Strategic Selection of Malaria Social and Behavior Change Activities

Using results from the Malaria Behavior Survey

Table of Contents

Acknowledgments

Acronyms

ACT   Artemisinin-based combination therapy

ANC   Antenatal care

DHS   Demographic Health Surveys

IPC   Interpersonal communication

IPTp   Intermittent preventive treatment of malaria in pregnancy

IRS   Indoor residual spraying

ITN   Insecticide-treated net

MBS   Malaria Behavior Survey

MICS   Multiple Indicator Cluster Survey

MIP   Malaria in pregnancy

MIS   Malaria Indicator Survey

RBM   RBM Partnership to End Malaria

SBC   Social and behavior change

SBCC   Social and behavior change communication

SMC   Seasonal malaria chemoprevention

Introduction

Purpose

The [Malaria Behavior Survey](#) (MBS) is a formative assessment tool that measures malaria-related behaviors and a range of cognitive, emotional, and social factors associated with those behaviors. Understanding these factors is critical to selecting high-quality, evidence-based social and behavior change (SBC) activities tailored to unique contexts and audiences. Because the MBS delves into the factors associated with malaria-related behaviors, its findings equip program planners with evidence for making strategic decisions for SBC strategies and programs and thus help to justify SBC investments by malaria programs.

This guide is specific to the MBS and includes practical instructions on how to use MBS findings to guide certain data-driven aspects of developing national malaria SBC strategies and to inform the strategic selection of audiences, activities, and other aspects of SBC programs.

Intended audience

This guidance is designed for SBC technical officers based in the Ministry of Health National Malaria Programs and SBC implementing partners engaged in planning malaria programs, though donors and other programs may find this useful as well. This guidance can be used at the national level during malaria SBC strategy development and at the national and subnational levels for the selection of SBC activities. As with most SBC planning processes, it is important to note that these national and subnational planning activities are best carried out by a group of program partners, decision makers, audience members, and technical experts. Throughout this guidance, the intended users are referred to as the stakeholders or stakeholder group to reflect this crucial aspect of program planning and decision making.

What is the Malaria Behavior Survey?

The MBS is a standardized survey of randomly selected women, men, and heads of households. The MBS collects data on factors related to malaria behaviors, such as the use and care of insecticide-treated nets (ITNs), care-seeking for children with fever, prevention of malaria in pregnancy (MIP), acceptance of indoor residual spraying (IRS), and seasonal malaria chemoprevention (SMC).

The MBS is a theory-based survey informed by the [Ideation Model of Behavior Change](#). Ideation refers to people's ideas, views, and feelings about a particular behavior. The ideation model provides a framework for SBC programs by drawing on multiple behavior change theories. It can be used to identify the intermediate psychosocial factors associated with behaviors, determine the contextual and environmental conditions that facilitate behaviors, and provide guidance about which SBC and service delivery strategies can be drawn upon to influence behaviors. The ideational factors that are measured by the MBS are listed in Figure 1, and their definitions can be found in Annex A. In addition, the MBS incorporates some structural variables, such as gender attitudes, educational attainment, access to bed nets, distance to health facility, and wealth index.

Figure 1. Ideation model of strategic communication and behavior change
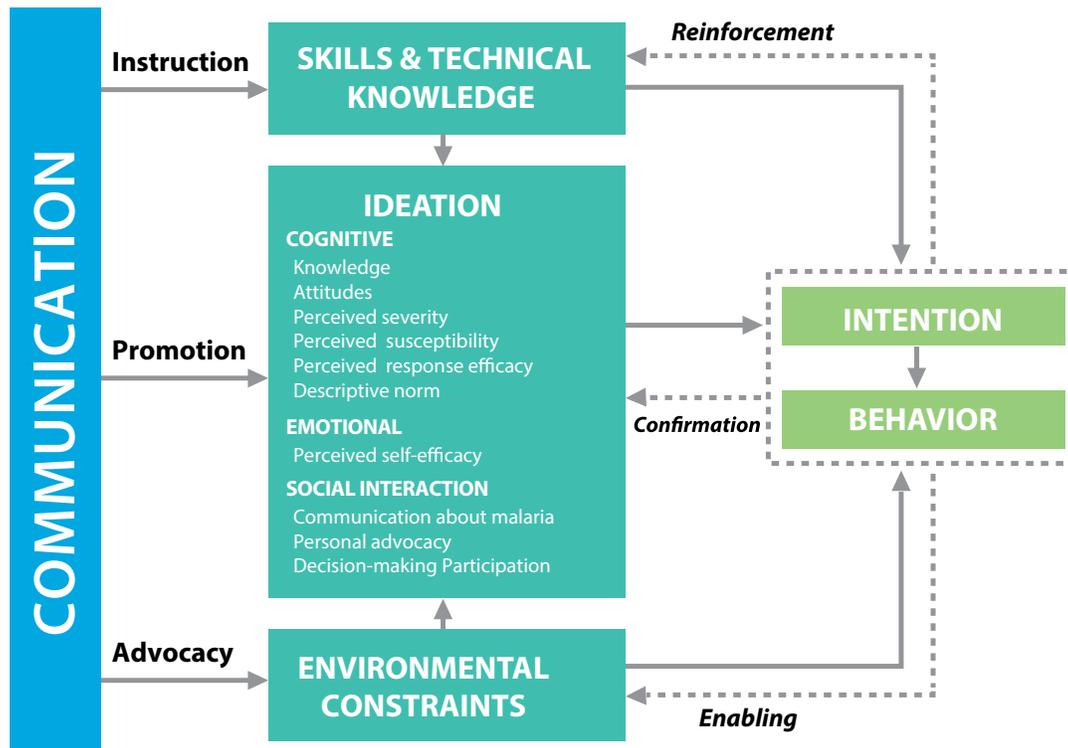
Source: Adapted from Kinkaid (2000)

How can MBS data be used with other survey data?

Where MBS data are available, a comprehensive array of cognitive, emotional, and social factors influencing behavior can be studied. This research can enable program planners to have a robust understanding of the factors most likely to influence priority audiences and behaviors. Other data sources, such as the Demographic and Health Surveys (DHS), Malaria Indicator Survey (MIS), MIS SBCC (social and behavior change communication) module, Multiple Indicator Cluster Surveys (MICS), Malaria Matchbox, health facility surveys, qualitative data, and other types of formative research are complementary to the MBS. Taken together, these data sources provide malaria programs with a broader picture of malaria behaviors in context, the individual and social factors that motivate specific groups, and barriers to equitable and quality services. One aspect that sets the MBS apart from other one-off data collection activities, such as knowledge, attitudes, and practices surveys, is that the MBS is standardized and relies on validated survey questions and tools. Ultimately, triangulating data across multiple sources is crucial for all SBC programs to better inform situation analyses and explore which behaviors are or are not practiced among different populations. When triangulating data, bear in mind that all surveys produce point estimates within a range of uncertainty (confidence interval), so data points may not be exactly the same across surveys but may still be aligned within a range.

How to Use This Guide

The guidance presented here is intended to help malaria programs and implementing partners understand findings from the MBS to inform the development of national malaria SBC strategies and/or the strategic selection and framing of SBC activities. Regardless of whether SBC activities use communication-based, structural, or other approaches, understanding the context-specific ideation factors is critical to selecting priority behaviors, objectives, audiences, and activities tailored to each unique situation. Similarly, all activities require the strategic formulation of content based on an understanding of the factors driving malaria-related behaviors. The MBS provides both breadth and depth of information on ideational factors and some structural factors, making it an important resource to inform these decisions.

This guidance walks users through a framework that includes many of the steps commonly used by SBC implementers to develop SBC strategies or to select and define SBC activities. For each step, the guidance centers on **describing how and when MBS results can be used to make decisions** that are strategic and based on evidence.

STEP 1: Determine priority behaviors and behavior objectives

STEP 2: Identify the primary audience and influencing audiences

STEP 3: Analyze ideational factors that influence behavior

STEP 4: Describe the structural factors affecting the audience

STEP 5: Strategically select SBC approaches and activities

STEP 6: Develop a channel mix plan (for communication-based interventions)

STEP 7: Describe framing and tone of SBC content based on ideational factors

Steps 1–4 of this guidance are relevant to the development of a national malaria SBC strategy, and Steps 5–7 build on the previous steps to guide selection and planning specific aspects of SBC activities. All steps are meant to be carried out with MBS results in hand, by consulting a country's MBS report, MBS results brief, or MBS Dashboard data. MBS reports and briefs can be found on the MBS website, and the MBS Dashboard visually describes MBS data on a streamlined and interactive website.

Developing national malaria social and behavior change strategies

National malaria SBC strategies are important national reference documents. They describe the priorities and focus of a country's malaria SBC efforts and indicate how partners will work in tandem to influence specific behaviors to improve malaria outcomes. These strategies are usually developed through a consultative process with key stakeholders, such as the SBC technical working group, and span a period of five years, typically aligning with and supporting a national malaria strategic plan. National malaria SBC strategies should include a situation analysis (synthesis of research, program reports, and survey data) and provide clear and concise direction on priority audiences and how to influence their behavior. Most malaria endemic countries will develop a national malaria SBC strategy or a national malaria SBCC strategy (sometimes simply titled a national malaria communication strategy). Regardless of the type of national strategy chosen to guide malaria SBC efforts, MBS findings can be highly informative in its development.[10]

When developing a national malaria SBC strategy, stakeholder groups are strongly encouraged to use the Malaria SBC Strategy Development Tools developed by the RBM SBC Working Group. These tools include data synthesis worksheets (see Figure 2 and Figure 3) that explicitly indicate where to incorporate MBS data for strategy development. **When developing a national strategy, Steps 1–4 of this guidance should be used in conjunction with those tools.**

Figure 2. Example data brief in the Malaria SBC Strategy Development Tools

SBC BRIEF: MALARIA IN PREGNANCY BEHAVIORS				
INDICATOR	MICS-YEAR	MIS-YEAR	DHS-YEAR	MBS-YEAR
Behaviors (insert these indicators into the situation analysis polygons in the malaria in pregnancy tell-a-story with data worksheets - slide 4)				
Proportion of mothers who took 1 dose of IPTp				
Proportion of mothers who took 3+ doses of IPTp				
Proportion of pregnant women who slept under an ITN the previous night				
Proportion of women 15-49 who had a live birth in the past five years that attended 2-3 ANC visits				
Proportion of women 15-49 who had a live birth in the past five years that attended 4+ ANC visits				
Determinants of behavior (inset these indicators into the behavior analysis polygons in the malaria in pregnancy tell-a-story with data worksheet- slides 15 and 16)				
INDICATOR	KAP-DATE LOCATION	KAP-DATE LOCATION	KAP-DATE LOCATION	MBS-YEAR LOCATION
Access				
Proportion of pregnant women whose husband or partner accompanied them to ANC at any time				
Proportion of pregnant women who did not take IPTp because it was not offered during ANC				
Proportion of pregnant women who paid for IPTp at ANC				

Figure 3. Example data synthesis worksheets in the Malaria SBC Strategy Development Tools

Example: Côte d'Ivoire

ANC
78.4%
know that a woman should attend at least four ANC visits

IPTp
22.6%
know that a woman must receive three doses of IPT during pregnancy

Health Provider Knowledge & Practice
Health providers know and provide IPTp at ANC visits

Timing
80.9%
know that a woman should go for her first ANC visit in the first quarter or as soon as she knows she is pregnant

Knowledge % who have correct knowledge
Attitudes
Efficacy
Social Norms

Perceived Threat
93.4%
of women believe malaria in pregnancy is very serious

Safety
91.3% women and 88.7% men believe IPTp medications are safe

Attitudes
56.6% women and 61.4% men have positive attitudes toward ANC / IPTp

Maternal Health
96.3% women and 95.5% men believe IPTp is effective in keeping mothers healthy

Norms
70.0%
believe using IPTp is the norm in their community

Self-Efficacy
97.7%
women believe they can take IPTp at least three times during pregnancy

Prenatal Health
95.4% women and 95.8% men believe IPTp is effective in keeping babies healthy

Framework for the strategic selection of SBC activities

Selecting SBC activities for changing malaria-related behaviors requires understanding the current practice of these behaviors within a specific population and the factors influencing them. Likewise, appreciating the potential barriers to practicing the behaviors will help determine whether an individual, social, structural, or combination SBC approach is the most appropriate for the setting and behavior. In making these decisions, the best practice is to consult key stakeholders and use quantitative data sources, such as the MBS, as well as qualitative data sources.

