

Malaria Matchbox Tool

An equity assessment tool
to improve the effectiveness
of malaria programs



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Why Malaria Matchbox?

Shedding light, matching needs to responses and igniting action

A matchbox ignites a process that starts by shedding light on the object that we want to see in detail. A toolbox gives us resources that can improve outcomes, by matching the needs with appropriated solution. The term Malaria Matchbox was, therefore, created to illustrate the idea of tool that can shed light on the different types of barriers that people face to access and utilize healthcare services, particularly those related to malaria prevention and care. Identifying those barriers - being them sociocultural, financial, physical or related to gender norms - is an essential step to match people's specific needs to responses that are person-centred, rights-based and gender responsive. Finally, we hope that by encouraging learning and collaboration among relevant country stakeholders, the Malaria Matchbox will also ignite a more effective integrated and multi-sector action towards the global agenda to end malaria by 2030.



FOREWORD



In May 2019, the World Health Assembly called for accelerated progress towards Universal Health Coverage, with a focus on poor, vulnerable and marginalized in society. It is an admirable ambition, but an impossible one unless we tackle the resurgent threat of malaria.

Malaria claims the lives of more than 400,000 people each year, largely in Africa. After an unprecedented period of success between 2000 and 2016, when more than 7 million lives were saved, progress against malaria has stalled. High-burden countries have seen an increase in the number of malaria cases. Children under the age of five, pregnant women, refugees and populations affected by conflicts and natural disasters are at higher risk.

Getting back on-track in the fight against malaria requires a greater emphasis on the specific country contexts where malaria programs are deployed and on the characteristics of different population groups in need of healthcare services, in order to leave no one behind. It means understanding how poverty, social norms, gender inequality, legal status and language barriers affect individuals and their ability to access and utilize prevention, diagnosis and treatment of malaria, as well as basic healthcare more broadly.

To address these challenges, the Malaria Matchbox has been designed to improve the capacity of malaria programs to make services available, accessible and acceptable for all individuals at risk of malaria. Its name gives a sense of how it works – casting light on populations most at risk of not being reached by

standard malaria interventions, and those without or with limited access to care. It helps match these needs with national malaria programs, engaging communities in policy-making and ignite more effective, integrated and multi-sector action with a person-centred approach. By ensuring that **no one is being left behind**, irrespective of who and where they are, and considering the root causes of health inequality across different contexts, populations and groups of individuals, the Malaria Matchbox is part of a growing arsenal at the disposal of countries to help them get back on track in the fight against malaria.

To date, the Malaria Matchbox tool has been piloted at state level in Meghalaya, India - and at national level in Niger and in Guinea Bissau. By supporting the roll-out of the Malaria Matchbox, authorities from these countries embarked on a ground-breaking way of thinking about how malaria programs could improve effectiveness to reach populations with physically and financially accessible healthcare services that are also culturally appropriate and person-centred.

Political commitment and high-level leadership are essential for ending malaria and reaching the broader SDGs to ensure a better future for our next generation. In April 2019, while celebrating World Malaria Day in Paris, we had the pleasure to express our appreciation to the First Lady of Niger, Her Excellency Madame Aissata Issoufou Mahamadou, for her engagement in the implementation of the Malaria Matchbox in Niger, and her leadership in promoting the principle of health services for all. We trust that more countries will be inspired by the examples of India, Niger and Guinea Bissau in piloting Malaria matchbox and join us in the global fight against malaria.

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LIST OF ACRONYMS

ACT	Artemisinin-based combination therapy	NGO	Non-government organization
AMREF	African Medical Research foundation	NMP	National malaria programme
AIDS	Acquired immunodeficiency syndrome	NMCP	National malaria control programme
AIM	Action and investment to defeat malaria 2016–2030	NVBDCP	National vector borne diseases control programme
ANC	Antenatal care	PMI	President's Malaria Initiative
CHW	Community health worker	RBM	Roll Back Malaria Partnership to End Malaria
CMATs	Community malaria action teams	RDT	Rapid diagnostic test
CSOs	Civil Society Organizations	SBCC	Social and behaviour change communication
DFID	Department for International Development	SDG	Sustainable Development Goal
DHIS2	District Health Information System 2	SES	Socio economic status
DHS	Demographic health survey	SISCOM	Community Health Information system (Système d'information sanitaire des communauté)
FBO	Faith based organization	SMC	Seasonal malaria chemoprevention
FDG	Focus group discussions	UHC	Universal health coverage
GF	Global Fund to Fight AIDS, Tuberculosis and Malaria	UNDP	United Nations Development Programme
GMP	Global Malaria Programme	UNFP	United Nations Population Fund
GMS	Greater Mekong sub region	UNICEF	United Nations Children's Fund
GTS	Global technical strategy for malaria 2016–2030	USAID	United States Agency for International Development
HBHI	High burden, high impact	WHO	World Health Organization
HCD	Human-centered design		
HMIS	Health management information systems		
HDI	Human development index		
KII	Key informant interviews		
IPTi	Intermittent preventive treatment in infants		
IPTp	Intermittent preventive treatment in pregnancy		
IRB	Institutional review board		
IRS	Indoor residual spraying		
ITN	Insecticide-treated mosquito net		
LLINs	Long-lasting insecticidal nets		
M&E	Monitoring and Evaluation		
MiP	Malaria in pregnancy		
MIS	Malaria indicator survey		
MPR	Malaria program review		
MTR	Mid-term review		

PART A: INTRODUCTION

1 Policy approach

Equity as a prerequisite to achieving Universal Health Coverage

The Malaria Matchbox is an assessment toolkit designed to ignite equity in malaria programs, by correlating data on populations' access and utilization of healthcare services with countries' malaria programming across the continuum from control to elimination. Through ensuring consideration of the root causes of health inequities across different contexts, populations and groups of individuals and contributing to developing malaria programming plans, the toolkit aims to contribute to the ambitious global health targets set under **SDG3**, which call on the international community to ensure healthy lives and promote wellbeing for all at all ages, and in all settings, including humanitarian and fragile (4). This will ensure that **no one is left behind**, irrespective of who and where they are.

Achieving the SDG sub-goals of reducing maternal, newborn and infant mortality (3.1 and 3.2), as well as ending HIV, TB, malaria and neglected tropical diseases (3.3) (5) requires a continued political commitment to address a vast range of underlying social determinants of poor health such as poverty, social and geographic exclusion, harmful gender and traditional norms and financial barriers. Populations living in fragile settings or affected by conflicts, such as refugees, internally displaced people including those displaced by urbanization, construction or human development, are at particular risk of deprivation of basic healthcare services, linked to discrimination, marginalization, lack of security and many other inequities. Other marginalized populations including seasonal workers, and those displaced by urbanization/construction/human development are, also at risk. A number of studies, have also found that marginalized populations can be particularly vulnerable to malaria as they face barriers to accessing health services, including those for malaria. Ethnic or political minority groups, for instance, tend to be impoverished and mobile (6, 7), and may not have services available where they live, may be denied services based on

factors such as citizenship, ethnicity, religion or political affiliation or may avoid accessing the health systems because of fear of unwanted attention from government authorities, thus limiting access to malaria prevention, diagnosis and treatment (8, 9). Gender inequality can also increase the risk of malaria and limit access to services, depending on the socio-economic context. Many women and girls live in greater poverty and the harmful effects of inequality act as barriers to accessing health services (10) in addition, to possible unequal gender norms that favor boys and men in the distribution of household resources over girls and women. Poverty, disability and geographic location further impact the availability, accessibility and utilization of health services. Generally, adolescents and young people are seen to be healthy and few services cater to their needs or able to reach them with relevant, responsive and respectful services. Growing evidence shows that adolescents often have difficulty in accessing basic health care prevention or treatment services due to financial barriers, fear of intimidation and need of parental consent (11). Out of school youth and adolescents may also have difficulty in accessing primary health care services, with potential implications for the management of malaria among these groups (12). These further disadvantage adolescent girls already more vulnerable to malaria (13). Men may also experience the consequences of harmful gender-related barriers, which often present in work-related exposure to the vector and avoidance of proper health seeking.

The fact that malaria continues to be a main cause of child mortality, although preventable and curable, reveals a broken link between primary health services and individuals. The World Malaria Report 2018 revealed insufficient levels of access to and uptake of lifesaving malaria tools and interventions; and that a considerable proportion of people at risk of malaria are not being protected, including pregnant women and children (14). Notably, 30% of febrile children do not access any treatment at any level, only 22% of pregnant women access the 4th dose of Intermittent preventive treatment

in pregnancy (IPTp) and nearly 30% of the population in Africa do not have access to any sort of vector control. Pregnant women and children continue to be at highest risk of malaria as they are the most immunologically weaker but also are at highest risk of being marginalized (14). To get back on track, the World Malaria Report 2018, calls for a comprehensive approach that includes universal access to effective vector control, early diagnosis and treatment including a renewed focus on reaching the most vulnerable and underserved populations (5).

An integrated, equitable and people-centred approach to end malaria

Health equity should be pursued not only as a moral imperative of social justice, but as a practical measure to support progress towards achieving the global health targets set under SDG3. Achieving equity in health programming, will require a comprehensive healthcare approach including assessing and breaking down populations' barriers to timely access to necessary healthcare services. In the context of malaria, this includes quality, timely, and affordable prevention, diagnosis, and treatment services for affected populations (14).

The fight against malaria is one of the biggest public health successes of the 21st century. Global malaria death rates have decreased by 60 percent since 2000 – translating to millions of lives saved. However, after an unprecedented period of success, progress in malaria control has stalled. The World Malaria Report 2018 estimates that there were 219 million cases of malaria in 2017. The 10 highest burden African countries saw an estimated 3.5 million more malaria cases in 2017 compared with the previous year. According to the report, every two minutes, a child dies of malaria (14).

The agenda set by the international health community to get back on track to malaria elimination is ambitious. The World Health Organization (WHO) Global Technical Strategy for Malaria (2016-2030) and the **Action and Investment to Defeat Malaria (AIM) 2016-2030** call for an incidence and mortality reduction of at least 90% globally; and malaria elimination in at least 35 countries by 2030 (15). Recently, WHO and the RBM Partnership to End Malaria (RBM) launched a massive wakeup call with a response termed the **High Burden to High Impact approach (16)** in an attempt to support targeted responses and increase political and community commitment to re-ignite the pace of progress in the global malaria fight.

In line with the equity and universal health coverage agenda, meeting the global health agenda to end malaria will require more information on the context and determinants underpinning the implementation of malaria programmes. Malaria is closely linked to low socio-economic development and inequity. Low

socioeconomic status (SES) doubles the likelihood of clinical malaria or parasitaemia in children compared with children of higher status within the same locality. The probability of dying from malaria in Sub-Saharan countries is inversely related to the Human Development Index (HDI) for income and education (17).

Social inequalities in malaria endemic settings may result in lack of access to treatment due to cost, lack of information about malaria, lack of access to preventive measures, such as insecticide-treated nets (ITNs), delayed treatment seeking behaviour or lack of access to treatment for malarial symptoms and, poor housing, among other factors. The likelihood of being infected with malaria is higher in poor and marginalized communities (18). Yet, malaria itself is a burden to communities and increases poverty and inequality due to lost productivity or income associated with illness or death.

Success of vector control and case management interventions should be evaluated by their impact, which will be determined by effective population coverage for affected populations and, successful individual access and uptake in targeted populations, particularly disadvantaged or hard to reach populations. To achieve this impact, successful malaria strategies should include interventions that are:

- ▶ **Integrated:** addressing malaria not only as a health issue, but in a multi-sectoral context, as a developmental, economic, political, environmental, agricultural, educational, biological, legal, security and social issue.
- ▶ **Equitable:** ensuring that social behaviour change communication, vector control, diagnosis and treatment services reach all populations at risk of malaria, including building in consideration for differentiated barriers that certain populations face in accessing services.
- ▶ **People-centred:** ensuring that the experiences and particular needs of target populations actively inform the design of malaria interventions, including decisions about community versus facility-based deployment and the dynamic of interactions between service provider and client.

Aligned with the principles above, the present toolkit was designed to guide improvement of the quality, effectiveness and outreach of malaria responses by bringing into perspective how biological, social, economic, cultural and gender-related inequities can shape malaria prevalence and/or outbreaks in a country or region. By correlating malaria epidemiological data with a robust analysis on key social determinants of health, the tool contributes to increase the reach and uptake of prevention and care services, particularly by underserved populations.

2 Conceptual framework

Socio-economic determinants of health inequity in malaria endemic areas: Who are the most impacted?

The incidence rate of malaria declined globally between 2010 and 2017, from 72 to 59 cases per 1000 population at risk. Although this represents an 18% reduction over the period, the number of cases per 1000 population at risk has remained static at 59 for the past 3 years (19). Malaria risk is mediated by a number of factors both biological and socio-economic resulting in some population groups being at considerably higher risk of contracting malaria, and developing severe disease than others (Figure 1). The most biologically vulnerable due to limited or reduced immunity to the malaria parasite include pregnant women, infants, children under 5 years

of age and patients with HIV/AIDS, as well as non-immune migrants, mobile populations and travellers from non-endemic areas (20). The majority of malaria control programme efforts to date have for the most part focused on the biological factors, and taken into consideration pregnant women and children under five years of age in national malaria strategies. There is also recognition that socioeconomic, cultural, geographical, gender and other factors contribute to the level of risk for malaria infection or severe disease progression, as a function of access to and use of health services. Along with several of the aforementioned populations with limited or reduced immunity, these vulnerabilities are largely still under-researched and often not considered in the development of country policies and strategies to control and eliminate malaria.

FIGURE 1.
MALARIA RISK FACTORS AND POPULATIONS IMPACTED

RISK FACTORS	
Biological factors <ul style="list-style-type: none"> ▶ Low immunity to the parasite 	Socio economic and cultural factors <ul style="list-style-type: none"> ▶ Poverty ▶ Social exclusion ▶ Gender inequalities ▶ Financial barriers ▶ Cultural norms ▶ Complex emergencies (eg. war/civil strife, floods, famine)
POPULATIONS MOST IMPACTED	
High risk populations* <ul style="list-style-type: none"> ▶ Pregnant women ▶ Infants ▶ Children under 5 years of age ▶ People living with HIV/AIDS ▶ Non-immune groups ▶ Mobile populations ▶ Travelers 	Underserved populations <ul style="list-style-type: none"> ▶ Populations impacted by conflict including refugees and internally displaced persons ▶ Populations living in remote areas facing geographical barriers to services ▶ Women and children from poor settings ▶ Undocumented workers ▶ Indigenous populations ▶ Ethnic minorities
OUTCOMES	
Higher risk of contracting malaria and of developing severe disease	Low access and usage of malaria prevention services <ul style="list-style-type: none"> ▶ Reduced access to ITNs ▶ Low usage of ITNs ▶ Low coverage of ANC ▶ Low uptake of IPTp Low access and usage of primary healthcare and malaria treatment services <ul style="list-style-type: none"> ▶ Poor/delayed diagnosis ▶ Delayed/lack of access to antimalarial treatment
IMPACT	
Poor health profile <ul style="list-style-type: none"> ▶ Increase in malaria incidence and mortality rates 	

* These can also be undeserved populations

This toolkit focuses on the socioeconomic and other determinants including the physical environment and individual behaviour that may impede availability and full access to malaria services by all who need it and not on the biological risk factors well known to malaria programmes. Particular importance is placed on the need to identify and include behaviour and socioeconomic factors – which may or may not compound biological factors - in the overall equation - to illustrate how malaria interrelates with poverty and social exclusion.

Understanding these health determinants, against the backdrop of the epidemiological and entomological context of malaria endemic regions, is vital to providing insights which may inform the design and implementation of malaria interventions, and lead to more equitable health outcomes. Socioeconomic and cultural factors can cause both increased risk, e.g. behaviour leading to higher exposure to the vector, as well as physical, social, or economic barriers to accessing quality healthcare. For instance, forest workers may spend several hours working outdoors during times and in spaces where the risk of infection is higher than the risk among their peers working in different occupations. Specific populations may also have increased exposure due to outdoor sleeping habits or specific agriculture activities, such as rice cultivation. At the same time, these populations may also be underserved, facing geographical, structural, social and/or economic barriers to access needed health services.

Assessing risk for malaria infection and disease progression involves simultaneous consideration of epidemiological, entomological, and social factors. The immunological profile of populations must be examined alongside the environments in which they operate and their ability to access prevention, diagnosis, and treatment services. Populations may be at higher risk of infection, higher risk of developing severe disease if infected, and/or higher risk of mortality with severe disease. The mitigation efforts will likewise be different depending on the specific risk profile. Only by having a comprehensive and specific risk assessment profile is it possible to develop effective and efficient mitigation efforts. This tool defines underserved populations as populations facing healthcare service deprivation due to barriers such as poverty, social exclusion, gender norms, cultural and traditional norms, financial barriers, and distance to health facilities.

3 Overview of the Malaria Matchbox toolkit

Objectives

This toolkit aims to provide countries with guidance on how to identify risk factors and barriers impeding equitable and integrated people-centred malaria programs, and recommendations on how to address them. The toolkit has the following 3 objectives:

1. **Support national programmes to identify areas and/or populations with barriers to malaria and primary health care services through a qualitative analytical framework to complement existing quantitative analyses (such as Malaria Programme Reviews, HBHI assessments etc.);**
2. **Assess equity through the prompt evaluation of programmatic approaches to service delivery to enhance inclusivity;**
3. **Promote provision of equitable, integrated and people-centred services.**

The Malaria Matchbox Toolkit provides a comprehensive guide on how to conduct analyses to identify populations that are at higher risk of malaria due to socioeconomic and/or cultural factors. While the toolkit primarily focuses on malaria, country programs may find the outcomes useful for addressing a wider range of primary health care services. In pursuit of the provision of equitable malaria prevention, diagnosis, and treatment services it is hoped that the resultant analyses from use of the toolkit will support the more targeted development and update of malaria policies, plans, and modes of implementation.

The toolkit also provides useful tools and methods to conduct qualitative analyses and includes resources for data collection, analysis, learning and programming. The use of the tool should not be prescriptive, but rather adapted to the required scope and country context.

Use of this tool

The Malaria Matchbox Toolkit is designed to support the identification of gaps and generate useful information to guide malaria program planning. It should be implemented alongside national malaria programme reviews (comprehensive malaria programme review (MPR), mid-term review (MTR) or annual review) to identify equity gaps that will guide the revision or development of national malaria strategic plans. The Malaria Matchbox would complement the standard methodology of the MPR (see [WHO: Practical manual for malaria MPR and MTR](#)), with an additional analysis of potential geographic areas and/or populations that may not have been identified through the standard review of the core interventions.

Global Fund Equality Strategy

The Global Fund is committed to ensuring that its grants support the equal and equitable access to prevention, treatment care and support for all those who need it.

High Burden High Impact approach

This is a country led response to reignite the pace of progress in the global malaria fight. It is characterized by packages of malaria interventions, optimally delivered through appropriate channels including a strong foundation of primary health care.

