

ZAMBIA



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Zambia: Accelerating Toward Malaria Elimination

Stakeholder Perspectives



COMPLETED BY PATH MACEPA
IN PARTNERSHIP WITH
THE ZAMBIA MINISTRY OF HEALTH
OCTOBER 2015

MACEPA  **PATH**
Malaria Control and Elimination Partnership in Africa

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EXECUTIVE SUMMARY

INTRODUCTION TO PROJECT

In partnership with the Zambia Ministry of Health (MOH) and the Ministry of Community Development, Mother and Child Health (MCDMCH) and in support of Zambia's National Malaria Control Program (NMCP), the PATH Malaria Control and Elimination Partnership in Africa (MACEPA) program has conducted a stakeholder analysis to assess the perceptions and prioritization of key stakeholders in malaria policy and implementation decision-making around readiness to introduce and scale new tools and approaches to accelerate efforts toward elimination. The analysis also assesses perceptions around what is needed to accelerate progress toward national targets and opportunities and barriers to increasing the prominence of malaria on the national health agenda. As the first analysis to be conducted, the results will serve as a baseline for future reports, analyses, and projects. Interviews will be conducted biannually to measure change in stakeholder perceptions over time. The analysis findings are intended to inform policies and program strategies to accelerate progress toward the reduction and elimination of the malaria burden in Zambia.

METHODOLOGY

Stakeholder interviews

Forty-five semi-structured interviews were conducted with Zambia stakeholders in June 2015. The interviews were conducted by an independent consultant and one to three PATH MACEPA staff members. Stakeholders represented a variety of organizations with varying perceptions on malaria policy and implementation and were selected based on known expertise and involvement in decision-making and implementation of malaria activities in Zambia.

Stakeholders fell into seven categories: (1) decision makers, who have the ability to directly or indirectly impact the design of the National Malaria Strategic Plan (NMSP), (2) implementers, who play the crucial role of operationalizing the NMSP, (3) health management representatives from the provincial, district, and facility levels who manage the implementation and realization of the NMSP, (4) national regulatory representatives, who evaluate the safety and effectiveness of antimalarial medicines, (5) national procurement representatives, who oversee the availability and distribution of diagnostic tools and equipment, drugs, and other tools for malaria control and elimination, (6) community level influencers, who can communicate public

health messages and promote health seeking behavior in the community, and (7) private sector representatives, whose companies are involved with malaria control and elimination activities for their workers and/or the surrounding communities.

Qualitative analysis

Interview data was coded according to major themes that emerged across interviews and was analyzed using thematic content analysis. Analysis findings are presented according to the analytical framework developed by the Bill & Melinda Gates Foundation, which posits that six “building blocks”—policy, governance, financing, planning and operations, evidence base, and tool development—must be in place to accelerate efforts towards malaria elimination.

Stakeholder perspectives on current strengths and areas for improvement, as well as recommendations addressing the areas for improvement, are summarized in the following table aligned to the six building block categories.

	STAKEHOLDER PERSPECTIVES: STRENGTHS	STAKEHOLDER PERSPECTIVES: AREAS FOR IMPROVEMENT	RECOMMENDATIONS
 POLICY			
<p><i>A supportive policy environment and an existing framework to facilitate national decision-making. Sufficient data, knowledge, and access to information for decision makers to sufficiently support changes in policy, strategy, and guidance on malaria efforts.</i></p>	<ul style="list-style-type: none"> • NMSP provides evidence-based policies and strategies to guide malaria program development and implementation and determine funding requirements. • Draft National Malaria Elimination Strategy (NMES) affirms national commitment toward elimination by outlining goals and targets for national elimination. 	<ul style="list-style-type: none"> • NMSPs should address regional coordination and population mobility challenges. • Consensus needed around elimination timelines and the setting of feasible national elimination targets. • Regulatory system must be further strengthened and integrated with existing and future malaria programs, including the procurement system for malaria tools. 	<ul style="list-style-type: none"> • Finalize National Malaria Elimination Strategy (NMES) and develop 2017-2021 NMSP that includes operationally, technically and financially feasible elimination targets. • Develop annual malaria elimination operational plans to guide elimination efforts and align resources that address systems, budget, and implementation requirements. • Continue to incorporate latest tools and approaches for parasite clearance into national policies, strategies, and treatment guidelines.
 GOVERNANCE			
<p><i>Sense of national ownership and commitment to the country's malaria initiatives. Defined architecture to ensure coordinated planning and implementation. The exercise of political, economic, and administrative authorities in the management of malaria efforts at all levels. Support or engagement in regional collaboration and cross-border initiatives focused on malaria.</i></p>	<ul style="list-style-type: none"> • Strong political will and support for elimination from MOH leadership. • Technical working groups (TWGs) provide forum to bring together partners, share information, and build consensus for evidence-based policy changes. • Elimination 8 regional coordination mechanism can be leveraged to increase cross border information sharing, collaboration, and policy harmonization. 	<ul style="list-style-type: none"> • NMCC coordination and communication with partners could be expanded. • Insufficient coordination and communication between MOH and MCDMCH. • Health structure is only partially decentralized and requires increased support at the district level to strengthen overall structure. • Skillsets of NMCC and MOH personnel could be strengthened in some areas. • Zambia could further deepen its engagement in E8 regional coordination mechanism. 	<ul style="list-style-type: none"> • Empower NMCP management to coordinate national malaria elimination agenda, guide Government of the Republic of Zambia (GRZ) and partner strategy development and operationalization, and offer a strong voice for Zambia's malaria efforts within the GRZ, the Elimination 8, and the international global health community. • Support technical capacity at NMCC through regular reviews of staffing needs, and training, hiring and retention of sufficient personnel with core skillsets (including surveillance, M&E, IEC/BCC, and elimination planning) to manage the development and implementation of national policies and strategies. • Convene annual review and meetings with key partners and stakeholders to review operational challenges and opportunities related to the NMSP and operational plan. • Promote partner alignment and coordination by regularly holding TWG meetings with broad, representative partner participation. • Engage and provide leadership in regional coordination mechanisms such as the Elimination 8 to strengthen regional elimination initiatives and leverage learnings from neighboring countries.

STAKEHOLDER PERSPECTIVES: STRENGTHS

STAKEHOLDER PERSPECTIVES: AREAS FOR IMPROVEMENT

RECOMMENDATIONS

 FINANCING

Long-term commitment of domestic funds from national programs for malaria efforts. External donor willingness to support approved tools and interventions. Sufficient access to information needed by donors to make empowered decisions. General understanding of total cost required for effectiveness.

- Domestic financing commitments have increased significantly in recent years, reaching \$28 million in 2015 (representing 31% of funding from all sources), and GRZ has committed to continue to increase funding for malaria.
- GRZ has strong funding support from donor partners including the Global Fund and PMI.

- 60% of stakeholders believe additional financing is needed to achieve malaria control targets and move towards elimination.
- Domestic financing for malaria may not always be disbursed in a timely manner.
- Stakeholders perceive decreases in donor funding for malaria as a risk.
- Private sector engagement must be increased to encourage increased financial support.

- Develop resource mobilization strategy for Zambia to align existing funding in support of NMSP goals and targets and to grow new sources of funding, with a focus on increasing private sector engagement.
- Advocate for and ensure that additional financial resources are available for capacity building at the NMCC.
- Increase private sector engagement (e.g., financial contributions, logistics support, IEC/BCC messaging and health services for workers and local community members) in malaria efforts.
- Create and strengthen public-private partnerships and cross-sectoral (i.e. mining/extraction, agricultural and banking sectors) and pooled private sector initiatives at national and regional levels.



 PLANNING AND OPERATIONS

Adequate manufacturing, infrastructure, and human resources to implement malaria control and elimination efforts. Specific plans for scale-up of new approaches, products, and strategies. Realistic timeline for country-wide implementation.

- Core WHO-recommended control interventions are being implemented at scale.
- Data collected from MIS and HMIS allow for more targeted interventions.

- Inconsistent implementation of NMSP interventions throughout Zambia.
- Community engagement requires strengthening to overcome resistance to malaria control activities.
- ITN usage is reported to be low in areas.
- Supply chain and logistics challenges sometimes limit availability of malaria tools at health facilities.
- Funding disbursement delays and procurement policy changes sometimes delay malaria commodity procurement.

- Promote multiple channels of ITN distribution to sustain coverage between mass distribution campaigns.
- Optimize IRS by improving planning, timely implementation and targeting, and actively engaging local partners in the implementation process.
- Engage community leaders and communities, and develop more nuanced, informative, and appealing messaging for IEC/BCC, regarding the importance of ITN use, IRS acceptance, and prompt treatment seeking.
- Strengthen supply chain management through proactive logistics management at provincial and district levels and strong planning and needs forecasting among GRZ and partners at the national level, with regular convening of relevant TWGs and partner groups.

	STAKEHOLDER PERSPECTIVES: STRENGTHS	STAKEHOLDER PERSPECTIVES: AREAS FOR IMPROVEMENT	RECOMMENDATIONS
EVIDENCE BASE			
 <p><i>Sufficient data to support current strategy and approaches and/or to guide future policy changes.</i></p>	<ul style="list-style-type: none"> Population wide approaches to the reduction of malaria transmission could contribute to efforts to reduce the malaria burden. 	<ul style="list-style-type: none"> Stakeholders express desire to see strong local evidence for safety and efficacy of malaria tools. Additional research into ITN design is needed to address user complaints about size, shape and ventilation. Further research into malaria vector behavior and population mobility is needed. Further research into drug and insecticide resistance is needed. Further research to demonstrate MDA effectiveness and support scale up is needed. Additional research to support wider use of DHA-p is needed. 	<ul style="list-style-type: none"> Investigate impact of cross border population movement on malaria transmission to identify appropriate intervention strategies. Support capacity building for domestic research into new tools and approaches. Ensure that new evidence regarding transmission reduction strategies and case investigation relevant to the Zambian context is disseminated in a prompt and inclusive manner within the GRZ and with partners.
TOOL DEVELOPMENT			
 <p><i>Necessary product development for new tools.</i></p>	<ul style="list-style-type: none"> New tools and approaches could accelerate timeline to elimination, including new antimalarial drugs, diagnostics, a vaccine, and better insecticides and drugs to overcome developing resistance. 	<ul style="list-style-type: none"> Potential future need for new antimalarial drugs due to reported developing ACT resistance. ITNs with more effective insecticide and improved design (shape, size, and/or ventilation) are needed. More sensitive and specific field-based malaria diagnostics are needed. 	<ul style="list-style-type: none"> Support field validation of point of care diagnostics with improved sensitivity and specificity.

NEXT STEPS

This initial Zambia stakeholder analysis report and its supporting qualitative data will serve as a baseline for the ongoing analysis of the enabling environment for national malaria policy and implementation efforts. PATH MACEPA, in support of the Zambia MOH, intends to conduct the next round of stakeholder analysis interviews in approximately

two years' time in order to examine changes in perceptions and prioritization of elimination over time. The findings from the stakeholder analysis report will be used to identify challenges and opportunities—technical, financial, and operational—to accelerate Zambia's progress toward national elimination.

ABBREVIATIONS

ACT	Artemisinin-based combination therapy	MOH	Ministry of Health
BCC	Behavior change communication	NMCC	National Malaria Control Centre
BMGF	Bill and Melinda Gates Foundation	NMES	National Malaria Elimination Strategy
CHW	community health worker	NMCP	National Malaria Control Program
DHA-P	Dihydroartemisinin-piperazine	NMSP	National Malaria Strategic Plan
DFID	Department for International Development		prise en charge à domicile (Senegal's home-based malaria case management program)
DRC	Democratic Republic of Congo	PECADOM+	
E8	Elimination Eight	PMI	President's Malaria Initiative
EU	European Union	RDC	PATH Research Determination Committee
FMDA	focal mass drug administration	REC	PATH Research Ethics Committee
GLOBAL FUND	Global Fund to Fight AIDS, Tuberculosis and Malaria	RDT	rapid diagnostic test
GRZ	Government of the Republic of Zambia	SADC	Southern African Development Community
HSSREC	Humanities and Social Sciences Research Ethics Committee	SIDA	Swedish International Development Cooperation Agency
HMIS	Health Management Information System	SP	Sulfadoxine-Pyrimethamine
IEC	Information, education, and communication	SUFI	Scale-up for Impact
IPTP	intermittent preventive treatment in pregnant women	TWG	Technical Working Group
IRS	indoor residual spraying	USAID	United States Agency for International Development
ITN	insecticide-treated bed net	WHO	World Health Organization
LLIN	long-lasting insecticide-treated net		
M&E	monitoring and evaluation		
MACEPA	PATH Malaria Control and Elimination Partnership in Africa		
MCDMCH	Ministry of Community Development, Mother and Child Health		
MDA	mass drug administration		
MIS	malaria indicator survey		
MTAT	mass test and treat		

I. PURPOSE

In partnership with the Ministry of Health (MOH) and the Ministry of Community Development, Mother and Child Health (MCDMCH) and in support of Zambia's National Malaria Control Program (NMCP), the PATH Malaria Control and Elimination Partnership in Africa (MACEPA) program has conducted a stakeholder analysis to assess the perceptions and prioritization of key stakeholders in malaria policy and implementation decision-making around readiness to introduce and scale new tools and approaches to accelerate efforts toward elimination.