This document walks through seven steps describing how to use MBS findings to inform the selection of activities for SBC programs. As such, users can start with Step 1. However, if an existing national malaria SBC strategy used MBS data to define priority behaviors and objectives, primary and influencing audiences, and ideational and structural factors to address (Steps 1–4), then users can consult that strategy and begin with Step 5 to select and further define the SBC activities to be implemented.

Specific outputs produced after each step build upon the prior step. The outputs of each step can be succinctly captured using the framework below. The blank framework provided (Annex B) can be used as a template to fill out; one template should be used for each behavior selected in Step 1.

Step 1	**Behavior**	**Behavior objective**
	Which specific behavior is the priority to address?	*What is the expected change for the priority behavior?*

Step 2	**Primary audiences**	**Influencing audiences**
	Who is the priority group to reach?	*Who influences the primary audience in practicing the desired behavior?*

Step 3	**Ideational factors**	**Intermediate objectives**
	Which ideational factors related to the selected behavior need improvement?	*What is the expected change for the priority ideational factors?*

Step 4	**Structural factors**	**Intermediate objectives (if applicable)**
	Which structural factors are feasible for the SBC program to address?	*What is the feasible change that the SBC program can expect?*

Step 5

SBC approaches and activities

Which activities will be most appropriate for this behavior and this audience to address the ideational and structural (if applicable) factors?

Primary audience activities	**Influencing audience activities**	**Activities to address structural factors (if applicable):**
To address ideational factors:	To address ideational factors:	

Step 6

Channel mix plan (for communication-based approaches)

What is the optimal blend of channels to maximize reach and effectiveness of a communication-based intervention?

Step 7	**Content framing**	**Content tone**
	How will the content address the ideational factor(s) that were prioritized?	*What style or emotion will be used in presenting the content?*

STEP 1: Determine Priority Behaviors and Behavior Objectives

| Compile data on behavioral outcomes | Disaggregate data by geographic area and residence | Compare data across different sources | Select priority behaviors with input from stakeholders |

Prioritizing behaviors is the first step in developing any SBC strategy, whether it is a national SBC strategy, a specific community program, or something in between. Step 1 focuses on how to use MBS findings as one data source to inform decisions on priority behaviors and objectives.

Prioritizing behaviors involves diagnosing the situation to understand the current status of a specific health issue. The selection of priority behaviors may rely on several methods, such as reviewing the data points with the lowest percentages; comparing data points across different sources, such as national surveys (e.g., DHS, MIS, MICS), qualitative studies, or health information systems to look for trends; referring to national priorities and strategies; considering the behaviors of specific audiences and geographic areas; and consulting with key stakeholders. Consider selecting fewer behaviors in order to focus resources on activities that will have the most impact.

The MBS is one source of formative data that can be used to select priority behaviors. The MBS reports findings on the following malaria-related behavior themes:

- Use and care of ITNs
- Care-seeking for children with fever
- Prevention of MIP, including attendance to antenatal care (ANC) and uptake of intermittent preventive treatment of malaria in pregnancy (IPTp)
- Acceptance of household IRS and SMC interventions (optional modules)

Consult the MBS country report, MBS results brief, or the MBS Dashboard to identify the data points for these behaviors. In this step, disaggregate the MBS data by geographic area and, if of interest, urban or rural residence. The images below illustrate how to disaggregate data using the MBS Dashboard. Fill in the table in Annex D to summarize the findings and make comparisons across behaviors. Note that sociodemographic factors such as sex, age, education, and wealth will be analyzed as part of the audience analysis in Step 2. As mentioned above, other data sources, such as the MIS, also provide indicators of behaviors and should be consulted in Step 1 along with MBS data.

Figure 4. Behavioral data can be disaggregated by geographic area or residence by selecting from the drop-down menu on the MBS Dashboard
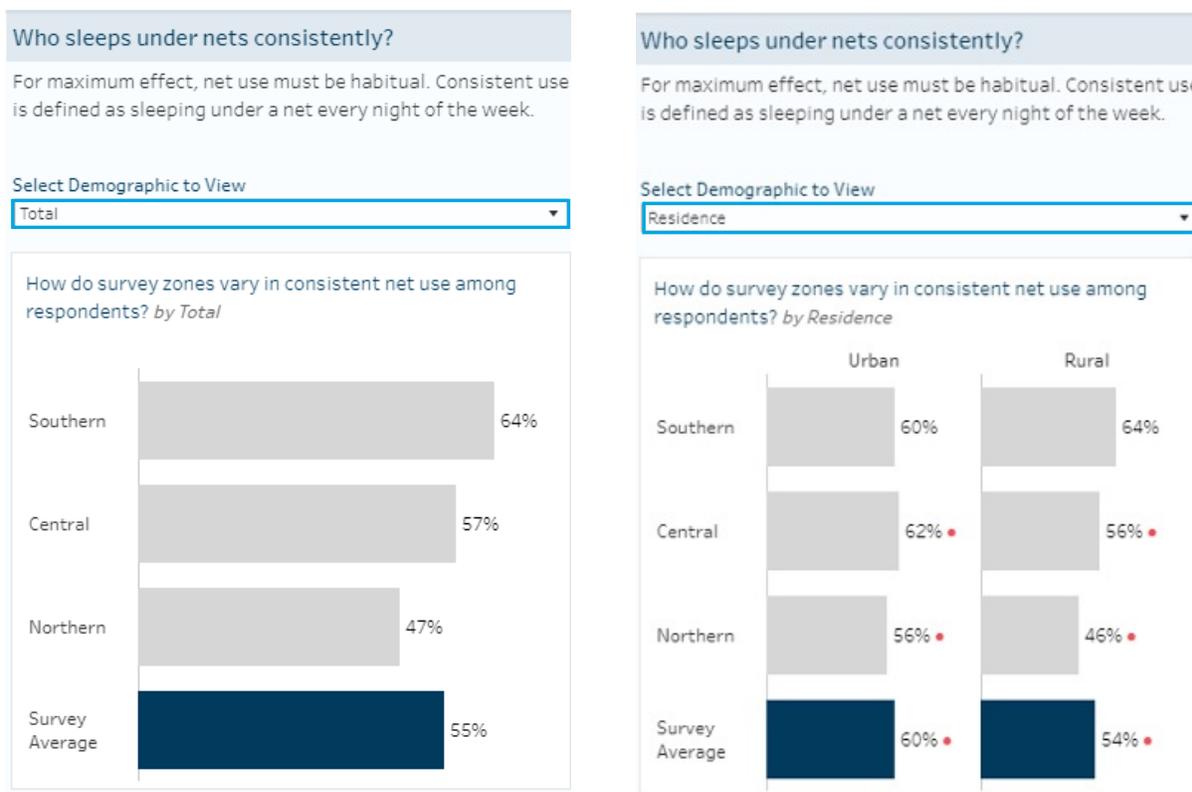
After reviewing the MBS results using Annex D, use the online data brief tools to triangulate the data points across data sources. In doing so, the stakeholder group will be able to see which behavior or group of behaviors are the most critical to prioritize for the SBC program.

Once the stakeholder group has decided on the priority behavior(s), they can determine an objective for behavior change. Ensure the behavior objective is S.M.A.R.T., following the principles below:

- Specific: What is the specific behavior that needs to be changed?
- Measurable: What is the baseline measurement? What level or amount of change is expected?
- Achievable: Is the change in behavior realistic within a specific audience (identified in Step 2)?
- Relevant: Does this behavior objective relate to the overall goal of the program? Is it relevant to the primary audience?
- Time-specific: What is a realistic time frame for this change to happen?

The MBS can provide the baseline percentage for the prioritized behavior(s) and the stakeholder group can then determine a target for change that meets the S.M.A.R.T. criteria. The behavior objective may be refined after following the subsequent steps in this guidance.

Illustrative example from the Malawi MBS: The table summarizes key behavioral results from the Malawi MBS, using malaria in pregnancy as an example. The results can be color coded using thresholds predetermined by the program or strategy development team. In this case, results that are less than 60% are highlighted in red to indicate a priority need. As described above, the stakeholder group will decide on which behavior(s) to prioritize by reviewing the MBS data alongside other triangulated data sources. In this illustrative example, initiation of ANC in the first trimester of pregnancy is selected as the priority behavior due to its low prevalence across all MBS zones, as well as the fact that early ANC can be a gateway to increase ANC visits and IPTp doses.

Behavior domain	Data point	All Zones	Northern Zone	Central Zone	Southern Zone
Malaria in pregnancy	Proportion of women with a live birth in the past two years who took three or more doses of IPTp	60%	62%	63%	56%
	Proportion of women with a live birth in the past two years who attended four or more ANC visits	69%	62%	63%	56%
	Proportion of women with a live birth in the past two years who attended ANC during the first trimester of their most recent pregnancy	42%	44%	41%	40%
	Proportion of women who intend to seek ANC during the first trimester of a future pregnancy	72%	70%	73%	75%
	Proportion of women who intend to take IPTp during a future pregnancy	94%	91%	96%	98%

Key: ▨ <60%   ▨ 60-80%   ▨ >80%

Step 1 Outputs: At the completion of reviewing MBS data for Step 1, the priority behaviors for SBC programs should be selected and objectives for behavior change defined. Fill in the Step 1 output of the framework in Annex B to articulate both the selected behavior and the behavior objective. Use a separate template of the framework for each behavior selected. The example framework below (and used throughout this guidance) is based on MBS data from Malawi; initiating ANC in the first trimester of pregnancy is selected as the priority behavior (Annex C presents the completed example framework).

Step 1	**Behavior**	**Behavior objective**	
	Which specific behavior is the priority to address?	What is the expected change for the priority behavior?	
	Early ANC attendance	Increase the proportion of pregnant women who attend ANC in the first trimester of their pregnancy from 42% in 2021 (MBS) to 60% by 2026	
Step 2	**Primary audiences**	**Influencing audiences**	
	Who is the priority group to reach?	*Who influences the primary audience in practicing the desired behavior?*	
Step 3	**Ideational factors**	**Intermediate objectives**	
	Which ideational factors related to the selected behavior need improvement?	*What is the expected change for the priority ideational factors?*	
Step 4	**Structural factors**	**Intermediate objectives (if applicable)**	
	Which structural factors are feasible for the SBC program to address?	*What is the feasible change that the SBC program can expect?*	

Step 5 — **SBC approaches and activities**

Which activities will be most appropriate for this behavior and this audience to address the ideational and structural (if applicable) factors?

Primary audience activities	Influencing audience activities	Activities to address structural factors (if applicable):
To address ideational factors:	To address ideational factors:	

Step 6 — **Channel mix plan** (for communication-based approaches)

What is the optimal blend of channels to maximize reach and effectiveness of a communication-based intervention?