Additional key opportunities which may require the information resulting from application of the malaria matchbox toolkit include: funding requests such as the [Global Fund applications](#); the [HBHI approach](#) within a country; designing the implementation of malaria programs/projects (such as PMI funded projects); when a program has identified a challenge related to potential social and behavioural determinants of access and use of malaria interventions and; when there is a need to provide evidence and guidance in the development of SBCC initiatives such as [zero malaria starts with me campaigns](#).

The tool can be used in all malaria contexts:

- ▶ In **high malaria transmission settings**, the Malaria Matchbox can help countries to refine their programmatic approach by improving policies, program/project plans, messaging and implementation. Furthermore, by making prevention and health care services more responsive to variations in the socio-cultural context, the Matchbox may also promote a more patient-centred approach within primary health care.
- ▶ In malaria **elimination** settings, the tool can ensure that populations, living in specific transmission pockets or remote areas, are able to access appropriate and timely malaria prevention, diagnosis, and treatment services, thus supporting the prevention of malaria resurgence and/or resistance.
- ▶ In **all settings**, the Matchbox can also facilitate engagement and advocacy for the benefit of affected communities, ensuring that malaria remains a priority and that the required community priorities are addressed by the government, donors and implementing partners throughout changes in the mixture of interventions needed to reach elimination.

Intended audience

This Malaria Matchbox Toolkit should be used by the national malaria programmes, together with in-country implementing partners and stakeholders, including civil society and community-based organizations. Selected representatives from key non-health sectors such as gender, agriculture, housing, finance and education should also be included. The tool can also be used at sub-national level if health programmes are decentralized/or on recommendation from the national level. To ensure that the identified barriers are documented and addressed through the appropriate strategies, whichever entity leads this analysis, it is important that all relevant actors are engaged in the process, including women, young people and marginalized groups from the community or with a community perspective.

Overall principles

An overarching goal of the Malaria Matchbox Toolkit is to elucidate and highlight barriers to access to needed malaria services and bring national malaria stakeholders together, including affected communities to jointly develop mitigation measures and ensure there is a gender responsive and people-centred approach in the fight against malaria.

Countries using the Malaria Matchbox Toolkit should adhere to the following four principles:

- ▶ **Multi-stakeholder and participatory engagement:** National and local malaria programmes should engage and coordinate closely with other public health programmes, relevant non-health sectors, public and private health care providers, non-governmental and civil society organizations, communities and other support associations from programme planning to service delivery to ensure the provision of inclusive, people-centred care and prevention interventions.
- ▶ **A gender responsive approach:** All stakeholders engaged in the use of this tool should consider the vulnerabilities related to gender norms that result in men and women as well as boys and girls being disproportionately exposed to, and vulnerable based on the division of labour, decision making power, access to education, and broader contextual factors like gender-related access to economic resources and land use.

- ▶ **A rights-based approach:** A rights-based approach to health specifically aims at realizing the right to health and other health related human rights. Human rights standards and principles should guide all aspects of planning, including health policy making and programming. A rights-based approach also calls for empowering the people, especially the most marginalized, to participate in policy formulation and, also in holding those who have a duty to act, accountable. A human rights-based approach also identifies rights holders (the population at risk for malaria) and their entitlements and corresponding duty-bearers and their obligations, and works towards strengthening the capacities of rights-holders to make their claims and of duty-bearers to meet their obligations (21).
- ▶ **Evidence-driven decision making:** National and local malaria programmes should use the available disaggregated data (such as on sex, wealth geography, ethnicity and education levels in population-based surveys and age in routine health facility data), but also recognize the potential gaps in the data that may require additional data collection to inform, tailor or refine programmes that focus on high risk, and underserved populations. Evidence of barriers and potential interventions from other health and non-health sectors could also inform decision making.
- ▶ **Learning and improving/taking action:** Knowledge generated through this assessment should be disseminated nationally (including at the sub-national and community level) and influence policies and programme focus to address inequity. Findings and recommendations should result in action and improvement towards achieving equitable and people-centred malaria prevention and treatment services where recommended.

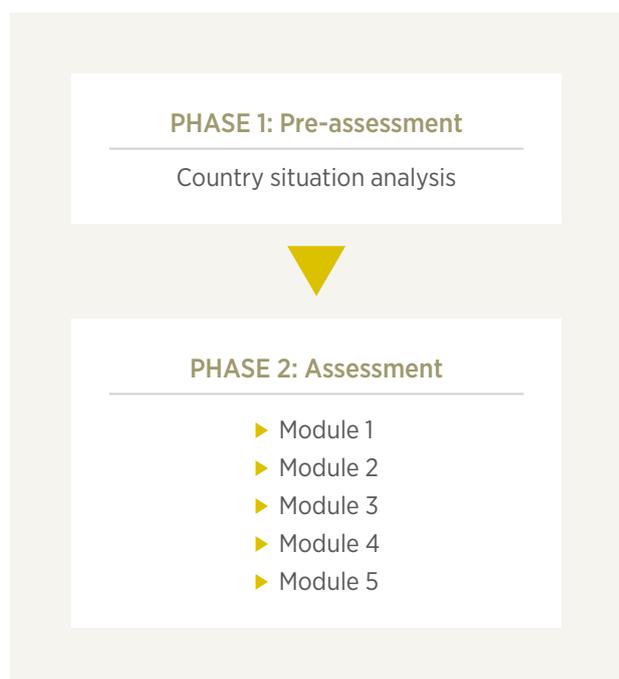
Toolkit structure

The Malaria Matchbox Toolkit is structured into four parts: Part A which, provides the *background information* including concepts of gender and equity in relation to malaria and an overview of the toolkit; Part B which provides guidelines to users on how to roll out the toolkit, extensively describing the two process phases of *pre-assessment* and *assessment*; Part C which contains Annexes, including examples of instruments and tools which countries can tailor to their needs; and Part D with the references.

Implementation process

There are two phases in implementation of the Malaria Matchbox toolkit as shown in figure 2 below.

FIGURE 2.
MALARIA MATCHBOX PROCESS



The **pre-assessment (preparation phase)** provides key recommended inception steps such as first understanding the country context, engaging stakeholders, placing the tool in the national malaria strategic planning process, forming the assessment team, and ensuring country protocol and ethical requirements are considered. It also provides relevant information, resources and tools that will support planning and budgeting.

If the Malaria Matchbox is not conducted alongside a standard MPR/MTR (MPR) or a similar review process, which includes an analysis of available epidemiologic and programmatic data, a desk review of available data sources should be conducted prior to the implementation of the Malaria Matchbox to inform the appropriate targeting of the tool.

The **assessment phase** is divided into **5 modules**, each one following the structure below:

a. Problem analysis

b. Specific objectives

c. Methodology

d. Key processes

The modules are briefly explained below.

MODULE 1:

Identifying who and where are the populations most impacted by malaria

The objective of this module is to identify and spatially locate the populations most impacted by malaria, defined as both **high-risk and underserved populations**, as per this toolkit's conceptual framework. The module guides users through the analysis of global malaria indicators collected from population-based surveys, as well as countries' health management and surveillance systems, and published reports including country situation analyses in countries implementing the High Burden to High Impact (HBHI) approach (16) or other analyses conducted by partners. It is recommended to undertake a stratified sub-national analysis of malaria epi-data (e.g. *Pf* and *Pv* prevalence), alongside health coverage, access indicators and malaria strategies being implemented comparative to the Global Technical Strategy for malaria (15), as well as information on the potential occurrence of high-risk and underserved populations within each sub-national unit. Use of tools such as the Health Equity Assessment toolkit [HEAT](#) or the Equitable Impact Sensitive Tool [EQUIST](#), will support visualizing the underserved population and the equity dimensions that contribute to such vulnerabilities.

Stakeholder consultations are especially important where data about high-risk and under-served populations are scarce. Module 1 should build on any up-to-date, ongoing or planned quantitative analysis conducted by National Malaria Programmes, such as the MPRs, MTRs, annual reviews, and HBHI country situation analyses.

MODULE 2:**Critically examining risk factors and barriers affecting health equity in the context of malaria**

This module guides users to explore the main **risk factors and barriers to accessing services as well as the bottlenecks to providing equitable services**, impacting each of the populations identified in module 1, including:

- ▶ **Behaviour and sociocultural factors**
- ▶ **Information accessibility and health literacy**
- ▶ **Financial accessibility**
- ▶ **Geographical accessibility**
- ▶ **Provision of quality, responsive and non-discriminatory services.**

The module is mainly to be completed using existing comprehensive and relevant up to date in-country data where available, and/or by conducting in-country qualitative research involving **data collection** among specific groups of populations identified in Module 1.

MODULE 3:**Identifying intra-household inequity**

Gender is a cross-cutting issue and is covered throughout the toolkit where it is addressed in the context of economic, social and cultural attributes and barriers. Notably, intra-household gender relations are complex and are linked to power. There is a wealth of evidence that women across the world have less access to resources and have fewer rights than men do. Many cultures have a very high respect for women, a respect that is often limited to women's traditional role and abolished if women enter traditional "male domains" in society, like politics and decision-making (22). Consequently, gender power relations are differently manifested in different contexts and different parts of the world (22). Thus, in a gender perspective, women and men have different rights, opportunities and possibilities as well as different access to resources and power. The toolkit therefore goes further in module 3, to focus on this specific gender aspect at a household level. It will guide users to conduct a deeper analysis on how gender norms affect decision power, division of labour and quality of care in the context of malaria prevention and treatment services in the community. Module 3 provides analytical questions to be used as references for primary data collection amongst community members in the target areas. The questions will help users to understand the differential gaps in programme delivery that prevent access to services; and to use the information collected - to strengthen gender-responsive programming.

MODULE 4:**Data analysis and validation**

This module is about tabulating the main findings and working with key national malaria stakeholders to design an implementable response.

MODULE 5:**The action and planning phase**

This module provides guidance on how to use the equity and gender assessment findings to shape and influence the malaria response in the country. When conducted alongside an MPR, MTR or HBHI assessment recommended actions will be integrated into the evidence base for review of malaria strategic plans.

When as recommended, the Malaria Matchbox assessment is conducted as part of a malaria program planning process such as an MPR, MTR or HBHI assessment the above processes should be aligned with the assessment/analysis as in the example below (Figure 3).

FIGURE 3.
MATCHBOX TOOLKIT AS PART OF AN MPR/MTR

MATCHBOX TOOLKIT	MPR/MTR PHASES
Preparation phase	Planning
Assessment phase Module 1	Thematic Desk Reviews
Assessment phase Modules 2, 3 and 4	Validation
Action & planning phase Module 5	Programme Strengthening

The final sections of this Malaria Matchbox Toolkit, *Parts C and D* provide further information, *references, resources, and templates* for data collection, including samples of Focus Group Discussions (FGDs) and other useful features that can help countries and malaria stakeholders to improve the outreach and quality of their responses.

PART B: USING THE MALARIA MATCHBOX TOOLKIT

1 Pre-assessment Phase

The aim of the preparation phase is to ensure adequate planning; consult and obtain consensus from all key partners and stakeholders; develop a concept note and, where applicable, identify funding sources for implementing the assessment.

Understanding the country context and response

The Malaria Matchbox should not be used as a stand-alone process, but rather integrated into a malaria comprehensive programme review, mid-term review, a high burden high impact (HBHI) country led situational analysis, or in preparation for a funding proposal such as a Global Fund grant or a PMI funded project. The toolkit should be adapted and harmonized to existing or planned country activities, taking into consideration the country's needs and gaps to prevent duplication of efforts. It should be used as a tool to better address equity within the agreed national policy framework. When conducted alongside a comprehensive program review or country HBHI analysis, the HBHI implementation team or the MPR/MTR secretariat and task team should ensure that appropriate plans are in place for inclusive implementation of the Malaria Matchbox toolkit.

Securing multi-stakeholder national commitment

Multi-stakeholder national commitment to addressing equity is necessary for the processes outlined in the Malaria Matchbox to be effective. This phase should be under the leadership of the national malaria programme and ensure inclusion of relevant stakeholders including gender, education, agriculture, finance and others as guided by the required country specific malaria response. Broad stakeholder participation strengthens accountability, builds trust and agreement in the assessment process, triangulates information from

multiple sources, is evidence based, incorporates local knowledge and experiences, generates credibility, and enhances the use of the assessment findings and recommendations leading to sustainability. To secure this commitment at all levels, users of the Malaria Matchbox methodology should: map key stakeholders and identify appropriate advocacy strategies.

- ▶ Map out the key stakeholders comprising government decision-makers, financiers, subnational leaders, implementing partners, service providers at various levels, malaria champions, civil society organizations and NGOs, cutting across the multiple sectors including malaria/health, gender, education, agriculture, housing and, finance.
- ▶ Identify challenges and opportunities for building high-level support and prepare strategies to secure this support.
- ▶ Prepare a brief one-page concept note (Sample Concept note outline: *Annex 1*). The concept note will include highlights on why it is important to undertake an equity assessment in the context of malaria control and how the assessment will enhance the effectiveness of the national malaria response. This concept note should be developed by the national malaria programme in consultation with partners and used for advocacy and resource mobilization.
- ▶ Organise a briefing meeting with the senior management team of the Ministry of Health to share the concept note and a brief on the toolkit objectives and expected use of outcomes, to secure endorsement.
- ▶ Convene a meeting with stakeholders to share the concept note with all the key partners.

Forming the assessment team

It is recommended that a team under the leadership of the national malaria programme is constituted to conduct the activities in the 5 modules in the Malaria Matchbox. Members with complementary skills, perspectives, technical influence and technical expertise should be identified and included. It is essential to involve locally based personnel and representatives from the national malaria programme, Ministry of Health and other key Ministries including Gender, Education, Agriculture, etc. Requests for external technical support can be sent to WHO, the RBM Partnership and/or other key bi-lateral partners. Selection of the team should be diverse and based on, but not limited to, the following attributes and capacities:

- ▶ Strong evaluation knowledge and experience in data analysis (quantitative and qualitative data);
- ▶ Research experience on social determinants of health, equity and gender;
- ▶ Knowledge and experience in malaria epidemiology and entomology in the national and subnational context;
- ▶ Knowledge of regional/country/sub-national/local context & language, cultural competence and interpersonal skills;
- ▶ Practical experience implementing malaria interventions in facility and community settings in each of the major technical areas (vector control, case management, and SBCC).
- ▶ Expertise in equity, gender, human rights-based approach, human-centered designing, and/or socioeconomic determinants of health.

The assessment team should be provided with well-defined terms of reference, which should reflect the composition of the team, the main activities, expected deliverables and the time lines for these processes. A recommended number is 5-7 core team members who can dedicate time for the work to ensure timely action and decision making.

Planning and budgeting

The funding needed to complete the Malaria Matchbox modules will depend on the scope of additional data to be unearthed through secondary sources as well as the research to be undertaken, in addition hitherto unavailable primary data needs to be collected. Users should list and agree on the human resources that will be needed to conduct the pre-assessment, which will determine the resources needed to collect primary data.

Costs will generally include:

- ▶ Professional fees (consultants);
- ▶ Institutional Review Board (IRB) fees (Human Protection research review boards, may charge a fee for review of the proposal submitted);
- ▶ Travel (national and international) costs for researchers;
- ▶ Communication (including dissemination of findings);
- ▶ Tool development and testing (including interview forms and translation costs);
- ▶ Data collection costs (training interviewers, allowances for participants when needed, recording devices, data entry, data analysis and software, etc.);
- ▶ Meetings and workshops (including lodging, per diems, travel and logistic costs, as needed);
- ▶ Administrative expenditures;
- ▶ Other costs, as relevant to the national context.

Once the concept note and budget have been determined, the national programme/MOH could seek funding for application of the Malaria Matchbox Toolkit from donors and partners to supplement resources within the MOH. When conducted as part of the MPR for example, implementation of the toolkit should be included in the malaria program budget or more specifically as a component within the malaria programme review budgets.

Development of the research proposal

The concept note should be further developed into a full research proposal to guide data collection, storage, and use. Simple and easy-to-conduct research methodologies that are likely to provide quicker and cost-effective results should be considered in the design of data/information gathering. The protocol should include details of the assessment including the justification, objectives, detailed implementation steps, implementation needs, consent forms for inclusion of participants, and data collection tools, such as scripts and guidelines for interviewing community members, observation checklists, and consent forms. Where required existing country protocol templates should be used. The proposal will need to be submitted for ethical/IRB approval as detailed below and once all required approvals are obtained, the tools need to be pre-tested to ensure they are adapted appropriately to the country context. Samples of a consent form and a Focus Group Discussion interview guide are provided in *Annex 2 and 3* respectively.

Ethical considerations

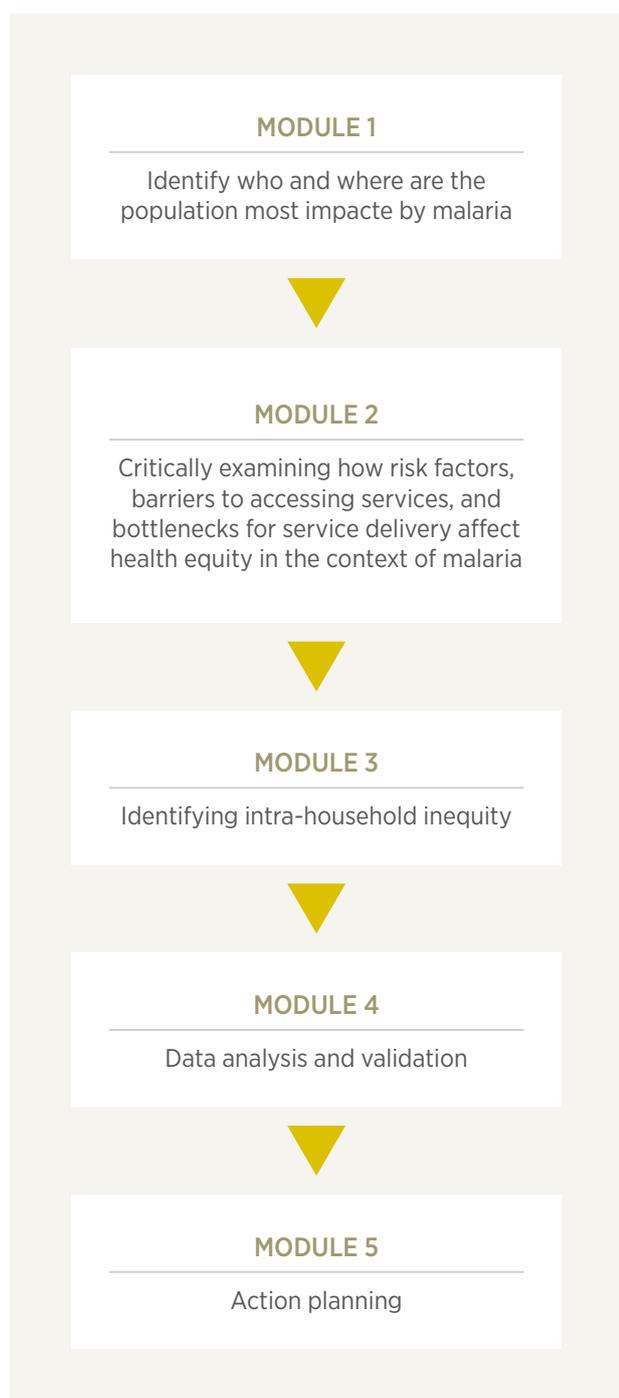
The assessment must adhere to both international and national ethical codes of conduct.

