RIs held on the days and times you shared earlier instead of the alternative timing you think would work better? • How do you use the information from vaccine coverage in your immunization plans? Please explain. • In your experience, are there personal factors that influence a parent's/caregiver's decision about immunization of their child (e.g., age, education level, economic circumstances, religion, tribe affiliation, etc.)? Please explain. • How do you change information based on the personal factors you observe? Please explain if you do or do not make changes to information. • Are there any local beliefs that need to be incorporated into communication messages about the benefits/need of vaccination, that are not already included in messaging? If yes, what are those beliefs? **Community health volunteer**: • Are there any local beliefs that need to be incorporated into communication messages about the benefits/need of vaccination, that are not already included in messaging? If yes, what are those beliefs? • Do you have any standard operating procedures or job aids for vaccination communication? If yes, how useful are they? If no, then what kind of aids or standard operating procedures would be useful (e.g., a list of frequently asked questions, an information guide, or a script of information to be shared for each vaccine)? • What resources would help you reach more children or do your job more efficiently? Are there changes that the district/province could make that would help you in the role?	• Some of the questions are asked of different stakeholder groups in the same (or slightly different) ways. For these questions, it can be especially helpful to analyze responses both in and of themselves, as related to each specific stakeholder group, as well as by comparing and contrasting responses across the stakeholder groups. • In general, the rapid assessment process is not geared to do an in-depth analysis of these questions that involves coding and qualitative analysis software. • Rather, it is anticipated that at least two team members will be assigned to review the responses that have been recorded by the data collection team to identify overarching themes for each question. • The team can design a simple matrix that identifies the observed themes for each question as well as the location(s) and respondent type(s) associated with those themes, and any other aspects that the team thinks is important to include. • Look across the responses within (or across) stakeholder groups for common themes; consider/interpret what the common themes are telling us, in the context of the rest of the information and feedback emerging

Type of question	Examples	Analysis/suggestions/guidance
	• Do you engage with community groups for immunization-related activities? If yes, which ones? (Refer to the list generated from HCW questionnaire results.) If yes, **how** do you engage with community groups for these immunization-related activities? **Caregiver**: • Do HCWs do any of the following? (Multiple options, plus "Any other reaction you would like to share, please provide details.") • What information or assistance can community leaders provide that would help you decide to vaccinate your child/children? (open-ended) • What information can HCWs share that would help you decide to vaccinate your child/children? (Multiple options, including "other".) If other, please specify. **Note**: These responses may be wide-ranging; could be difficult to categorize "other" responses in this case; are more open-ended. • Is there anything that local groups could do to support you more regarding immunizations (if you trust these local groups or organizations with information, or sometimes trust them)? (open-ended) • What would be the most helpful way to be reminded to bring your child in for their next immunization visit? Please explain. (open-ended) • If your answer is "no" to having access to your child's vaccination cards, what actions did the HCW take to vaccinate your child? • Do you have any other concerns not already expressed about taking your child for vaccination in your current place of residence? **Community leader/champion**: • If you already receive this information [an estimate for vaccination coverage in the village], how do you/would you use this information? (Multiple options, including "other".) If other, please explain. (open-ended) **Note**: If the responses to this question cluster around a limited number of themes or types of responses, it may be useful to treat this question like a question with "other" responses. See "Note" in the questions above. • Do you think your HCWs have an accurate count of how many children or pregnant women there are in your village? Please explain. (open-ended)	from the overall rapid assessment exercise and in the specific geographic context and time. Describe the themes. Provide examples if helpful. • In some cases, it can be useful to include quotations that represent these themes when writing the assessment report. If so, the team should also note the location and type of respondent (e.g., HCW, community leader, caregiver, etc.), sex, and age—unless doing so would lead to the easy identification of specific individuals associated with the quotation. This is especially relevant in cases where as part of the consent process the data collection team has indicated that responses documented in reports cannot be tied to specific individuals. • Report on both the most commonly referenced themes—and the outliers (but identify them as such)—give the reader a sense of which themes and responses were most common, and which were unusual. Was there a lot of variability in responses or not? • Think about and comment on who was saying what: Were there differences in responses between women and men in the stakeholder groups (or across stakeholder groups); were there differences

Type of question	Examples	Analysis/suggestions/guidance
		based on age, or rural versus urban locations, or other important factors? • Think about and comment on what might be missing. Are there aspects of the question(s) that seem not to figure prominently in respondents' feedback to the open-ended questions?