Step 7	**Content framing**	**Content tone**
	How will the content address the ideational factor(s) that were prioritized?	*What style or emotion will be used in presenting the content?*

STEP 2: Identify the Primary and Influencing Audiences

| Compile data on sociodemographic factors | Disaggregate data by sociodemographic factors | Compare data across different sources | Select the primary audience with input from stakeholders |
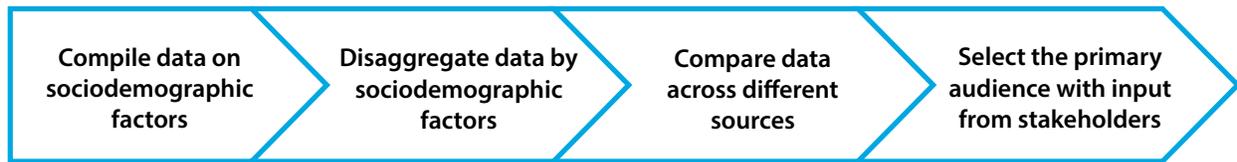
Step 2 focuses on using MBS data to identify how behaviors may vary by sociodemographic factors. Effective SBC programs recognize that the priority behavior of interest may vary by segment and that different groups will respond differently to SBC approaches.

Audience segmentation

Audience segmentation is fundamental to SBC interventions and is a key step in the development of a national malaria SBC strategy, as well as community-level programs. The process involves dividing a large audience into smaller groups of people—or segments—who have similar needs, values, or characteristics and recognizing that the response to messages and interventions may differ according to the specific group. Audiences may be segmented based on demographic, behavioral, psychosocial, or other key variables.

Advanced audience segmentation builds on traditional segmentation approaches by using mixed methods research to hypothesize and test audience segments. It produces a framework to understand how certain beliefs, behaviors, or needs vary across a given population. See the Audience Segmentation for Malaria e-learning course to learn more about segmentation based on attitudes and behaviors of intended audiences.

MBS data can be used for traditional and advanced audience segmentation by providing data on the characteristics that appear to be the most relevant for the people who practice the behavior. These characteristics may relate to sociodemographic variables (explored later in this step) or psychosocial variables (explored in Step 3). Special consideration can be given to sociodemographic or psychosocial factors that have statistically significant links with the priority behavior. Such links suggest that the factors are associated with a greater likelihood that an audience segment will adopt a behavior.

Identify the primary audience and common audience characteristics

The primary audience is the group for whom the priority behavior and behavior objective identified in Step 1 are important, yet practice of the behavior is not at the level needed. Children represent an exception to this definition, as their caregivers are usually addressed as the primary audience. The primary audience may include a spectrum of sociodemographic categories and can be further segmented according to these categories. As such, consider which audience segments need to be targeted to achieve a behavior objective and explain the rationale for prioritizing these audiences.

MBS data can be used to segment the audience by sociodemographic and structural information such as sex, age, religion, education, wealth quintile, housing characteristics, access to health facilities, and ownership of selected assets.

Use the MBS data to look for trends across sociodemographic factors. Keep in mind that sociodemographic factors are not the only defining characteristics of audiences, and ideational factors may better reveal how an audience may react to SBC activities. Therefore, this step should be closely followed by Step 3, which centers on analyzing the ideational factors that influence behavior.

Illustrative example from the Malawi MBS: Pregnant women should seek ANC as soon as they learn they are pregnant, ideally during the first trimester, to maximize the health benefits of ANC and IPTp. MBS data indicated that a low percentage (40%) of survey respondents across all regions attended ANC during the first trimester of their most recent pregnancy. MBS findings also show low levels of early ANC attendance among women in all demographic categories reported by the MBS. Therefore, additional audience segmentation and other sources may be required to strategically select a specific audience to tailor SBC interventions. For this example, SBC program planners might determine that women with low levels of education who are living in urban areas in the Central Region are the primary audience for the SBC activities. Such a decision should be made with consideration of integration with existing SBC programming and resources and consultation with stakeholders.

Behavior	Indicator	Survey zone	Demographic category	Data point
Early ANC attendance	Proportion of women who intend to seek ANC during the first three months of their future pregnancy	Central	30 years and above	37%
			Under 30 years	41%
			Urban residence	38%
			Rural residence	40%
			Less than primary education	39%
			Primary or higher education	42%
			Moderate or low wealth quintile	38%
			High wealth quintile	43%
			Less than two children	47%
			Two or more children	36%

Identify key influencing audiences

Influencing groups are those that have an important role in influencing whether individuals in the primary audience practice the desired behavior. A program will work with individuals in these groups or with entire groups to help support the primary audience in the behavior. Influencing groups may include, but are not limited to, mothers, mothers-in-law, husbands, religious and community leaders, friends and neighbors, or health workers (both facility-based and non-facility-based).

The MBS provides some information that stakeholders can use to determine the influencing audiences. This information includes:

- Role of partners in decision making for seeking services (care-seeking for a febrile child or ANC)
- Perception that permission from a partner or other person is needed to access health services
- Influence of community or religious leaders in the uptake of malaria-related behaviors
- Perceptions about community health workers
- Perceptions about facility-based health care providers

These MBS data points will provide some insight into potential influencing audiences. To make fully informed decisions on influencing audiences, stakeholders should also consult other data sources from the country, especially qualitative research. Answering the following questions may also help identify influencing audiences:

- Who has the most impact on the primary audience's health-related behavior, and what is their relationship with the primary audience?
- Who influences the primary audience's behavior positively, and who influences it negatively?
- How strongly does this group influence the primary audience?
- What behaviors do they encourage the primary audience to practice?
- Why would they encourage or discourage the desired behavior?
- Who makes or shapes the primary audience's decisions in the problem area?

Illustrative example from the Malawi MBS: Contextual factors are essential to consider when selecting influencing audiences. In looking at MBS data for this example, the Malawi data indicate that most men and women report favorable gender norms around decision making for care-seeking, including pregnant women feeling comfortable asking a partner to attend ANC. With regard to perceptions of health workers, two-thirds or less of women and men report favorable attitudes. Further research is needed to unpack why attitudes may not be favorable; for example, reasons may include belief that the health facility may not be stocked with supplies or concerns about the quality of health worker interactions with clients. For this example, health workers were selected as the influencing audience to increase favorable perceptions of health care services among the primary audience.

Are there favorable gender norms about malaria prevention and treatment?

Favorable gender norms about malaria prevention and treatment include the belief that children should not be favored for malaria prevention or treatment based on gender, and that pregnant women should feel comfortable asking a partner to attend prenatal consultations.

Select Demographic to View

Sex ▼

What proportion of respondents reported favorable gender norms about malaria prevention and treatment by survey zone? *by Sex*

	Male	Female
Southern	96%	95%
Northern	96%	94%
Central	94%	95%
Survey Average	95%	94%
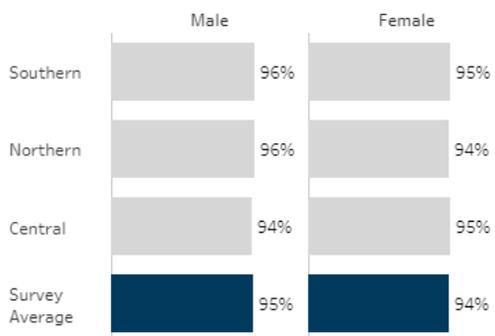
Are there positive attitudes about facility-based health workers?

When people feel positively about health facility worker and their interaction with clients, they may be more likely to seek them out for advice or malaria services.

Select Demographic to View

Sex ▼

What is the percent distribution of respondents with favorable attitudes towards health facility workers? *by Sex*

	Male	Female
Southern	56% •	66% •
Central	56%	62%
Northern	52% •	55% •
Survey Average	55% •	61% •
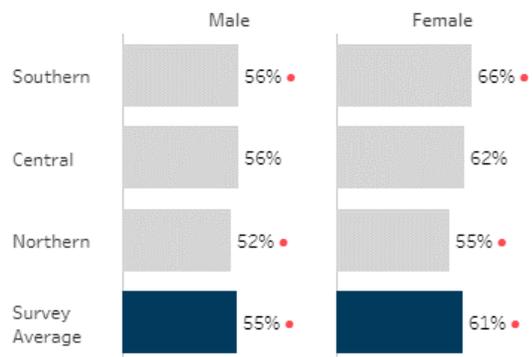
Step 2 Outputs: At the completion of Step 2, the sociodemographic variables would have been reviewed for each selected priority behavior and primary and influencing audiences determined using data sources such as the MBS and other contextual information through stakeholder consensus. Fill in the output of Step 2 in the framework. Continuing with the Malawi example to increase early ANC attendance, the primary and secondary audiences have been added to the illustrative framework below.

Step 1	**Behavior** *Which specific behavior is the priority to address?*		**Behavior objective** *What is the expected change for the priority behavior?*	
	Early ANC attendance		Increase the proportion of pregnant women who attend ANC in the first trimester of their pregnancy from 42% in 2021 (MBS) to 60% by 2026	
Step 2	**Primary audiences** *Who is the priority group to reach?*		**Influencing audiences** *Who influences the primary audience in practicing the desired behavior?*	
	Women in urban areas in the Central survey zone who have lower levels of education		Facility-based health workers	
Step 3	**Ideational factors** *Which ideational factors related to the selected behavior need improvement?*		**Intermediate objectives** *What is the expected change for the priority ideational factors?*	
Step 4	**Structural factors** *Which structural factors are feasible for the SBC program to address?*		**Intermediate objectives (if applicable)** *What is the feasible change that the SBC program can expect?*	
Step 5	**SBC approaches and activities** *Which activities will be most appropriate for this behavior and this audience to address the ideational and structural (if applicable) factors?*			
	Primary audience activities To address ideational factors:	**Influencing audience activities** To address ideational factors:		**Activities to address structural factors (if applicable):**

Step 6	**Channel mix plan** (for communication-based approaches)	
	What is the optimal blend of channels to maximize reach and effectiveness of a communication-based intervention?	
Step 7	**Content framing**	**Content tone**
	How will the content address the ideational factor(s) that were prioritized?	*What style or emotion will be used in presenting the content?*

Health providers as a primary audience

Health provider behavior impacts malaria treatment and care, and health care providers are key influencers for many primary audiences. Understanding the underlying factors of health provider behavior, such as their personal opinions and biases, attitudes and behaviors, capacity and skills, and working conditions, can help define strategic SBC approaches to address issues around quality service provision. A health provider behavior assessment can provide the necessary data to better understand these factors and issues and inform SBC activities.
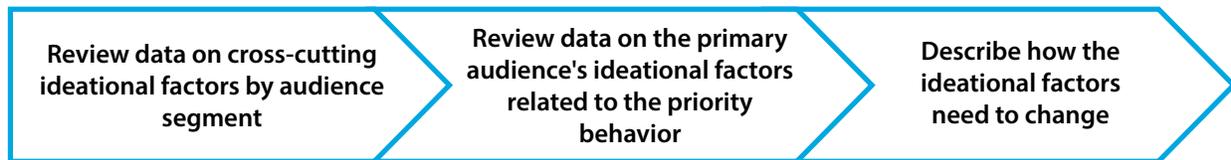
Some MBS results can point to when health provider behavior may be influencing community members' use of health services, meriting a closer look at health provider behavior to gain a more holistic understanding of the factors influencing health behavior. The MBS reports on the perceptions that people hold about health-facility and community-based health workers and includes general perceptions, perceptions of health workers providing case management, and perceptions of health workers providing care for MIP. Data also include respondents' beliefs in the effectiveness of drugs to prevent or treat malaria and source of ANC. Results can be disaggregated by participants' sociodemographic characteristics and survey zone so that any notable differences among groups can be considered.

The MBS can help identify whether to consider health provider behavior; however, the MBS is not designed to assess specific provider behaviors and further analyses are needed. If the MBS data indicates the possibility that health provider behavior is relevant, collaborate with service delivery partners in the reproductive, maternal, newborn, and child health, vaccination, case management, and other realms to review key national and subnational data and establish the priorities of an SBC program.