- ▶ **Ethical approval by the relevant national body:** If the assessment does not include any interaction or intervention with human subjects or include any access to identifiable private information, then IRB review and approval will not be required. Equity assessments are normally exempt from ethics committee reviews because they are intended to contribute directly to programmatic improvements. However, it is best to request advice early in the process from the local ethics committee to determine whether the assessment will require a review and approval from the ethics committee. If primary data collection will be required, ethical clearance prior to the roll-out of the Matchbox in-depth country assessment should be sought. Timely submission of the protocol including the budget and the data collection tools to the relevant national ethical bodies should be done as per country requirements.
 - ▶ **Informed consent:** Prior to inclusion in the operational research, community participants should be assessed for eligibility and fully informed regarding the assessment and the implications of providing consent, by trained team members. Eligible and consenting participants should provide individual written or verbal consent as per ethical approval (sample consent form: *Annex 2*). Where the participant(s) cannot read English, but are/is fluently literate in another language, then a translated version of the Informed Consent Form and all accompanying information should be provided. For communities where the individual(s) cannot read or understand written or spoken English, and cannot read an alternate language, but understand it orally, then the translated version of the Informed Consent Form should be read to that individual and the use of the alternative language orally should be documented. In this instance, a witness should sign the form along with the subject and the person acquiring informed consent. Where the assessment identifies legal minors as required participants, in addition to obtaining informed consent from their guardians, assent will be obtained from the legal minors.
 - ▶ **Voluntary participation:** Participation must always be voluntary and there should be no negative consequences for refusing to participate. An individual's right to refuse consent or to stop the interview or leave a focus group at any time without negative consequences after consent has been given should be emphasized. Participants will not be required to provide explanation for such decisions.
 - ▶ **Confidentiality:** The research team will always maintain each participant's confidentiality. Interviewers will only use unique study identification numbers and no other identifying information to label any records such as notes and audiotapes. All documents and other records will be stored securely either password-protected files for electronic data or locked cabinets for paper data when not in use by researchers.
 - ▶ **Involving participant representatives** in the planning, implementation and dissemination of the operational research. This principle will be recognized and implemented in countries where this is an IRB requirement.
-

2 Assessment Phase

The assessment phase will follow the steps in the chart below.

FIGURE 4.
ASSESSMENT PHASE FLOWCHART



MODULE 1:

Desk review

As much as possible, the toolkit should be timed alongside a standard malaria review process to ensure that the Malaria Matchbox analysis is aligned with an expert epidemiologic and entomologic analysis and to facilitate targeting of the toolkit itself. A preliminary desk review will enable national stakeholders to set the country context and gain an initial understanding about the main determinants affecting the health profile of the general population. In many malaria endemic countries, data is collected through various channels: routine data collection at health facilities; data from tools such as mobile apps, platforms, and health strategies to track the disease; survey data gathered at the baseline and end of specific projects and, through nationwide population/community-based surveys. The completeness, quality and reliability of these data should be considered to determine how it can be used to inform the desk review. Selection of data sources should be a consultative process under the guidance of the national malaria programme and key stakeholders to avoid the risk of duplication and ensure the use of validated, updated, relevant country data. Existing tools such as HEAT and EQUIST (www.equist.info) will help determine equity dimensions for various health services including malaria and other services that are delivered at community level, health centres/hospitals and through outreach activities. The health systems related barriers and bottlenecks are often the same across multiple disease prevention and treatment strategies for the same service delivery platform. As part of an MPR/ MTR the desk review can be organized alongside the thematic review of the malaria strategic plan as an additional (fifth) component.

This review can also build on any ongoing or planned country led malaria quantitative analyses. For example, in the countries implementing the High Burden to High Impact approach (16) where comprehensive country situation analyses have or will be conducted with support from WHO and the RBM Partnership, the desk review may be integrated into the HBHI country situation analysis or adapted to complement (not duplicate) the analyses.

Specific objectives

This module requires the analysis of country data including analysis of existing national reviews and reports, as well as published and grey literature, with a view to:

- a) Understand the overall country malaria burden;
- b) Understand the country policy and programme context in terms of equity in health and malaria
- c) Identify inequities (e.g. socioeconomic, gender, geography, ethnicity, age-related), etc.) in malaria service coverage and malaria health outcomes;

Data sources to include can be (but are not limited to):

- ▶ Country malaria, primary health care, universal health care, gender policies and frameworks, strategic plans, work plans and, M& E plans;
- ▶ Country reports compiled with routine surveillance data;
- ▶ Reports compiled from health services of each level of the health system (community, district, county/region/national)
- ▶ Official reports from DHS/MIS/MICS and other household surveys;
- ▶ Risk mapping;
- ▶ IRS/ITN/SMC distribution reports;
- ▶ Service provision assessment reports (SPA) and, service availability and readiness assessment reports (SARA);
- ▶ Assessments of health expenditures and household expenditure on health
- ▶ Other relevant program reports shared by technical partners and country stakeholders (especially from the NMCP);
- ▶ Published or unpublished “grey literature”;
- ▶ Academic literature collected from online bibliographic databases, like PubMed, CINAHL, the Cochrane Library, the Campbell Collaboration Online Library, MEDLINE (OVID interface), Google Scholar, Web of Science etc.
- ▶ Equity monitoring toolkit (HEAT) and other data sources for assessing status of inequality measurement (SCORE).

d) Based on the literature review, conduct cross-analysis of malaria epidemiological data with socioeconomic, gender and age-related data and identify potential geographic areas or populations with suboptimal access and use of malaria and primary health care services;

e) Scope the in-country research protocol – or primary data collection – to identify the information gaps.

The desk review will require looking at the different data sources to gather disaggregated data (to the extent possible) about the population groups of interests. It will include, but should not be limited to, the following main areas: a) Demographic data, b) Socio-economic data and c) Data on health services including financial data. The data of interest will need to be plotted/organized in such a way to enable cross tabulation and interpretation during the subsequent steps of the exercise. While standard malaria programme reviews routinely include demographic, socioeconomic, meteorological and other data, there will likely be a need to explore additional data sources focused on social, cultural, economic, gender, and educational dimensions that may impact access and use of services. In addition, assess to what extent malaria prevention and treatment intervention strategies are adapted to address social, cultural perceptions and behaviour practices.

At the onset of the desk review, inclusion and exclusion criteria should be established by the reviewer(s) to guide the literature search, minimize the potential complexity of the review, and ensure that important source material is not missed. List all documents in a spreadsheet to provide an accessible summary of key findings and sources that can be used to complete the module. Create a digital storage method for the documents (e.g. Drop Box, blog, cloud servers, etc.) to allow team members to have common access.

Triangulation of the data will be key to identifying potential geographic regions and/or populations that may not be accessing health care (which includes access to diagnosis and treatment as well as malaria interventions delivered through community approaches). Data experts should advise on how best to triangulate data across multiple data sources in order, to provide a more comprehensive assessment.

Illustrative search terms

To ensure a comprehensive search for existing literature that could inform the assessment, key word search terms may include:

- ▶ [malaria + equity]
- ▶ [malaria + vulnerable populations] + Country./sub-national name).
- ▶ Malaria + equity/inequality
- ▶ Primary healthcare + access
- ▶ Healthcare access
- ▶ Barriers to healthcare
- ▶ Primary healthcare + equity
- ▶ Gender + healthcare
- ▶ Gender + malaria
- ▶ Children + malaria+ access
- ▶ Pregnant women + malaria + access

The literature searches should include recently published reports (the last 5 years or less), and if deemed necessary then expanded to include data beyond 6 years.

The areas of focus could include (but are not limited to):

- ▶ Subnational areas with increased mortality.
- ▶ Subnational areas with suboptimal coverage and use of vector control.
- ▶ Suboptimal care seeking and access to diagnosis and treatment.
- ▶ Potential difference seen in access, coverage and usage of malaria interventions and basic health care by gender, age, wealth, education level or other determinants (these differences may also be seen in specific geographic regions as well).
- ▶ Identification of populations that may be of concern – such as nomads, migrants, IDPs, refugees, populations living in hard to reach areas, indigenous or ethnic minorities, specific occupations, etc. (see below).

Quantitative data mining (optional)

Where it is not possible to implement the Malaria Matchbox Toolkit alongside a standard malaria review process, nor to build into any other country led quantitative analyses, e.g. HBHI country situation analyses, or where there is paucity of published or unpublished quantitative data reports within the last 5 years, it will be essential to conduct quantitative data mining exercise, collection and analysis.

Data sources to include can be (but are not limited to):

- ▶ Health Management Information System(s) including where available DHIS2;
- ▶ Household and Facility surveys such as DHS/MIS/MICS, SPA, SARA etc.;
- ▶ Census of population and housing;
- ▶ Malaria Indicator survey data;
- ▶ Civil registration and vital statistics;
- ▶ Health Equity estimates by International agencies e.g. WHO, Health Equity Monitor database, EQUIST (from UNICEF, United Nations Development Programme (UNDP) Human Development Index and Gender Development Index databases;
- ▶ Subnational data bases e.g. at provincial, state or district level;
- ▶ Community data bases e.g. SISCO in Rwanda.

This will involve identification of the relevant databases, analysing the national-level primary health care and malaria service indicators disaggregated by key equity strata, such as sex, age, education, economic status, place of residence (e.g. rural/urban and urban slums), subnational areas and levels of healthcare delivery (e.g. district, state, province or village). Sex- and age-disaggregated data are often collected at the health service level but are commonly aggregated when reported to higher levels. If sex and/or age-disaggregated data are not available at the national level, review data at subnational level e.g. district, provisional or, state levels. Official data often lack granular information about population characteristics such as ethnicity, religious group, occupation and many others that would apply to a robust analysis on how malaria interventions can improve the outreach and effectiveness. For this reason, it is important to consider the range of data sources that can inform on this research and how multiple data sources can best be combined to provide sufficient data and evidence.

It is important, to ensure together with national or subnational authorities, that any specific group that could be of interest is included in the in-country research. Quantitative data mining should be led by those within the assessment team with the strongest bio-statistical experience (e.g. biostatisticians/epidemiologists).

An analysis of these quantitative data should be summarized. It is important to identify, record and take into consideration document gaps and possible biases. Depending on the delivery channels for antimalarials and ITNs, distribution and networks analysis of drug shops/outlets, public distribution systems etc., also need to be included if application of the toolkit is not part of an existing program review such as the MPR which would otherwise address these.

A brief report on the literature review and the quantitative data analysis (if conducted) should be developed, highlighting the findings in relation to the objectives of this module.

Based on the desk review and the data mining (where applicable) the assessment committee will then identify potential geographic areas or populations with suboptimal access and use of malaria and primary health care services and use this information to guide the next steps in the qualitative research module.

MODULE 2:

Critically examining how risk factors, barriers to accessing services, and bottlenecks for service delivery affect health equity in the context of malaria

Specific Objectives

- 1) Using the areas and/or populations identified through the desk review, assess potential prohibitive factors and barriers to access and use of, as well as bottlenecks to delivery of basic health care and malaria services.
- 2) Engage key stakeholders from the areas and/or populations identified to better understand the context and circumstances that both prohibit and facilitate delivery of and access to services

Methodology

There are several qualitative methodologies that can be used in this module including observations, in-depth *key informant interviews and, focus group discussions*. Each method is particularly suited for obtaining a specific type of data as explained in this link: [Guide on Qualitative Research Methods](#).

A consultative process will be used to identify target interview groups and key stakeholders representing each of the geographical areas, and population groups at the various levels of primary health care and malaria services. The number of focus group discussions (FDGs) and/or key informant interviews (KIIs) will be determined by the diversity of the identified populations, the geographical distribution of the areas identified and the availability of funds.

Below the toolkit discusses some of the methods briefly providing practical guidance.

Focus Group Discussions: In consultation with the subnational health/malaria management teams and local authorities, focus group discussion groups will be selected. The FDGs can range from 8-15 participants and should be inclusive. It is important to ensure that the timing and location of the FDGs are appropriate and do not result in systematic exclusion of potential participants. Where feasible, audio recording should be conducted during the group discussions, if the participants have provided consent. Specific consent will also need to be obtained from participants if video recording is conducted. Include a facilitator, a note taker for each FGD, ensure interview teams are trained, and that required materials are made available. An example of interview questions for a focus group discussion can be found in *Annex 3*.

Key Informant Interviews: It is important to ensure the key informants are diverse – including national and subnational administrative, health and malaria programme leadership; traditional and religious leaders, health facility staff (including community health workers), civil society organizations, implementing partners, and community members from the populations and geographical areas identified to have suboptimal access and use of malaria and primary health care services. A set of semi-structured questions should be set in advance to guide the interview sessions.

The questions below are meant to be answered through the synthesis and analysis of the findings from key informant interviews and focus group discussions. The aim is to provide the national programme and stakeholders information for reflection on the delivery of malaria interventions and their appropriateness, applicability and flexibility to address the potential gaps and barriers identified. Thereafter, programmes can adapt and tailor interventions and services to try to meet the needs of all populations at risk. Ensure informed consent is obtained from all participants and confidentiality maintained. It is important in focus group discussions to provide a safe space where the participants feel they can speak freely to discuss their challenges and are encouraged to propose solutions.

Use of innovative and rapid methods including SMS through mobile phones and crowd-sourced information such as m-Health and U-Report should be encouraged in the data collection efforts.

The assessment

While behaviour and sociocultural factors are assessed in the first sub-section, the barriers to services are assessed against the four dimensions of healthcare accessibility,

defined by the WHO as (i) information accessibility and health literacy, (ii) financial accessibility, (iii) physical accessibility and (iv) non-discrimination (23).

a. Behaviour and sociocultural factors

Society, culture and religion have great influence in how populations are able to conduct themselves including a person's ability to earn a living; their decision-making power, and (indirectly) their exposure to malaria and ability to access basic services. Issues of stigma, language, gender, age and legal status can further exacerbate these challenges.

Given the impact of a range of local attitudes, social norms, self and effect efficacy, personal advocacy, risk perceptions, beliefs and cultural patterns on individuals' behaviour and community practices including on malaria prevention and treatment behaviours, the sociocultural and gender-related determinants of health in programme design is fundamental to ensure no one is left behind in the design and implementation of national health/malaria plans.

The following questions will assist in determining which sociocultural factors, if any, increase the risk of or vulnerability to malaria and the ability to seek and access related health services in the population of interest, identified to have suboptimal access and use of malaria and primary health care services. The questions below will be explored through the key informant interviews and focus group discussions (sample FGD in *Annex 3*). Additional reading/consultation of the RBM [Strategic Framework for Malaria Social and Behavior Change communication 20018-2030](#) and [The Art of Asking Questions: Priority Research Areas and Approaches for Malaria Social and Behavior Change Programs](#) is recommended.

THE QUESTIONS BELOW ARE NOT PRESCRIPTIVE BUT FOR REFERENCE TO INFORM THE DESIGN OF THE DATA COLLECTION TOOLS.

QUESTION	CONSIDERATIONS
a1 Are the populations identified to have suboptimal access and use of malaria and primary health care services knowledgeable on the causes of malaria?	Several studies in Sub-Saharan Africa have demonstrated that there is a gap between cultural or folk interpretations of what causes malaria and actual biomedical reasons. In Ghana, for instance, a study found that rural communities often believe that malaria can be acquired by exposure to the intense sun heat or by eating ripe fruits (24). This may be because the peak season of malaria is at the same time as the fruit harvest, while the link to mosquitoes is not recognized.
a2 Are there intra-group disparities in terms of knowledge?	One study in Yemen found that men had more knowledge on the cause of malaria as compared to women whose knowledge of causes of malaria was more vague, and they associated it with flies, eating uncovered food, drinking bad water, breastfeeding and sleeping in the same bed as an infected person (25).

QUESTION	CONSIDERATIONS
<p>a3 What local or traditional beliefs, perceptions and practices affect use of malaria prevention methods?</p> <p>a4 Are there intra-group disparities related to background characteristics such as age, income and education level?</p>	<p>Traditions and beliefs may lead to poor health seeking behaviours or rejection of certain malaria services or treatment.</p> <p>In Western Kenya, interestingly the beliefs that bed nets were a family planning tool or that their use might cause bad dreams determined the decision not to use bed nets (26).</p> <p>Another study in Tororo, Uganda showed that during indoor residual spraying some household heads reportedly refused their houses to be sprayed, claiming the chemical being used causes cancer, may kill their domestic animals and may spoil their food (27).</p> <p>Despite increasing ANC in malaria endemic regions, IPTp coverage remains low. The respondents from some studies viewed SP for IPTp as harmful, suggesting that its “strength” caused miscarriages and side effects that included mouth sores, fatigue, fever, rashes and itchiness (28). In north-eastern Tanzania, Mubyazi and colleagues reported similar concerns deterring women from taking SP as IPTp and, Mushi and colleagues described how women linked taking SP with large babies and therefore difficult deliveries, which they were keen to avoid (29).</p> <p>Varying characteristics within the identified populations may result in disparities. Participants in a study conducted in Uganda who refused IRS were mainly from urban districts with secondary and higher education level, including participants such as teachers, drivers and other public officials (30).</p> <p>In a socially marketed ITN trial in Tanzania, young pregnant women, primigravidae, and unmarried pregnant women were among those with the lowest use of ITN (31).</p>
<p>a5 What local or traditional beliefs, perceptions and practices affect treatment seeking behaviour?</p>	<p>Attribution of causation of ill-health to supernatural sources has been associated to seeking traditional treatment over bio-medical medicine.</p> <p>Studies have also shown that in some countries convulsions in children are not attributed to malaria and there is the belief that modern medicine cannot treat convulsions and that only traditional healers can heal thus first treatment option is the traditional healers (32).</p>
<p>a6 What specific beliefs prevent women’s access to primary health care/ malaria treatment?</p> <p>a7 Are there intra-group disparities related to background characteristics such as age, income and education level?</p>	<p>In some contexts, in Sub-Saharan Africa, for example, in rural Gambia, older women (35 years+) kept their pregnancy hidden as going to ANC created a sense of shame if the woman is pregnant at the same time as her daughter or daughter-in-law. This prompts them to delay exposing their pregnancy and consequently not seeking treatment (33).</p> <p>Studies for example from Kenya (34) and Uganda (35) report that teenagers and unmarried mothers were among those who used ANC least frequently.</p>
<p>a8 What specific beliefs prevent men accessing PHC/ malaria treatment services?</p> <p>a9 Are there intra-group disparities related to background characteristics such as age, income and education level?</p>	<p>In some communities, men believe that insecticides can hamper their sexual health and fertility (36).</p> <p>Some studies have investigated the impact of gender norms on men’s access to malaria services. These studies have found that men underutilize health care services for malaria as compared to women in similar circumstances, possibly due to male social norms that dictate that men must be strong and ‘get over’ their illness by themselves, or because men assign a lower priority to their health or feel uncomfortable asking for assistance (13).</p> <p>Another consideration is in HIV prevention and control programming. Many southern African countries have made remarkable progress in expanding access to ART, but patients have been disproportionately female. In South Africa, about 55% of those living with HIV are women but more than two-thirds of patients receiving public sector ART are female. Similarly, in Zambia, 54% of those living with HIV are women yet 63% of adults starting ART in Lusaka were female. In 2006, both countries had detailed national strategic plans yet neither identified male access as a gap or included plans to address it (37).</p>