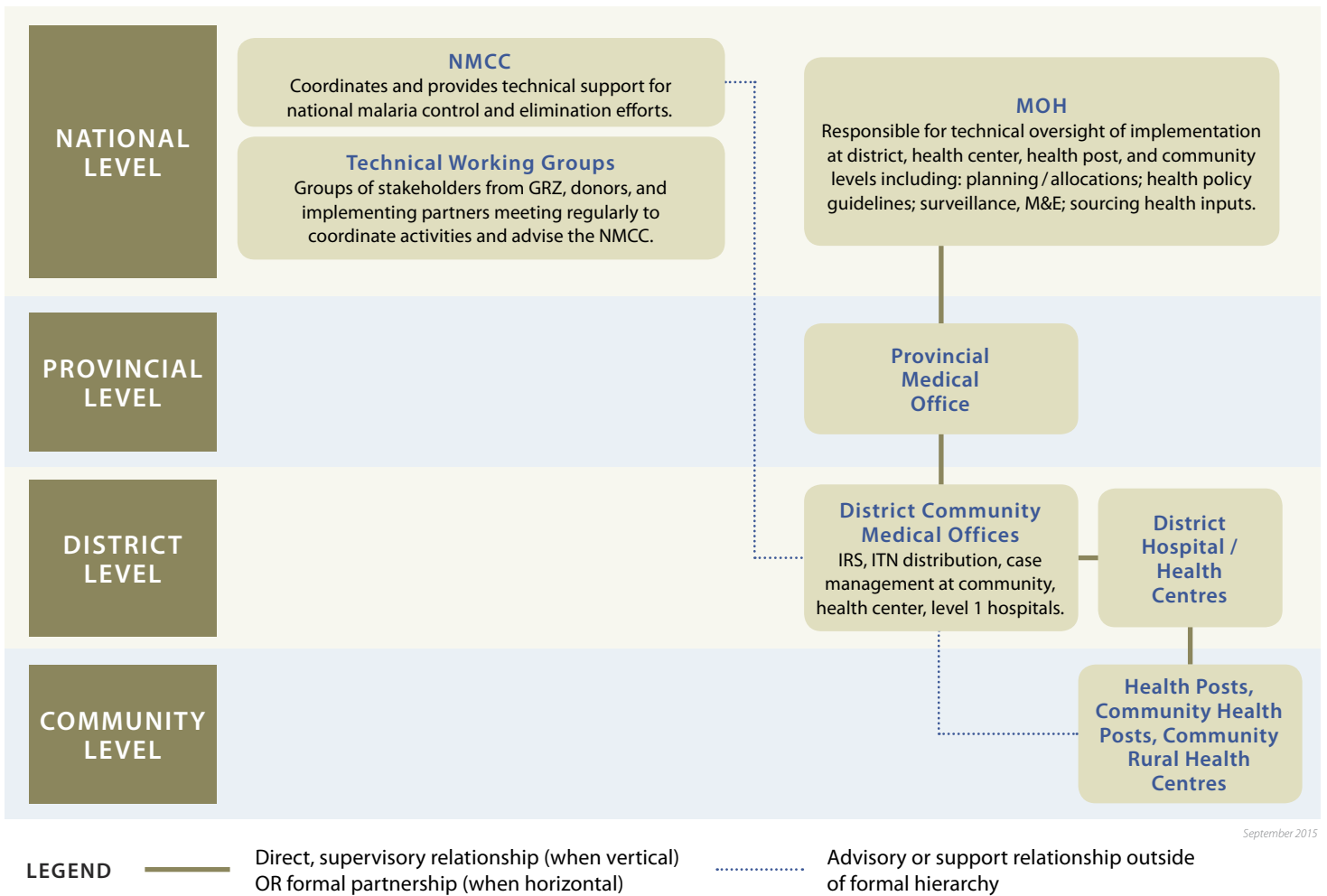
This report presents the results from the first stakeholder analysis in Zambia and serves as a baseline for future reports, analyses, and projects. Critical information captured during interviews is intended to support the development of national policies, strategies and practice, particularly the National Malaria Elimination Strategy (NMES) and the next National Malaria Strategic Plan (NMSP).

II. BACKGROUND

Zambia had an estimated population of 15.72 million in 2014.¹ In 2012, a National Malaria Indicator Survey (MIS) found that malaria parasite prevalence among children under age five was 14.9 percent.² Zambia has seen signs of improvement due to its malaria efforts over the last decade, but the entire population remains at risk for malaria, a major cause of morbidity and mortality.³

There have been significant declines for inpatient malaria deaths (3.9 per 10,000 in 2010; 2.8 per 10,000 in 2012) and in severe anemia for children under the age of five (14% in 2006; 7% in 2012). MIS data shows substantial trend variations across the country; for example, Luapula Province showed a documented decline in parasite prevalence among children under five years of age (51% in 2010; 32% in 2012) while Northwestern Province showed an increase (6% in 2010; 17% in 2012). From 2009 to 2013, the number of reported malaria cases (clinical and confirmed) to HMIS increased from 3.25 million to 4.89 million. Increases in confirmed malaria cases may be due to improved malaria tracking and surveillance systems, more widespread malaria testing, and expanded community case management programs that provide better healthcare access and promote treatment seeking behaviors.

In Zambia the MOH provides overall leadership of national health systems, policy and strategy, as well as partner coordination and resource mobilization for malaria control activities. The National Malaria Control Centre (NMCC), an MOH entity, is responsible for the management of the national malaria program and the development and implementation of its strategic plans. Technical Working Groups (TWGs), whose membership includes representatives from the Government of Zambia, donor organizations, and implementing partners, meet regularly to coordinate malaria activities and advise the NMCC.



In collaboration with partners, the NMCC developed and implemented Zambia’s most recent 2011–2015 National Malaria Strategic Plan (NMSP), which sustained control interventions and included the objective to eliminate malaria in five zones by 2015. Following a 2013 midterm review, the 2011-2015 NMSP was extended to run through 2016 with the vision of achieving progress towards a “malaria-free Zambia.”⁷ The 2011–2016 NMSP includes the goals of 1) reducing malaria incidence by 75% from the 2010 baseline, 2) reducing malaria deaths to near zero and reducing all-cause child mortality by 20%, and 3) establishing and maintaining five “malaria-free zones” in Zambia.⁸ In collaboration with partners, the NMCC is currently finalizing the content of the National Malaria Elimination Strategy (NMES) that will guide the development of the 2017-2021 NMSP.

PATH MACEPA has worked in Zambia since 2005. As a resident partner at the NMCC, PATH MACEPA has supported the MOH and a range of local and international partners to accelerate the scale-up of malaria intervention coverage across Zambia. PATH MACEPA contributed to the development of the “Scale-up for Impact” (SUFU) model of malaria intervention tool distribution, the establishment of malaria information systems to inform national decision-making and to support day to day management of malaria commodities and malaria case reporting, and the piloting of population-wide strategies to reduce disease transmission. In addition, MACEPA has provided technical assistance for the adoption of new targets and methodologies for insecticide-treated bed net (ITN) distribution and for the use of rapid diagnostic tests (RDTs) at the community level. Currently, MACEPA is partnering with the Zambian government to conduct operational research in Southern Province to evaluate strategies for the creation of malaria-free zones.

III. METHODOLOGY

INTRODUCTION

The primary objective for this analysis was to systematically gather and analyze data to assess the perceptions and priorities of key stakeholders in malaria policy and implementation decision-making in Zambia around malaria reduction and elimination efforts. The methodology used for this stakeholder analysis was adapted from Kammi Schmeer's Guidelines for Conducting a Stakeholder Analysis, created by Partnerships for Health Reform, which offers a systematic process for collecting and analyzing data about key stakeholders in order to influence a specific health sector policy. The guidelines and tools in this document provided an adaptable yet structured framework for the stakeholder analysis process. Stakeholder analysis planning, data collection, analysis, and report writing were conducted by the PATH MACEPA team and an independent consultant.

This initial Zambia Stakeholder Analysis report is designed to be subsequently used as a benchmark. PATH MACEPA intends to repeat stakeholder analysis interviews at select points in time over the next five years.

POLICY IDENTIFICATION

The stakeholder analysis assesses perceptions of the feasibility of the malaria reduction targets contained in Zambia's current 2011–2016 NMSP, namely the goals of: 1) reducing malaria incidence by 75% from the 2010 baseline, 2) reducing malaria deaths to near zero and reducing all-cause child mortality by 20%, and 3) establishing and maintaining five "malaria-free zones" in Zambia. Interview teams also collected information concerning what types of elimination targets stakeholders would support in the next NMSP (2017–2021) and in particular what timeframe they would consider to be realistic for the achievement of national malaria elimination. The draft National Malaria Elimination Strategy includes a target for national malaria elimination by 2020.

STAKEHOLDER IDENTIFICATION

For the purposes of this assessment, stakeholders were defined as key external and in-country actors in organizations based in Zambia with a vested interest in malaria policy or malaria program implementation. The PATH MACEPA Zambia country team, who work closely with the MOH, NMCC, MCDMCH, and other malaria partners, facilitated the identification of stakeholders and managed the scheduling of interviews. After identifying potential respondents, PATH MACEPA received approval from MOH and MCDMCH to begin outreach to priority organizations and to request interviews with key organizational representatives, including individuals in leadership and technical roles supporting national malaria efforts. Stakeholders were asked to participate in the stakeholder analysis on behalf of MOH and MCDMCH, in partnership with PATH MACEPA, in support for malaria control and elimination efforts in Zambia.

Stakeholders were identified and selected from the following seven categories:

STAKEHOLDER CATEGORIES

DECISION MAKERS	including national government representatives (from the MOH and MCDMCH) and donors (country representatives of multilateral and bilateral donor agencies) who have the ability to directly or indirectly impact the design of the NMSP.
IMPLEMENTERS	including representatives from the NMCC, relevant working groups, academic/research institutions, faith-based organizations, and other NGO implementing partners. Implementers play a crucial role in planning and executing the NMSP.
HEALTH MANAGEMENT REPRESENTATIVES	who manage the implementation and realization of the NMSP at provincial, district, and facility levels.
NATIONAL REGULATORY REPRESENTATIVES	who ensure the safety and effectiveness of antimalarial medicines.
NATIONAL PROCUREMENT REPRESENTATIVES	who oversee the availability and distribution of diagnostic tools/equipment, drugs, and other tools for malaria control and elimination.
COMMUNITY LEVEL INFLUENCERS	who communicate public health messages and promote health seeking behavior in their communities.
PRIVATE SECTOR REPRESENTATIVES	whose companies are involved with malaria control and elimination activities for their workers and/or the surrounding communities.

STAKEHOLDER OVERVIEW

The 45 stakeholder interviews provided a broad representation of stakeholders engaged in malaria policy and implementation in Zambia. Decision maker stakeholders from the national government and donor organizations accounted for eight of the interviews. Health management representatives made up the largest stakeholder group with fifteen interviews. These stakeholders came from provincial, district, and facility level health management teams. These fifteen stakeholders provided important perspectives from Zambia's Southern and Eastern provinces, which have significantly different malaria burdens and experiences.

Implementers made up the second largest stakeholder group, with fourteen stakeholder interviews. Private sector stakeholders accounted for five of the interviews. Regulatory, procurement, and community level stakeholders represented the smallest groups, with one stakeholder in each group.

For a summary of stakeholder organizations by category, see Appendix 3: Stakeholder Overview.

DATA COLLECTION

Qualitative stakeholder interviews

Stakeholder interviews were conducted in Zambia in June 2015. Thirty-seven interviews were conducted in-person, while eight interviews were conducted by teleconference due to the remote locations of stakeholders. Interviews were primarily conducted with individual stakeholders, but in several cases included multiple representatives from stakeholder organizations. The interviews were conducted by an independent consultant, one to three PATH MACEPA staff members, and a translator when needed. While the majority of interviews were conducted in English, several interviews with health management representatives at the district and facility level required translation from local languages into English.

Semi-structured interview scripts with open-ended questions were developed in advance of the interview process and were tailored specifically to each stakeholder category. Probes and follow-up questions were used by the interviewing team to capture a sufficient level of detail from each stakeholder interview.

To organize and analyze the content from the stakeholder interviews, the report uses an analytical framework developed by the Bill & Melinda Gates Foundation (BMGF) positing that six “building blocks”—policy, governance, financing, planning and operations, evidence base, and tool development—must align to create a critical pathway toward malaria elimination:

- **POLICY:** Supportive policy environment to facilitate the introduction of new approaches and strategies for malaria parasite elimination as a part of the national strategy. Sufficient data, knowledge, and access to information for decision-makers to sufficiently support changes in policy, strategy, and guidance on malaria efforts.
- **GOVERNANCE:** Sense of national ownership and commitment to the country’s malaria initiatives. Defined architecture to ensure coordinated planning and implementation. The exercise of political, economic, and administrative authorities in the management of malaria efforts at all levels. Support or engagement in regional collaboration and cross-border initiatives focused on malaria.
- **FINANCING:** Long-term commitment of domestic funds from national programs for malaria efforts. External donor willingness to support approved tools and interventions. Sufficient access to information needed by donors to make empowered decisions. General understanding of total cost required for effectiveness.

- **PLANNING AND OPERATIONS:** Adequate health system capacity, infrastructure, and human resources to implement NMSP and operational plans. Specific plans for scale-up of new approaches, products, and strategies. Realistic timeline for country-wide implementation.
- **EVIDENCE BASE:** Sufficient evidence around new tools and approaches to support policy change and national program adoption.
- **TOOL DEVELOPMENT:** Necessary product development for new tools.

For a full list of interview questions by stakeholder category, see Appendix 1: Stakeholder Interview Questions.

Multiple choice questionnaire

A multiple choice questionnaire was presented at the end of each interview to capture the stakeholder’s assessment of the feasibility of the targets outlined in the National Malaria Elimination Strategy. An examination of multiple choice responses can be found under the Policy section of the report. For the multiple choice questions and summary answers, see Appendix 2: Multiple Choice Questions and Response Summaries.

Confidentiality guarantee

From the outset, total confidentiality of all stakeholder responses was guaranteed in order to encourage honest and open responses. Each stakeholder heard a standard, pre-approved introduction about the interview process and provided verbal consent before beginning the interview.

Although individual responses are highlighted in the report, any direct identifying information is excluded.

Research approval

As the stakeholder analysis involves systematic data collection from human participants, a project description was submitted to appropriate reviewing bodies at PATH and with the Zambian National Government to ensure full compliance with ethics and research standards. After review, the Research Determination Committee (RDC) at PATH determined on April 14, 2014 that the stakeholder analysis does not meet the US Government’s definition of research and does not need to be submitted to the PATH Research Ethics Committee (REC) for approval. In Zambia, a project description was submitted to the Humanities and Social Sciences Research Ethics Committee (HSSREC) for ethical review. On February 17, 2015, the Chairman of the HSSREC, Dr. Augustus Kapungwe, found that the stakeholder analysis “does not contain any ethical concerns,” exempting it from the full clearance process for research activities.