Suggested resources:

- Segmenting Malaria Health Providers
- Antenatal Care Client Segmentation Toolkit
- A Blueprint for Applying Behavioral Insights to Malaria Service Delivery
- Malaria Service Delivery Assessment Tool

STEP 3: Analyze Ideational Factors that Influence Behavior

Review data on cross-cutting ideational factors by audience segment	Review data on the primary audience's ideational factors related to the priority behavior	Describe how the ideational factors need to change

Once behavior objectives and primary and influencing audiences have been identified, **Steps 3 and 4** in the framework define the intermediate outcomes, which may also be considered precursor factors of behavior change. An **intermediate outcome** indicates what changes the SBC activity is predicted to effect in individuals or society to facilitate a subsequent change in behavior. It helps to explain how the program will create the desired behavior change. Such precursors of behavior may be structural, cognitive, social, or emotional, and analyzing data from multiple national and subnational sources is important to better understand what drives specific audiences to behave as they do. Psychosocial factors for individuals, also called ideational factors, are explored in **Step 3**, and structural factors (e.g., access to commodities or health services), which also influence behavior change, are examined in **Step 4**.

The bulk of MBS data focuses on ideational factors, which are psychosocial constructs that may influence whether an audience practices a specific behavior. Understanding these constructs and their role in malaria-related behavior helps countries and program planners determine the strategic focus of national and subnational SBC programmatic activities to reduce the burden of malaria.

First, consider the cross-cutting factors that may influence all malaria-related behaviors, such as knowledge about malaria, perceived severity of malaria, perceived threat, discussion with others about malaria, gender norms, social support, and perceptions about providers. Answering the following questions may be helpful when reviewing cross-cutting factors.

- What does the primary audience already know about malaria? (Knowledge)

- Does the primary audience feel at risk of malaria or its consequences? (Perceived threat)

- What level of support does the primary audience believe they would receive from family members or the community? (Social support)

- To what extent does the primary audience discuss malaria with friends, family, and/or partners? (Discussion with others about malaria)

Next, look at the ideational factors associated with each priority behavior that was selected and their prevalence among the primary and influencing audiences. What are the top three highly associated ideational factors for each priority behavior? Which factors are statistically significant—that is, which ideational factors are more positively associated with a behavior and thus make adopting the behavior more likely? For the ideational factors with the greatest association, is there room for an increase, or are the ideational factors already high among the primary or influencing audiences? If a given ideational factor is already high, then resources may be better allocated toward influencing an ideational factor that is lower, even if it has a lesser association with the behavior.

Once ideational factors for the focus of SBC activities are selected, describe how the factors need to increase or decrease to influence the behavior objective. Start with the data point measured by the MBS and set a target rate that stakeholders think is feasible to attain within the projected timeframe and scope of the activity. This articulated change that is expected in ideational factors is the **intermediate outcome**. More than one intermediate outcome may be associated with a behavior; however, each intermediate outcome should focus on one ideational factor. Annex E lists the ideational factors for each behavioral outcome that are measured by the MBS to facilitate crafting intermediate objectives based on the selected ideational factor(s).

Illustrative example from the Malawi MBS: Intention is a powerful predictor of future behavior. The Malawi MBS data indicates that both knowledge and attitudes are associated with women's intention to attend ANC early in their next pregnancy. However, there is considerably more room to improve correct knowledge about MIP than there is to improve attitudes about IPTp. Correct knowledge about MIP is defined as the awareness of a country's recommended number of IPTp doses, ANC visit frequency, and importance of attending ANC early in pregnancy. These data imply that increasing correct knowledge about ANC can be an important intermediate objective to select for improvement. In this example, correct knowledge about ANC is selected as the priority ideational factor to increase; however,

What factors influence early ANC visit intention?
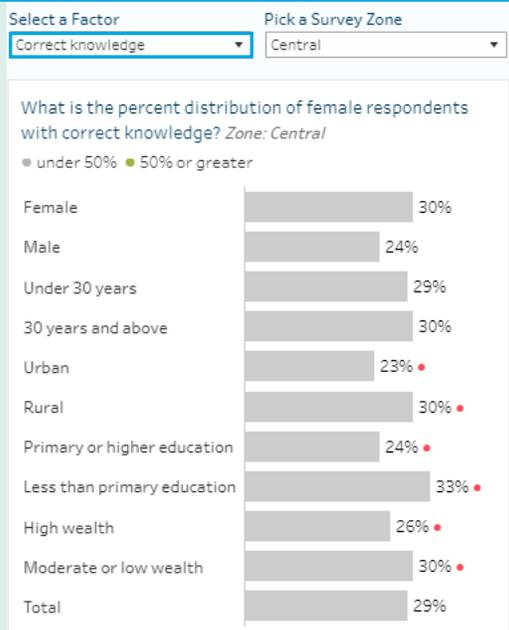
Logistic regression revealed factors significantly associated with the intention to attend ANC visits in the first trimester of a future pregnancy.

Which factors influence female respondents intending to visit ANC in the first trimester in a future pregnancy? *Only showing statistically significant factors*

More likely ▶

Factor	Value
Correct knowledge	2.0
Favorable attitudes towards IPTp	1.5
Injunctive norms	0.7
Favorable gender norms	0.6

◀ Less likely

a program might select more than one ideational factor to prioritize if the data indicates multiple factors need to be prioritized and program resources allow for it. Bearing in mind that attendance to ANC may involve access, gender norms, or other structural factors, consider the next section on structural factors, which may influence the SBC activities that are ultimately selected.

How do these behavioral factors vary?

Select a Factor: Correct knowledge ▼   Pick a Survey Zone: Central ▼

What is the percent distribution of female respondents with correct knowledge? *Zone: Central*

● under 50% ● 50% or greater

Female	30%
Male	24%
Under 30 years	29%
30 years and above	30%
Urban	23% ●
Rural	30% ●
Primary or higher education	24% ●
Less than primary education	33% ●
High wealth	26% ●
Moderate or low wealth	30% ●
Total	29%

How do these behavioral factors vary?

Select a Factor: Favorable attitudes towards... ▼   Pick a Survey Zone: Central ▼

What is the percent distribution of female respondents with favorable attitudes towards iptp? *Zone: Central*

● under 50% ● 50% or greater

Female	76%
Male	71%
Under 30 years	72% ●
30 years and above	78% ●
Urban	85% ●
Rural	73% ●
Primary or higher education	78% ●
Less than primary education	73% ●
High wealth	82% ●
Moderate or low wealth	71% ●
Total	75%

Step 3 Outputs: By the end of Step 3, ideational factors that are associated with the priority behavior would have been identified, and S.M.A.R.T. intermediate objectives developed and added to the framework. The decision of which ideational factors to prioritize can be made by reviewing MBS logistic regression or other results that indicate association between the outcome behavior of interest and ideational variables. In thi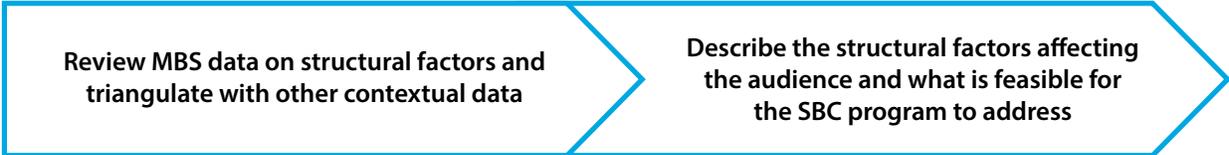s example, correct knowledge about ANC is selected as the priority ideational factor to increase although more than one factor can be prioritized if the data warrants it.

Step 1	**Behavior** *Which specific behavior is the priority to address?*	**Behavior objective** *What is the expected change for the priority behavior?*
	Early ANC attendance	Increase the proportion of pregnant women who attend ANC in the first trimester of their pregnancy from 42% in 2021 (MBS) to 60% by 2026
Step 2	**Primary audiences** *Who is the priority group to reach?*	**Influencing audiences** *Who influences the primary audience in practicing the desired behavior?*
	Women in urban areas in the Central survey zone who have lower levels of education	Facility-based health workers
Step 3	**Ideational factors** *Which ideational factors related to the selected behavior need improvement?*	**Intermediate objectives** *What is the expected change for the priority ideational factors?*
	Correct knowledge of MIP	Increase the proportion of women with correct knowledge of MIP from 30% in 2021 to 50% by 2026
Step 4	**Structural factors** *Which structural factors are feasible for the SBC program to address?*	**Intermediate objectives (if applicable)** *What is the feasible change that the SBC program can expect?*

Step 5	SBC approaches and activities		
	Which activities will be most appropriate for this behavior and this audience to address the ideational and structural (if applicable) factors?		
	Primary audience activities To address ideational factors:	**Influencing audience activities** To address ideational factors:	**Activities to address structural factors (if applicable):**
Step 6	**Channel mix plan** (for communication-based approaches)		
	What is the optimal blend of channels to maximize reach and effectiveness of a communication-based intervention?		
Step 7	**Content framing** *How will the content address the ideational factor(s) that were prioritized?*	**Content tone** *What style or emotion will be used in presenting the content?*	

STEP 4: Describe Structural Factors Affecting the Audience

Review MBS data on structural factors and triangulate with other contextual data	Describe the structural factors affecting the audience and what is feasible for the SBC program to address

Step 4 explores contextual and structural factors that the primary and influencing audiences may experience, drawing on the MBS and other data sources, especially, qualitative data. Understanding structural factors and how they influence behavior is important for making strategic SBC program decisions and will inform estimates of the degree of change that can be achieved within a given timeframe.

Describing behaviors within the broader context of accessibility, availability, and affordability of services or products (e.g., malaria medication) ensures a more holistic approach to addressing specific problems. Additionally, considering how structural factors may vary across populations, as well as who the primary and influencing audiences are, can permit more tailored SBC programs; for example, the distance to a health center may be more relevant to rural than urban communities.

As a specific example, MBS data showed that ANC attendance and uptake of IPTp and perceptions of health providers could be improved in Côte d'Ivoire. Stakeholders designed and implemented an SBC program that incorporated "Monitor My Pregnancy" checklists into the existing ANC booklets with graphics to depict malaria prevention measures for pregnant women. The checklists served as

reminders for both ANC clients and health providers to adhere to antenatal guidelines for malaria preventive services and counseling. In addition, they improved the relationship between clients and providers by creating a space for clients and providers to dialogue and make a joint commitment to a healthy pregnancy. This SBC intervention used a low-cost approach to both improve provider behavior and encourage return ANC attendance.

The MBS collects data on structural factors that SBC program planners can use in this step. These indicators can be triangulated with other sources (see the Malaria Matchbox tool). Examples of structural factors that are not measured by the MBS but can be explored from other data sources include health provider workload, training, supervision, stock-outs, and health workforce density. In turn, and as part of this step, the program can define intermediate objectives to capture changes in these structural factors that may influence behavior. For examples of indicators for intermediate objectives around structural factors for SBC, consult the RBM SBC Working Group Indicator Reference Guide.

MBS indicators on structural factors related to access to services:

- **Access to ITNs**: Percentage of the population with access to an ITN in their household.

- **Access to SMC:** Percentage of households with eligible children visited.

- **Geographic access to malaria services:** Percentage of households near a health facility or community health worker (defined as less than five kilometers, 30 minutes on foot, or 10 minutes by car).

- **Financial, geographic, or social access to health facility services:** Proportion of respondents who cited distance, cost, or permission as reasons for not seeking treatment, taking a sick child to the health facility, taking IPTp, or going to ANC at the health facility.