QUESTION	CONSIDERATIONS
<p>a10 Is the malaria prevalence rate in the identified communities linked to individuals performing a certain occupation/ attending a specific setting (i.e. working in fields, mines, attending schools in a risk area)?</p>	<p>Agricultural practices, including irrigation and drainage, have been shown to increase the vector when not well managed. This means that farming workers are often at increased risk of malaria.</p> <p>Schicker et al. (2015) (38) observed that migrant workers in the lowlands of North Gondar zone mostly originate from the highlands and highland fringes of Amhara and exhibit a higher prevalence of malaria than usual estimates of malaria transmission in the lowlands. These temporary farm workers return home at the end of the agricultural season, and this return to the highlands facilitates Plasmodium transmission in areas of Amhara that would otherwise have limited malaria transmission (39).</p>
<p>a11 Where do the populations/groups of individuals considered go FIRST to diagnose and treat malaria?</p> <p>a12 Where do they go second and even third if the symptoms continue?</p> <p>a13 Are there intra-group disparities related to age, sex, income and any relevant background characteristics?</p>	<p>Treatment seeking for illness is a complex process that very much varies according the social-cultural dynamics of the society and the family. Decisions to seek treatment in a local pharmacy, traditional healer, public or private health facility may depend on many factors such as cultural beliefs, perceptions of inadequacy of services, attitude and/or discrimination by healthcare providers among others.</p> <p>Treatment choice may also depend on how individuals perceive the severity of the illness and previous experience of health services.</p> <p>A study in Uganda showed that young parents struggle with advice from older members of society, who recommend initial treatment from traditional practitioners rather than from allopathic providers. These guardians—who often wish to seek allopathic care first—are torn between their own ideas about appropriate treatment of their child and the sociocultural expectation of showing respect and deference to members of the preceding generation, who suggest traditional medicine approaches (40).</p>
<p>a14 What other behaviour factors can increase the exposure of the assessed populations to the vector?</p>	<p>The risk of exposure to biting mosquitoes can be increased by taking part in outdoor night-time activities including leisure evening activities where people are not covered by core interventions (such as bed nets and IRS). Other groups, such as night-time forest workers, workers on rubber plantations, or migrant populations, are exposed to outdoor transmission on, a daily basis if their work takes place during peak biting times.</p> <p>In addition, sleeping arrangements may also affect malaria transmission. In some societies, men tend to sleep outdoors, and this may increase their risk of exposure to mosquitoes. Women who get up before dawn to perform household chores may also be exposed to mosquitoes and consequently to malaria infection (41).</p>
<p>a15 Do certain dress habits affect the risk of or vulnerability to malaria?</p> <p>a16 Are there particular social groups that have dress habits that are more vulnerable?</p>	<p>A study in Nigeria showed that different norms of dressing for men and women accounted for significantly higher malaria infection rates among men. Men who are shirtless and wear only shorts are more likely to be bitten by mosquitoes whereas women who wear clothing completely covering their bodies are much less likely to be bitten by mosquitos (42).</p>

CASE STUDY 1: BARRIERS TO MALARIA CONTROL AMONG MARGINALIZED TRIBAL COMMUNITIES IN INDIA

In tribal communities in India, healthcare seeking behavior is motivated by culturally specific beliefs which practitioners need to consider regarding issues of health. For example, Vijayakumar et al. (2009) found that the tribal populations in Eastern India sought treatment for malaria symptoms from traditional healers first. Also, another study in Gadchiroli district has suggested that local tribal peoples do not allow insecticide spraying in all rooms of the home, particularly where household altars to deities are located, thereby rendering the insecticide programme less ineffective. Further, literacy rates are low among Indian tribal populations, and many tribal people in Gadchiroli do not speak the dominant state language of Marathi. Tribal children often leave school after the third or fourth year and “relapse into virtual illiteracy”. Therefore, educational materials presented by community health workers (who do not speak tribal languages) are not always comprehensible to tribal communities (1).

CASE STUDY 2: BARRIERS FACED BY PREGNANT ADOLESCENTS TO ACCESS HEALTH SERVICES

A study in Central Uganda set out to explore adolescent health seeking behaviour during pregnancy and early motherhood in order to contribute to health policy formulation and improved access to health care. Two main themes emerged; ‘feeling exposed and powerless’, and ‘seeking safety and empathy’. The categories identified in the first theme were “the dilemma of becoming an adolescent mother” and “lack of decision power”. In the second theme the following categories were identified: “cultural practices and beliefs about birth”, “expectations and experiences”, “transport, a key determinant to health seeking”, and “dealing with constraints”. Adolescent girls felt exposed and powerless due to the dilemma of early motherhood and lack of decision making power. The adolescent mothers seemed to be in continuous quest for safety and empathy. In so doing they are part of cultural practices and beliefs about birth. They had expectations about the health care services but their experiences of the services were rather negative. Transport was a key determinant for health seeking and adolescents to some extent had learnt how to cope with constraints they faced.

The findings indicated that they mostly utilized the traditional sector because it was most accessible in terms of distance, cost and cultural context. Adolescent mothers were disempowered in decision making because of their pregnancy state which often put them in a dilemma (43).

b. Information accessibility and health literacy

Access to information about malaria and general knowledge on the modes of transmission and control is an important factor in encouraging health-seeking behaviour for effective malaria control. Access to information to a large extent is influenced by cultural beliefs, gender, education, values, and socioeconomic status. It can inspire people to protect themselves and those in their care and, mobilize stakeholders to play their part in the fight against malaria. However, when information is not clear or accurate, it can undermine efforts, sensationalizing issues, and potentially scare people away from healthcare services. Health information needs not only to be accessible but also readable and comprehensible. Health literacy plays an important role on how individuals/population can access the health

system and receive quality care (44). Health literacy responsiveness is also key to ensure that the health/malaria information provided is suitable to the health literacy levels of individuals and populations. Gender inequality can also influence differences in terms of access to quality information and sources of information.

The following questions will assist in determining if the necessary information about malaria is reaching the relevant populations in your country or community. They will also assist to assess the populations' health literacy strengths and limitations and the health literacy responsiveness. Programs should explore if the malaria SBCC interventions are designed appropriately for the identified underserved or marginalized population so as to achieve impact.

QUESTION	CONSIDERATIONS
<p>b1 Where do the identified populations/groups (groups with suboptimal access and use of malaria and primary health care services) receive information on malaria?</p> <p>b2 Does it vary when sex and age are disaggregated?</p> <p>b3 What is the health literacy level of the identified populations/groups?</p>	<p>SBCC strategies can include the provision of information in schools, churches, mosques, workplaces, health facilities, community discussions, TV, radio stations, mass media-campaigns, SMS texting, community town halls, or interpersonal communication.</p> <p>Specific interventions may need to reach certain groups that are not able to receive information via regular channels. For example: use of women's groups or teachers/schools may be an approach used to target women and school going children (5-14 years) in a specific population.</p> <p>The ability of the population/individuals to not only access but also use the malaria and primary health care information is critical. Studies have shown health literacy is a potentially modifiable contributor to health inequities (44).</p>
<p>b4 Are SBCC strategies culturally adapted for the populations/groups assessed?</p>	<p>Information provided to specific populations should be evidence-based.</p> <p>Increasing coverage, especially among those at highest risk who are often the poorest and most marginalized, requires strategically designed communication approaches tailored to local contexts. While the malaria control messages in a country may share the same context, across the difference regions, their designs may vary to take into account language, cultural and geographical differences.</p> <p>Malaria messages that resonate with the audience through their cultural, interpersonal and seasonal behaviours and priorities have a better reach and are more likely to influence the desired outcome (45).</p>
<p>b5 Is information on malaria provided in all the languages relevant to the populations/groups assessed?</p>	<p>Information on malaria prevention and treatment services in many countries is provided in the national language, and less so in the native languages that may be used sub-nationally, among specific age groups or, population groups. Local malaria information and communication tools will need to be adapted to a relevant language for identified populations.</p> <p>For example, in Gadchiroli district, along the southeastern border of the state of Maharashtra in central India, literacy rates are low among Indian tribal populations, and many tribal people in Gadchiroli do not speak the dominant state language of Marathi. Tribal children often leave school after the third or fourth year and "reapse into virtual illiteracy". Therefore, educational materials presented by community health workers (who do not speak tribal languages) are not always comprehensible to tribal communities (1).</p>

QUESTION	CONSIDERATIONS
<p>b6 Do SBCC strategies take into account, the differences on how women and men from different age cohorts access information?</p>	<p>Women often have less education and literacy than men and thus have less access to information and materials on malaria risk factors, prevention methods, and symptoms (18).</p>
<p>b7 What types of media are utilized by the populations/groups assessed? Does it differ when sex and age are disaggregated</p>	<p>Technological devices (e.g. telephones, TVs) can provide more efficient modes of communication i.e. reach more people across a larger space in a shorter time but, may have less impact than person to person communication – such as community dialogue, town-halls or use of participatory communication methodologies.</p> <p>Communications channels such as school health dramas and clubs, radio, TV, health alerts through mobile phones, community sensitization meetings, net hang up campaigns, commemorations, wall and commuter omnibus branding, road shows and community dialogue meetings need to be tailored to specific populations and may vary across sex and age groups.</p>
<p>b8 How are programs ensuring that information is health literacy responsive and is reaching all populations affected by malaria?</p>	<p>Other types of media include newspapers, billboards, public service announcements, radio broadcasts, flyers and material for low literacy or illiterate men and women</p> <p>Some populations may not be able to receive the correct message about prevention due to the lack of translation of traditional communication means to their local languages, inability to understand the information provided and how to apply/act on it.</p> <p>Lack of financial resources, security concerns, long distances and poor roads to distribute IEC materials can results in failure to reach populations already identified with suboptimal access and use of health care services such as hard populations, refugees, and populations in conflict areas.</p>
<p>b9 What evidence is used to determine if those outlets are reaching all relevant audiences?</p>	<p>During implementation of communication strategies, there should be routine data collection and measurement of progress towards the country's malaria SBCC objectives for example, through the routine Health management information systems (HMIS), Omnibus surveys, Malaria Indicator surveys or, Demographic Health Surveys. This should be a continuous and systematic process to determine if the actions being taken are leading to the desired change, in malaria prevention and treatment - knowledge, attitude and practices.</p>
<p>b10 In general, are communities involved in the design and implementation of communication/ mobilization campaigns?</p> <p>b11 To what extent are high-risk and underserved populations involved in the design and/or implementation of those campaigns?</p>	<p>Including the community in the entire product development process of BCC materials enhances their sense of ownership and interest in the products. Some countries like Zambia ensure community engagement and participation at all stages of malaria communication development and implementation is crucial as local input will improve the quality of the communication. The district teams organize Focus Group Discussions (FGDs) with selected populations where the messages/materials are pre-tested and the comments compiled for inclusion in the development process (46).</p> <p>Using community change agents and community leaders/influencers, as well as community mobilization and community engagement efforts, to influence behaviours is key. Community-led efforts have been shown to better influence attitudes and practices within the community (47).</p> <p>In Uganda, to complement malaria SBCC strategies, community dialogue meetings were recorded and then aired on radio. The recorded dialogue meetings were conducted by the health management committee, the health facility in charges, local council leaders and community members both male and female. The community dialogue meetings were held to enable communities address malaria related issues within their communities (46).</p>

QUESTION	CONSIDERATIONS
b12 What role to health care givers play in providing information and advice about malaria?	Using existing health workers, community health workers, established networks (such as women's groups) as peer educators is an effective and culturally appropriate way to disseminate comprehensive information on malaria especially to low-literacy communities.
b13 Do the health care workers have access to the required information and tools to share the information?	For example, in many antenatal clinics (ANCs), community health workers (CHWs) and midwives provide advice on preventing MiP. A malaria case study conducted in Ethiopia for example, showed that the lack of SBCC skills and materials among health workers discouraged people from using their services (48).

c. Financial accessibility

Although malaria is not exclusively a disease of the poor, the deprivation associated with poverty can increase the risk of malaria (18). The cost of malaria services and/or the ability and willingness to pay is an important component for seeking care. Understanding how the cost of services interacts with access to financial resources and

therefore determines what individuals or communities are willing to pay for specific malaria services is important in designing programs that reach all high-risk and underserved populations.

The following questions will assist in determining how access to financial resources and the cost of malaria services impede access to malaria services.

QUESTION	CONSIDERATIONS
c1 Where do most of the population access healthcare for fever symptoms and what are the costs associated with it?	The direct cost of health care services and related expenses determine the choice of appropriate services sought. In areas, where access to pharmacies and healthcare facilities results in additional costs towards transport and travel time, local drug shops or traditional healers or untrained practitioners are often the most common sources of malaria treatment.
c2 How does access differ for different populations (different age groups, gender, including populations identified to have suboptimal access and use of health care service by this assessment)?	Even in societies where there are subsidized primary health care services, available health insurance coverage or free healthcare services, some selected populations may not have access to these services, such as refugees, immigrant workers, displaced populations etc. In hard to reach areas where health care services have been brought closer to the populations through community health workers often these services are usually restricted to children under 5 years. However, in countries achieving significant reduction of malaria and progressing towards elimination overtime the biological at risk age group goes beyond 5 years old as adults become 'non-immune' necessitating policy changes such as the expansion of community health care services such as in Rwanda.
c3 How do financial constraints affect the use of malaria prevention services	At national level, financial constraints may impede implementation of universal malaria prevention strategies resulting in delayed IRS or targeted LLIN distribution thus achieving suboptimal coverage. Countries are required to monitor the antimalarial drug efficacy and insecticide resistance levels to ensure timely change to more effective antimalarials and insecticides. However, limited resources and financial constraints, may delay policy changes resulting in inadequate protection against the malaria vector. The utilization of prevention methods is associated with several economic factors. Transport to the sites of distribution of LLINs can impede access to the LLINs even when distributed free of charge. The quantity of LLINs available in a household is also determined by economic resources. A Study in Liberia showed a significant difference is between the lowest and highest economic quintiles, with individuals from the highest quintile being more than twice as likely to sleep under an ITN as their peers from the lowest quintile (49). On the contrary, a study in Madagascar showed that whereas higher socio-economic increased LLIN ownership, when LLINs were distributed free through mass campaigns LLIN usage was not associated with higher wealth status. Rather, in some areas usage by children under five years was slightly higher in poorer households that owned an LLIN (50).

QUESTION	CONSIDERATIONS
<p>c4 To what extent is the place where people look for healthcare associated with income?</p>	<p>The household income may determine availability of resources to seek medical care. In addition, the establishment of health services including private health facilities may in turn be determined by the income of the population and its purchasing power.</p> <p>Schellenberg and others identified that children less than five years in Tanzania, were twice as likely to receive appropriate treatment for fever if their family were in the least-poor quintile than in the poorest quintile (51).</p> <p>Studies have also shown an association between economic status and the use of herbal/traditional treatment as the first response to malaria in Ghana and the Asia-Pacific Regions (52) (53).</p>
<p>c5 To what extent is the cost of healthcare affecting the ability of the identified populations in accessing testing and treatment services?</p>	<p>In many settings people must pay for malaria services out of pocket, and services can cost more than the average daily wage.</p> <p>In government health facilities where malaria testing and treatment services are generally subsidized or free, at least for the most vulnerable groups, the high cost of test kits and drugs may result in shortage at the health facility affecting the identified populations who may be unable to seek alternative health care services.</p> <p>The private sector plays an important role in delivering malaria care in many high-burden countries, both in urban areas and in remote rural areas underserved by formal health care facilities. However, in some places, the test-based treatment is still unpopular in the private sector. This could be due to unwillingness of customers to spend extra finance on rapid diagnostic test (RDT) resulting in presumptive treatment of malaria.</p>
<p>c6 Is free health care or any type of financial coverage in place to allow the population to access essential services free of charges or at reduced costs? To whom is treatment free or subsidized?</p>	<p>To reduce out-of-pocket payments and improve access to health care services, some countries have introduced health insurance schemes, subsidized health services and free primary health care including malaria diagnostic and treatment services.</p> <p>However, unless services are free some populations may still have financial constraints preventing them from obtaining the required insurance premiums or the shared costs.</p> <p>How individuals access insurance is also important, especially as women tend to be over-represented in informal economies. If insurance, for example, is accessed through employment schemes, then women will be overrepresented in the uninsured, or dependent upon other family members to access care.</p> <p>It is essential to ensure even when the government offers free health facility services that populations access is not restricted by unofficial “under the table”, charges by the health workers.</p>
<p>c7 How do indirect costs related to accessing health services affect certain populations or members of a community differently?</p>	<p>Many governments have put in place strategies to improve access to healthcare and to reduce cost of healthcare especially for the traditional high risk populations of children under 5 years and pregnant women aimed at addressing financial barriers in populations however, indirect costs such as transport costs, lost productivity or income associated with illness or death (days lost at work) may continue to impede access to malaria prevention and treatment services and have catastrophic financial impact on families.</p> <p>Populations in hard to reach or remote areas may require additional and higher transport costs.</p>
<p>c8 Are indirect costs taken into consideration in the current programming?</p>	<p>Addressing indirect costs may include the provision of vouchers to transport to health facilities or the provision of community services, via community health workers.</p> <p>The costs associated with days off work, school fees for absent days of school should also be considered in the indirect cost estimates.</p> <p>In settings where health care is heavily subsidized but direct costs remain relatively high, policy efforts to address both medical and non-medical drivers of these costs are crucial.</p>

QUESTION	CONSIDERATIONS
<p>c9 How do indirect costs related to accessing health services affect certain populations or members of a community differently?</p>	<p>While there is often subsidized or no charge for malaria treatment in the public health facilities, populations in hard to reach areas (over 5 km from the health facilities and, areas with difficult terrain) must bear higher costs of transportation to and from the health facilities.</p> <p>Funds needed to facilitate hospitalization are often borrowed from family members, neighbours, and village banks. In the context of pre-existing impoverishment, this process creates sizeable debt for families (54).</p> <p>In working populations a few days off from work may not impact the monthly income, unlike self-employed persons or casual labourers who if directly unable to attend to their jobs or their investments, create an avenue for loss of capital.</p>
<p>c10 Is the income of the family affected when the woman or men in the household contract the disease? How?</p> <p>c11 Who in the family looks after a person with malaria? Does that affect her/his income, employment, etc.?</p> <p>c12 Does this vary across age groups, socioeconomic condition of the household and educational level of the household head?</p>	<p>When the head of the household (the bread winner) is sick, the whole household becomes at risk of increased poverty.</p> <p>Most of caregiving in the home is provided by female household members: mothers, aunts, grandmothers and older female siblings. In addition to time lost by being sick themselves, caregivers invest at least an additional two days for every malaria episode in any one of their children or younger siblings (55). In high-transmission settings where children contract malaria frequently and family size is large, this can take up a significant amount of time.</p> <p>They also determine access to material resources, such as land, credit and training, and more ephemeral resources, such as power. The implications for everyday life are many, and include the division of labour, the responsibilities of family members inside and outside the home, education and opportunities for professional advancement and a voice in policy-making.</p> <p>Women play the primary role of care giving to other members in the household, including leading the majority of health care seeking for the rest of the family members (56). However, men still dominate decision-making on health and economic issues in households, which is likely to affect success of health care interventions such as malaria control and prevention programmes.</p> <p>Lack of education, low income, low wealth, living in poorly constructed houses, and having an occupation in farming have may increase risk of Plasmodium infection among people in Sub-Saharan Africa (56).</p>

CASE STUDY 3: ECONOMIC BURDEN OF MALARIA AND FINANCIAL CONSTRAINTS

A study in rural Colombia found that illness in an adult male placed the whole household at risk. The workload of women was significantly increased as they had to take care of sick household members as well as replace males in farm production. The study found that 64% of all tasks normally undertaken by the sick person were then performed by women. The women expressed concern about the loss of the main economic provider as well as about having to work harder in order, to earn money to buy medicine and food. The study pointed out that although the disease burden was greatest amongst adult males, the indirect economic burden of the disease was greater for women.