V. QUALITATIVE RESULTS

All stakeholder interviews were analyzed and coded against the analytical framework developed by the BMGF of critical building blocks for elimination – policy, governance, financing, planning and operations, tool development, and evidence base. Stakeholder perspectives on the major successes and challenges faced in Zambia’s malaria efforts are summarized in the following sections aligned to the six building block categories.

Stakeholders generally believed the strategic direction of Zambia’s malaria efforts to be on the right path and were quick to note progress achieved thus far. Stakeholders overwhelmingly pointed to the need for strengthened governance, highlighting many specific challenges under the governance building block that directly and indirectly affect Zambia’s success against malaria across all building block categories. Overall stakeholders were supportive of malaria efforts because they recognize the severity of the issue, but seemed somewhat pessimistic that elimination will be possible within the next five years unless dramatic changes occur including a strengthened health system, improved national leadership, strengthened coordination and improved communication across all levels of government, and increased human resource capacity at the national level.



POLICY

Stakeholders provided a variety of perspectives on the current policy environment in Zambia, particularly focused on the current 2011-2016 NMSP, the upcoming National Malaria Elimination Strategy (NMES), and the subject of elimination.

Overall, stakeholders were supportive of the current NMSP targets and objectives and more broadly the NMSP framework for setting national policy and strategy objectives and implementation requirements. One stakeholder felt the strategic plans have made everyone more ambitious, supporting the shift in mindset needed to reach elimination:

“ I think a lot has been done in terms of malaria control. I remember in 2005 when we were doing our strategic plan for 2006-2010 we decided to scale up a lot of our key interventions. Everyone saw this as very ambitious. We were scaling up with ITNs, IRS, and everything... There was a shift in the mindset of people at this point – one of our objectives was to have malaria free areas or zones. We started small and this thinking started growing.”

— IMPLEMENTER STAKEHOLDER

Stakeholder perspectives diverged, however, on the topic of elimination – how, if, and when it will be possible – resulting in a range of perspectives to inform malaria partners and future NMSP planning processes.

2011-2016 NMSP

The current 2011-2016 NMSP guides malaria programs and activities throughout Zambia. The NMSP includes the goals of: 1) reducing malaria incidence by 75% from the 2010 baseline, 2) reducing malaria deaths to near zero and reducing all-cause child mortality by 20%, and 3) establishing and maintaining five “malaria-free zones” in Zambia.

Stakeholder feedback made it clear that the Government of the Republic of Zambia (GRZ) needs to create manageable strategic plans, implement assigned tasks, and hold partners accountable. While many stakeholders said that the work their organizations are doing follows the current NMSP, several shared frustration that other public and private sector partners in the country are not doing so. One private sector stakeholder was frustrated because their organization provides IRS in the region according to the NMSP, but they feel the government does not uphold its responsibilities:

“ The challenge with the public sector – today they spray – tomorrow they don’t. It is diluting the work we do and has been going on for years. They say they haven’t been funded – it is the same answer throughout. They have no funds to buy chemicals. We do follow the national policy and we all buy into it. But they set a policy but are not buying.”

— PRIVATE SECTOR STAKEHOLDER

A decision maker, on the other hand, said that partners could be better about supporting the strategies set by government:

“ We also would like our partners to buy into our strategic plan for elimination so that they support our strategies. The partners we have at the moment do support our plan but I think there is room for improvement.”

— DECISION MAKER STAKEHOLDER

Another decision maker discussed how the government is guided by national and regional targets for many different diseases and has to balance many national priorities.

Two implementers discussed the need for national policy that implements different strategies in different regions based on malaria burden:

“ It is not so easy to implement different policies in different regions but Zambia needs to be going in that direction. Some areas where there is much lower transmission need to have different approaches.”

— IMPLEMENTER STAKEHOLDER

“ The mix of high burden and low burden areas is a challenge for making a policy. I’m not sure if WHO allows us to make a split policy. If it is allowable it would be very good to manage it like this.”

— IMPLEMENTER STAKEHOLDER

However, the NMSP does target interventions based on malaria burden. This confusion from implementing stakeholders points to the need for improved communication on the NMSP components.

Elimination strategy

A draft National Malaria Elimination Strategy has been created to guide the development of the 2017-2021 NMSP. This strategy still requires final decisions around an elimination target and implementation costs. Aside from a few decision makers and implementers, stakeholder knowledge of elimination strategy components was low as the process is in the early stages. However, many stakeholders still offered perspectives on what the plan should include – especially concerning the elimination target.

Elimination target

Stakeholders offered their perspectives on what elimination approaches and targets to include in the National Malaria Elimination Strategy and 2017-2021 NMSP. Stakeholders believed that a drive towards elimination will require additional interventions, approaches and emphases compared to the control phase. Increased technical expertise, strengthened surveillance, and population wide approaches were discussed as requirements as the strategy shifts.

One decision maker discussed the need to realign the NMSP to focus on elimination rather than control. This stakeholder felt this switch will require additional staff at MOH, including the NMCC, and MCDMCH – including more surveillance technologists and environmental scientists. This stakeholder emphasized that partners must also look to adapt their support so that everyone shifts into elimination mode.

Stakeholders emphasized that the control mindset and the elimination mindset are different. A decision maker felt that more ambitious targets could help shift mindsets:

“ If I don’t believe in elimination I’m not going to think beyond control. We need to change the mindset of our people. They need to do interventions for elimination. When I look at our strategic plan it still says reduce by 75% — is that elimination? If I’m writing my strategic plan for elimination I shouldn’t be saying reduce by 75%. I shouldn’t be saying focus on these provinces only. I should have the ambitious goal of eliminating nationally.”

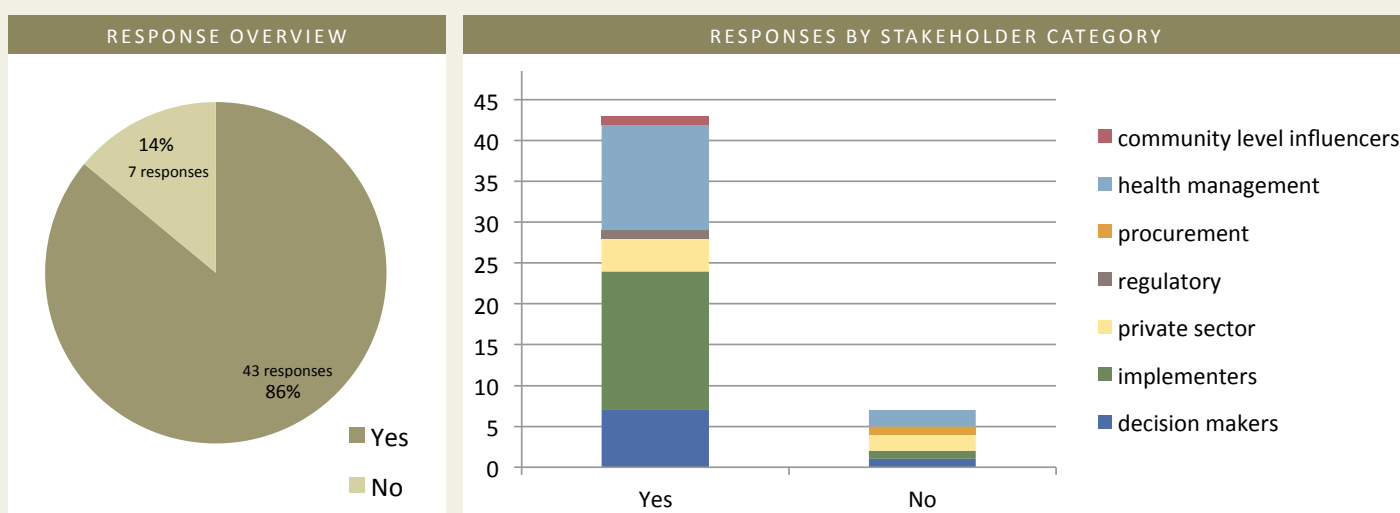
— DECISION MAKER STAKEHOLDER

ELIMINATION TARGET – STAKEHOLDER MULTIPLE CHOICE RESPONSES

A multiple choice questionnaire was presented at the end of each interview to capture each stakeholder’s perspective on setting a national malaria elimination target. While this analysis included 45 stakeholder interviews, responses were collected from 50 respondents in total because some interviews included multiple representatives.

Question 1:

Do you think that Zambia should set a target to eliminate malaria nationally?



43 out of 50 respondents (86%) answered ‘Yes’ that Zambia should set a target to eliminate malaria nationally. When asked to explain why, respondent comments included:

- “ Without a target it will never be completed as there are no defined objectives.”
- “ It’s feasible in many parts of the country and lessons learned can be used to contribute to elimination in other parts.”
- “ I strongly feel yes. That is the best way to go. We start from somewhere but we must target to eliminate nationally, even if we are not at the same level everywhere. We must talk about control in some areas, then pre-elimination, then elimination.”
- “ We need the target to accelerate our efforts. Over the next 5 years we are yet to decide how to approach elimination - in a phased way or nationally. My feeling is that it is better to do everything across the board in all provinces.”

7 out of 50 respondents, however, answered ‘No’ that Zambia should not set a target to eliminate malaria nationally. When asked ‘why not?’ their responses included:

- “We should do by district.”
- “I feel local or regional targets would work best for us.”
- “We need to organize ourselves first before setting a target.”

For the full list of responses, see Appendix 2: Multiple Choice Questions and Response Summaries.

Additional NMSP 2017-2021 components

In addition to an elimination target, stakeholders discussed the need for policies to address regional coordination and population movement in the 2017-2021 NMSP. Several stakeholders said that the 2017-2021 NMSP should seek to improve regional coordination and address population movement across borders.

“ How are we going to address the population mobility challenge? We have some of the most porous borders and there are populous countries nearby. This should be addressed in the national policy and strategic documents. How does the national program link with border posts, and how do they link to other countries in different phases of control and elimination? NMCC needs to address these questions and it needs to pursue harmonization.”

— IMPLEMENTER STAKEHOLDER

Twelve stakeholders discussed the challenge of population movement across borders. Stakeholders said that if Zambia eliminates malaria it will still see imported cases from neighboring countries where malaria is endemic. Stakeholders from Eastern Province described patients crossing the border from Mozambique to seek treatment at Zambian health facilities:

“ Most of our cases are coming from Mozambique. Addressing this could really help. People are crossing into Zambia from Mozambique and they're bringing malaria. We need to address this challenge. If we eliminate malaria but Mozambique doesn't scale up its own interventions, our efforts will be undermined.”

— HEALTH MANAGEMENT STAKEHOLDER

Elimination

Stakeholders discussed factors that support the path to malaria elimination, challenges that will need to be overcome to reach elimination, whether or not elimination is feasible by 2020, and what the realistic timeline to elimination might be.

Factors that support path to elimination

Stakeholders discussed five factors that are critical to achieving elimination:

- **Strong elimination-focused strategy:** Stakeholders felt a good strategy focused on elimination will ensure the country appropriately and efficiently directs its efforts.
- **The right interventions:** Zambia has experienced great success when the right interventions are implemented according to stakeholders. Interventions that will continue to be critical for elimination include MDA to clear the parasites, IRS and LLINs for vector control, IPTp for malaria in pregnancy, and the addition of a second ACT as first-line treatment for malaria.
- **Strengthening the elimination message:** Stakeholders felt letting the population, volunteers, and stakeholders know that Zambia is working towards elimination and that the GRZ and its partners are committed to eliminating malaria has helped to shift mindsets and will continue to be critical to elimination.
- **Leadership support:** Stakeholders shared support from leaders from the central level down to the community levels is critical to reaching elimination. At the community level, support from local chiefs has proven particularly beneficial for community engagement.
- **Technical Working Groups:** TWGs bring together key malaria stakeholders and enable collaboration and discussion on solutions for major challenges. TWGs were cited by stakeholders as one of the most effective mechanisms for policy change.