Illustrative example from the Malawi MBS: In previous steps, pregnant women who live in urban areas in the Central region were identified as the primary audience for increasing the uptake of ANC during their first trimester of pregnancy. More specifically, pregnant women with less than primary education were selected. The MBS data also indicated other structural factors prevented women's early ANC attendance, such as not knowing their pregnancy status due to limited availability of pregnancy tests, distance to the health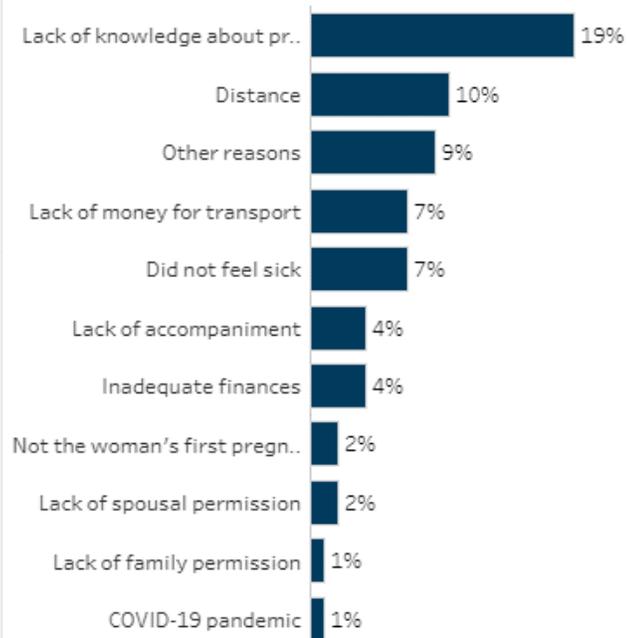 facility, and lack of money for transport. In this case, SBC programs that only focus on improving ideational factors at the individual level may not achieve the behavior objective because other barriers are not being addressed. In Malawi, MBS respondents cited not knowing their pregnancy status and distance to the health facility as main barriers for not attending ANC in the first trimester of a recent pregnancy. Contextual data is needed to determine the role that distance to the health facility plays in urban areas in the Central region. Program planners can identify SBC approaches that may reduce structural factors for a more comprehensive program, such as organizing community-based transportation to ANC and ensuring pregnancy tests are available at health facilities.

What are the barriers to attending ANC early?

While respondents may plan to attend early ANC, there can be factors, some outside their control, that prevent them from doing so. The MBS asked for the reasons women did not seek ANC during the first trimester of their most recent pregnancy.

What reasons did female respondents express for not attending ANC in the first trimester? *Zone: Survey Average*

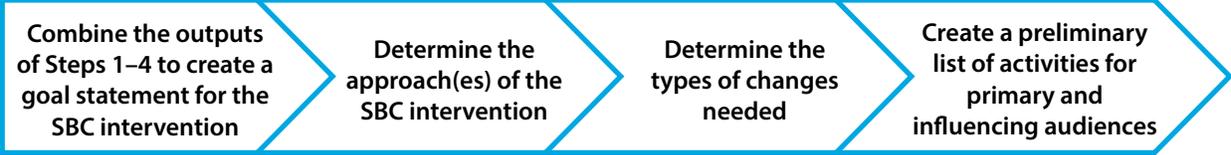| Reason	Percentage
Lack of knowledge about pr..	19%
Distance	10%
Other reasons	9%
Lack of money for transport	7%
Did not feel sick	7%
Lack of accompaniment	4%
Inadequate finances	4%
Not the woman's first pregn..	2%
Lack of spousal permission	2%
Lack of family permission	1%
COVID-19 pandemic	1%

Step 4 Outputs: By the end of this step, the stakeholder group will have considered structural factors to the behavior, drawing on data and contextual factors from multiple sources, including the MBS. Fill in the output of Step 4 in the framework. Relevant structural factors identified by the MBS are reflected in the example framework below.

Step 1	**Behavior** *Which specific behavior is the priority to address?*		**Behavior objective** *What is the expected change for the priority behavior?*	
	Early ANC attendance		Increase the proportion of pregnant women who attend ANC in the first trimester of their pregnancy from 42% in 2021 (MBS) to 60% by 2026	
Step 2	**Primary audiences** *Who is the priority group to reach?*		**Influencing audiences** *Who influences the primary audience in practicing the desired behavior?*	
	Women in urban areas in the Central survey zone who have lower levels of education		Facility-based health workers	
Step 3	**Ideational factors** *Which ideational factors related to the selected behavior need improvement?*		**Intermediate objectives** *What is the expected change for the priority ideational factors?*	
	Correct knowledge of MIP		Increase the proportion of women with correct knowledge of MIP from 30% in 2021 to 50% by 2026	
Step 4	**Structural factors** *Which structural factors are feasible for the SBC program to address?*		**Intermediate objectives (if applicable)** *What is the feasible change that the SBC program can expect?*	
	Lack of money for transport and inadequate finances		Decrease the proportion of respondents who cited cost as a reason for not seeking ANC at the health facility from 7% to 2% by 2026	
Step 5	**SBC approaches and activities** *Which activities will be most appropriate for this behavior and this audience to address the ideational and structural (if applicable) factors?*			
	Primary audience activities To address ideational factors:	**Influencing audience activities** To address ideational factors:	**Activities to address structural factors (if applicable):**	

Step 6	**Channel mix plan** (for communication-based approaches)	
	What is the optimal blend of channels to maximize reach and effectiveness of a communication-based intervention?	

Step 7	**Content framing**	**Content tone**
	How will the content address the ideational factor(s) that were prioritized?	*What style or emotion will be used in presenting the content?*

STEP 5: Strategically Select SBC Approaches and Activities

Combine the outputs of Steps 1–4 to create a goal statement for the SBC intervention	Determine the approach(es) of the SBC intervention	Determine the types of changes needed	Create a preliminary list of activities for primary and influencing audiences

Step 5 identifies the SBC approach and initial list of activities that can be refined later depending on stakeholder priorities, feasibility, and resources. Step 5 is the last step in this guidance that is intended to directly inform how MBS findings can be incorporated into developing national malaria SBC strategies.

SBC strategies and interventions encompass multiple approaches that influence the factors that help facilitate change. These approaches may be structural, social, or individual, and many malaria SBC strategies and interventions may aim to effect change at all three of these levels with a combination of communication and non-communication-based approaches. In Step 5, stakeholders decide on the approaches and activities to implement. While they may not consult MBS results very much in this step, the decisions made in this step rely on the outputs of the three preceding steps. Those outputs were informed by MBS and other available data.

To begin, the stakeholder group can review the outputs of Steps 1–4 **together as a whole**. To do this, the group can complete the following **goal statement**:

> **The SBC program will improve** [state the behavior] **among** [list the primary audiences] **with support from** [list the influencing audiences] **by influencing** [list ideational factors and/or list structural factors].

Then the group will discuss which types of SBC activities are the most suitable for changing the prioritized ideational factors for the selected behavior and audiences. The group can reflect on and decide what **type of changes** in the ideational factors and structural factors are most needed. For example, based on the factors that need changing, it may be necessary to:

- Inform and educate
- Impart specific skills and confidence
- Persuade and promote
- Increase intention to act
- Provide cues to action and reminders
- Broaden social support
- Lower structural barriers
- Nurture advocacy

Certain ideational factors are more influenced by specific SBC activities. For example, if the results of the MBS indicate that social norms are associated with the priority behavior and they need to be increased, then it would be strategic for the program to select SBC activities that are oriented towards changing public perceptions. Such activities include role modeling, community dialogues, testimonials (especially by influential community leaders), declaration events, radio/television interviews, and mass media campaigns. In this step, activities can be selected for both the primary and influencing audiences, as well as activities to influence structural factors, if applicable. To select activities during this step, the stakeholder group can refer to Table 1 for definitions and a non-exhaustive list of common SBC activities and the ideational factors they might be best placed to influence.

Table 1. Definition and examples of common SBC activities

Intervention category	Subcategory	Definition	Ideational factors most affected	Example activities
Interpersonal communication (IPC)	Individual/ household IPC and counseling	Provision of education, information, and counseling to individuals by a health professional or trained volunteer.	• Knowledge • Perceptions of health providers • Perceived severity • Perceived susceptibility • Self-efficacy • Response efficacy • Intention	• Role models • Peer educators • Testimonials • Demonstrations • Counseling • Home visits • Interspousal and parent-child communication • Community health worker door-to-door visits • Service provider counseling patients • School demonstrations • Hotlines
	Group IPC, including all peer and popular opinion leader interventions	Provision of education, information, and counseling to groups by a health professional or trained volunteer.	• Knowledge • Attitudes • Perceived severity • Perceived susceptibility • Self-efficacy • Response efficacy • Communication about malaria with others • Descriptive norms • Decision-making participation • Intention • Perceptions of health providers	

Intervention category	Subcategory	Definition	Ideational factors most affected	Example activities
Mass, digital, and social media	Mass media and entertainment education	Use of a diverse set of technologies capable of simultaneously reaching an audience, including the internet, television, print materials, film, and radio.	• Knowledge • Attitudes • Perceived severity • Perceived susceptibility • Response efficacy • Descriptive norms • Perceptions of health providers	• Community radio • Serial dramas • Game shows • Radio listening groups • Spots • Radio magazine shows • Interactive (live) community radio shows • Billboards • Posters • Infographics • Magazines • Newspapers • Pamphlets • TV spots • Game show • Serial drama • Mobile video units
	Social media and mHealth	Using a variety of web-based and mobile technologies and software applications that enable users to engage in dialogue and share information.		

Intervention category	Subcategory	Definition	Ideational factors most affected	Example activities
Community mobilization	Community mobilization	Interventions to encourage community individuals, groups (including in schools), or organizations plan, carry out, and evaluate activities on a participatory and sustained basis to improve their health and other needs.	• Knowledge • Attitudes • Perceived severity • Perceived susceptibility • Self-efficacy • Response efficacy • Communication about malaria with others • Descriptive norms • Decision-making participation	• Community health workers • Religious leaders • Champions • Community dialogue • Community engagement groups (community action groups, women's and men's groups, micro-credit groups) • Community drama • School programs • Music • Interactive story telling • Social mobilizers
	Community participation (in health service planning and programs); social accountability	Activities to create ongoing relationships between community members and health service delivery providers/actors. The objective is to institutionalize community participation in decision making within health services and programs.	• Attitudes • Perceived severity • Perceived susceptibility • Self-efficacy • Response efficacy • Communication about malaria with others • Descriptive norms • Decision-making participation • Perceptions of health providers	

Intervention category	Subcategory	Definition	Ideational factors most affected	Example activities
SBC service- and program-strengthening activities	Provider behavior change interventions, including training and service delivery adjustments	Training of health providers and other service providers, such as teachers and pharmacists, in skills and techniques related to communication, health education, and community engagement and any adjustments made to service provision based on community perspective of quality (e.g., hours for service delivery).	• Knowledge • Attitudes • Self-efficacy • Response efficacy • Communication about malaria with others • Descriptive norms • Decision-making participation	• Training • Supportive supervision • Coaching • Positive deviants • Cue cards • District competitions • Role modeling • Incentives • Changes in service provision
Packages	Various combinations of the interventions above			

Adapted from Guidelines for Costing of Social and Behavior Change Health Interventions.

Step 5 Outputs: By the end of Step 5, an initial list of SBC approaches and activities for the primary and influencing audiences (if applicable) will be decided on to improve the priority behavior. The activities selected will be chosen to strategically influence the ideational and structural factors identified in previous steps. Fill in the output of Step 5 in the framework; the example framework below lists activities for both the primary and influencing audiences and indicates which intermediate or structural factor the activity is primarily addressing.