When interviewed, women said that the care of sick children or sick adult males represented extra work. In addition to their concern and fear of death, the sick child had to be carried and attended to constantly. Women were uneasy about leaving the children alone in order, to carry out their normal tasks. These concerns increased when there was no money to purchase medication. In the case of an adult male, they felt that in addition to the anxiety about the loss of the economic provider, they felt they had to work harder to earn money to buy medicine and food (2).

CASE STUDY 4: BARRIERS TO PROMPT AND EFFECTIVE MALARIA TREATMENT AMONG THE POOREST POPULATION IN KENYA

The study was conducted in the poorest areas of four malaria endemic districts in Kenya to explore access barriers to effective malaria treatment. All public health facilities in Kenya charge user fees. In an attempt, to make malaria treatment affordable, the Kenyan government provides free anti-malarials to all public health care facilities, which ideally should be dispensed free of charge to malaria patients. Malaria treatment is therefore, officially free to all Kenyans. In a further development, in 2004, registration fees for malaria patients in all primary health care facilities were eliminated.

However, the findings presented in this paper and elsewhere suggest that health care charges remain a significant barrier to access and that the 'free treatment' policy is not fully implemented for various reasons including: (1) poor policy design, where patients are required to pay consultation fees before being seen by a health worker; (2) low revenue, especially in districts where malaria is the main illness. Exempting malaria patients from paying fees in malaria endemic districts impacts heavily on the amount of revenue collected; (3) the difficulties of identifying patients suffering from malaria illness conditions have symptoms similar to malaria and many primary health care facilities do not have laboratories and; (4) shortage of drugs supplied by the government meant that facilities had to raise additional money through charging fees in order to raise money to purchase drugs.

Regarding affordability, about 40 percent of individuals who self-treated using shop-bought drugs and 42 percent who visited a formal health facility reported not having enough money to pay for treatment, and having to adopt coping strategies including borrowing money and getting treatment on credit in order to access care. Other factors influencing affordability were seasonality of illness and income sources, transport costs, and unofficial payments (3).

d. Physical accessibility

Distance to health facilities, travel time, spatial isolation and, mobility or ease with which a client can access a facility, outreach session, or community-based provider are key factors associated with access to care. In areas affected by security issues, mobility of community members may be reduced, especially for women and

girls. Marginalized populations or populations living in remote area are particularly affected by physical barriers to access services.

The following questions will assist in determining what physical or environmental factors, if any, impact increased risk of or vulnerability to malaria in the chosen unit of analysis.

QUESTION	CONSIDERATIONS
<p>d1 To what extent do physical barriers to accessing healthcare affect the population groups analysed? Are there differences for men and women?</p> <p>d2 Are there intra-group disparities determined by age, sex, ethnicity, place of residence or any other relevant background characteristic?</p>	<p>Distance from health services may have implications for care-seeking, particularly where patients need to walk hours or have high costs on transport to get to facilities. Access included facility opening hours, distance to health care facilities, poor road networks, drugs and staff shortages.</p> <p>Some health facilities only operate within certain hours and remained closed during the weekend. Therefore, beyond the official opening hours, there was no source of formal care in those settings. In some of the remotest areas, many often use public means of transport to access the health facilities, which is often heavily unreliable, and hardly operates during the rainy season due to the poor road conditions thus rendering the population unable to access through public health facility or arrive outside the working hours of the facility.</p> <p>Restricted mobility of women may also impede their attendance at primary health care clinics for malaria testing (18) (19).</p> <p>Pregnant women may have difficulty walking long distances to access care and face security issues in their path to the facilities.</p> <p>Disabled men and women and senior citizens may also have difficulty in this regard. A study in Papua New Guinea found that adolescent (10-19, year-old) and adult (20-40, year-old) women were more likely than similarly aged men to walk long distances to obtain malaria treatment at a clinic. The study estimated that 37% of infected adolescent males did not attend for care because of the distance to the clinic. The same men indicated that they might readily attend a clinic if it was nearby (57).</p>
<p>d3 Are there security issues affecting the search for healthcare?</p> <p>d4 Do these differ for men and women/ boys and girls?</p>	<p>A national or local security situation may affect mobility and thus access to health services. In areas of conflict, the whole population may be impacted by security issues and therefore not be able to access services violence? A national or local security situation may affect women and men differently. Men may fear shooting or kidnapping, and women may face the additional fear of sexual violence. This can affect mobility and thus access to health services (58).</p>
<p>d5 Are there recent security issues leading to disruption of services at the community level?</p>	<p>Refugee populations can be stigmatized or suffer discrimination or xenophobia, for example if they are seen, as taking away resources from nationals or as bringing disease.</p> <p>In Indian villages for example, many tribal people do not have formal land rights and to express their dissatisfaction with current government policies on such matters they reportedly attack government workers and infrastructure. Violence towards the health workers is a real and constant threat in these rural areas, thus these regions are unpopular posts for civil servants including health workers (1).</p>

QUESTION	CONSIDERATIONS
<p>d6 Is the housing structure of the identified population a risk factor for increased malaria burden?</p>	<p>For the poor, living conditions are often characterized by inadequate housing and overcrowding or houses that are hastily constructed.</p> <p>Several studies have identified particular household characteristics as risk factors for an increased burden of malaria. An increase in the presence of household openings, such as windows and open eaves, has been associated with increases in mosquito entry into the home and parasite prevalence. Poor-quality household construction materials have also been associated with increased mosquito entry, malaria incidence, and para-site prevalence (59-62).</p> <p>Some evidence suggests that overcrowding might increase the risk of malaria, because mosquitoes are attracted by the higher concentration of carbon dioxide and other chemicals in crowded houses. In addition, family living space might not be adequately separated from domestic animals.</p>
<p>d7 Are strategies to address physical barriers taken into consideration in the current programming?</p>	<p>For the identified populations, determine if the country has made any considerations or initiatives to address the physical barriers such as the introduction of testing and treatment mobile units, health agents going to communities, vouchers or fees provided for most remote population to get to health facilities, etc.).</p> <p>For example, in India, following an assessment of barriers in India within remote, malaria endemic zones where, diagnosis and treatment of malaria is often delayed, and during the rainy season when the incidence of malaria is high, many villages are cut off from the surrounding areas due to flooding and CHWs cannot access these villages, it was recommended that a health worker who is a resident of the village, such as an Accredited Social Health Activist (ASHA) in India, can ensure 'within village' diagnosis and treatment of malaria, thereby reducing the delays.</p>

e. Provision of quality of health care services

Receiving the highest quality of care is critical to maintaining the health of any population.

Quality of health care can be evaluated on whether or not the services provided are medically appropriate as defined by normative bodies, such as WHO, or the quality of the specific encounters between providers and patients. This can include the technical aspects of care, such as the appropriateness of the services provided, and the technical skill with which the services are performed. Timeliness of services includes convenient opening hours and short waiting times. Clients also prefer positive attitudes of the provider, including being friendly and non-discriminatory and respectful.

When the matchbox toolkit is implemented alongside an existing country evaluation such as the MPR as recommended, the quality of health care services from the supply side (e.g. availability of staff with the necessary training and skills; accessibility of essential medicines and medical equipment) is often evaluated hence an overlap should be avoided. In other situations, inclusion of this in the matchbox tool implementation is the sole source of this much-needed information or may further enhance an ongoing evaluation.

QUESTION	CONSIDERATIONS
<p>e1 How do the populations/groups assessed experience formal health care and how does it impact their health seeking behaviour?</p> <p>e2 Does it differ across background characteristics of each individual (e.g. age, sex, gender, education, marital status, ethnical or religious affiliation)?</p>	<p>Health seeking behaviour is often related to the perception of the attitudes of the provider, including being friendly, polite, providing consolation, and showing concern.</p> <p>In Kenya availability barriers identified were related to facility opening hours, organization of health care services, drug and staff shortages. Regarding acceptability, the major interrelated factors identified were provider patient relationship, patient expectations, beliefs on illness causation, perceived effectiveness of treatment, distrust in the quality of care and poor adherence to treatment regimens (3).</p> <p>The distribution of resources in a rural area in Uganda created delays in diagnosis and treatment. Respondents describe experiences at both private and government facilities where health-care providers were not present, crucial medications were out of stock or past the expiration date, diagnostic testing was not performed, and blood products necessary for transfusion were unavailable to treat severe malarial anaemia (63).</p> <p>Women may not feel comfortable in seeking health provided by males (64). Marginalized ethnic groups, refugees or migrants may also fear discrimination in health facilities. Pregnant adolescents may also fear discrimination and stigmatization and therefore decide not to attend ANC. Key informant interviews and FGDs revealed that health workers were rude and unsympathetic to pregnant adolescents. This significantly contributed to delayed health care seeking when adolescents were ill (11).</p>
<p>e3 How do the populations/groups of individuals assessed perceive/experience quality of services, including conditions of health facilities and availability of drugs?</p> <p>e4 How does it impact health seeking behaviour?</p>	<p>Poor physical environment (no sex segregated toilets, lack of privacy, lack of confidentiality, not culturally appropriate and no adolescent friendly services), and providers non-welcoming of children, or husbands/wives, may affect uptake of services at the facility level. Provider and patient attributes, expectations, beliefs and perceptions were identified as key factors influencing acceptability of formal health care services (3).</p> <p>In a study in Kenya, Bondo district, older clients reportedly found it difficult to accept treatment by youthful providers, associating young health workers with inadequate training and poor quality of care, including disrespectful behaviour (3). In a study in Kenya, Bondo district, older clients reportedly found it difficult to accept treatment by youthful providers, associating young health workers with inadequate training and poor quality of care, including disrespectful behavior (3).</p> <p>Stock-outs and counterfeit products can lead to administering expired or inappropriate medications. Frequent public sector stockouts may lead to poorer and less equitable outcomes for patients unable to purchase drugs from the private sector (65).</p>
<p>e5 Do the populations/groups of individuals assessed face discrimination in accessing health services? What kind of discrimination? How does it differ across different individual background characteristic (e.g. age, sex, gender, education, place of residency, marital status, ethnical or religious affiliation)?</p>	<p>Men and women who are uninformed, poor, illiterate, belonging to a particular ethnic group, too young or too old, or who do not conform with social or gendered-related norms may find using health services intimidating. In many settings, women may be more likely to feel intimidated than men due to compounding factors of gender norms. Non-locals (visitors/travellers, migrants, refugees, IDPs) and minority ethnic groups may face barriers if they do not speak the region's official and/or local languages.</p>

QUESTION	CONSIDERATIONS
<p>e6 Across the levels of the health system, what is the availability and sufficiency of malaria prevention and treatment services to the population or group of individuals? Are there adequate laboratory supplies for malaria testing and, adequate antimalarials?</p> <p>Are the malaria diagnosis and treatment protocols, guidelines and manuals available to and utilized by health care providers?</p>	<p>Primary health care services in resources – poor settings are not always equipped to provide the standard care of services including malaria diagnosis, treatment and follow-up. This may affect the ability of the populations/groups of individuals assessed to access and use effective services.</p> <p>A survey conducted in rural Malawi revealed bottlenecks which may reduce quality and effectiveness of malaria treatment including anti-malarial drug stockouts with one facility reporting complete stockout of antimalarials for 3 months (66).</p> <p>Even when community health workers (CHWs) were deployed in Malawi to provide preventive care and integrated community case management to underserved populations, they reported receiving kits with missing RDTs, and also reported lacking some antimalarial (artemether-lumefantrine) treatments in their kits. Stock outs were reported by CHWs in all provinces, more commonly in the rainy season (67).</p>
<p>e7 Is the population served by an adequate number of skilled personnel?</p>	<p>Both, developing and developed countries, typically report a higher proportion of health personnel in urban and wealthier areas. Urban areas are more attractive to health care professionals for their comparative social, cultural and professional advantages.</p> <p>It is in the most remote and underserved areas that health workers are less likely to work.</p> <p>In addition, the effects of health worker movement between public, private-for-profit or private-not-for-profit sectors can create inequities for the populations served by the sectors and the weakening of health systems, as some sectors are left with fewer health workers. The situation can even be worse for post-conflict settings where the populations are concentrated in rural areas and where attracting and retaining staff can be particularly difficult (68).</p> <p>A pervasive problem is the concentration of health workers in areas that are perceived to be safer or have better prospects, which can leave remote and conflict-affected zones underserved. Nonetheless, redeployment of health workers to these areas may be directly hampered by war-related destruction of health facilities and staff houses. NGOs and aid agencies may also contribute to staff being concentrated in more secure areas. Due to operational convenience and security concerns, NGOs in Afghanistan and South Sudan tended to recruit local staff to work in facilities near secure borders (68).</p>
<p>e8 Are the health workers trained on management of malaria and following country protocols/ treatment guidelines in management of malaria?</p> <p>Are clinical audits conducted to assess the quality of laboratory, and treatment services provided for malaria?</p>	<p>In rural Malawi, a study in health facilities revealed that 2% of children received an under dose of artemether-lumefantrine and 22% were overdosed based on weight (66).</p> <p>Prompt diagnosis and effective treatment of acute malaria in pregnancy (MiP) is important for the mother and fetus, however in a study in Kenya identified gaps among health providers in diagnostic knowledge and practice related to MiP, and the lack of malaria diagnostic capacity (69).</p>

f. Provision of non-discriminatory health care services

In addition to gender related norms and roles affecting the ability of individuals to seek healthcare, discrimination and poor gender considerations at the facility are also key deterrents and predictors of health seeking behaviour for both men and women. As previously noted, healthcare seeking behaviour are negatively impacted when people feel intimidated, discriminated or not acknowledged by healthcare professionals.

Discrimination and intimidation (including violence experienced in health care) are often related to a number of factors, including where people are from, age, religion, ethnicity, language, sexual orientation and identity and expression. This can be even more serious when you add gender as a consideration. There are many reasons why health care providers respond in discriminatory ways that impact health outcomes negatively. Some of the reasons include their own perceptions and morals, age, religion, ethnicity, language and gender.

QUESTION	CONSIDERATIONS
<p>f1 Does the gender of the health care provider impact on the perception or acceptability of health care by the populations/groups assessed?</p>	<p>Often, people prefer to be served by a provider of the same sex.</p>
<p>f2 How does it differ across sex and age disaggregation?</p>	<p>In some cases, religion dictates that a married woman cannot be seen by a male provider.</p>
<p>f3 Overall, are health facilities able to respond to patients' preferences to be assisted by a male or female health providers? If not, why?</p>	<p>Pregnant adolescents are often less likely to seek antenatal care due to several factors related to stigma and negative attitude of health workers (35) (70).</p>
<p>f4 How does it affect health seeking behavior of men and women of different age ranges?</p>	<p>In Nepal for example, basic maternal and child health care including family planning services was provided by a group known as community health leaders and this included both male and female volunteers, but the males were not easily accepted by female service users. Because of this the male volunteers were replaced by female community health volunteers, who are married and are mothers to provide maternal health services in the community (71).</p>
<p>f5 Are there enough female community health workers, midwives, nurses, and physicians to care for women (or men) who prefer female health care workers?</p>	
<p>f6 Does the sex of health care workers affect their capacity to interact with the population (e.g. in certain contexts, male health care workers cannot do home visits to raise awareness on malaria prevention if the woman is alone in the house)?</p>	
<p>f7 If delivery of malaria prevention is provided principally through targeted interventions, how do programmes ensure that all populations at risk receive services?</p>	<p>Seasonal Malaria Chemoprevention (SMC) is the intermittent administration of a full course of antimalarial medicine at monthly intervals throughout the peak high malaria transmission season in areas in sub-Saharan Africa with high seasonal malaria transmission. SMC is a timed intervention. To ensure timely availability at the distribution points at the start of the malaria transmission season, SMC medicines must arrive in country well in advance of the rains season. Inaccurate population censuses and ill-defined target age-group definitions risk inaccurate target caseload estimates.</p>

Key processes

- ▶ Adapt the reference questions above to data collection tools that are adequate to each respondent/group of respondents, i.e. key informant interview, FGDs with community members, individual surveys guided by the sample FGD questionnaires in *Annex 3*.
 - ▶ Pre-test the data collection tool to ensure that the questionnaires can be applied in an acceptable timing.
 - ▶ Check for any sensitivity related to terms/expressions that may cause discomfort to the respondent.
 - ▶ Check for any gender sensitivity related to the participation of the respondents (as both women and men) in the assessment.
 - ▶ Ensure that consent forms are signed, and that information are kept confidential.
 - ▶ Use sentences that can empower respondents to think about how their feedback on services and/or barriers can influence policy.
 - ▶ Ensure that consent forms are signed, and that information are kept confidential.
 - ▶ Consider having women-only, adolescent girls-only, men-only, adolescent boys-only focus group discussions instead of mixed men-women or mixed boys-girls focus group discussions to allow full participation and freedom of speech.
 - ▶ Ensure an environment of active listening, non-judgment and mutual respect and confidentiality for every focus group, so that participants feel at ease to speak up.
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MODULE 3:**Identifying intra-household inequity**

Understanding gender inequities within the household contributes to understanding overall inequity. Household power dynamics may affect access to and use of malaria prevention tools as well as treatment-seeking behaviour. Gender and age-related norms and biases may affect access to malaria and health services within the household and within society e.g. within a household, there will be inequality in earnings across generations due to, the effect of age and experience impacting on access to malaria prevention and treatment services.

This module therefore attempts to guide users through the collection of intra-household qualitative data to inform key areas where gender- and/or age- responsive approaches are required. Decision making power and division of labor are assessed in this module, to provide insight to potentially relevant differences impacting on access to malaria and health care that should be further explored.

Specific objective

Collection of intra-household qualitative data to inform key areas where gender- and/or age- responsive approaches are needed.