Challenges to overcome to reach elimination

Despite the successes thus far, stakeholders agreed that Zambia has some significant challenges to overcome to reach elimination:

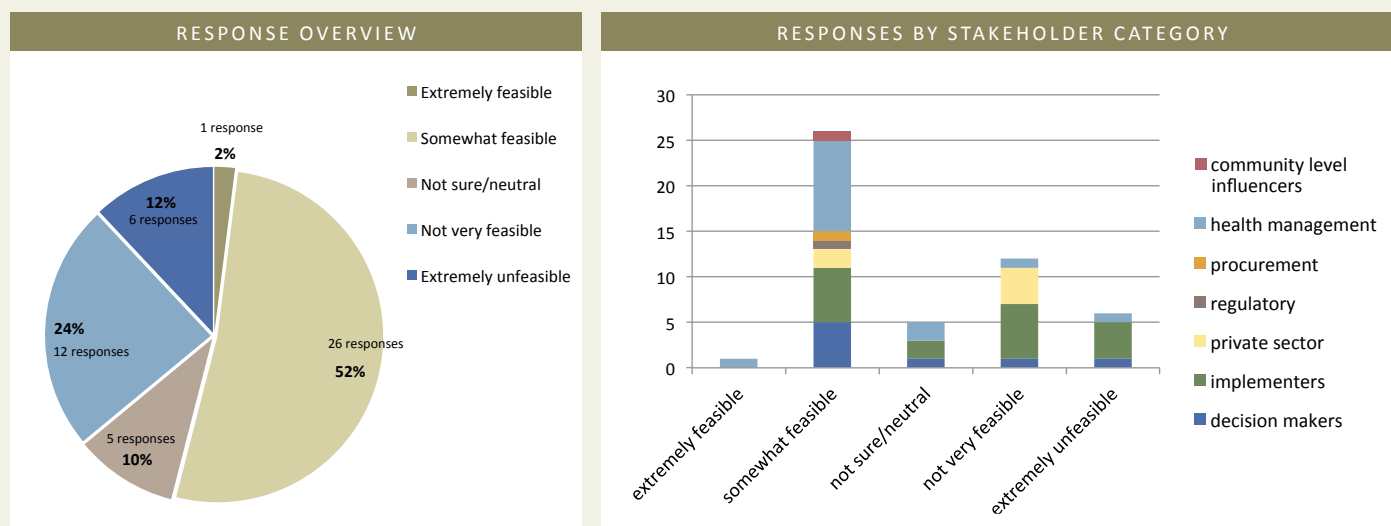
- ***Sustained interventions, complete coverage:*** Stakeholders overwhelmingly felt interventions must be increased to provide consistent, complete coverage.
- ***Strengthened community engagement:*** Stakeholders shared IEC/BCC efforts must be improved and increased to change people's behavior nationwide. Community understanding of the importance of antimalarial drugs is not yet satisfactory – some are still taking traditional herbs rather than medications. Use of ITNs must be increased.
- ***Increased funding:*** Many stakeholders felt that current funding is insufficient to reach elimination. Some mentioned the need for increased funding to strengthen malaria control. Others discussed the need for increased domestic funding. All agreed that consistent funding was important.
- ***Improved supply chain management:*** Stakeholders shared that logistics such as transport must be improved in order to reach the population with programming and commodities in rural areas. Procurement challenges must be addressed.
- ***Increased human resource capacity:*** Increases in human resources are needed countrywide according to stakeholders, from the Ministry level down to the health facility level. Staff also require training. CHWs require consistent and stronger management.
- ***Overcome environmental challenges, improved sanitation:*** Stakeholders highlighted areas with water are difficult to address. Ensuring access to running water, improved sanitation, and clean environments is critical.
- ***Implementation of cross-border initiatives:*** Zambia must work with its eight border countries to ensure malaria is being addressed on both sides of its borders, stakeholders said. Improved cross-border efforts will require a better understanding of the epidemiology of malaria in these areas, as well as patterns of population movement.
- ***Surveillance system expanded:*** According to stakeholders, elimination will require increased and strengthened surveillance.
- ***Stronger national coordination:*** Fifteen stakeholders felt that MOH and MCDMCH must work together more effectively to lead Zambia's malaria efforts.
- ***Address drug and insecticide resistance:*** Several stakeholders mentioned the need to investigate drug and insecticide resistance and to develop new tools and approaches as needed.

ELIMINATION FEASIBILITY BY 2020 – STAKEHOLDER MULTIPLE CHOICE RESPONSES

A multiple choice questionnaire was presented at the end of each interview to capture each stakeholder’s perspective on elimination feasibility by 2020. While this analysis included 45 stakeholder interviews, responses were collected from 50 total respondents because some interviews included multiple representatives.

Question 2:

In your opinion, how feasible is national malaria elimination in Zambia by 2020?



When asked about the feasibility of national malaria elimination in Zambia by 2020, 36% responded ‘not very feasible’ and ‘extremely unfeasible’. Only 2% responded with ‘extremely feasible.’ A majority of stakeholders – 26 out of 50, or 52% - responded ‘somewhat feasible.’ However, interview responses suggest this percentage may overstate the proportion that actually believe this; many respondents said that 2020 was an unrealistic target, yet would answer ‘somewhat feasible’ on the multiple choice questionnaire. Stakeholder comments accompanying a response of ‘somewhat feasible’ included:

“ 2020 is too soon.”

“ Only in certain areas, not the whole country.”

“ If we go out and intensify the interventions it is very possible to eliminate malaria by 2020.”

“ In my view 2020 is only 5 years away; I think it might happen in the next 10 years. I am saying ‘somewhat’ because I am looking at my province. If people look at Lusaka it might be possible by 2020.”

“ In areas where there is high burden I don’t think we will achieve elimination. We could be talking about sustained control but not elimination. We could reduce drastically the mortality in those areas but may not completely reduce transmission.”

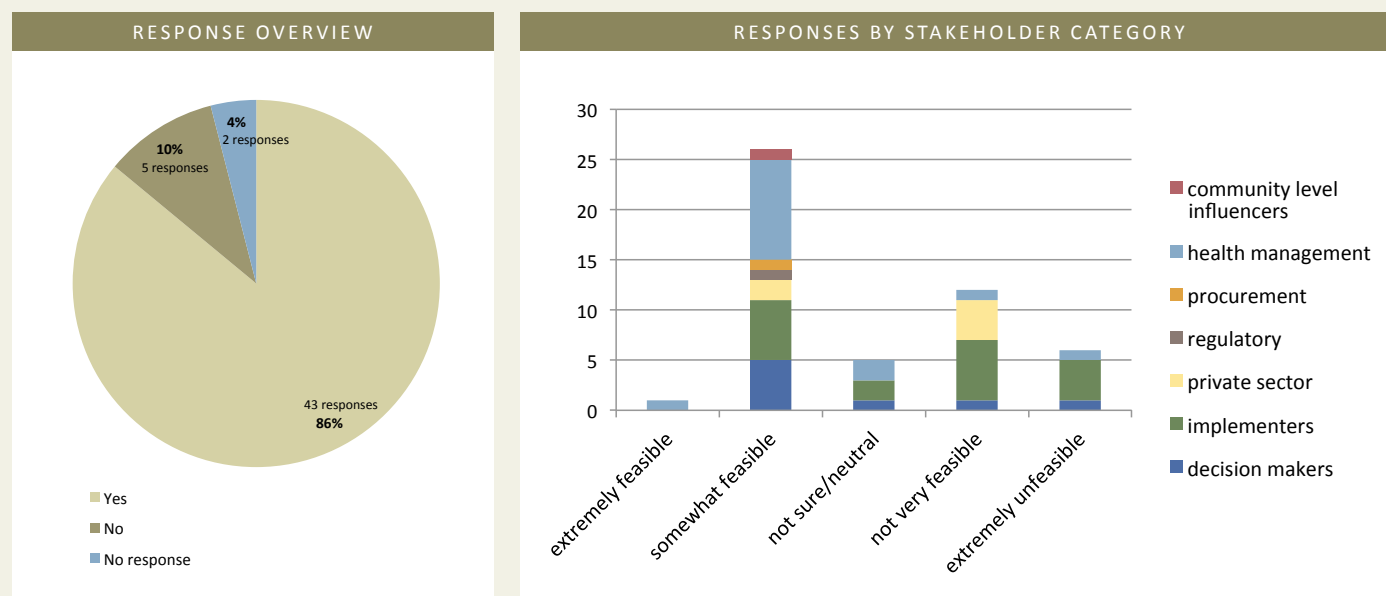
The second chart breaks out responses to Multiple Choice Question 2 by stakeholder group. Health management stakeholders were the most optimistic group, with one ‘extremely feasible’ response and ten ‘somewhat feasible’ responses. The community level, procurement and regulatory stakeholder groups (with one stakeholder each) all responded ‘somewhat feasible.’ Implementers and private sector stakeholders were the most pessimistic. One-third of implementers and a majority of private sector stakeholders responded ‘not very feasible.’ Decision maker stakeholders fell in the middle, with five respondents answering ‘somewhat feasible’ and one respondent selecting ‘not sure/neutral’, ‘not very feasible’, and ‘extremely unfeasible.’

ELIMINATION FEASIBILITY BY 2020 – STAKEHOLDER MULTIPLE CHOICE RESPONSES

Stakeholders were also asked about the feasibility for malaria elimination in low burden areas by 2020.

Question 3:

Do you think that it is feasible for Zambia to eliminate malaria in low burden areas by 2020?



When asked whether it is feasible for Zambia to eliminate malaria in low burden areas by 2020, a majority of stakeholders – 43 out of 50, or 86% - responded ‘Yes.’ When asked ‘Which areas?’ to their response, stakeholder comments included:

- “ Yes, in urban areas. In 10 years elsewhere.”
- “ Southern province, some districts. By 2030.”
- “ Southern, Lusaka. Rural areas will be last.”
- “ Southern, Lusaka, Central, Copperbelt.”
- “ Southern province where MACEPA has already showed positive outcomes.”
- “ Areas of low rainfall.”

Five respondents, or 10%, answered ‘No.’ Four respondents included comments:

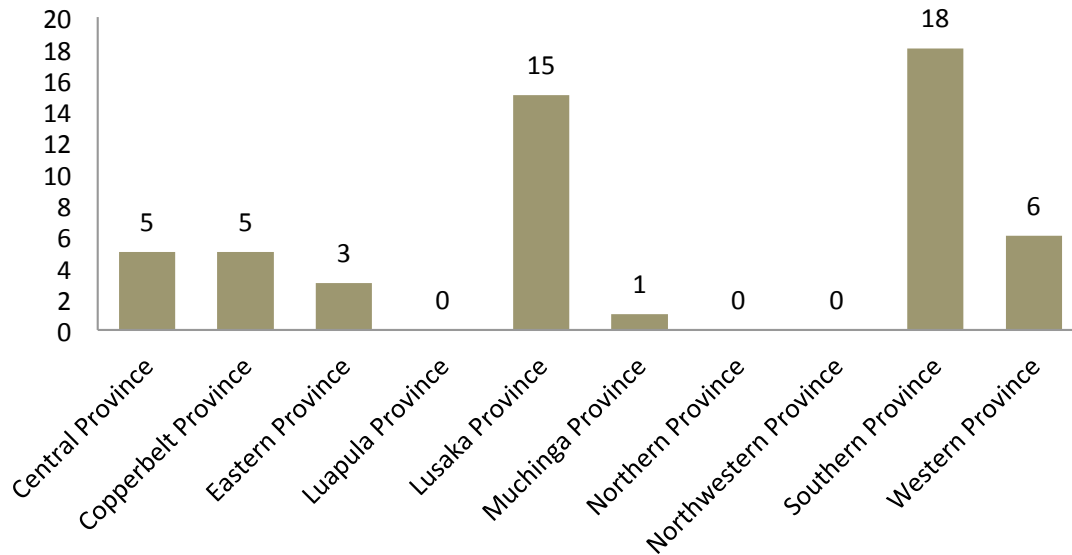
- “ Unless the government increases support.”
- “ The country needs resources from within not dependent on partners. The country has borders with high burden areas. Cross border initiatives should target hot areas. Maybe 10 years from now which is 2025-2030.”
- “ Even those areas with low burden have an unpredictable disease pattern.”
- “ They need to address the mobility element and to also ensure sustained control efforts throughout the period and country. Possibly 2025 for elimination in a few provinces”

The following chart breaks down responses by stakeholder category. ‘No’ responses came from one decision maker, one private sector representative, and three implementer stakeholders.

Elimination Phasing

During stakeholder interviews and on the multiple choice questionnaire stakeholders were asked to identify which provinces would be the first to eliminate malaria, and which would be the last.

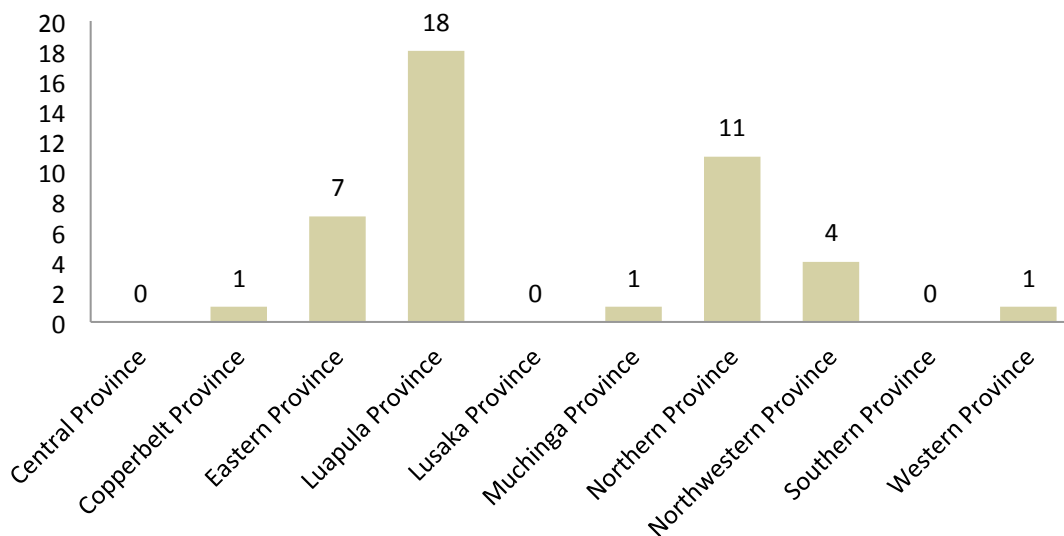
Which provinces do you think will be the first to eliminate malaria?



Eighteen stakeholders felt that Southern Province would be first to eliminate, followed closely by Lusaka Province, which was mentioned by 15 stakeholders. Stakeholders shared that both of these provinces have had significant gains against malaria and that due to their low burdens will be able to achieve elimination first.