Step 1	**Behavior** *Which specific behavior is the priority to address?*	**Behavior objective** *What is the expected change for the priority behavior?*
	Early ANC attendance	Increase the proportion of pregnant women who attend ANC in the first trimester of their pregnancy from 42% in 2021 (MBS) to 60% by 2026
Step 2	**Primary audiences** *Who is the priority group to reach?*	**Influencing audiences** *Who influences the primary audience in practicing the desired behavior?*
	Women in urban areas in the Central survey zone who have lower levels of education	Facility-based health workers
Step 3	**Ideational factors** *Which ideational factors related to the selected behavior need improvement?*	**Intermediate objectives** *What is the expected change for the priority ideational factors?*
	Correct knowledge of MIP	Increase the proportion of women with correct knowledge of MIP from 30% in 2021 to 50% by 2026
Step 4	**Structural factors** *Which structural factors are feasible for the SBC program to address?*	**Intermediate objectives (if applicable)** *What is the feasible change that the SBC program can expect?*
	Lack of money for transport and inadequate finances	Decrease the proportion of respondents who cited cost as a reason for not seeking ANC at the health facility from 7% to 2% by 2026

Step 5	SBC approaches and activities		
	Which activities will be most appropriate for this behavior and this audience to address the ideational and structural (if applicable) factors?		
	Primary audience activities	**Influencing audience activities**	**Activities to address structural factors**
	To increase correct knowledge about MIP:	To improve attitudes toward facility-based health providers:	1. Organize ANC transportation
	1. Individual IPC activities such as role models, peer educators, testimonials, community health worker door-to-door visits, and service provider counseling patients	1. Training health providers in skills and techniques related to communication, health education, and community engagement	2. Leverage micro-credit groups.
	2. Community mobilization activities such as community dialogue, women's groups, and community drama		
	3. Media activities such as billboards, posters, and pamphlets		
Step 6	**Channel mix plan** (for communication-based approaches)		
	What is the optimal blend of channels to maximize reach and effectiveness of a communication-based intervention?		
Step 7	**Content framing**	**Content tone**	
	How will the content address the ideational factor(s) that were prioritized?	*What style or emotion will be used in presenting the content?*	

Côte d'Ivoire: Translating Data Into Practice

Behavior objective: Increase ANC attendance among pregnant women

Primary audience: Pregnant women

Influencing audience: Spouses/partners of pregnant women, health providers

Key challenges and barriers: MBS data from Côte d'Ivoire indicated the following:

- Only 35% of men reported accompanying their partners for ANC.
- Only 34% of couples reported jointly deciding to attend ANC, which speaks to the level of female caregiver decision-making autonomy and local gender norms.
- 20% of respondents did not have favorable perceptions of facility-based health workers. People who feel positively about health workers and their interactions with clients are more likely to seek them out for advice or malaria services.

Intermediate objectives:
- Increase gender norms around female decision-making autonomy
- Increase gender norms around partners accompanying pregnant women to ANC
- Increase positive perceptions of health facility workers

Intervention: Community women's groups are an established communication channel. The intervention leveraged these existing groups to encourage dialogue between women and their spouses by creating materials such as flipcharts. Additionally, the intervention worked with midwives to include ANC guidelines inserted on cards to fill out with clients and then to co-certify that these services and counseling were received. Both provider and client received certificates for completing comprehensive MIP care. Finally, a method for feedback was implemented at the health facilities in which women can obtain a feedback form from a women's group leader, fill it out, and put it in a feedback collection box to express her satisfaction. She is not obliged to do so if she is unsatisfied with how she was treated during the antenatal consultations.

Key findings:
- Understanding behavioral drivers allowed for the design of a multipronged intervention to address the combination of individual and structural factors influencing malaria-related behavior.
- MBS data indicated that women whose partners accompanied them to ANC were twice as likely to obtain at least four visits during their prior pregnancy. By encouraging spousal dialogue and ANC accompaniment, pregnant women may be more likely to intend to attend ANC.
- Utilizing an established communication channel (community women's groups) built trust in the information that was shared.
- The intervention engaged health providers as an influencing audience and implemented a practice that increased interaction between the health provider and client.
- Health providers reported that the information inserted on cards served as a reminder of the counseling involved in each ANC visit. They also reported that the intervention facilitated their work, improved client satisfaction, and led to improved outcomes of interest, demonstrating the positive impact of the intervention.

STEP 6: Develop a Channel Mix Plan (for Communication-Based Inventions)

| Review MBS data to identify channels that yield the highest rates of exposure to malaria messages | Disaggregate media habits by audience segments | Develop a channel mix plan |

If the SBC activities defined in Step 5 include communication-based approaches, **Step 6** centers on developing a channel mix. A malaria SBC strategy or program may select a strategic mix of channels (television, radio, household visits, community dialogues, etc.) to reach and influence the primary or influencing audience. A channel mix identifies the optimal blend of channels to maximize the reach and effectiveness of the intervention. Consider the channels that are the most likely to be trusted by the target audience and use a mix of channels to reach the target audience through multiple touchpoints. An SBC technical working group can advise on the selection of channels to utilize based on MBS and other data and country-specific considerations about the audiences. See How to Develop a Channel Mix Plan for more information.

The MBS is a rich data source on media consumption habits, exposure to malaria messages, and message recall among different sociodemographic groups that can help inform the selection of channel, timing, and frequency of communication-based activities. The following MBS indicators can guide the group in deciding which mix of media approaches to use in SBC activities and when to reach specific audiences.

Media consumption

- Radio ownership, frequency and timing of listening
- TV ownership, frequency and timing of listening
- Mobile phone or tablet ownership and access to types of media
- Internet access

Exposure to malaria messages

- Seen or heard a malaria message in the six months prior to the survey
- Source of malaria message

Message Recall

- Messages seen or heard
- Identified a campaign slogan
- Identified campaign logo or pictures

Consult the MBS findings to identify which channels yielded the highest rates of exposure to malaria messages and consider these to be the more promising avenues for continued malaria communication. These may be through IPC (e.g., community health workers), mass media, or other avenues. Additionally, depending on the primary and influencing audiences selected, the MBS media habits data can provide insight on which channels to select for specific audiences to maximize reach. Looking at media habits disaggregated by age, gender, urban or rural residence, and wealth quintile will be important. For instance, men may be more likely to watch TV, or respondents under 30 years may listen to the radio during specific times of day, such as
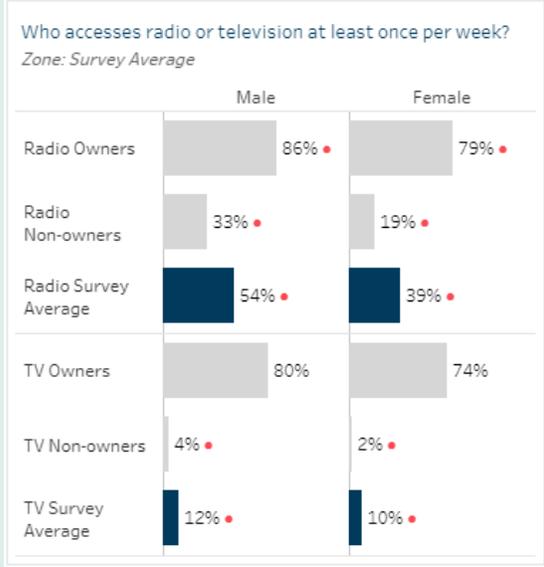
between 8 pm and 12 am. Social media may be a more common channel among those in urban areas or higher wealth quintiles and not reach many in rural areas or the lowest wealth quintiles. If mass media is widely accessed at least once per week by selected audiences, and one-way communication about the topic is considered an appropriate approach, this channel can serve as a good means to reach audiences. Because the nature of mass media programming is often one-way communication, it is typically employed in SBC programs as one of several SBC approaches that complement each other. If mass media is not accessed at high levels, SBC programs can use other communication-based formats to reach audiences, such as working with community leaders or local groups for IPC activities.

Illustrative example from the Malawi MBS: MBS data indicate that high percentages of men and women who own a radio or TV access those media. However, a greater percentage of the overall sample reported listening to the radio at least once per week compared with watching TV. Among the times that women (the primary audience selected in this example) are listening to radio, the most popular span is between 4 pm and 8 pm. Resources may be best allocated to radio spots or programs that air during peak watch times for the primary audience of women. Since men also listen to the radio at high levels, and they are an influencing audience, complementary content tailored for men as an influencing audience could also be aired on the radio between 4 pm and 8 pm.

What mass media channels do people access?

Mass media sources, such as television and radio, can be key opportunities to spread important malaria prevention information to the public.
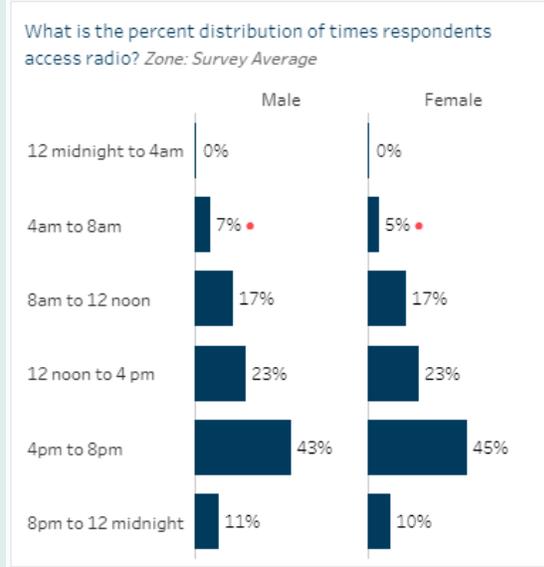
Select Demographic to View

Sex	▼

Who accesses radio or television at least once per week?
Zone: Survey Average

	Male	Female
Radio Owners	86% •	79% •
Radio Non-owners	33% •	19% •
Radio Survey Average	54% •	39% •
TV Owners	80%	74%
TV Non-owners	4% •	2% •
TV Survey Average	12% •	10% •

At what times do people listen to radio?

Understanding when media sources are most often being accessed will help SBC mass media programs reach the maximum number of people.

Select Demographic to View

Sex	▼

What is the percent distribution of times respondents access radio? *Zone: Survey Average*

	Male	Female
12 midnight to 4am	0%	0%
4am to 8am	7% •	5% •
8am to 12 noon	17%	17%
12 noon to 4 pm	23%	23%
4pm to 8pm	43%	45%
8pm to 12 midnight	11%	10%

Additionally, the top sources of malaria messages reported by MBS respondents in Malawi were radio (47%), and health facilities (31%). This result further supports the use of radio for SBC activities and suggests that IPC at health facilities would also be strategic to leverage.

Step 6 Outputs: In Step 6, MBS data on malaria message exposure, sources of messages, and media consumption habits will have been reviewed. Based on these data, a channel mix plan would be developed, identifying the optimal blend of channels to best reach the primary audience for any communication-based SBC approaches. Fill in the output of Step 6 in the framework to indicate the channel mix plan for communication-based approaches as done for the illustrative example below.