The methodology selected in this module remains in line with the guidelines in module 2 above and may include FGDs and/or KIIs.

The assessment**g. Intra-household decision power affecting malaria prevention**

Access to insecticide-treated nets has increased substantially in recent years, but ownership and use remain well below 100% in many malaria endemic areas. Understanding decision-making around net allocation in households with too few nets as influenced by gender, age norms and dynamics in the home is essential to ensuring protection of the most vulnerable. The World Malaria report (2018) indicates that coverage of other prevention methods including IRS and IPTp remain low. Among 33 African countries that reported on IPTp coverage levels in 2017, only an estimated 22% of eligible pregnant women received the recommended three or more doses of IPTp despite high ANC coverage (19). Exploring the influence of decision power in regard, to gender norms on acceptability and use of these prevention services may provide insight on how to increase uptake.

QUESTION	CONSIDERATIONS
g1 To what extent do intra-household decision power affect the utilization of ITNs? Who decides who in the household sleeps under an ITN?	Although, several studies show that pregnant women and children under 5 years are prioritized it is essential to explore if this is the case in your country as exceptions to this have been reported. The acceptability and use of ITNs are strongly linked to culturally accepted sleeping patterns, in which gender and age play important roles.
g2 Does it differ when the household is headed by a woman? How?	In some instances, young children sleep with their mother and are therefore protected by her ITN if she has one (72).
g3 Is education and literacy of the head of household a predictor for utilization of ITNs?	A meta-analysis of population-based surveys across sub Saharan Africa demonstrated that in households that do not have enough ITNs, women of reproductive age and children under 5 years of age are prioritized to use the nets (39). In addition children aged 5 – 14 years and adult males were least likely to use nets (73).
g4 Is education and literacy of the woman (being the head of household or not) a predictor for utilization of ITNs?	In some parts of some countries, the gender of the care-giver may be linked to LLIN use as shown in Nigeria, where the sex of the care giver (being female) and a mother's education significantly increased the utilization of ITNs (74).
g5 Is the role and status between women in the household a predictor for utilization of ITNs?	The care giver's age has also been shown to be strongly associated with utilization of ITNs in some settings (74) (75).

QUESTION	CONSIDERATIONS
<p>g6 Are there interactions between gender, age and the efficacy and acceptability of indoor residual spray?</p>	<p>As the primary caretakers of the household, women are the first household members that vector control personnel such as IRS spray teams will encounter. However, cultural norms and safety precautions may not permit a woman to allow an unknown adult male to enter the house (58). This can impede vector control programs, which can miss houses or whole communities during program implementation (59).</p> <p>An effort by PMI's AIRS project to increase the number of female sprayers successfully recruited and promoted women as sprayers, but found no impact on acceptability and refusal rates, and in some cases found a marginal increase in refusal if there were female spray operators (76).</p> <p>Age was found to indirectly impact IRS acceptability in Mozambique where community leaders noted that when young members of the community were not selected as spray operators, these same individuals created rumours about IRS, encouraging residents to refuse the campaign (77).</p>
<p>g7 Are there gender specific issues affecting the women's attendance to antenatal care (ANC)?</p> <p>g8 Does it differ across different age and education level cohorts?</p> <p>g9 Are there gendering specific issues affecting the uptake of IPTp and SMC in infants and children under five respectively?</p> <p>g10 Does it vary when mother's education and age are considered?</p>	<p>Gender-specific reasons for poor access to IPTp can include women's lack of financial resources, delays due to having to wait to obtain permission from their husband to attend ANC, heavy load of household responsibilities, and mandatory male attendance at ANC visits – a policy intended to encourage male engagement – which resulted in women being more likely to delay attending ANC while they try to convince their partners to accompany them (78).</p> <p>Women with migrant background may face greater disparities in the health services received due to cultural factors for example a refugee pregnant woman from religion X which dictates that she should be seen only by a female doctor/nurse may be in a host country where this is not an issue thus the health facilities predominately have male health workers.</p> <p>Adolescent girls face elevated barriers to accessing ANC services as they attempt to conceal their pregnancies for as long as possible to avoid stigma and discrimination by health workers, their families, and the larger community. Pregnant adolescents may not get cooperation from the nurses during ANC visits without being lectured and the nurses may have wanted her to come with an escort, a mother in law, a mother etc. Other barriers include <i>unfavourable</i> health facility opening hours, poor attitude and <i>behaviour</i> by older pregnant women, inadequate privacy and confidentiality (79).</p> <p>Based on the decision power in households, a mother may or may not be allowed to take her child for IPTi or accept SMC (whether delivered house to house or through distribution points).</p>

h. Intra-household decision power affecting treatment

Intra-household decision power affecting health seeking behaviour may be both linked to control of financial resources, as well as to other gender norms that often harm the ability of women to seek care. When looking at intra-household dynamics, it is important to assess

the different patterns followed by households headed by women versus household headed by men, or single women households, within a same area, as well as other background characteristics such as educational level of members, income level and other relevant background characteristics that may lead to harmful gender patterns.

QUESTION	CONSIDERATIONS
h1 How does access to and control over resources within a household affect access to healthcare?	Men, in many contexts, control decision making and finances. This may force women to seek sub-optimal services or delay/not seek treatment if they do not have the resources to access services.
h2 Who within the household makes the decision about when to seek treatment?	A study in Ghana found that women who lacked economic support from male relatives, or who disagreed with husbands or family elders about appropriate malaria treatment, faced difficulties accessing health care for children affected by malaria. These women also bore most of the cost of seeking treatment, which was disproportionate to their access to resources (80).
h3 Who makes the decision about where to seek treatment? If and how does it depend on who is sick (ex: child is sick; wife is sick; husband is sick; grandparent is sick)	
h4 To what extent do women in the household participate in or make health related decisions on their own of the children?	Because women often have less access to resources to pay for care, it may lead women to attend traditional healers more often or delay seeking services.
h5 Does it vary across age groups or education level?	

i. Division of labour

Multiple reviews of gender and malaria have noted the connection between gendered household roles and occupations, and malaria vulnerability. Traditional gender roles and occupations can put women and men at elevated risk of malaria infection. For example, men

may work in the fields at dusk or women may gather water early in the morning, exposing them to peak mosquito-biting times (81). *Please note: the questions below must be adapted to the relevant entomological context, i.e. the activities cited below may or may not increase (or decrease) the risk of malaria based on the local behaviour of the vector.*

QUESTION	CONSIDERATIONS
i1 What specific activities of women and girls, including household, community, or workplace responsibilities, that influence the risk of or vulnerability to malaria?	Women's household responsibilities such as cooking the evening meal outdoors or waking up before sunrise to prepare the household for the day may put them at greater risk of malaria infection than men in their societies (82).
i2 What specific activities of men and boys, including household, community, or workplace responsibilities, that influence the risk of or vulnerability to malaria?	In some pastoral societies, boys and young men leave their homes to watch over livestock as they graze. These boys and young men have very little, if any, protection from malarial mosquitoes and are often far away from treatment facilities should they fall ill. Men from low endemicity regions may also migrate to areas of high endemicity for work, putting them at substantial risk (22).
i3 Do specific roles in farming increase the risk of or the vulnerability to malaria for men and women and/or girls and boys differently? How?	

QUESTION	CONSIDERATIONS
<p>i4 Is there a difference in the burden of work that prevents men and/or women to seek healthcare?</p>	<p>Women may not seek healthcare due to the burden of work associated with responsibilities for childcare, food preparation and other family care. They reportedly tend to delay seeking modern treatment until their symptoms are too severe to ignore. Thus, they take longer to recover and often return to work before they have completely recuperated (83).</p> <p>In some settings when men are ill, others encourage them to seek medical help, and hence they are appropriately diagnosed and treated earlier than women. They also receive greater care from wives and others and are not expected to perform other duties until they are better. Women often substitute for their husbands in agricultural work when they are ill but husbands rarely substitute for their wives, and only essential duties are assumed by other family members (83).</p> <p>Men may also not seek healthcare due to loss of income associated or due to the desire to show strength and manliness where culturally sickness is a sign of weakness (84).</p>

Key processes

- ▶ Using the above reference questions develop data collection tools – Key informant interview guide and Focus group discussion questionnaires, guided by the samples in the Annexes.
- ▶ Pre-test the data collection tools to ensure that the questionnaires can be applied in an acceptable timing.
- ▶ Check for any sensitivity related to terms/expressions that may cause discomfort to the respondent.
- ▶ Check for any gender sensitivity related to the participation of the respondents (as both women and men) in the assessment.
- ▶ Use sentences that can empower respondents to think about how their feedback on services and/or barriers can influence policy.
- ▶ Ensure that consent forms are signed, and that information are kept confidential.
- ▶ Consider having women-only, adolescent girls-only, men-only, adolescent boys-only focus group discussions instead of mixed men-women or mixed boys-girls focus group discussions to allow full participation and freedom of speech.
- ▶ Ensure an environment of active listening, non-judgment and mutual respect and confidentiality for every focus group participant to feel at ease to speak up.

MODULE 4:

Data analysis and validation

When the matchbox toolkit is implemented as part of a HBHI strategy or a MPR/MTR as recommended, then the data analysis will be conducted in line with the recommended processes. For example within a malaria program review, data analysis will be conducted following the field visits as described in the WHO practical manual for MPRs and MTRs (<https://www.afro.who.int/publications/practical-manual-malaria-programme-review-and-malaria-strategic-plan-midterm-review>).

In the MPR, the desk review is organized along the framework of four strategic analyses: programme epidemiological and entomological impact analysis; programme financing analysis; programme “capacity to implement” analysis; and analysis of the attainment of programme outcome targets. Integrating the malaria matchbox would add a fifth analysis component (work stream 5) on equity.

It is recommended that analysis of data is not kept until the end of the assessment (as the final phase) but is implemented as an ongoing process, from the time data begin to be collected. At each stage of the process, notes and, transcribed audio recordings from FGDs and KIs, observations and, desk reviews can all be summarized and preliminary reports made for each section.

Methodology:

- i. Summarize and integrate the findings from modules 1-3 (as shown in the sample template in *Annex 5*). Then, analyze findings, identify barriers and merge into the HBHI or MPR/PTR preliminary report to be shared with technical experts.
- ii. In-cooperate a stakeholder meeting within the HBHI or MPR ‘conclusion workshops’ to review findings and barriers identified. Ensure all key stakeholders are invited to participate in the workshop. The meeting should include: Ministry of Health representatives, all malaria implementing partners (NGO’s, CSO’s, FBO’s), representatives from relevant non-malaria sectors, including gender, education, occupational health, finance, legislature, housing etc., representatives from the communities identified for assessment, private and public sector multisector entities, academia and research, development partners (for example WHO, UNICEF and UNDP) and, donors (such as DFID, Global Fund and, PMI). Ensure senior government participation in this work shop/meeting to ensure translation of joint recommendations will be translated to policies.

- iii. Produce and disseminate a draft assessment report. When conducted alongside a HBHI or MPR/MTR an integrated preliminary report will be developed.

Specific Steps:

Step 1:

Data collected in modules 1, 2 & 3 should be summarized.

- ▶ It is advisable to first review the questions/questionnaires to remind one’s self of the key purpose of the assessment and the key areas identified. Reflect on the questions shared in each module above.
- ▶ Skim notes and transcriptions to identify themes.
- ▶ Review notes again, synthesize and categorize based on the documented themes.
- ▶ Review the notes under each theme and identify patterns, note information that answers the questions. Use various forms to document findings including graphs and charts.

Step 2:

The data should be synthesized, triangulated and barriers identified and documented in a summarized format as shown in the sample template in *Annex 5*. Then write an initial draft of the findings which will be integrated into the MPR/MTR report or the overall report of which this is a component such as the HBHI report and, disseminate it for a wider technical review.

Step 3:

Conduct a 2-3 day meeting led by the assessment technical team with the key stakeholders listed above to review and validate the findings including identified barriers.

It is essential that the findings are validated by all key stakeholders through a national stakeholder’s workshop or meeting.

The objectives of the workshop/meeting are:

- ▶ To share and review the findings of the assessment.
- ▶ To discuss the findings and their implication in relation to malaria programming and policies.
- ▶ To identify and plan the next steps towards action.

MODULE 5:

Action planning

Module 5 aims at using the findings from the assessment for an equitable and gender transformative response. The module provides programmatic guidance and good practices on how key issues can be addressed through more refined and integrated approaches and how this can be combined with strategies that are already in place in the country.

Specific Objectives:

1. Review the assessment findings and identify barriers.
2. Develop actions to address barriers and improve equity in malaria programme.
3. Review and prioritize proposed actions.
4. Outline next steps to mainstream proposed actions.

Methodology

The first step is a consultative review of the findings led by the malaria country program and should include in-depth assessment of the identified barriers, to ascertain if they have each been addressed in any policies or program documents. If yes, determine if there are gaps and what has worked and what has not worked.

Once the barriers to access and use of services including gender inequality are identified the next step is to identify actions towards developing malaria responsive programmes that can address these barriers and inequalities. In the process of developing actions, consider current best practices and global recommendations, and adapt evidence-based practices to suit the local context. Use of tools such as EQUIST (www.equist.info) can help identify strategies to address health system level barriers and bottlenecks and quantify lives saved among children and women. Actions recommended should be specific and realistic.

Refer to existing global documents which may be useful in enabling identification of actions such as: [WHO's Innov8 technical handbook](#); UNICEF's EQUIST tool; UNAIDS gender assessment tool; malaria and gender RBM etc.

Establish actions that have been shown to effectively address the barriers identified and determine how they can be integrated into existing interventions or adapted into the existing programs. To do this will require wide consultation and collaboration, ensuring the affected/identified groups are included to support a human-centered design approach. Evidence can be obtained from within the country or other countries with similar malaria endemicity, similar socio-economic barriers and similar gender inequalities. For some groups/barriers, no concrete actions may be identified immediately but a plan should be developed and clear steps outlined towards the exploration and identification of suitable actions. Operational research may be required to guide the development of an effective intervention. Prioritize actions with guidance from tools such as the [Innov8 Technical handbook](#). Examples of criteria used for prioritization of actions are provided in *Annex 4*.

When implementation of the Malaria Matchbox Toolkit is conducted as part of a malaria programme review or a HBHI analysis, the recommended actions will guide the revision or development of national malaria strategic plans. When use of the Malaria Matchbox is conducted to guide funding requests such as the Global Fund proposal or in designing of implementation programs/projects (such as PMI funded projects) it is essential that the recommended actions are mainstreamed into the country's malaria programming, policies and guidelines. The recommendations may include policy, implementation or research recommendations.

Addressing the broad range of barriers identified using the Matchbox process in order to increase the equity and overall effectiveness of malaria programmes ultimately requires programme managers to be aware of the barriers and to be able to work with affected communities and adapt how malaria programmes and services are delivered accordingly.

There is a rich literature describing the barriers faced by malaria programmes, including barriers related to gender norms and inequalities, occupational risks, social and cultural risks, different forms of marginalisation and human rights. While these investigations often make suggestions or recommendations for potential solutions to these challenges, there is comparatively less robust research describing proven, effective approaches or interventions to address these barriers.

As such, the Matchbox does not offer definitive guidance on how to address the barriers or a menu of approaches or interventions that can address these challenges. However, in *Annex 6* the toolkit provides a small number of illustrations of approaches that have been proven or that have shown potential. The intention of the table in *Annex 6* is to provide ideas, inspiration and references that users can use to address the challenges they identify through the Matchbox process. The evidence is presented in table form, and provides additional information on the population groups, context and approaches where these interventions were effectively delivered.

The illustrations are provided by specific population group (or groups), with basic information on their location also provided. While the population group concerned by each example is specified, in most cases implementers of malaria programmes may be able to adopt or adapt the approach even when working with a different population or in a different context. Because the core package of evidence-based malaria interventions is well established, the focus of these examples is on describing alternative means of delivering those interventions with a view to removing barriers faced by vulnerable groups and achieving greater equity.

Report finalization

After the national workshop including the action planning, the team leader and the assessment committee should finalize the assessment report based on the edits and recommendations agreed at the workshop.

Develop the final assessment report including the proposed actions. Include an action work plan in the report indicating the timelines for each specific action, responsible persons, and resources. The report can follow the proposed structure in sample report outlined in *Annex 6*.

PART C: ANNEXES

Annex 1 Template for concept note

Assessment title:

Date:

1. Implementing entity and key partners

Insert name of the Ministry/Division/organization submitting the concept note. Also include a brief description of key partners. Add a page describing the national or local context in which the assessment will take place.

2. Background

Provide a short general overview of the proposed assessment, including operational timeframe (start end and dates). Between 1/2 page to 1 page.

3. Project summary

3.1. Overall goal and objective

Provide the overall general goal and specific objectives of the proposed assessment (maximum 1).

3.2. Expected outcomes

Provide the overall expected outcomes of the proposed assessment including benefits (approximately 1-3).

3.3. Indicators of achievement

Provide key indicators (1-2 per expected outcome) of how the expected outcomes will be measured.

3.4. Main activities

List the main activities and duration of the proposed assessment. Please clearly indicate the expected outcome(s) to which each activity relates.

3.5. Key target beneficiary population

Provide a detailed description of the key target beneficiary group, including key characteristics/demographics and what are the key risk/vulnerability factors for this group. Provide the rationale of why and how this target audience was chosen.

3.6. Summary budget

Provide a description of tentative budget lines.

Annex 2 Sample Consent form

INFORMED CONSENT FORM TEMPLATE

(Adapted from WHO Informed Consent Form Template for Qualitative Studies)

This is a sample template to guide the development of an informed consent form (ICF) which can be adapted to your own country and community context. This template provides an outline for an equity assessment that use questionnaires, in-depth interviews or focus group discussions.

The informed consent form consists of two parts: the inform assessment sheet and the consent certificate. This template includes examples of key questions that may be asked at the end of each section, that could ensure the understanding of the information being provided. These are just examples, and suggestions, and should be modified to the country context.

In this template:

- ▶ square brackets indicate where specific information is to be inserted
- ▶ bold lettering indicates sections or wording which should be included
- ▶ standard lettering is used for explanations to researchers only and must not be included in your consent forms. The explanation is provided in black, and examples are provided in red in italics. Suggested questions to elucidate understanding are given in black in italics.

[Informed Consent Form for]

Name the group of individuals for whom this consent is written - for example, community members, health workers, women community group, men community group etc.

- ▶ **EXAMPLE:** This informed consent form is for women in the community X and who we are inviting to participate in a research, titled "An Assessment of risk factors affecting health equity in the context of malaria"

You may provide the following information either as a running paragraph or under headings as shown below.

[Name of Organization]

[Name of Sponsor, if applicable]

[Name of Project and Version]

This Informed Consent Form has two parts:

- ▶ **Information Sheet** (to share information about the assessment study with you)
- ▶ **Certificate of Consent** (for signatures if you choose to participate)

You will be given a copy of the full Informed Consent Form

Part I: Information Sheet

Introduction

Briefly state who you are and that you are inviting them to participate in this assessment/research which you are doing. Inform them that they may talk to anyone they feel comfortable talking with about the research and that they can take time to reflect on whether they want to participate or not. Assure the participant that if they do not understand some of the words or concepts, that you will take time to explain them as you go along and that they can ask questions at any-time.