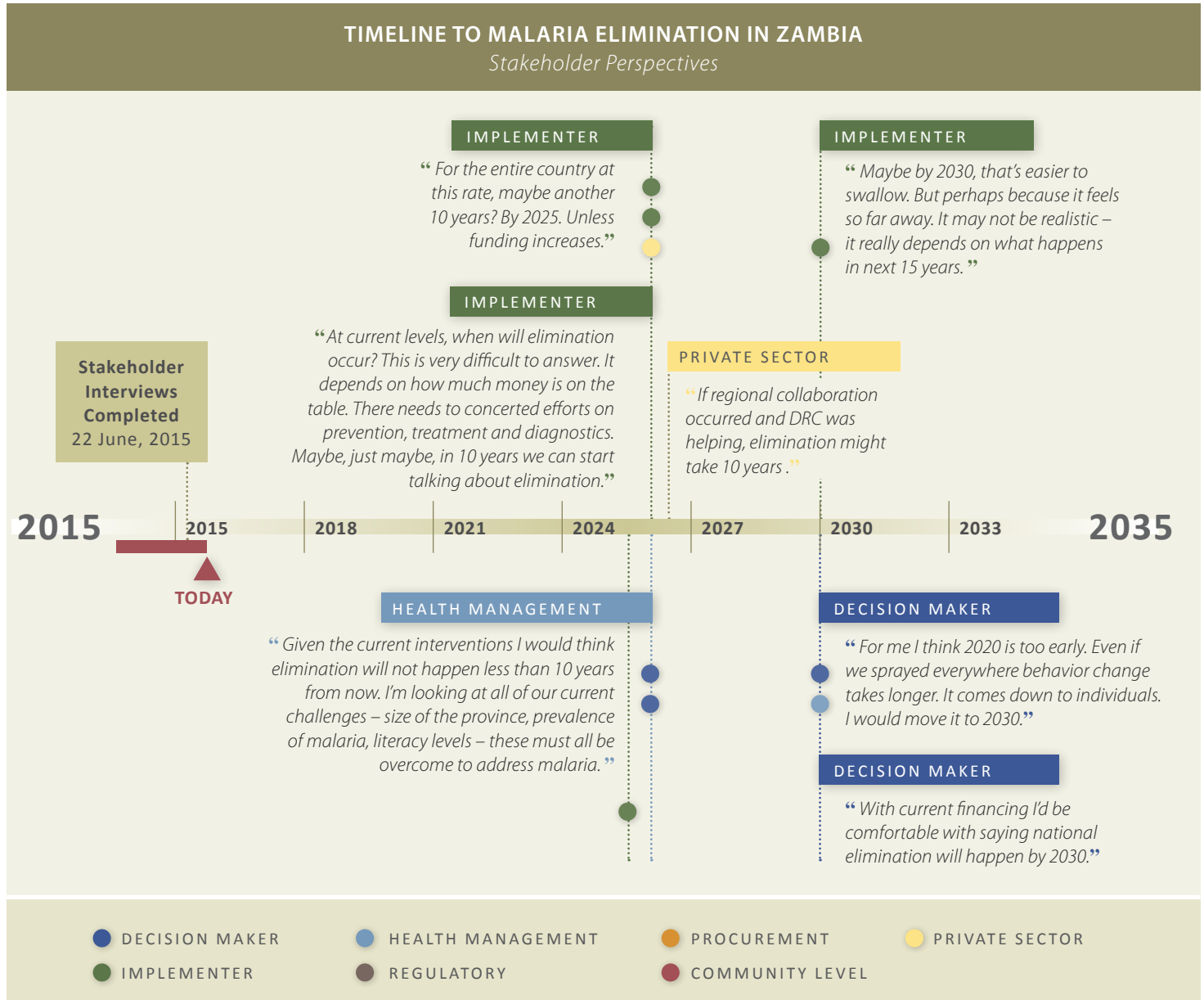
Stakeholders overwhelmingly identified Luapula Province as the hardest to eliminate malaria in. Stakeholders cited its border with the Democratic Republic of Congo (DRC), along with the large bodies of water found in this region. Eleven stakeholders mentioned Northern Province, which was also noted to have many bodies of water. Seven stakeholders mentioned Eastern Province and its long border and four brought up Northwestern Province.

Which provinces do you think will be the hardest to eliminate malaria?



Timeline to elimination

In addition to discussing the feasibility and subnational sequencing of elimination, stakeholders were asked when elimination would be feasible if not by 2020. No stakeholder felt that national elimination was possible by 2020 unless efforts dramatically increased and additional funding and tools became available. Seventeen stakeholders provided later dates, which all fell into two buckets – by 2025 or by 2030. See Figure 1 for a visual timeline representation of stakeholder responses.



Support for malaria elimination

Stakeholders were asked how support for elimination could be increased — including financial, political, and community support.

Three stakeholders discussed how to best increase financial support for elimination. A decision maker and an implementer felt that data must be used to advocate for malaria funding. Another implementer felt that global advocacy is necessary to both the US Congress and the Global Malaria Program at WHO, emphasizing the importance of putting out the message that malaria elimination is feasible to garner more resources.

Seven stakeholders discussed increasing political support. Two implementers and one decision maker recommended more collaboration with politicians to educate them about malaria and provide them with information to make informed decisions. Another implementer noted that politicians are the ones who “make things move” and that if there is political will for malaria then supporting it will be a top priority. Two other stakeholders discussed the need for advocacy at the political level so that more money is invested toward malaria.

Six stakeholders discussed how to increase community support for malaria elimination. Traditional chiefs, healers, faith based organizations, civil society groups and CHWs were mentioned as effective ways to reach communities. An implementer and a decision maker emphasized that it is important for the community to understand and believe that malaria can be eliminated.

Several stakeholders felt that the approach to malaria elimination needs to be holistic, and that everyone must be involved because everyone is responsible. Others felt that support could be increased by producing vigorous, robust evidence on why malaria should be a priority.

What would elimination mean to your community?

Health management personnel and community influencers were asked what elimination would mean to their communities. Nine stakeholders believed that malaria elimination would result in more healthy and productive communities where people could focus on their jobs and families. Six stakeholders said that lives would be saved as fewer people died from malaria. Three stakeholders noted the economic benefits that malaria elimination would bring. While the costs associated with treating malaria are high, the opportunity costs for individuals, families, and communities are also significant—including the work days and school time currently lost to malaria. Finally, three stakeholders provided a basic yet heartening response: “happiness.”

Regulatory process

Zambia’s regulatory activities are managed by Zambia Medicines Regulatory Authority (ZAMRA) which oversees the registration of all products that come into the country, for malaria or otherwise. ZAMRA also provides licensing for wholesalers, manufacturers, and retailers of medicines. Similarly to other Sub-Saharan African countries examined for this stakeholder analysis, Zambia’s regulatory activities appeared to be hampered by limited funding and human resource capacity. Zambia’s regulatory structure also has a limited scope. For instance, ZAMRA is working to improve its laboratory capacity and administrative structures, but still does not cover diagnostics.

Drug Approval

ZAMRA evaluates registration applications by looking at quality, efficacy, and safety issues. As described by the regulatory stakeholder, regulators look for sufficient safety and efficacy evidence, preferably from local data or from a population similar to that of Zambia. If data provided is not representative of the local population, the available evidence is assessed, but additional studies may be required.

Drug applications are peer reviewed within the Department of Product Registration and a report is presented to an expert advisory committee which then makes a recommendation regarding registration of the product. If the product is recommended by the committee, it is issued a market registration number. Final approval is granted by the Director General of ZAMRA.

The regulatory stakeholder shared that if ZAMRA were considering a drug or population-wide approach like MDA, where asymptomatic as well as symptomatic individuals were to be treated, they would look for justification that the activity would be an effective strategy to control malaria. ZAMRA would also evaluate the safety profile, specifically for vulnerable groups like women and children. They would require safety information to be available for the relevant categories of targeted individuals or patients. The approach would also require approval through the standard authorization process.

Drug Rejection

Expert advisory committee members will vote to reject a product if it does not meet registration requirements or if information is insufficient to make a decision on quality or efficacy.

Diagnostics

The regulatory stakeholder said that ZAMRA does not currently evaluate diagnostics because they do not have the

human resource or laboratory capacity to do so. If diagnostic regulation were to take place in Zambia, however, ZAMRA might not be the responsible entity because its regulatory mandate is for medicines. Currently, ZAMRA does not evaluate, review or approve diagnostics or medical devices. RDTs are used throughout Zambia but are not licensed by the authorities. RDTs coming into the country are supplied to the MOH through partners.

Current challenges

Beyond the current capacity challenges limiting ZAMRA's ability to cover diagnostics, the regulatory system also needs to improve the following:

- **Better coordination within the internal expert advisory committee:** The regulatory stakeholder noted ZAMRA's need to strengthen communication within its internal expert advisory committee so that all advisory group members are aware of products that have already been approved. Improving communication and coordination at this level also includes instituting feedback mechanisms between the National Formulary Committee and the National Regulatory Committee.
- **Streamline supply chain between the regulatory and procurement processes:** To avoid significant delays and for the supply chain to operate more efficiently, Zambia should only procure for products that have received regulatory approval. The regulatory stakeholder shared that at times requests for products are given to suppliers before those products have gone through the regulatory process. Suppliers then have to apply for regulatory approval before products can enter the market.

Future regulatory plans

ZAMRA intends to build the capacity to cover diagnostics in the future and has included this as an action point in the ZAMRA 2015-2019 Strategic Plan. ZAMRA also wants to strengthen its manufacturing inspections, particularly conducting inspections with foreign manufacturers. In partnership with UNFPA ZAMRA has been working to inspect condom manufacturers, but for other commodities, particularly medicines, they are still working to put those systems in place. ZAMRA is also working with Zimbabwe, Namibia, and Botswana to develop a system to collaborate on issues related to medications and diagnostics within the region.

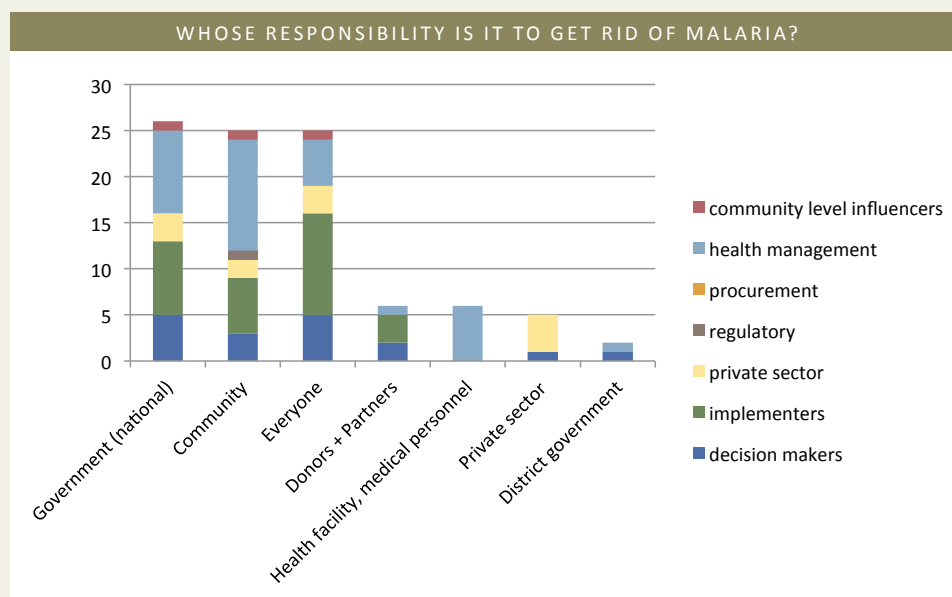


POLICY RECOMMENDATIONS

1. Elimination strategy and NMSP 2017-2021 should establish a realistic timeline and roadmap to achieve national elimination.
2. Regulatory system must be further strengthened and integrated with existing and future malaria control systems and programs, including the procurement system for malaria tools.

WHOSE RESPONSIBILITY IS IT TO GET RID OF MALARIA?

Stakeholders were asked ‘whose responsibility is it to get rid of malaria?’ and 42 responses were collected. Many stakeholders felt that the responsibility lies with more than one institution or group.



26 stakeholders believed the national government is responsible, particularly for providing the structure and coordination necessary to guide efforts.

“It is the responsibility of both the government and the people. The government comes in with sensitization activities to educate the people. It also provides ITNs, antimalarial medicines and IRS. The people need to fill the ditches around their homes, use ITNs and take their antimalarial medicines.

–Health management stakeholder

‘Everyone’ and ‘the community’ were each identified by 25 stakeholders.

“ I think we just need to have everyone involved. They must all be on board. This is not something to be left for one person, one org, or the government. We are all responsible. –Implementer stakeholder

“ I think you see that our MOH has a slogan of ‘malaria ends with me’ – the government has always recognized it is government responsibility. But it is also a community responsibility and household responsibility. We look at various levels – government, communities, households, individuals all have responsibilities. It’s Zambia’s responsibility. –Implementer stakeholder

“ The temptation would be to say the government’s, but the answer is all of us. It should start with individuals – with citizens being involved. It’s a partnership of the government and citizens.

–Decision maker stakeholder

Donors and partners were identified as responsible for getting rid of malaria by six stakeholders. The private sector was identified by five stakeholders – interestingly four of these stakeholders were from the private sector. Six health management stakeholders identified the health facility and health personnel as responsible, suggesting their sense of personal responsibility:

“ It’s the responsibility of us in the health sector. We need to educate the community about malaria and how to prevent and treat it, and we need to make sure that malaria commodities are coming down from the health sector/MOH level. –Health management stakeholder

Finally, district government was identified by one decision maker and one health management stakeholder.

“ For me everyone is responsible, but the main players for interventions should be local government. Local governments should help with housing, screening, doors, building infrastructure.

–Decision maker stakeholder



Effective governance is a critical foundation for accelerating Zambia's efforts to eliminate malaria and issues around governance were discussed in all 45 stakeholder interviews. Encouragingly, several decision makers and implementers felt that strong political will exists within the MOH for elimination.

However, stakeholders cited governance challenges more frequently than any other topic, identifying the need for a strengthened health system and leadership, increased personnel capacity at the national level, and more effective coordination across all levels of government.

Governance challenges often create or exacerbate challenges identified under the other building block categories. For example, for Zambia's NMSP to be effectively implemented, strong coordination and communication from national government down to local government is needed. Stakeholders made it clear that while certain regions are ready to proceed toward elimination due to low disease burden and other favorable conditions, the governance architecture must be strengthened nationwide for the rest of Zambia to improve malaria control efforts and accelerate toward elimination.

Health System Structure

Following the change of government in October 2011, the GRZ decentralized the health system, shifting the management of primary health care services including malaria treatment from the central to the district level.⁸ Before this, MOH was responsible for all health activities including malaria efforts from the central level down to the provincial, district, and community levels. The change transferred technical oversight for the implementation of health activities at district, health center, health post, and community levels to MCDMCH. However, in September 2015 President Edgar Lungu announced that MCDMCH's Mother and Child Health function will be taken over by MOH, while MCDMCH will be recast as the Ministry of Community Development.⁹ Stakeholder comments about the challenges that arose from the division of malaria responsibilities between MOH and MCDMCH are included in this report, although the assumption of the Mother and Child Health function by MOH may limit their future relevance.