Step 1	**Behavior** *Which specific behavior is the priority to address?*	**Behavior objective** *What is the expected change for the priority behavior?*
	Early ANC attendance	Increase the proportion of pregnant women who attend ANC in the first trimester of their pregnancy from 42% in 2021 (MBS) to 60% by 2026
Step 2	**Primary audiences** *Who is the priority group to reach?*	**Influencing audiences** *Who influences the primary audience in practicing the desired behavior?*
	Women in urban areas in the Central survey zone who have lower levels of education	Facility-based health workers
Step 3	**Ideational factors** *Which ideational factors related to the selected behavior need improvement?*	**Intermediate objectives** *What is the expected change for the priority ideational factors?*
	Correct knowledge of MIP	Increase the proportion of women with correct knowledge of MIP from 30% in 2021 to 50% by 2026
Step 4	**Structural factors** *Which structural factors are feasible for the SBC program to address?*	**Intermediate objectives (if applicable)** *What is the feasible change that the SBC program can expect?*
	Lack of money for transport and inadequate finances	Decrease the proportion of respondents who cited cost as a reason for not seeking ANC at the health facility from 7% to 2% by 2026

Step 5	**SBC approaches and activities**		
	Which activities will be most appropriate for this behavior and this audience to address the ideational and structural (if applicable) factors?		
	Primary audience activities To increase correct knowledge about MIP: 1. Individual IPC activities such as role models, peer educators, testimonials, community health worker door-to-door visits, and service provider counseling patients 2. Community mobilization activities such as community dialogue, women's groups, and community drama 3. Media activities such as billboards, posters, and pamphlets	**Influencing audience activities** To improve attitudes toward facility-based health providers: 1. Training health providers in skills and techniques related to communication, health education, and community engagement	**Activities to address structural factors** 1. Organize ANC transportation 2. Leverage micro-credit groups.
Step 6	**Channel mix plan** (for communication-based approaches)		
	What is the optimal blend of channels to maximize reach and effectiveness of a communication-based intervention?		
	Radio spots aired during peak listening times for women and men (for both groups this is 4 pm to 8 pm). IPC at health facilities.		
Step 7	**Content framing** *How will the content address the ideational factor(s) that were prioritized?*		**Content tone** *What style or emotion will be used in presenting the content?*

STEP 7: Describe the Framing and Tone of SBC Content Based on Ideational Factors

| Gather outputs from Step 3 to identify the priority ideational factors most strongly associated with the behavior objective | Determine the content framing and tone most appropriate for the prioritized ideational factors |

In Step 7, teams outline considerations for the framing and tone of the content of the SBC activities, based on the ideational factors that were defined in the previous steps. While developing content is a standard consideration for communication-based SBC activities, even SBC activities that are more structural or systemic in nature generally require some content about the behavior they seek to facilitate.

For communication-based approaches, content is often also referred to as messaging or messages. Successful, well-designed messages are simple, memorable, easily understood, culturally appropriate, and meaningful to the audience. As such, the output of this step can help inform the development of a message guide should an SBC program choose to employ one, for example, to accompany a national malaria SBC strategy.

Additionally, the output of this step can also be used to develop a [creative brief](#), which is a practical and important tool that guides all creative materials within an SBC activity and aligns expectations among members of the implementing team. The creative brief describes the crucial information that must be communicated, as well as what audiences are expected to know, feel, and do as a result of engaging with the activity or materials. As such, tone and framing are a central aspect of a creative brief.

Content framing refers to the "angle" used to present the content, and it involves a careful selection of information or concepts that will best persuade or resonate most powerfully with the primary or influencing audiences. For example, content framed in a way that emphasizes protecting the health of one's children may be more persuasive than a message framed in a way that highlights compliance with public health recommendations. The right framing can significantly affect how an audience interprets and responds. Because standard MBS analyses indicate which ideational factors are most strongly associated with behavioral outcomes, stakeholders should first consult the outputs of Step 3 for useful input for content framing. The prioritized ideational factors should be the foundation and primary focus of the content. For example, if self-efficacy is a prioritized ideational factor, the content of SBC activities should focus strategies on boosting confidence in the ability to perform the behavior, such as by demonstrating how easy or manageable it is.

In addition to framing, the prioritized ideational factors can inform **content tone** in malaria SBC programming. Tone refers to the emotion, style, or manner of expression employed in the SBC activity. For example, if the selected SBC activity is to engage pregnant women who have unfavorable attitudes towards IPTp, the content should have a reassuring tone; emphasize the safety, benefits, and effectiveness of the medication for the mother and her baby; and address any specific concerns or misconceptions that can lead to anxiety or other unfavorable attitudes.

Table 2 below presents recommendations for the content framing and tone according to each ideational factor in the MBS. Remember that pretesting content with the intended audience is a critical best practice for quality SBC.

Table 2. Content framing and tone by ideational factor

Ideational factor	Content framing	Content tone
Knowledge	• Focus on the facts around a behavior to communicate the key points an audience needs to know. • Messaging to increase knowledge can combat misinformation and misconceptions.	• Informative • Educational • Reassuring
Attitudes	• Frame messaging around how easy and beneficial the behavior is and include non-health-related benefits.	• Empowering • Nonjudgmental
Perceived severity	• Emphasize that malaria can be a serious condition regardless of age, but it is especially dangerous for pregnant women and children under five years old. • Content can include the adverse outcomes associated with malaria, especially severe malaria which can be fatal.	• Urgent • Persuasive • Informative • Empowering
Perceived susceptibility	• Focus on the risk of contracting malaria in all audiences but especially among vulnerable groups such as pregnant women and children under five.	• Urgent • Persuasive • Informative • Empowering
Perceived response efficacy	• Emphasize the effectiveness of practicing the behavior. • Frame messaging to address the concerns or doubts that people may have about malaria prevention measures, such as side effects or how effective the prevention measure can be.	• Informative • Educational • Reassuring
Perceived self-efficacy	• Demonstrate how easy or desirable a behavior is. • Highlight the individual's capability to control their own health. • Provide strategies and discussion prompts if needing to negotiate a behavior with a family or member to increase feelings of autonomy.	• Supportive • Empowering • Positive

Ideational factor	Content framing		Content tone
Social norms	•	Establish behavior as normative in the community by highlighting that people are already adopting the behavior. This can include positive role models and community standards.	• Relatable • Builds rapport • Supportive • Nonjudgmental
	•	Appeal to people's sense of social responsibility and their desire to contribute to the well-being of their community.	
Decision-making autonomy	•	Encourage couple communication about malaria care and prevention.	• Relatable • Builds rapport • Supportive • Nonjudgmental
	•	Encourage women to talk about malaria with others to build social support for joint decision making with their family when an ANC visit or care-seeking for fever is needed.	

Step 7 Outputs: By the end of Step 7, guidance for the framing and tone of any content to be developed in support of the SBC activities will have been defined and listed in the framework below. The selection of framing and tone will be aligned with the ideational factors prioritized in Step 3. This output can then be utilized when the team fully develops the selected SBC activities or to produce a creative brief, a message guide, or other SBC material. The illustrative example below indicates the MIP-related content and tone suggested.

Step 1	**Behavior** *Which specific behavior is the priority to address?*	**Behavior objective** *What is the expected change for the priority behavior?*
	Early ANC attendance	Increase the proportion of pregnant women who attend ANC in the first trimester of their pregnancy from 42% in 2021 (MBS) to 60% by 2026
Step 2	**Primary audiences** *Who is the priority group to reach?*	**Influencing audiences** *Who influences the primary audience in practicing the desired behavior?*
	Women in urban areas in the Central survey zone who have lower levels of education	Facility-based health workers
Step 3	**Ideational factors** *Which ideational factors related to the selected behavior need improvement?*	**Intermediate objectives** *What is the expected change for the priority ideational factors?*
	Correct knowledge of MIP	Increase the proportion of women with correct knowledge of MIP from 30% in 2021 to 50% by 2026

Step 4	Structural factors	Intermediate objectives (if applicable)
	Which structural factors are feasible for the SBC program to address?	*What is the feasible change that the SBC program can expect?*
	Lack of money for transport and inadequate finances	Decrease the proportion of respondents who cited cost as a reason for not seeking ANC at the health facility from 7% to 2% by 2026

Step 5	SBC approaches and activities		
	Which activities will be most appropriate for this behavior and this audience to address the ideational and structural (if applicable) factors?		
	Primary audience activities To increase correct knowledge about MIP: 1. Individual IPC activities such as role models, peer educators, testimonials, community health worker door-to-door visits, and service provider counseling patients 2. Community mobilization activities such as community dialogue, women's groups, and community drama 3. Media activities such as billboards, posters, and pamphlets	**Influencing audience activities** To improve attitudes toward facility-based health providers: 1. Training health providers in skills and techniques related to communication, health education, and community engagement	**Activities to address structural factors** 1. Organize ANC transportation 2. Leverage micro-credit groups.

Step 6	Channel mix plan (for communication-based approaches)
	What is the optimal blend of channels to maximize reach and effectiveness of a communication-based intervention?
	Radio spots aired during peak listening times for women and men (for both groups this is 4 pm to 8 pm). IPC at health facilities.

Step 7	Content framing	Content tone
	How will the content address the ideational factor(s) that were prioritized?	*What style or emotion will be used in presenting the content?*
	Increase awareness of Malawi's recommended number of IPTp doses, ANC visit frequency, and importance of attending ANC early in pregnancy.	• Informative • Educational • Reassuring

Next Steps and Additional Resources

he MBS provides rich data that informs the development of national and subnational strategies and interventions. It provides insights into the characteristics that influence behavior, both within an individual and in their environment. The outputs from the steps in this guidance can be built upon and used in the subsequent design, development, implementation, monitoring, and evaluation of the SBC activities selected and characterized throughout this process.

Developing SBC strategies and interventions requires additional steps, and strong SBC programs are grounded in best practices, such as selecting theory to underpin the intervention, developing a logic model, developing a monitoring and evaluation framework and plan for data collection, costing the intervention, pretesting all materials and content, and piloting activities. Additional guidance on SBC design and implementation can be found in the resources linked below.

- Compass for SBC
- SBC Learning Central
- Theory picker
- Center for the Theory of Change
- Malaria Social and Behavior Change Indicator Reference Guide: Third Edition
- Developing M&E Plans for Malaria Social and Behavior Change Programs: A Step-by-Step Guide
- Guidelines for Costing of Social and Behavior Change Health Interventions
- Reference Case for Estimating the Costs of Global Health Services and Interventions

Annex A. Definitions of Ideational Factors Measured by the MBS

Ideational factors		Definition
Attitudes		Attitudes refer to the judgments people make about a product, practice, or service; these may or may not be favorable. People who have a favorable view of a behavior, such as net use, or of a malaria commodity, such as rapid diagnostic tests, are more likely to adopt a given health behavior.
Knowledge		This construct measures knowledge of the health topic or behavior among target populations. Regarding malaria, this includes knowledge about the causes, symptoms, testing, treatment, and recommended means of prevention.
	Comprehensive knowledge	Determined by correctly identifying fever as the primary symptom of malaria, not mentioning any incorrect causes of malaria, and knowing at least one major prevention measure.
	Knowledge of care-seeking and treatment	Determined by correct knowledge of when to seek care promptly and appropriately from a health facility or community health worker, identify a blood test as the best way to test for malaria, and identify artemisinin-based combination therapy (ACT) as the effective treatment for malaria.
	Knowledge of MIP	Determined by correct knowledge of when a pregnant woman should first seek ANC, the number of recommended ANC visits, and the number of doses of the prophylactic malaria drug sulfadoxine/ pyrimethamine a pregnant woman should receive.
	Knowledge of ITNs	Determined by correct knowledge that either ITNs or untreated nets can be used to prevent malaria.
Perceived severity		Perceived severity refers to how serious people believe the threat of malaria or its consequences to be. This is one component of risk perception.
Perceived susceptibility		Perceived susceptibility is a person's belief that the disease or threat can actually happen to them. This is one component of risk perception.
Perceived response efficacy		Response efficacy is a perception that a proposed action or solution will work to control a threat. In the case of malaria, a person's belief that ITNs serve as good protection against malaria is an example of response efficacy.

Ideational factors	Definition
Descriptive norms	Descriptive norms refer to the perceptions of how prevalent or common a behavior is within one's immediate environment or community. The belief that most other persons in a community use ITNs, seek care promptly in case of fever, attend ANC, or use IPTp are examples of descriptive norms.
Injunctive norms	The perception that one is expected to follow a given norm and expects others to follow in a given situation, irrespective of how people usually respond. Injunctive norms help an individual determine what is acceptable or unacceptable social behavior. ("People think I should do.")
Interpersonal communication about malaria with others	IPC is the process of exchanging information, ideas, or feelings with other people. In the case of the MBS, it refers to talking about malaria with a spouse, friends, or relatives.
Decision-making autonomy	Decision-making participation is a person's perception that they participate in decisions related to specific health issues in their household such as seeking care for a sick child, going for prenatal care, and allocating mosquito nets among household members.
Perceived self-efficacy	Measure of self-confidence in the ability to take specific measures to protect one's health, including action to control the threat. Self-efficacy can refer to a person's confidence in correctly and consistently using an ITN to prevent malaria.