- ▶ **EXAMPLE:** I am X, working for/on behalf of the Ministry of Health _malaria programme/ organization Y. I am doing research/an assessment on the risk factors affecting health equity in the context of malaria in your community where malaria is very common. I am going to give you information and invite you to be part of this research. You do not have to decide immediately whether or not, you will participate in the research. Before you decide, you can talk to anyone you feel comfortable with about the research.

This consent form may contain words that you do not understand. Please ask me to stop as we go through the information and I will take time to explain. If you have questions later, you can ask them of me or of another interviewer.

Purpose of the research

Explain the aim of the assessment in lay terms which will clarify rather than confuse. Use local and simplified words rather than scientific terms and professional jargon. In your explanation, consider local beliefs and knowledge when deciding how best to provide the information.

- ▶ **EXAMPLE:** Malaria is making many people sick in your community. We want to find out whether you have access to information on how to prevent you and your family from getting malaria and if you get it whether you are able, to get treatment on time. We want to learn about any challenges you have in accessing malaria prevention and treatment services, what causes these challenges and how you think they can be solved. We believe that you can help us by telling us what you know both about malaria and about local health practices. We want to learn what people who live or work here know about the causes of malaria and why some people get it. We want to learn about the different ways that people try to stop malaria before someone gets it or before it comes to the community, and how people know when someone has it. We also want to know more about local health practices because this knowledge might help us to learn how to better control malaria in this community.

Type of Assessment

Briefly state the type of assessment that will be undertaken. This will be expanded upon in the procedures section but it may be helpful and less confusing to the participant if they know from the very beginning whether, for example, it involves an interview, a questionnaire, or a focus group discussion.

- ▶ **EXAMPLE:** This assessment will involve your participation in a group discussion that will take about one and a half hour, and a one hour interview.
-

Participant Selection

Indicate why you have chosen this person to participate in this research. People wonder why they have been chosen and may be fearful, confused or concerned.

► **EXAMPLE:** You are being invited to take part in this research because we feel that your experience as a as a mother, or as a health workers, a farmer, a responsible citizen etc. can contribute much to our understanding and knowledge of local health practices.

► **EXAMPLE OF QUESTION TO ELUCIDATE UNDERSTANDING:** Do you know why we are asking you to take part in this assessment? Do you know what the assessment is about?

Voluntary Participation

Indicate clearly that they can choose to participate or not. State, only if it is applicable, that they will still receive all the services they usually do if they choose not to participate. Explanation: It may be more applicable to assure them that their choosing to participate or not will not have any bearing on their job or job-related evaluations. This can be repeated and expanded upon later in the form as well. It is important to state clearly at the beginning of the form that participation is voluntary so that the other information can be heard in this context. Also inform them that if they change their mind after if the interview or group discussion has taken place, they can request that the information provided by them not be used in the assessment analysis and report.

► **EXAMPLE:** Your participation in this assessment is entirely voluntary. It is your choice whether to participate or not. If you choose not to participate all the services you receive at this centre will continue and nothing will change.

OR

The choice that you make will have no bearing on your job or on any work-related evaluations or reports. You may change your mind later and stop participating even if you agreed earlier.

► **EXAMPLES OF QUESTION TO ELUCIDATE UNDERSTANDING:** If you decide not to take part in this assessment, do you know what your options are? Do you know that you do not have to take part in this assessment, if you do not wish to? Do you have any questions?

Procedures

A. Provide a brief introduction to the format of the research study.

► **EXAMPLE:** We are asking you to help us learn more about malaria in your community. We are inviting you to take part in this assessment. If you accept, you will be asked to....

B. Explain the type of questions that the participants are likely to be asked in the focus group, the interviews, or the survey. If the research involves questions or discussion which may be sensitive or potentially cause embarrassment, inform the participant of this.

► **EXAMPLE 1 (for focus group discussions)**

...take part in a discussion with 7-8 other persons with similar experiences. This discussion will be guided by [name of moderator/guider] or myself.

The group discussion will start with me, or the focus group guide or moderator (use the local word for group discussion leader), making sure that you are comfortable. We can also answer questions about the assessment that you might have. Then we will ask you questions about the malaria and give you time to share your knowledge. The questions will be about malaria in your community, how is it recognized, what people do to stop it from spreading to other people, who people go to for help and what happens when people become sick with it.

We will also talk about community practices because this will give us a chance to understand more about malaria but in a different way. We will ask you to share personal beliefs, practices or stories and you do not have to share any knowledge that you are not comfortable sharing.

The discussion will take place in [location of the FGD], and no one else but the people who take part in the discussion and guide or myself will be present during this discussion. The entire discussion will be tape-recorded, but no-one will be identified by name on the tape. The tape will be kept [explain how the tape will be stored]. The information recorded is confidential, and no one else except [name of person(s)] will have access to the tapes. The tapes will be destroyed after number of days/weeks.

► **EXAMPLE 2 (for interviews)**

participate in an interview with [name of interviewer] or myself.

During the interview, I or another interviewer will sit down with you in a comfortable place at the Centre. If it is better for you, the interview can take place in your home or a friend's home. If you do not wish to answer any of the questions during the interview, you may say so and the interviewer will move on to the next question. No one else but the interviewer will be present unless you would like someone else to be there. The information recorded is confidential, and no one else except [name of person(s)] will access to the information documented during your interview. The entire interview will be tape-recorded, but no-one will be identified by name on the tape. The tape will be kept [explain how the tape will be stored]. The information recorded is confidential, and no one else except [name of person(s)] will have access to the tapes. The tapes will be destroyed after number of days/weeks.

► **EXAMPLE 3 (for questionnaire surveys)**

fill out a survey which will be provided by [name of distributor of blank surveys] and collected by [name of collector of completed surveys]. Or, you may answer the questionnaire yourself, or it can be read to you and you can say out loud the answer you want me to write down.

If you do not wish to answer any of the questions included in the survey, you may skip them and move on to the next question. [Describe how the survey will be distributed and collected]. The information recorded is confidential, your name is not being included on the forms, only a number will identify you, and no one else except [name of person(s) with access to the information] will have access to your survey.

Duration

Include a statement about the time commitments of the assessment for the participant including both the duration of the research and follow-up, if relevant.

- ▶ **EXAMPLE:** The assessment takes place over (number of) days/ or (number of) months in total. The group discussion will be held once and will take about one and a half hour.

- ▶ **EXAMPLES OF QUESTION TO ELUCIDATE UNDERSTANDING:** If you decide to take part in the assessment, do you know how much time the interview will take? Where will it take place? Do you know that we will be sending you transport to pick you up from your home?
- ▶ If you agree to take part, do you know if you can stop participating? Do you know that you may not respond to the questions that you do not wish to respond to? Etc. Do you have any more questions?

Risks

Explain and describe any risks that you anticipate or that are possible. The risks depend upon the nature and type of qualitative intervention, and should be, as usual, tailored to the specific issue and situation.

- ▶ If the discussion is on sensitive and personal issues e.g. cultural practices, gender biases, personal habits etc. then an example of text could be something like “We are asking you to share with us some very personal and confidential information, and you may feel uncomfortable talking about some of the topics. You do not have to answer any question or take part in the discussion/interview/survey if you don’t wish to do so, and that is also fine. You do not have to give us any reason for not responding to any question, or for refusing to take part in the interview”

OR If for example, the discussion is on opinions on government policies and community beliefs, and in general no personal information is sought, then the text under risks could read something like “There is a risk that you may share some personal or confidential information by chance, or that you may feel uncomfortable talking about some of the topics. However, we do not wish for this to happen. You do not have to answer any question or take part in the discussion/interview/survey if you feel the question(s) are too personal or if talking about them makes you uncomfortable.

Benefits

Benefits may be divided into benefits to the individual, benefits to the community in which the individual resides, and benefits to society as a whole as a result of finding an answer to the research question. Mention only those activities that will be actual benefits and not those to which they are entitled regardless of participation.

- ▶ **EXAMPLE:** There will be no direct benefit to you, but your participation is likely to help us find out more about how to better prevent and treat malaria in your community.

Reimbursements

Incentives beyond reimbursements for expenses incurred as a result of participation in the assessment are not encouraged. These may include, for example, travel costs and reimbursement for time lost. The amount should be determined within the host country context.

► **EXAMPLE:** You will not be provided any incentive to take part in the assessment. However, we will give you [provide a figure, if money is involved] for your time, and travel expense (if applicable).

► **EXAMPLES OF QUESTION TO ELUCIDATE UNDERSTANDING:** Can you tell me if you have understood correctly the benefits that you will have if you take part in assessment? Do you know if we will pay for your travel costs and time lost, and do you know how much you will be re-imbursed? Do you have any other questions?

Confidentiality

Explain how the research team will maintain the confidentiality of data with respect to both information about the participant and information that the participant shares. Outline any limits to confidentiality. For example, inform the participant that because something out of the ordinary is being done through this assessment, any individual taking part in the assessment is likely to be more easily identified by members of the community and therefore more likely to be stigmatized. If the assessment is sensitive and/or involves participants who are highly vulnerable - research concerning violence against women for example - explain to the participant any extra precautions you will take to ensure safety and anonymity.

► **EXAMPLE:** The assessment being done in the Community, may draw attention and if you participate you may be asked questions by other people in the community. We will not be sharing information about you to anyone outside of the research team. The information that we collect from this research project will be kept private. Any information about you will have a number on it instead of your name. Only the researchers will know what your number is and we will lock that information up with a lock and key. It will not be shared with or given to anyone except [name who will have access to the information, such as research sponsors, etc]

The following applies to focus groups:

Focus groups provide a particular challenge to confidentiality because once something is said in the group it becomes common knowledge. Explain to the participant that you will encourage group participants to respect confidentiality, but that you cannot guarantee it.

► **EXAMPLE:** We will ask you and others in the group not to talk to people outside the group about what was said in the group. We will, in other words, ask each of you to keep what was said in the group confidential. You should know, however, that we cannot stop or prevent participants who were in the group from sharing things that should be confidential.

► **EXAMPLE OF QUESTION TO ELUCIDATE UNDERSTANDING:** Did you understand the procedures that we will be using to make sure that any information that we as researchers collect about you will remain confidential? Do you understand that the we cannot guarantee complete confidentiality of information that you share with us in a group discussion Do you have any more questions?

Sharing the Results

Your plan for sharing the findings with the participants should be provided. If you have a plan and a timeline for the sharing of information, include the details. You may also inform the participant that the assessment findings will be shared more broadly, for example, through publications and conferences.

- ▶ **EXAMPLE:** Nothing that you tell us today will be shared with anybody outside the assessment team, and nothing will be attributed to you by name. The knowledge that we get from this assessment will be shared with you and your community before it is made widely available to the public. Each participant will receive a summary of the results. There will also be small meetings in the community and these will be announced. Following the meetings, we will publish the results so that other interested people may learn from the assessment.

Right to Refuse or Withdraw

This is a reconfirmation that participation is voluntary and includes the right to withdraw. **Tailor this section to ensure that it fits for the group for whom you are seeking consent.** The example used here is for a community social worker. Participants should have an opportunity to review their remarks in individual interviews and erase part or all of the recording or note.

- ▶ **EXAMPLE:** You do not have to take part in this assessment if you do not wish to do so, and choosing to participate will not affect your job or job-related evaluations in any way. You may stop participating in the [discussion/interview] at any time that you wish without your job being affected. I will give you an opportunity at the end of the interview/discussion to review your remarks, and you can ask to modify or remove portions of those, if you do not agree with my notes or if I did not understand you correctly.

Who to Contact

Provide the name and contact information of someone who is involved, informed and accessible - **a local person who can actually, be contacted.** State also the name (and contact details) of the local IRB that has approved the proposal. State also that the proposal has also been approved by the WHO ERC.

- ▶ **EXAMPLE:** If you have any questions, you can ask them now or later. If you wish to ask questions later, you may contact any of the following: [name, address/telephone number/e-mail]

This proposal has been reviewed and approved by [name of the local IRB], which is a committee whose task it is to make sure that research participants are protected from harm. If you wish to find about more about the IRB, contact

This proposal has been reviewed and approved by [name of the local IRB], which is a committee whose task it is to make sure that research participants are protected from harm. If you wish to find about more about the IRB, contact [name, address, telephone number.]

- ▶ **EXAMPLE OF QUESTION TO ELUCIDATE UNDERSTANDING:** Do you know that you do not have to take part in this study if you do not wish to? You can say No if you wish to? Do you know that you can ask me questions later, if you wish to? Do you know that I have given the contact details of the person who can give you more information about the study? Etc.

You can ask me any more questions about any part of the research study, if you wish to. Do you have any questions?

Part II: Certificate of Consent

This section must be written in the first person. It should include a few brief statements about the assessment and be followed by a statement similar the one in bold below. If the participant is illiterate but gives oral consent, a witness must sign. A researcher or the person going over the informed consent must sign each consent. Because the certificate is an integral part of the informed consent and not a stand-alone document, the layout or design of the form should reflect this. The certificate of consent should avoid statements that have “I understand...” phrases. The understanding should perhaps be better tested through targeted questions during the reading of the information sheet (some examples of questions are given above), or through the questions being asked at the end of the reading of the information sheet, if the potential participant is reading the information sheet him/herself.

► **EXAMPLE:** I have been invited to participate in research about malaria and local health practices.

(THIS SECTION IS MANDATORY)

I have read the foregoing information, or it has been read to me. I have had the opportunity to ask questions about it and any questions I have been asked have been answered to my satisfaction. I consent voluntarily to be a participant in this study

Print Name of Participant

Signature of Participant

Date Day/month/year

If illiterate¹

I have witnessed the accurate reading of the consent form to the potential participant, and the individual has had the opportunity to ask questions. I confirm that the individual has given consent freely.

Print name of witness

Signature of witness

Date Day/month/year

Thumb print of
participant

¹ A literate witness must sign (if possible, this person should be selected by the participant and should have no connection to the research team). Participants who are illiterate should include their thumb print as well.

STATEMENT BY THE RESEARCHER/PERSON TAKING CONSENT:

I have accurately read out the information sheet to the potential participant, and to the best of my ability made sure that the participant understands that the following will be done:

- 1.
- 2.
- 3.

I confirm that the participant was given an opportunity to ask questions about the study, and all the questions asked by the participant have been answered correctly and to the best of my ability. I confirm that the individual has not been coerced into giving consent, and the consent has been given freely and voluntarily.

A copy of this ICF has been provided to the participant.

Print Name of Researcher/person taking the consent

Signature of Researcher /person taking the consent

Date Day/month/year

Annex 3 Sample Focus Group Discussion Topic Guide

The FGD Topic guide should be tailored to the specific FGD groups (population) e.g. women/men/refugees/migrants, hard to reach population/fishermen, rice farmers, etc.

FGD facilitator FGD Note taker

Date No. of participants

Time Village

Diagram of participants (seating arrangements) FGD Participant: (8-10)

Introduction yourself and organization. Introduce topic (length of FGD about 1.5 hours, confidentiality, and informed consent).

SOCIO-CULTURAL FACTORS	General Question	1. What are the most common health problems in this community? ▶ Probe for all disease and malaria
	Malaria	2. What do people call malaria in this community? ▶ Probe for all local terminologies 3. Is malaria considered a serious health problem in this community? Why? Why not?
	Signs and Symptoms of malaria	4. What are the common signs and symptoms of malaria?
	Causes of malaria	5. According to your opinion how do people get malaria? Causes of malaria? (Explore all existing beliefs i.e. bad spirit, bathing in the stream etc. 6. Which groups of people are most likely to get malaria? Why?
	Healthcare seeking Behaviour	7. When a person gets malaria, what do they, family members/land owners do for treatment? ▶ Probe for home treatment, herbal medicines 8. Where do they go first for the treatment? ▶ Probe for all types of health care providers including private practitioners, drugs shops, traditional healers, and faith healers and who is visited first? Where do they go next (second) if there is no improvement? 9. How long after fever starts do you seek care? Does it vary for men/women or boys/girls? 10. Who decides in the family or workplace where to seek treatment? 11. Who influences the patient to seek effective treatment for malaria? 12. What are the barriers to receive effective treatment of malaria? ▶ Probe: Decision making, financial, distance to health care services, long wait at health facility, lack of time, language barriers, lack of health insurance, quality of health care services.
	Preventive Measures	13. What kind of things do people in this community usually do to protect themselves from malaria? ▶ Probe for mosquito nets: Who provides? 14. What do you do when you sleep outside the house (security guard) in the forest or farm to protect yourself from malaria? What do you do when you are outside late at night for social reasons e.g wedding ceremony, social drinking? ▶ Probe for hammock nets and repellents etc. 15. If no preventive behavior, why no preventive measures taken? ▶ Probe: expensive, not available, hot? etc.

SOCIO-CULTURAL FACTORS	Work	<ol style="list-style-type: none"> 16. Which parts of the country do people who work/live here usually come from? <ul style="list-style-type: none"> ▶ Probe: Do they migrate alone or together with their families? How long do they usually stay? Where do they usually reside while they are here? 17. What kinds of jobs do men do to earn a living in this community/around here? What kinds of jobs do women do to earn a living in this community/around here? 18. What do men wear while at work? What do women wear while at work? <ul style="list-style-type: none"> ▶ Probe if clothing exposes or protects against mosquitoes. 19. If any migrants or mobile groups what do they do to protect against malaria? 20. Where do migrants usually get treatment for malaria? What kinds of difficulties do migrants face when trying to get treatment for malaria? <ul style="list-style-type: none"> ▶ Probe for area distance, cost, health worker attitudes, or legal issues factors?
INFORMATION ACCESSIBILITY	Communication Channels	<ol style="list-style-type: none"> 1. What are the main sources of information/communication about health for people in the community? <ul style="list-style-type: none"> ▶ Probe: Radio, T.V, Interpersonal e.g. Community health workers, Facility staff, village leaders, community meetings, and teachers etc. 2. Is the information on malaria provided in a language (s) suitable for all? If no which groups of people is it not suitable for? Why? <ul style="list-style-type: none"> ▶ Probe: A specific ethnic group, immigrants, less educated, women, men, youth. 3. Which sources of information do you trust most? 4. What mode of communication do you prefer? <ul style="list-style-type: none"> ▶ Probe: TV, Telephone SMS, Community mass campaigns, interpersonal, information materials. 5. Is there any SBCC information regarding malaria treatment or prevention that is contrary to traditional beliefs /culture/religion? 6. Is the community consulted in the development of malaria information materials/ messages?
PHYSICAL ACCESSIBILITY	Communication Channels	<ol style="list-style-type: none"> 1. How do you feel about the health services that you receive? What about the services specifically for malaria prevention and treatment? 2. What are the challenges that people face in accessing malaria prevention and treatment services in terms of distance, terrain, safety, timing of availability of services, location of services etc. 3. Are there particular population groups who face more access challenges than others? <ul style="list-style-type: none"> ▶ Probe: Specific challenges for women and girls? IDPs/refugee/returnees and host communities? information materials/ messages?
FINANCIAL ACCESSIBILITY		<ol style="list-style-type: none"> 1. Who has access to and control of resources, and decision making? 2. Do women have access to this resource? (do women have the possibility to use it?) 3. Do women have control over the resource? (do women have the possibility to define the use of it within a certain space of participation?)