Health system decentralization was meant to spread responsibility across departments to facilitate implementation efforts. According to many stakeholders, however, the new structure is ineffective due to an incomplete transition to decentralization, cumbersome bureaucratic processes, and insufficient funding and participation at the district level.

Incomplete decentralization

The decentralization process has progressed but is still incomplete according to multiple decision makers and implementers. One implementer said there were plans to create provincial level MCDMCH offices to provide further oversight of the district and lower levels, but currently only the central MCDMCH office exists. A decision maker pointed out that the final planned step for decentralization was for local governments to take over responsibility for malaria control interventions, including treatment and education at the local level. However, according to several stakeholders, local governments currently lack the capacity to take on this responsibility and there is often a gap between what local and district level governments are supposed to provide and what they actually do provide given existing resource constraints. Interventions mentioned by stakeholders included insecticide spraying and health services.

"The final idea is to transition everything off to local government – decentralization. The local government will be responsible for running health facilities... For malaria elimination you need that community level structure working – it must be robust and funded – to get to elimination. You need money to do that, but also time to get the community organized to the required level."

— IMPLEMENTER STAKEHOLDER

Stakeholders report that local governments are often unable to conduct community level malaria interventions, frequently mentioning gaps in insecticide spraying and health services at the district and lower levels.

Cumbersome bureaucratic processes

Several stakeholders expressed frustration with having to navigate cumbersome bureaucratic processes due to unclear divisions of responsibility between the MOH and MCDMCH.

“ When you have two captains for one ship, what happens? It doesn’t sail straight. There always needs to be representation from two ministries and it delays the process. It especially delays the process at the district level. Who’s going to make this decision? People aren’t clear who their supervisor is.”

— IMPLEMENTER STAKEHOLDER

“ The MOH-MCDMCH split isn’t really working; we may need to reconsider. The population must put on the pressure. People do not care about structures, they care about results.”

— HEALTH MANAGEMENT STAKEHOLDER

Gaps in district level participation in planning

According to several stakeholders, current malaria strategic planning does not engage district level representatives sufficiently, resulting in inefficient use of district level funds and gaps in district level funding. Stakeholders discussed how district level funding is insufficient for malaria efforts.

“ We need capacity building and bottom up types of planning for malaria control and elimination strategies. Usually we do planning at a top level. But specific areas might not need what we are pushing. We must allow the districts to plan what they need for their areas themselves.”

— DECISION MAKER STAKEHOLDER

“ Planning is conducted at the NMCC level, but when you get out to the district level you see gaps, especially with transport and logistics. District level planning will be important for acknowledging these challenges.”

— IMPLEMENTER STAKEHOLDER

National leadership and coordination

Seven decision maker and health management stakeholders shared positive views of current national leadership and coordination of malaria efforts in Zambia. According to two decision makers, support for malaria elimination from top level government leadership makes a difference in what is possible, particularly because GRZ funding has increased over the last few years. One of these decision makers also said that the government has gotten better at planning and implementation and that better national coordination of partners has fostered consultative resource mobilization. In addition, one decision maker and one health management stakeholder at the provincial level pointed to the strong communications strategy created by the government as an example of good coordination.

Major national leadership and coordination challenges highlighted by stakeholders included insufficient coordination between MOH and MCDMCH, NMCC challenges including lack of clear leadership and limited capacity, and a need for improved communication between the national government ministries and to all partners.

MOH + MCDMCH coordination

Only one decision maker felt that MOH and MCDMCH coordination is working well:

“ We have two ministries now – the MOH and the MCDMCH are the key players. The way it is structured is the MCDMCH is implementing malaria efforts. The MOH is more focused on policy and running hospitals. Their roles and responsibilities are spread out. For now I can’t think of anything that needs to be improved.”

— DECISION MAKER STAKEHOLDER

Fifteen stakeholders described challenges stemming from a lack of unified national leadership. Many challenges result from split responsibilities between MOH and MCDMCH, with multiple stakeholders pointing to an adversarial relationship between the two ministries.

“ From what I’m observing now we’ve gone into silos – into individual teams working alone and competing against each other. We need to come together and work on malaria control or elimination together. [We] should be working together as one, without criticizing other efforts. Even in implementation we need to be seen as working as one.”

— DECISION MAKER STAKEHOLDER

Coordination challenges between MOH and MCDMCH primarily fell into three categories: unclear roles and responsibilities, complicated lines of communication, and problems with information sharing.

Unclear roles and responsibilities: Stakeholders said that on the surface basic roles and responsibilities between MOH and MCDMCH are clear. However, in practice implementation can be complicated, particularly when it comes down to the details of who is doing what.

Other stakeholders felt that closer collaboration between MOH, MCDMCH, NMCC and partners would help to reduce inefficiencies. According to one implementer, programs are often duplicated at the district level because partners do not always go through MOH or MCDMCH before conducting activities as it is unclear who is responsible at the national level.

Complicated lines of communication: Stakeholders felt that complicated lines of communication between the two ministries and the NMCC have led to poor communication across national government, with lower levels of government, and with partners.

Net distribution, for example, is managed by the NMCC and occurs nationwide. According to one stakeholder, the NMCC can’t communicate directly with the districts to determine their needs because districts are managed by MCDMCH. Communicating with districts requires the NMCC to work through the MOH Permanent Secretary, who must write to the province. The province can then communicate directly to the district.

The strict communication requirements described by stakeholders appeared to limit interaction between government levels. Several health management stakeholders said that when partners like PMI do work through the national government at the province and district level they sign an MOU with the MOH or MCDMCH. However, province and district level stakeholders mentioned that they are not privy

to the content of these agreements and would like to be more involved in their development. Stakeholders felt that as a result of limited communication, provinces and districts are not able to shape agreements according to their needs.

Stakeholders believed that communication at the national level also requires improvement. Implementing partners shared that it is difficult to conduct planning correctly because both MOH and MCDMCH must be represented – otherwise they will not communicate to one another; it thus falls on partners to invite everyone to the table. Several private sector stakeholders mentioned disconnects between information they received from MOH and the district levels, pointing to lack of communication between MCDMCH and MOH. At the national level, stakeholders described a lack of communication and coordination between NMCC and MCDMCH – especially the Maternal and Child Health department (MCH). According to one implementer:

“ [W]e need to get the MOH close to MCH. They have to find that place at a government level and they are not there yet; there is a separation. We need to tighten that somehow. They have to meet and talk. We may need a partner to come in to assist them to talk. We must create a platform where we can have the policymakers and implementers sitting together.”

— IMPLEMENTER STAKEHOLDER

Decision makers also reported this challenge – although MCH is working with anemic pregnant mothers who must be screened for malaria, due to limited communication with NMCC there is no shared strategy, integration of activities, or funding.

NMCC leadership and coordination

The NMCC, the implementing body of the NMCP, falls under the directorate of the MOH Department of Disease Surveillance Control and Research. It has coordinated malaria control activities and provided technical research support in Zambia since 1997. The NMCC is responsible for coordinating all malaria control activities in the public and private sectors of Zambia. According to stakeholders, the NMCC has seven core activities: IRS, ITN distribution, IEC/BCC, case management, operational research, policy implementation, and overall coordination. Of these activities, policymaking and implementation, operational research, and overall coordination are completed with MOH. NMCC works with MCDMCH to complete IRS, case management, and IEC/BCC at the district and lower levels. For example, with

IRS the NMCC provides guidance on geographical areas to target and MCDMCH manages implementation.

Out of all 45 stakeholder interviews, only 18 mentioned or discussed the NMCC. Stakeholders who did discuss the NMCC were decision makers, implementers, and health management representatives; their opinions ranged on NMCC management and coordination, communication between NMCC and MCDMCH, and limited NMCC capacity as challenges.

Two health management stakeholders who discussed the NMCC were positive in their remarks. One stakeholder at the provincial level shared “in the last year we have started to see more support from the NMCC.” The other stakeholder shared “a big success factor is that the cooperating partners are there for us and support us. We’ve received a lot of support from the government and the NMCC.”

Limited capacity: Several stakeholders said that the NMCC has limited capacity due to low staffing numbers; limited capacity was highlighted by six stakeholders as a challenge. Two stakeholders pointed out that the NMCC has been operating with 60% of their recommended staff structure for the last two years, making it difficult to complete necessary work.

“ Over time many people have left and we have not replaced them. It is a small overstretched group; we need more staffing for the program. At the district level it’s more ad-hoc, but we need a strong NMCC team at national level to coordinate the elimination agenda. One recommendation is that we should have a dedicated NMCC person or a team looking at elimination every day just to help coordinate elimination activities.”

— DECISION MAKER STAKEHOLDER

Limited NMCC capacity was described as an obstacle to successful coordination of malaria elimination activities. In addition to increased representation at the national level, particularly to coordinate elimination activities, another decision maker discussed the need for increased staffing to help connect all levels:

“ As a malaria program we also want to have structures which go down right to the community level. We seem to have some weak links between the central and the local levels. We need to have proper people who provide links between province, district, communities, and the central level.”

— DECISION MAKER STAKEHOLDER

Communication challenges: In addition to – and likely a result of – limited NMCC capacity, communication challenges at NMCC were highlighted by five stakeholders.

A provincial health management stakeholder said that communication has been “okay”, both formally and informally, noting that the NMCC provides regular debriefs. However, this stakeholder felt that communication primarily flowed in one direction and was limited to certain types of information. This stakeholder felt that increased collaboration between the national and lower levels would keep stakeholders informed and engaged in planning, helping to ensure planning decisions are relevant to the provinces and districts where they are implemented.

One decision maker said that the NMCC is not talking to its counterparts or partners. Several implementer and private sector stakeholders shared similar opinions:

“ Communication with NMCC happens when they have people who want to see what we are doing or when we have activities. Over the last 4 years it does not occur in a normal, ongoing way.”

— PRIVATE SECTOR STAKEHOLDER

Multiple stakeholders suggested reinstating the NMCC newsletter that was distributed to partners in the past. Stakeholders felt that an ongoing newsletter with programmatic updates would help to keep partners informed and could facilitate increased dialogue.

Partnerships

One third of stakeholders highlighted the importance of partnerships for ensuring effective implementation of quality malaria interventions in Zambia. The NMCC is responsible for managing the activities of its collaborating partners and primarily does so through frequent partner meetings and Technical Working Groups (TWGs). The NMCC also works to engage private sector companies – primarily mining companies but also others – to further integrate malaria efforts throughout the country.

Technical Working Groups¹¹

Decision makers and implementers emphasized that the TWG process is crucial to success for malaria efforts in Zambia. TWGs provide a forum to exchange information, bring together key representatives from the MOH, MCDMCH and partner organizations, encourage communication, and keep participants engaged and actively pursuing constructive solutions. The TWG process for reviewing and recommending policy and treatment guideline changes was described as a way to effect change for malaria control and elimination because it brings key players to the table to discuss critical issues. According to one stakeholder, TWGs are often effective at pushing through change even when support from the upper ministerial level is lacking:

“ We need to have technical working groups meet on a regular basis, have people organize them, and then think of bringing in new partners in the area. We must have an effective technical group meeting on a regular basis – if they see opportunity for change they can push that up to a Ministry level. Our changes previously were actually pushed through without support from the very top, but we got them through.”

— IMPLEMENTER STAKEHOLDER

TWGs are coordinated by the NMCC. According to stakeholders, a well-functioning TWG system requires strong coordination, diverse representation from partners across sectors, and frequent, regular meetings. Stakeholders believed inconsistent TWG meetings were primarily due to limited NMCC capacity. Currently active TWGs mentioned by stakeholders included the ITN group (described as meeting regularly), the operations group, and an insecticide resistance management group. One decision maker said that a malaria and pregnancy TWG has been highly effective in the past and should be revived.

Human Resources at the National Level

Forty percent of stakeholders said that human resource gaps are one of the greatest challenges to malaria elimination. While more human resources are needed across all levels, stakeholders highlighted limited capacity and the need for highly educated and trained staff at the national level.

As previously mentioned, the NMCC has been operating with 60% of the recommended staff structure for the past two years. One implementer shared that at times, programs are not implemented due to this staffing challenge.

Stakeholders also believed that the malaria program would benefit from strengthening technical expertise. Monitoring and evaluation (M&E) and surveillance, for example, were mentioned most frequently – areas that will be especially critical as Zambia moves towards malaria elimination. At the NMCC, increased support for M&E and surveillance, entomology, and logistics were all discussed. One implementer discussed the need for national level staff with public health training to communicate Zambia’s needs to donors:

“ For so many years we have not had enough national people with public health training – epidemiology, biology, etc. We have a huge problem with local, educated, and trained capacity. We need these type of people to work with donors. Sometimes what the donor believes is best is not actually the best investment from the local perspective. We need to be able to articulate and debate that. Otherwise we end up down paths that are not cost effective or culturally appropriate.”

— IMPLEMENTER STAKEHOLDER

Regional coordination

Nearly all stakeholders that discussed regional coordination emphasized the importance of cross-border initiatives for reaching elimination, yet many noted that current efforts are in need of improvement if not nonexistent.

“ Zambia is not an island. Our elimination actually depends also on the neighboring countries. If they are not eliminating then we are not eliminating. People at the border areas cross at will without passports... For elimination to work it will really depend on regional coordination.”

— IMPLEMENTER STAKEHOLDER

Three stakeholders believed that cross-border initiatives could serve as a learning opportunity for Zambia as the NMCPs from each country come together to share successes and technical information on new tools and innovations. One stakeholder felt that cross border partnerships could help Zambia to mobilize resources and that partner countries could pool funding to support any countries that are struggling to implement efforts due to finances.