Annex B. Framework for Selecting Social and Behavior Change Activities

Step 1	**Behavior** *Which specific behavior is the priority to address?*	**Behavior objective** *What is the expected change for the priority behavior?*
Step 2	**Primary audiences** *Who is the priority group to reach?*	**Influencing audiences** *Who influences the primary audience in practicing the desired behavior?*
Step 3	**Ideational factors** *Which ideational factors related to the selected behavior need improvement?*	**Intermediate objectives** *What is the expected change for the priority ideational factors?*
Step 4	**Structural factors** *Which structural factors are feasible for the SBC program to address?*	**Intermediate objectives (if applicable)** *What is the feasible change that the SBC program can expect?*

Step 5	**SBC approaches and activities**	
	Which activities will be most appropriate for this behavior and this audience to address the ideational and structural (if applicable) factors?	

	Primary audience activities To address ideational factors:	**Influencing audience activities** To address ideational factors:	**Activities to address structural factors (if applicable):**
Step 5			

Step 6	**Channel mix plan** (for communication-based approaches) *What is the optimal blend of channels to maximize reach and effectiveness of a communication-based intervention?*

Step 7	**Content framing** *How will the content address the ideational factor(s) that were prioritized?*	**Content tone** *What style or emotion will be used in presenting the content?*

Annex C: Example of a Completed Framework for Selecting SBC Activities

Step 1	**Behavior** *Which specific behavior is the priority to address?*	**Behavior objective** *What is the expected change for the priority behavior?*
	Early ANC attendance	Increase the proportion of pregnant women who attend ANC in the first trimester of their pregnancy from 42% in 2021 (MBS) to 60% by 2026
Step 2	**Primary audiences** *Who is the priority group to reach?*	**Influencing audiences** *Who influences the primary audience in practicing the desired behavior?*
	Women in urban areas in the Central survey zone who have lower levels of education	Facility-based health workers
Step 3	**Ideational factors** *Which ideational factors related to the selected behavior need improvement?*	**Intermediate objectives** *What is the expected change for the priority ideational factors?*
	Correct knowledge of MIP	Increase the proportion of women with correct knowledge of MIP from 30% in 2021 to 50% by 2026
Step 4	**Structural factors** *Which structural factors are feasible for the SBC program to address?*	**Intermediate objectives (if applicable)** *What is the feasible change that the SBC program can expect?*
	Lack of money for transport and inadequate finances	Decrease the proportion of respondents who cited cost as a reason for not seeking ANC at the health facility from 7% to 2% by 2026

Step 5	**SBC approaches and activities**		
	Which activities will be most appropriate for this behavior and this audience to address the ideational and structural (if applicable) factors?		
	Primary audience activities To increase correct knowledge about MIP: 1. Individual IPC activities such as role models, peer educators, testimonials, community health worker door-to-door visits, and service provider counseling patients 2. Community mobilization activities such as community dialogue, women's groups, and community drama 3. Media activities such as billboards, posters, and pamphlets	**Influencing audience activities** To improve attitudes toward facility-based health providers: 1. Training health providers in skills and techniques related to communication, health education, and community engagement	**Activities to address structural factors** 1. Organize ANC transportation 2. Leverage micro-credit groups.
Step 6	**Channel mix plan** (for communication-based approaches)		
	What is the optimal blend of channels to maximize reach and effectiveness of a communication-based intervention?		
	Radio spots aired during peak listening times for women and men (for both groups this is 4 pm to 8 pm). IPC at health facilities.		
Step 7	**Content framing**	**Content tone**	
	How will the content address the ideational factor(s) that were prioritized?	*What style or emotion will be used in presenting the content?*	
	Increase awareness of Malawi's recommended number of IPTp doses, ANC visit frequency, and importance of attending ANC early in pregnancy.	• Informative • Educational • Reassuring	

Annex D. MBS Behavioral Indicators Table

This table can be used during Step 1 of this guidance to list the levels of malaria-related behaviors reported by the MBS by survey zone and urban or rural residence.

Behavior domain	Behavioral indicator	MBS definition	All Zones (%)	Zone 1 (%)	Zone 2 (%)	Zone 3 (%)
ITN use and care	ITN use to access ratio	The proportion of the population using an ITN the night before the survey, among people who have access to one within their household				
	Population ITN access	This outcome is calculated by dividing the potential ITN users in a household by the number of de facto members for each household and determining the overall sample mean of that fraction.				
	Use of nets	The proportion of existing nets in the home that were used for sleeping under the night before the survey				
	Consistent net use	The proportion of respondents who report they sleep under a mosquito net every night of the week				
	Observed nets tied or folded up over sleeping space	The proportion of existing ITNs in the home that were found tied or folded up over the sleeping space at the time of the survey				
	Net overwashing	The proportion of nets that were washed more than twice in the past six months				
	Drying of nets in the sun	The proportion of nets dried in the sun after the last wash				
	Nets washed with harmful products	The proportion of nets that were washed with bleach or detergent during the last wash				
	Tying or folding up nets when not in use	The proportion of respondents who reported tying or folding up their nets when not in use				

Behavior domain	Behavioral indicator	MBS definition	All Zones (%)	Zone 1 (%)	Zone 2 (%)	Zone 3 (%)
Care-seeking for fever	Prompt care-seeking	Proportion of children under five years old with fever in the past two weeks for whom treatment was sought the same or next day following the onset of fever				
	Appropriate care-seeking	Proportion of children under five years old with fever in the past two weeks who were taken to a health facility or community health worker first				
	Prompt and appropriate care-seeking	The proportion of index children under five years old with fever in the past two weeks who were taken to a facility or community health worker the same day as fever onset or the next day				
	Receipt of diagnostic test	Proportion of children under five years old with fever in the past two weeks who had a malaria blood test				
	Confirmed diagnostic test	Proportion of children under five years with fever tested that have a positive malaria blood test result				
	Receipt of ACT	Proportion of children under five years old with confirmed malaria receiving an ACT				
	Prompt receipt of ACT	Proportion of children under five with fever with confirmed malaria in the past two weeks received an ACT promptly				

Behavior domain	Behavioral indicator	MBS definition	All Zones (%)	Zone 1 (%)	Zone 2 (%)	Zone 3 (%)
Malaria in pregnancy	Receipt of IPTp	Proportion of mothers who took one dose of IPTp				
	Receipt of IPTp3	The proportion of women who gave birth in the two years prior to the study who received their country's recommended number of IPTp doses.				
	Net use among pregnant women	Proportion of pregnant women who slept under an ITN the previous night				
	ANC attendance	Proportion of pregnant women with at least one child in the past two years who obtained ANC from a health facility				
	ANC4 attendance	The proportion of women who had at least one child in the past two years who reported attending at least four ANC visits during their last pregnancy.				
	Partner accompaniment to ANC	Proportion of pregnant women with at least one child in the last two years whose husband/partner accompanied them to an ANC visit				
	Early ANC attendance	The proportion of women who gave birth in the two years prior to the study who attended ANC in the first trimester of their pregnancy.				
	IPTp intent	Proportion of women who intend to take IPTp during their future pregnancy				

Annex E. Ideational Variables Measured by the MBS

Ideational variable	Definition	Behavioral outcomes					
		Crossing-cutting	Mosquito net use and care	Case management	Malaria in pregnancy	Indoor residual spraying	Seasonal malaria chemoprevention
Perceived severity of malaria	How serious people believe the threat of malaria or its consequences to be	Perception of the treatability of malaria and how likely a person may die from malaria			Perception that malaria during pregnancy has serious effects on the mother and baby		
Perceived susceptibility to malaria	A person's belief that the disease or threat can actually happen to them	Perception of the seasonality of malaria and the frequency of serious cases of malaria			Perception that pregnant women are more likely to die from malaria		
Knowledge	Knowledge of the health topic or behavior within target populations	Knowledge of the causes, symptoms, prevention, and treatment of malaria	Knowledge of malaria prevention using ITNs	Knowledge of malaria care-seeking, testing, and treatment	Knowledge of IPTp, the appropriate timing for a first ANC visit, how many times during pregnancy a woman should receive medicine to prevent malaria, and how many ANC check-ups a pregnant woman should receive	Knowledge of the IRS program in implementation areas compared to non-implementation areas	Knowledge of the SMC medication for children
Attitudes	Beliefs and values that individuals have about a behavior; these may or may not be favorable		Attitudes toward ITN use, net preferences, and net care	Attitudes toward malaria care-seeking, treatment, and malaria diagnostic tests	Attitudes toward the safety and number of doses of IPTp and care-seeking for a pregnant woman	Attitudes towards IRS and the benefits	Attitudes toward the distribution of SMC

Ideational variable	Definition	Behavioral outcomes					
		Crossing-cutting	Mosquito net use and care	Case management	Malaria in pregnancy	Indoor residual spraying	Seasonal malaria chemoprevention
Self-efficacy	Self-confidence in the ability to take specific measures to protect health (individual and household members) against malaria		Confidence in using mosquito nets consistently	Confidence to promptly take a feverish child to a health facility, request a blood test for malaria at the health facility, make sure their child takes the full dose of medicine, and pay for the medication the health provider recommends.	Confidence in the ability to go to ANC, take IPTp, or support and accompany partners going to ANC appointments	Confidence in the ability to prepare for IRS and sleep in the house after it is sprayed	Confidence to give a child all the SMC pills left by the distributor
Perceived response efficacy	Belief in the effectiveness of a recommended solution		Perception of the effectiveness of mosquito nets for prevention of malaria	Perception of the effectiveness of diagnostic tests for malaria and antimalarial drugs provided in health facilities	Perception of the effectiveness of IPTp in ensuring the health of mothers during pregnancy	Perception of the effectiveness of IRS	Perception of the effectiveness of SMC
Communication about malaria with others	In the case of the MBS, refers to talking about malaria with a spouse, friends, or relatives	Discussing malaria with a spouse or partner and friends or relatives			Reported discussing ANC attendance with their spouse/partner		

Ideational variable	Definition	Behavioral outcomes					
		Crossing-cutting	Mosquito net use and care	Case management	Malaria in pregnancy	Indoor residual spraying	Seasonal malaria chemoprevention
Descriptive norms	Perceptions of the prevalence of behavior in the immediate environment or community		Belief that most individuals in their community use nets every night	Belief that most people in their community promptly take febrile children to a health provider, that febrile children get tested for malaria, and that people in the community approve of prompt care-seeking for febrile children	Belief that most women in their community go to ANC at least four times when pregnancy, and that most women in their community take IPTp		Belief that generally people in the community take SMC
Injunctive norms	Perceptions that most other community members would approve of a behavior		Belief that people in their community approve or disapprove of sleeping under a mosquito net every night	Belief that people in their community approve or disapprove of taking their child to a health care provider on the same day or day after their child develops a fever	Belief that people in their community approve or disapprove of pregnant women going to ANC at least four times, taking IPTp, or attending ANC early		
Decision making participation	Reported involvement in decision making as an indicator of the gender norms at play			Participation in the decision to take their child with fever to the health facility (may include asking for permission from another family member)	Participation in decision making regarding ANC		Participation in household decision making to accept SMC

Ideational variable	Definition	Behavioral outcomes					
		Crossing-cutting	Mosquito net use and care	Case management	Malaria in pregnancy	Indoor residual spraying	Seasonal malaria chemoprevention
Intentions	Reported intentions toward practicing a specific behavior			Reported intention on prompt and appropriate care-seeking for a child with fever	Reported intention to attend ANC early, to attend four or more ANC visits, and to take IPTp in their next pregnancy		