Annex 4 Example of criteria for prioritization

Criteria to prioritize actions/interventions

- ▶ Health equity impact - individual effectiveness
- ▶ Health distribution - population impact
- ▶ Economic impact
- ▶ System impacts
- ▶ Required expertise
- ▶ Feasibility - Health care personnel, Information system, Medical products and technology requirements
- ▶ Ease in implementation
- ▶ Sustainability
- ▶ Legal regulations
- ▶ Return on investment

Annex 5 Assessment Findings/results summary template

National/ Sub-national/ Community	Population	Methodology (Interview/FGD)	Barrier or risk	Potential solution
Example: 1. Community	Pregnant women	FGD	<ul style="list-style-type: none"> ▶ Long distance to Health facility ▶ Poor roads 	i) Community Health workers provide door to door services e.g. IPTp, LLINs
2.				

Annex 6 Key illustrations of actions/approaches taken to address barriers

The evidence presented in the table below was based on a review of available literature identified primarily through citations in malaria resources published by WHO and the RBM Partnership to End Malaria.

Barriers identified	Actions/Approaches taken	Expected/Achieved results	Reference
Restrictions on the decision-making power of women and lack of financial autonomy in Nigeria, Niger and Kenya	<p>Supported community members not only to identify the barriers they faced but also to propose effective solutions such as:</p> <ul style="list-style-type: none"> ▶ Engaging the community as active partners (e.g. Establish community emergency funds, transparency about fixed treatment costs at public facilities and local pharmacies, community maintenance of paths and walkways). ▶ Organization of community funds accessible to vulnerable families during emergencies. ▶ Maintaining a stable supply of free medicines and transparency about fixed costs at facilities. ▶ Ensuring that the national policy for free health care is put into effect. ▶ Economically empowering women to make them more financially independent. ▶ Door-to-door service to overcome restrictions on movement outside the household compound. ▶ Social empowerment of women. ▶ Health education for men - 'sensitized' to the health needs of their family. 	<ul style="list-style-type: none"> ▶ The authors acknowledge that while some of the proposed solutions are feasible within the scope of a health programme, those focusing on social norms and financial empowerment were beyond their core sphere of competence. ▶ This example illustrates the importance of connecting different health issues and connecting health to broader social welfare and development efforts. The fact that the programme was not focused only on malaria but on a broader range of child health issues (including pneumonia and diarrhoea) also emphasises the need for programmes to respond to health needs overall. 	Bedford KJA and Sharkey AB. Local Barriers and Solutions to Improve Care-Seeking for Childhood Pneumonia, Diarrhoea and Malaria in Kenya, Nigeria and Niger: A Qualitative Study. ²
Knowledge and information barriers	<ul style="list-style-type: none"> ▶ Strategic sustained and regular health education targeting key members of the community who had decision-making power and influence (especially men and local leaders). 		
Health facility deterrents	<p>Suggested solutions:</p> <ul style="list-style-type: none"> ▶ Focused on developing measures to improve patient experiences, specifically to reduce waiting times, improve interactions with health staff, and ensure that drugs were in stock. ▶ Focused on engaging the community as active partners (e.g. developing community emergency funds). ▶ Being transparent about fixed treatment costs available at public facilities and local pharmacies. ▶ Promoting community maintenance of paths and walkways, and engaging local leaders and informal providers to improve their knowledge. 		

² <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0100038>

Barriers identified	Actions/Approaches taken	Expected/Achieved results	Reference
Distance of services.	<ul style="list-style-type: none"> ▶ In Niger, many participants cited the important work of relais [a type of community health worker] and having a relais, with or without a health post in the vicinity, would be of huge benefit to the community. ▶ Other suggestions: expanding community-based services (through mobile services, better outreach, or enhanced roles for community health workers). 	Bring services closer to communities living in remote areas.	Project report: Malaria Matchbox Roll-out in Niger. Niamey, June 2018. Unpublished.
Patriarchal gender norms lead to male heads of households prioritizing themselves over their wives for LLIN use.	Established, a peer education programme aimed at positively influencing the behavior of male household heads. Program included short drama performances and focus group discussions illustrating, the critical role that men can play in supporting women both morally and financially to go for IPTs, ITNs and other malaria control measures.	Resulted in a rapid scale up of LLIN use.	Roll Back Malaria Partnership and Kvinnoforum. A guide to gender and malaria resources. Stockholm, 2005. ³
Limited LLIN usage linked to low self-confidence and self-efficacy among women from rural settings in Thailand, near the Myanmar border.	Empowerment program - Increasing the capacity of poor, low-educated women and their self-confidence in participating in malaria control-through training.	<ul style="list-style-type: none"> ▶ Enhanced women's ability to participate in malaria activities. ▶ Increased women's self-esteem and self-confidence. ▶ Increased the number of ITNs used in the community. ▶ Decrease in malaria incidence. 	Geounuppakul, M et al. "An empowerment program to enhance women's ability to prevent and control malaria". Southeast Asian journal of Tropical Medicine and Public Health; May 2007 38:3. ⁴
Challenges related to an emergency humanitarian situation caused by flooding in Gaza province.	<p>Programme adopted a participatory approach (ownership-based) focused on building the capacity and self-efficacy of affected communities, rather than being limited to simple distribution of LLINs.</p> <ul style="list-style-type: none"> ▶ Community participated in capacity-development activities. ▶ Stimulated within communities a dialogue in which residents would be involved in identifying the problems that affect them, analyzing the causes of those problems, and ultimately designing actions and strategies to address them. ▶ Created a set of simple tools, mostly drawings, that tell the story of malaria: depicting the mosquito that spreads the disease, its symptoms and treatment, and how communities can act in, the area of prevention—such as environmental sanitation and ridding villages of standing water where mosquitoes can breed. 	<p>Post distribution survey documented:</p> <ul style="list-style-type: none"> ▶ Improved knowledge and practices eg:100% knew what malaria was; 91% understood it is transmitted by mosquitoes (compared to only 30% in the earlier survey). ▶ 98.1% still had and were using their nets. ▶ Over 95% who received a net reported sleeping under it. ▶ Children were identified as a high-risk group by 85%-89% of respondents. ▶ Communities' increased understanding of their own ability to take measures to fight malaria. 	A Human Rights Approach During Emergencies - UNICEF website case study, 2004. ⁵

³ https://www.k4health.org/sites/default/files/gm_guide-en%5B1%5D.pdf

⁴ https://www.researchgate.net/publication/5966271_An_empowerment_program_to_enhance_women's_ability_to_prevent_and_control_malaria_in_the_community_Chiang_Mai_Province_Thailand

⁵ https://www.unicef.org/rightsresults/index_23693.html

Barriers identified	Actions/Approaches taken	Expected/Achieved results	Reference
Standard vector control methods (LLINs and IRS) not suitable for populations working away from home including mobile populations / populations in remote areas / forest workers.	<p>* Alternative technologies for vector control proposed:</p> <ul style="list-style-type: none"> ▶ Topical repellents for individuals who are away from their homes during the peak times of vector feeding. ▶ Use of long lasting, insecticide-treated hammocks for forest workers in Vietnam. ▶ Insecticide-treated clothing (e.g., chaddars and top sheets) in refugee areas in Afghanistan. ▶ Insecticide-treated personal clothes and bedding in Kenya. 	<ul style="list-style-type: none"> ▶ Results of evaluations of DEET-based soap in Pakistan and a plant-based repellent in Bolivia showed significant reductions, in <i>P falciparum</i> and <i>P vivax</i>, respectively. ▶ Decreased malaria infections associated with insecticide treated nets. <p>* While promising, further research is needed to validate the efficacy and acceptability of these interventions.</p>	Chris Cotter et. al, strategies for new challenges. <i>Lancet</i> 201 ; 382 : 900–11. ⁶
Undocumented migrant workers lacking basic information on malaria, as well as access to prevention and treatment services.	<ul style="list-style-type: none"> ▶ Linguistically accessible malaria information was made available where workers tend to stop or seek taxis and at border checkpoints. ▶ Mobile health workers visited the migrants' work sites to give information and conduct testing or referred people to nearby services. ▶ Clinics provided more complete mobile services. ▶ A telephone hotline provided malaria service information in the language of the workers. ▶ Worked with health officials to remove policy and documentation barriers to care for itinerant workers. 	<ul style="list-style-type: none"> ▶ Thousands of migrant workers have been reached with services in in the Greater Mekong Sub region. 	Global Fund briefing note on gender, human rights and malaria (2016). ⁷
The spread of resistance to artemisinin in the Greater Mekong region among populations most vulnerable: in remote regions; with occupational, social and gender barriers, remoteness from health facilities, distrust of health officials in the case of ethnic minority or migrant populations from neighboring countries, or populations working illegally in protected zones.	<ul style="list-style-type: none"> ▶ Community malaria action teams (CMATs) were established; ▶ CMAT members travel to map locations and people at risk of malaria in their designated geographical area, raise awareness on malaria prevention, distribute LLINs/LLIHs, accompany people showing symptoms to malaria service providers for diagnosis and treatment, and follow them up to ensure treatment adherence. ▶ Mapping data is updated in real time which contributes to essential surveillance activities and ensures interventions follow risks as they emerge. ▶ CMAT members work with marginalized communities to identify social and gender-related factors that may put them at risk. 	<ul style="list-style-type: none"> ▶ Bridged the gap between vulnerable communities and malaria services. ▶ CMATs can also help mediate mistrust which would otherwise make people reluctant to come into contact with health officials. This is particularly important for ensuring continuity and adherence to treatment regimens in the context of artemisinin resistance. 	Personal communication with Vietnam.

⁶ [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(13\)60310-4/fulltext?code=lancet-site](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(13)60310-4/fulltext?code=lancet-site)

⁷ https://www.theglobalfund.org/media/5536/core_malariagenderhumanrights_technicalbrief_en.pdf

Barriers identified	Actions/Approaches taken	Expected/Achieved results	Reference
Populations in zones of protracted conflict during the period when Sri Lanka was striving to eliminate malaria.	<ul style="list-style-type: none"> ▶ Agreement between parties in conflict to allow malaria services to be delivered. ▶ Aligned commitment to reducing malaria between the different parties. ▶ Both government funded aspects of the programme (IRS) and partner funded aspects (e.g. LLINs and treatment) were delivered effectively in conflict zones. 	<ul style="list-style-type: none"> ▶ Success in delivering a range of interventions to conflict affected zones. 	Abeyasinghe RR, et.al (2012) Malaria Control and Elimination in Sri Lanka: Documenting Progress and Success Factors in a Conflict Setting. PLoS ONE 7(8). ⁸
People affected by conflict; refugees worldwide.	<ul style="list-style-type: none"> ▶ A field guide with examples of interventions in a range of types of humanitarian emergency settings. 	<ul style="list-style-type: none"> ▶ While this guide does not describe in detail specific examples, it provides detailed useful guidance on development of appropriate interventions in such contexts. 	World Health Organisation 2013. Malaria control in humanitarian emergencies: an inter-agency field handbook – 2nd ed. ⁹
Limited awareness and skills for malaria control at community level, particularly in hard to reach groups.	<p>Report covers a range of approaches:</p> <ul style="list-style-type: none"> ▶ Utilizing information communication technologies (ICTs) and social media to share messages about malaria prevention and treatment. ▶ Report also outlines cycles of ‘low status, low funding and lack of evidence’ for malaria, which may already be known to practitioners but having a comprehensive list may be a useful guide to avoiding problems; alongside a strategic framework for ensuring the quality of information shared and the way it is distributed. 	<ul style="list-style-type: none"> ▶ Report guide gives many practical examples on how to ensure those most at risk of malaria can be accessed in diverse and creative ways. 	Roll Back Malaria Partnership. The Strategic Framework for Malaria Communication at a Country Level 2012-2017. 2012. Geneva, Switzerland. ¹⁰
Continued endemicity of malaria in certain Rwandan communities – the need to reach the last mile.	<p>Focused on community participation and engagement as a means of achieving the last steps of malaria control:</p> <ul style="list-style-type: none"> ▶ ‘Open space’ was deployed to explore local priorities, stimulate community contribution to project planning, and to promote local capacity to manage programmes... Participants included purposively selected community and local organizations’ representatives. ▶ A community rewards system was deemed important to motivate engaged participants, i.e., community health workers and households. ▶ Establishment of malaria clubs in school settings was also suggested to speed up community awareness and increase skills towards further malaria reduction. 	<ul style="list-style-type: none"> ▶ Malaria was perceived as a health concern despite the reported reduction in prevalence. ▶ Some misconceptions of the cause of malaria and misuse of preventive strategies were noted. ▶ This bottom-up approach was found useful in engaging the local community, enabling them to explore issues related to malaria in the area and suggest solutions for sustainable malaria elimination gains. 	Ingabire CM et.al, Community mobilization for malaria elimination: application of an open space methodology in Ruhuha sector, Rwanda. 2014. Malaria Journal. 13; 167.

⁸ <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0043162>

⁹ <https://www.who.int/malaria/publications/atoz/9789241548656/en/>

¹⁰ https://endmalaria.org/sites/default/files/BCCstrategicFramework_0.pdf

Barriers identified	Actions/Approaches taken	Expected/Achieved results	Reference
Pastoral populations that are left behind by standard malaria control efforts thus malaria programmes fail to achieve results; a particular challenge has been mobilizing leaders to support malaria control efforts.	<ul style="list-style-type: none"> ▶ Engagement with local leaders through training and advocacy. ▶ Engagement with mothers to complement the efforts of community health workers through education and motivation of community members. 	<ul style="list-style-type: none"> ▶ The proportion of pregnant women and children under five who slept under an ITN the previous night increased from 27 to 86.5% and from 17 to 84% respectively. ▶ Treatment seeking behavior for fevers also increased. 	Roll Back Malaria Partnership. The Strategic Framework for Malaria Communication at a Country Level 2012-2017. 2012. Geneva, Switzerland. ¹¹
Programs fail to identify groups that are being left behind and the barriers they face. Strategic information processes are often focused on reporting data to higher levels rather than informing local programming and local implementers are left with aggregate descriptions that may not reflect local specificities.	<ul style="list-style-type: none"> ▶ Data for local action on malaria are better in disaggregated form, and can be collected by ordinary people. ▶ Everywhere there are people, young and old, who are capable of, interested in and willing to take on active local malaria determinants surveillance and record the findings in, for instance, a web-based community log. 	<ul style="list-style-type: none"> ▶ Having fresh community data will enhance the local ownership, responsibility and accountability for action. ▶ A web-based community log. Such a log could show the actual situation as well as changes over time in tabular or graphic formats or as singular or layered local maps. 	Roll Back Malaria Partnership/UNDP. Multisectoral Action Framework for Malaria. New York and Geneva. 2013. ¹²
Identification of gaps, barriers and risk factors with conventional methods is difficult in some high-risk or vulnerable populations, meaning that additional surveillance and strategic information techniques are needed.	<p>Study identifies data collection methods used in different fields and assesses their potential for strengthening malaria program e.g.:</p> <ul style="list-style-type: none"> ▶ An extension of snowball sampling—respondent-driven sampling—provides representative sampling of hard-to-reach populations and can be used to determine risk factors—e.g. in migrants on the Thai-Cambodia border. ▶ Time-location sampling is an alternative approach, in which sampling occurs at a set time in locations where the risk groups are likely to gather, such as social clubs, bars, market stalls, or bus stops. 	<ul style="list-style-type: none"> ▶ With appropriate local adaptation, these methods could be used to efficiently identify, treat, and prevent infections that would otherwise go unaddressed. 	Gosling, Richard G. A. Feachem. The changing epidemiology of malaria elimination: new strategies for new challenges. <i>Lancet</i> 2013; 382: 900-11. ¹³

¹¹ https://endmalaria.org/sites/default/files/BCCstrategicFramework_0.pdf

¹² https://endmalaria.org/sites/default/files/9_Multisectoral-Action-Framework-for-Malaria.pdf

¹³ <https://www.ncbi.nlm.nih.gov/pubmed/23594387>

Barriers identified	Actions/Approaches taken	Expected/Achieved results	Reference
<p>Identification of gaps, barriers and risk factors with conventional methods is difficult in some high-risk or vulnerable populations (non-immune migrants, cross-border groups with limited access to health care services), thus additional surveillance and strategic information techniques are needed.</p>	<p>This study describes surveillance techniques that can strengthen identification and understanding of vulnerable groups and the barriers they face.</p> <ul style="list-style-type: none"> ▶ Respondent Driven Sampling” was used to gain in depth knowledge of these groups and of the barriers to effective malaria programmes. 	<ul style="list-style-type: none"> ▶ A survey of migrant populations from Cambodia and Myanmar was implemented in five selected rural locations in Thailand along the Thai-Cambodian border using respondent driven sampling (RDS) to determine demographic characteristics of the population, migratory patterns, knowledge about malaria, and health-care -seeking behaviours.” 	<p>Piyaporn Wangroongsarb et, al, Respondent-driven sampling on the Thailand-Cambodia border. II. Knowledge, perception, practice and treatment-seeking behaviour of migrants in malaria endemic zones Malaria Journal 2011, 10:117.¹⁴</p>
<p>Programmes fail to take, into account the impact of gender norms on malaria vulnerability and access to services (for pregnant women/children under 5 years).</p>	<ul style="list-style-type: none"> ▶ Report explains the importance of sex-disaggregated data for practitioners, policymakers and researchers to better understand communities at risk of malaria, and lists categories of data to collect or extract it. ▶ Report contains a comprehensive list of questions to assess how gender affects malaria data and outcomes” and signposts to resources for use in practice. It explains where data cannot be disaggregated other qualitative method such as focus groups or interviews are utilized to find answers to questions about people’s lifestyles; health needs; health seeking behaviors; understanding of malaria, prevention and treatment. 		<p>MEASURE Evaluation. The Importance of Gender in Malaria Data. 2017.¹⁵</p>

¹⁴ <https://malariajournal.biomedcentral.com/articles/10.1186/1475-2875-10-120>

¹⁵ <https://www.measureevaluation.org/resources/publications/fs-17-205d>

Annex 7 Assessment report outline

The report should include:

1. An **executive summary** that outlines key processes, findings, and recommendations;
 2. **Background** to the equity study. This can include: criteria for selection of fieldwork sites; selection of gender study team, and selection of objectives, tools, participants, and issues;
 3. **Description of methodology and tools used**, including number of people interviewed;
 4. **Key quantitative and qualitative findings**;
 5. **Implications of findings** for target participants, beneficiaries and communities;
 6. **Implications of findings** for the malaria program and stakeholders;
 7. **Actions/Recommendations** for follow-up (include a work-plan);
 8. **Bibliography** referencing all documents and data reviewed and cited;
 9. List and demographic breakdown of interviewees and focus group participants (sex, age group, geographic location, other as relevant) in an **annex**;
 10. Copies of all actual **tools and questionnaires** used.
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PART D: REFERENCES

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