Other stakeholders described current challenges in establishing agreements across national governments for cross border collaboration. One decision maker described experiences with cross border work:

“ I used to work near DRC at a health facility and many times when we were doing IRS on the Zambian side we were not allowed to cross the borders. Yet people would cross back and forth – basically we are the same people. You find that there are malaria cases in DRC and they come and access health services in Zambia and vice versa. Sometimes we had committees to sit down and coordinate together. We even did some referrals. That was just at district level. Now I think this coordination is quite silent.”

— DECISION MAKER STAKEHOLDER

One implementer involved in cross border initiatives described the challenges:

“ We’ve done a lot of talking across the table but it is time for us to act. Because we talk but then we find that nothing on the ground is really happening. One example is when we wanted to carry nets from Zambia to Zimbabwe. We have an agreement that commodities can pass for free. But the nets were impounded and then stayed at the border for 3 months. What a waste.”

— IMPLEMENTER STAKEHOLDER

Current cross-border initiatives

Stakeholders mentioned several mechanisms for cross border collaboration:

- **Elimination 8 (E8):** E8 is a platform for regional malaria elimination and includes eight of the southernmost countries in Africa pushing towards malaria elimination – Botswana, Namibia, South Africa, Swaziland, Angola, Mozambique, Zambia, and Zimbabwe. Stakeholders said that a Global Fund grant aimed at regional elimination to support E8 efforts was recently approved, although the grant specifics were not yet known by stakeholders. Several stakeholders believed that the primary challenge facing the E8 is that four member countries are much closer to elimination – Botswana, Namibia, South Africa, and Swaziland – while the other four, including Zambia, still have higher malaria burdens and require more control-oriented strategies.
- **Southern African Development Community (SADC):** SADC is a regional coalition focused on economic development, peace and security, and alleviating poverty through regional integration for member states, which include Zambia and all other African countries south of the DRC.¹² While SADC does not focus on malaria, three stakeholders discussed how SADC’s established infrastructure could help to coordinate malaria activities across countries.
- **Bilateral initiatives:** Stakeholders mentioned Zambia’s bilateral initiatives with Zimbabwe, Mozambique, and Malawi. Stakeholders said that efforts with other countries are less active or non-existent, as with the DRC where security challenges pose an ongoing challenge to collaboration.
- **Local cross-border coordination:** Stakeholders also discussed informal cross-border collaboration at the district or community levels. According to several implementers these efforts are often infrequent and involve communication but limited action due to insufficient funding. For these efforts to be successful, national level support is often required.

Regional coordination challenges

Stakeholders brought up several challenges to cross-border initiatives:

- **Funding:** There has typically been little to no funding devoted to regional coordination, though the recent Global Fund grant to the E8 is an exception. According to one stakeholder, successful regional coordination requires financial support from all participating countries:

“ People are fine to vote for [regional malaria protocol] harmonization, unless they have to pay. The countries who have to adjust their policies may still have preexisting stocks of the old interventions and they will have to pay higher costs in the end. And often harmonizing raises costs because it’s about adopting better interventions, which end up being more costly. Even if your technical personnel are on board, you still have to get the political leadership on board.”

— IMPLEMENTER STAKEHOLDER

- **NMCC management:** Although NMCC stakeholders said that they participate in regional meetings, four stakeholders discussed the need for stronger NMCC management of regional activities. Stakeholders viewed it as NMCC’s responsibility to coordinate at the regional level.
- **Need for equitable, harmonized malaria care across region:** Stakeholders emphasized the need for harmonized, equitable malaria activities across borders – particularly as mobile populations may cross porous borders to obtain better preventive coverage and care. Zambia effectively managing common treatments on both sides of its borders will require partnerships with its neighboring countries at the national, province, and district levels. Districts and communities must be able to coordinate their efforts.

“ For the Copperbelt we are right next to DRC. Unless we can get DRC to also have activities we will not be able to eliminate. Out here I don’t see how that can happen until we have regional collaboration. DRC does not currently have any malaria control. If regional collaboration occurred and DRC was helping, elimination might take 10 years.”

— PRIVATE SECTOR STAKEHOLDER

Stakeholders also said that activities happening on both sides of borders should include IRS, establishment of joint commissions to oversee efforts and to communicate effectively, resource pooling to fund activities, and data sharing.

- **National malaria program strengthening:** Four stakeholders cautioned that Zambia must strengthen its domestic efforts before it pursues cross-border efforts. Most of them believed ‘our house is not in order’ and that national governance and strategic planning should be improved before Zambia tries to deepen coordination with its neighbors. One donor stakeholder wanted more information on the malaria burden in locations across Zambia before supporting regional efforts.

“ The most important thing should be... strengthen the system we have within the country. Then we can contribute to the region. But first we must have strong programs and systems in the country.”

— PRIVATE SECTOR STAKEHOLDER

Stakeholders suggested that a strong regional coordination mechanism could help address cross border population movement by promoting communication, collaboration, and policy and health service delivery harmonization between the GRZ and neighboring governments.



GOVERNANCE RECOMMENDATIONS

1. Improve coordination and communication from national level down to local level within the decentralized health system structure.
2. Increase NMCC staff capacity and develop leadership and coordination of partners and activities.
3. Reinstate NMCC newsletter as a communication tool to partners and donors.
4. Utilize TWGs to target high priority issues and ensure they meet regularly and include all critical decision makers and knowledgeable stakeholders.
5. Continue to strengthen and engage existing regional coordination mechanisms. Work to strengthen cross-border technical coordination and communication. Identify strategies to address impact of population mobility on transmission.



Financing of malaria activities was discussed by 34 stakeholders. Stakeholders provided perspectives on the funding allocation approach as well as funding by sector including external donor financing, national financing, and private sector financing.

Overall, a majority of stakeholders felt that more funding is needed to reach elimination. Several stakeholders pointed to an increase in national funding as a positive trend and multiple decision makers said that the *Zambian government* intends to continue increasing its annual contribution to malaria.

Current financing

Current resources are sufficient

Two decision makers and one implementer stakeholder believed that current resources are sufficient for malaria efforts in Zambia. These three stakeholders all pointed to the gradual increase in malaria funding over the last few years, particularly national funding, sharing that as financing has increased over time, so has intervention coverage. Stakeholders also discussed the strength of partner funding, with allocation guided by the NMSP.

Additional resources needed

60% of stakeholders described funding gaps that require additional support. Eight stakeholders, primarily implementers, cited the need for regular, predictable funding so that interventions can be sustained and coverage can be increased. These stakeholders also believed that funding is currently insufficient to cover the entire country.

“ I think we need constant funding. Not with funding one minute to spray the whole district, the other minute to only spray part of the district. If we had constant funding, government support, and partner support then that would meet all our needs and we could reach elimination by 2020.”

— IMPLEMENTER STAKEHOLDER

Stakeholders identified the following funding gaps:

- **Commodities:** 18 stakeholders believed funds must be increased to procure sufficient commodities. RDTs, ACTs, SP, insecticides, and ITNS in particular were mentioned as needing additional funding support. One decision maker shared that government funding does not come in time for RDTs and ACTs, leaving a gap. ITN coverage needs to be expanded – Zambia currently does not have sufficient funding to provide universal coverage for bednets. IRS funding needs to increase according to stakeholders, who shared that districts are currently only partially covered. Numerous IRS funding challenges were discussed: an implementer shared that there are coverage gaps in nearly every district due to limited funding; a decision maker shared that often partners purchase the insecticide but do not provide money for implementation; a private sector stakeholder who conducts IRS faulted the public sector for inconsistently spraying its designated areas due to insufficient funding, diluting the overall efforts in the region.
- **Human resources:** 11 stakeholders discussed the need for funding to support increased human resources across all levels of government, identifying shortfalls in IRS supervisors, program managers and CHWs. Stakeholders felt that funds are also needed to train skilled staff and to provide offices and transport, that CHWs must be further supported financially, and that the NMCC needs greater staff capacity to lead the nation’s efforts against malaria.
- **Community case management and sensitization:** Stakeholders mentioned a need for increased funding to ensure the population is sensitized on malaria so that sick people seek treatment.
- **Supply chain management:** Stakeholders believed additional funding is needed to support procurement so that suppliers are able to deliver commodities on time. Funding was also discussed as needed for transport to reach rural areas, especially during the rainy season. One implementer said that storage facilities are lacking throughout the country to store commodities.

Resource allocation

Most stakeholders felt that, even if some funding gaps exist, resources are appropriately allocated. Two stakeholders felt that current funding should prioritize health system strengthening. An implementer said that resources should be targeted towards regions with the heaviest malaria burdens:

“ It’s good continuing malaria elimination efforts for areas moving toward elimination – Southern, Lusaka, other areas – but I actually think we need to be focusing more on control in Northwestern, Eastern, and Luapula provinces. There is more malaria there, it is hard to reach communities, and there is a lot of poverty.”

— IMPLEMENTER STAKEHOLDER

Donor financing

Stakeholders overwhelmingly affirmed that donor funding is essential to malaria efforts in Zambia, particularly as national funding is not yet sufficient. Donors mentioned by stakeholders included the Global Fund, PMI/USAID, DFID, BMGF through PATH MACEPA, and UNICEF.

Stakeholders noted that in the past donor funding decreases have been linked to malaria resurgence:

“ At one time we had heavy funding from Global Fund, World Bank, USAID, PMI, a lot of funding at one time. But I think the big impact came in when Global Fund and World Bank funding went down and we started seeing resurgence. It meant that in a lot of districts the government had to step in, but of course the resources were not as good.”

— IMPLEMENTER STAKEHOLDER

This stakeholder noted that a few years back there were more partners involved in malaria control; now fewer are involved and obtaining resources is more challenging. Donors that have stopped funding malaria efforts in Zambia mentioned by stakeholders include World Bank, Irish Aid, and the Swedish International Development Cooperation Agency (SIDA). Another implementer felt that malaria is no longer perceived to be a critical issue to address globally, which Zambians need to change:

“ Globally, malaria is no longer as appealing a condition as it used to be. Maybe this is because malaria is moving towards elimination, and other conditions are increasing in visibility. It’s harder to attract funding for malaria... Globally, or as a country, we need to see how we can raise the profile of malaria and package it in such a way that we can demonstrate that it’s worthwhile for donors. We need to show that it will save them money in the long-term.”

— IMPLEMENTER STAKEHOLDER

Another implementer was equally passionate about the importance of sustained donor funding:

“ If donor agencies don’t continue to fund malaria it will be one of the greatest tragedies of our lifetime because the return of malaria will be devastating.”

— IMPLEMENTER STAKEHOLDER

National financing

Stakeholders praised the GRZ’s increasing financial commitments for malaria efforts. The GRZ has committed to spend more than \$85,000,000 on malaria during the three year period from 2015-2017, which is approximately 28% of the total estimated funding requirement for NMSP implementation.¹³ Many stakeholders believe that this increased domestic funding will be critical for reaching elimination.

“ The government is doing quite a lot in terms of trying to sustain interventions. They are procuring nets, supporting IRS programs. We have seen a shift and the government is putting in more money for drugs. But we still need more money from the partners and for the government.”

— IMPLEMENTER STAKEHOLDER

“ A positive change is the government has stepped up more – there has always been government funding for malaria but now we can actually see it as a budget line item. Beginning in 2013 it was put in there – it says ‘funding for ACTs’ as a placeholder for the money and is worth about \$10 million...that budget line grew to \$27 million in 2014.”

— IMPLEMENTER STAKEHOLDER

But several stakeholders noted that government disbursements do not always equal commitments:

“ Even if it appears in the budget, it is not always made available. In one year the NMCP was only able to use something like \$14 million because the equivalent of \$10 million went “back to the treasury” – it was never made available.”

— IMPLEMENTER STAKEHOLDER

Increasing domestic funding

Despite optimism about increased government funding, some stakeholders feel it is still not enough. Several implementer and health management stakeholders felt that Zambia is too dependent on donor funding and needs to step up and lead efforts. One of these implementers felt that Zambia should focus on the long term and commit to finding funds for malaria elimination – even if takes 10 years.

A donor stakeholder described how presenting more evidence about the direct and indirect benefits of malaria elimination might convince the GRZ to invest more heavily:

“ We also need domestic resources to be increased. The evidence we have must be clear and documented. We must present the evidence in a way that it can stimulate our leaders to invest more resources, just like they did when they saw something in the commodities. To make the case of malaria elimination we must be more convincing in terms of value when there is reduction and the spinoff effects in terms of the whole health system.”

— DECISION MAKER STAKEHOLDER

Finally, one decision maker recommended increasing transparency about government funding allocations. This stakeholder also advocated for increased integration of funding for cross-cutting areas like maternal and child health. Sharing funds would increase efficiency, this stakeholder said, ensuring money goes further.

Private sector financing

One decision maker felt that Zambia has a good environment for public-private partnerships, pointing out that private sector partners provide a strong commitment in terms of funding and technical support. Private sector stakeholders working in the mining, sugar, and bottled water sectors voiced their support for private sector participation in Zambia’s malaria efforts, particularly in the communities where their businesses operate.

Six stakeholders acknowledged that the private sector could do more to support malaria efforts in Zambia. Stakeholders mentioned banks, mining companies, and phone companies as possible sources of support and funding. One implementer mentioned a program run by Coca Cola, and suggested they support efforts further by advertising at small community stores throughout the country – spreading anti-malaria messages at the local level.

Private sector engagement

The five private sector stakeholders are all involved in malaria efforts, both for their own employees and to support their surrounding communities through corporate social responsibility programs. Stakeholders shared that the NMCC is responsible for maintaining oversight and communication with the private sector around malaria control and elimination efforts.

Private sector stakeholders voiced a general desire for increased engagement with Zambia’s malaria efforts, identifying several changes that could empower their companies to strengthen involvement moving forward: stronger communication from the NMCC, longer term partnership opportunities, identification of unique strengths and opportunities for private sector involvement, and the government highlighting private sector support.

Stronger communication from the NMCC: Private sector stakeholders would like to communicate more frequently with the NMCC about government malaria activities and policies. Because companies differ in their needs and capabilities, stakeholders mentioned the value of one-on-one engagements as well as group discussions. One stakeholder mentioned the need for communication from higher ranked government officials:

“ The problem we have with the MOH is they are very good at sending low ranked people to us. You very rarely see a decision making person at a meeting. The meeting becomes academic and then you go home. We had a meeting in Livingstone run by SADC and they were also talking about malaria. We were expecting good representation from NMCC but they sent a low ranked person. Zimbabwe had their Minister of Health there and a deputy. Mozambique equally was represented.”

— PRIVATE SECTOR STAKEHOLDER

Stakeholders also discussed a need for clear notifications around government malaria policy requirements. Private sector companies work to comply with policy requirements and when these change notification is needed. For example, when the required insecticide switched to Actellic, many stakeholders felt they were notified late and thus forced into a challenging situation. One stakeholder emphasized that the NMCC newsletter could be a useful communication tool to share updates.

Longer term partnership opportunities: Private sector stakeholders said that longer term collaborative projects can be more fruitful over time than individual projects.

“ It is always nice to have a long term partnership because you can plan and review and see what is working, strategize so there is continuity and consistence. Then you can see your resources. We can partner and bring our strengths to the table. We can actually learn from the people specializing in those areas and implement successful programs together.”

— PRIVATE SECTOR STAKEHOLDER

Leveraging private sector strengths beyond financial support: According to stakeholders, the GRZ should work with the private sector to identify ways that the businesses can contribute beyond making financial donations. Potential avenues described by stakeholders included support procuring and transporting materials, advertising malaria projects on company products and materials, communication to company employees and communities, and providing training to the government and partners.

Highlighting private sector contributions: Stakeholders felt that recognition for private sector efforts – including branding, reports, and media stories that increase company visibility – could incentivize businesses to invest more in malaria activities.

“ At the end of the day it’s being able to communicate out to the community the investment we are putting into the malaria program. That is the angle of social responsibility – to be identified alongside other players.”

— PRIVATE SECTOR STAKEHOLDER



FINANCING RECOMMENDATIONS

1. Provide compelling evidence about malaria intervention successes and challenges to justify increased donor funding.
2. Ensure that domestic funding commitments for malaria are disbursed in a timely manner.
3. Increase private sector engagement to encourage support – financial and otherwise.



Stakeholders discussed Zambia's strong planning and operations capabilities while also emphasizing a number of planning and operations successes and challenges.

Planning and operations successes were primarily highlighted by decision maker stakeholders. One decision maker shared that Zambia is implementing WHO recommended interventions to control malaria, and that many of those interventions have been rolled out throughout the country. A decision maker and an implementer pointed to IRS coverage as a major success for malaria control. A decision maker also pointed to mass distributions of bednets as a major success. Another decision maker said that since the institution of the Malaria Indicator Survey (MIS) and Health Management Information System (HMIS) the country has been zoned into three sections, making it possible to target interventions more effectively.

Stakeholders also described a number of planning and operations challenges, the majority falling under community acceptance and supply chain management. The most discussed challenge was community resistance to planning and operations activities. Stakeholders provided bednet usage as one example, which is low for a number of reasons according to stakeholders: lack of sufficient education during distribution, community resistance and misuse, inappropriate bednet shape and size, and insufficient numbers provided per household. Community resistance also leads to refusal by some community members to participate in IRS spraying.

Another major challenge discussed by stakeholders was insufficient availability of resources. Many stockouts described by stakeholders may be due to government procurement and logistical challenges. Some stakeholders said that even when resources are supplied, they often arrive late or in insufficient numbers.

Interventions

Vector Control

ITNs

Despite some distribution and community use challenges, health management stakeholders described ITNs as a key intervention that communities must be educated and encouraged to use. Several noted a drop in malaria incidence in their regions due to ITN distributions:

“ For a long period, Nyimba had a growing malaria problem. But now it's going down, with ITN distribution and other interventions. But we're not dealing with the parasite pool. We need improved ITN use, treatment of the parasite pool, and sustainable interventions.”

— HEALTH MANAGEMENT STAKEHOLDER

According to the 2011-2016 NMSP and several decision makers, the national target for ITN coverage is 100% and the target for usage is 80% or higher.¹⁴ In addition, the PMI MOP lists the long-lasting insecticide-treated net (LLIN) target for vulnerable populations in Zambia at 85% or higher.¹⁵ However, stakeholders pointed out that in the last MIS survey Zambia bednet usage was around 50% nationally, well below the target. According to the 2012 MIS, 48.9% of all household members slept under an ITN the night before the survey was conducted. National level stakeholders said that to achieve universal coverage, the country will carry out mass distributions every three years supplemented by routine distribution channels. For routine distribution, nets will be available continuously through either schools or communities, depending on the choice of the district. If provided through schools, one net per pupil will be distributed to students in grades 1 and 4 once a year in July. The implementer said this program is planned to start this year as a pilot in Luapula. The committed money is reportedly delayed, however, which may result in a delayed start until next year.

Logistics and infrastructure for ITN distribution:

Stakeholders shared that the NMCC follows WHO forecasting guidelines for bednet procurement (1.8 x the population + 10% buffer). Bednets are procured by the government procurement unit or by the NMCC bednet distribution partner, depending on which partner the NMCC is working with. The most recent bednet distribution forecast called for eight million bednets, but there was only enough funding to procure six million according to an implementer. In addition, this stakeholder said that only five million were distributed because some nets went missing and some areas were oversupplied due to inaccurate forecasting. In the future, this stakeholder suggested conducting a needs assessment first and basing procurement numbers off of the headcount taken in the previous distribution campaign. Nevertheless, one stakeholder reported that after the last distribution campaign

the seven districts targeted by MOH were above 80% ITN coverage. Other areas were supported by PMI or the Global Fund. Despite efforts in this mass distribution campaign many stakeholders still point to the gap between available bednets and needed bednets as a major challenge.

Community attitudes towards ITNs: Some stakeholders described ITN misuse and a lack of community awareness about their importance as a vector control tool. Stakeholders reported that in certain regions ITNs are often used for fishing and gardening.

“ You find that the government and partners are working hard to take nets to the districts. The attitude of the people is challenging. As much as we distribute so many nets, distribution does not equal utilization. The people must also accept the nets and use them. At the central level we are doing hard work.”

— IMPLEMENTER STAKEHOLDER

Stakeholders believed that ITN misuse occurs when distribution is not accompanied by education about proper use and that community members are more likely to use ITNs appropriately when they are correctly educated. Health management stakeholders report that community leaders in some areas, such as chiefs and village headmen, are working to educate their communities about appropriate ITN use. An implementer pointed out that during mass campaigns volunteers take nets door to door, hang them in sleeping spaces, and provide informative messaging. Peace Corps volunteers in some parts of the country also reportedly go door to door in their communities conducting bednet checks; volunteers in some areas check that bednets are being used, repair holes, and provide basic education on malaria and bednet treatment.

Stakeholders described community complaints about current ITNs, including overly large holes allowing mosquitos to enter, material preventing airflow and being too hot, and itchiness due to chemicals. Size and shape were also mentioned by stakeholders – procured nets are a standard double size, rectangular in shape. Stakeholders said that in Lusaka people complain that the nets are too small and do not cover their beds. Others do not like the rectangular shape, reporting that it feels “coffin-like”. There are requests from communities for conical shaped nets instead. Stakeholders also discussed how nets are too short and do not reach the floor in some areas. To overcome this challenge, Peace Corps

volunteers started a new project called ‘bednet beautification’ where they sew strips of colorful fabric to the bottom of the nets to make them longer, lengthening them by a foot to reach the floor.

Stakeholders also described challenges with ITNs wearing out over time. According to policy, ITNs need to be replaced every three years. However, some stakeholders said that ITNs need to be available year round and replaced when they are torn or worn out. In addition, stakeholders felt that more nets need to be provided to each household because families are often large and there are typically not enough provided during mass distributions for every household member.

IRS

Stakeholders said that IRS coverage is increasing in Zambia: in 2014, MCDMCH and implementing partners attempted to cover the entire country with IRS except for some new districts that had just been added. In 2015, MCDMCH plans to cover all districts, old and new, except for three new districts that do not yet have the administrative or storage structures required. PMI supports IRS implementation by covering 20 high-burden districts with the same 85% coverage goal in these geographic areas that is instituted nationwide by other implementers. According to one implementer, the majority of catchment areas are covered but some are still left out, primarily due to funding:

“ In areas where we are working there are some areas that are left out. With IRS we take malaria burden into consideration first, but it is not only that. It is also the accessibility of areas. If we had additional funds we would access even more areas. Instead of spraying 400,000 structures, we’d spray 500,000 for example, to reach even more people. We’d expand the coverage.”

— IMPLEMENTER STAKEHOLDER

Funding was a frequent challenge for IRS discussed by five stakeholders, who pointed out that funding challenges result in both partial coverage and late procurement, delaying spraying into the rainy season at times. An upcoming challenge highlighted by some stakeholders is that PMI’s IRS funding from DFID will be ending this year and will result in a major gap for IRS coverage if not filled.

Several stakeholders mentioned IRS challenges in specific provinces. One stakeholder asserted that in Northwestern Province IRS has been implemented for several years, but coverage has never been above 80%. This stakeholder shared

that thus far in 2015 only 68% of Northwestern Province has been covered due to logistical challenges. In Northwestern Province the rainy season commences earlier than in other places, beginning in September. Sometimes spraying does not finish until January, often after the rainy season is over. Health management facilities in this region are operating with 60% of the necessary staff, further exacerbating implementation challenges. In Eastern Province a health management stakeholder said that partners only focus on spraying areas with high malaria incidence and that only a few districts in their area are included. This stakeholder felt that universal IRS coverage could greatly help to reduce malaria. Stakeholder comments point to a low awareness of national IRS policy for this stakeholder and potentially others at the health management level. The 2011-2016 NMSP set the goal of reaching at least 85% IRS coverage of all the targeted structures/households in low to high transmission epidemiological zones, and focused application of surveillance-driven IRS in very low transmission zones.¹⁶

Another stakeholder in Eastern Province described challenges with insecticide resistance, requiring a switch from pyrethroids to organophosphates. According to this stakeholder, following this switch the malaria incidence rate went from 750/1000 to 500/1000 in just one season.

Stakeholders described some challenges with community acceptance of IRS. Certain community members, especially in rural areas, refuse to allow IRS in their homes while others complain about the smell, the inconvenience, or the mosquitos, cockroaches, and pests they see after spraying. Stakeholders said that this resistance is typically easily overcome with increased education.

According to a decision maker and an implementer stakeholder, a greater challenge for IRS implementation lies in timing. Spraying will ideally occur before the rainy season. In Northern and Muchinga provinces, however, people are typically not in their homes for 3-4 weeks prior to the rainy season because they are catching caterpillars, a primary source of income. IRS implementers are unable to gain permission to spray because no one is home and are often forced to spray during the rainy season instead.

Certain provinces are especially challenging for IRS. Stakeholders said that in Luapula and Northern provinces there are many bodies of water conducive to mosquito breeding and that the populations spend a significant amount of time fishing. These populations often live in camps and structures not favorable for IRS and don't sleep under nets during the night because they are fishing.

Case Management

Seventeen stakeholders discussed some of the case management improvements and many of the ongoing challenges in Zambia.

“ Community case management of malaria must be continually strengthened with widespread treatment and testing. Also adding in drugs that work better and trying to add Primaquine. In other areas where that is not feasible we must just try to strengthen the training, availability of commodities and supervision of CHWs.”

— IMPLEMENTER STAKEHOLDER

Diagnostics: According to an implementer, government funding frequently does not come in time for procurement of RDTs (as well as ACTs). Partners do their best to fill the gap but the country is still lacking in supplies. Several partners conducted a study in 2012-2013 focused on improving case management and found that the government must address supply chain and procurement issues in order to do so. An implementer described how the unavailability of RDTs can lead to increased misdiagnosis:

“ Right now if you look at HMIS, you will see our numbers of confirmed malaria have been increasing year on year. When diagnostics aren't available it looks like malaria is higher due to misdiagnosis.”

— IMPLEMENTER STAKEHOLDER

Treatment: A decision maker pointed out that availability of RDTs and effective use can decrease antimalarial drug waste because only RDT positive cases are treated. Stakeholders reported that antimalarials are often not available due to domestic supply chain issues, particularly the currently recommended ACTs. A decision maker said that with ongoing commodity stockout challenges, malaria is often treated with whatever is available and that this behavior may contribute to drug resistance.

Another critical challenge for case management is encouraging people to seek early treatment when they are sick with malaria. A health management stakeholder from

Eastern Province said that parents are sometimes reluctant to seek care for a child with malaria symptoms, even though children are particularly vulnerable if they do not receive prompt treatment, because going to a health facility means losing valuable working time. Local traditional healers may be consulted instead, further delaying medical treatment. This stakeholder did note that child mortality is dropping locally due to programs aimed at educating parents about the importance of early treatment.

Another implementer called for an active case detection system like Senegal's PECADOM+ program:

" I work with many volunteers with stockouts issues who do not have adequate supplies: treatments, RDTs, IPTp supplies, nets. I spoke with PMI about instituting a program like Senegal's PECADOM+ here due to some of these challenges. I will meet with NMCC in a few weeks. I think if we had active case detection that would help here. The number of people who need treatment is much higher than those who go to clinics. At some periods during the rainy season everyone is positive but they don't go to clinics."

— IMPLEMENTER STAKEHOLDER

Environmental management

Five health management and private sector stakeholders discussed the importance of encouraging better environmental practices to decrease mosquito breeding. Stakeholders felt that communities needed to improve efforts to drain stagnant water, fill potholes, clear drains, and better manage waste and garbage. According to stakeholders, improved environmental management will require better community sensitization as well as increased guidance from the government.

One stakeholder broke down the community level challenges caused by poor infrastructure and further exacerbated by poverty and climate:

" A lot of that has to do with water and drainage systems. The country changes when it becomes the rainy season. But if people lived in screened houses that would give them more protection. But often people live in huts with open roofs. Your level of poverty has an impact on how well you can protect yourself from malaria. If you have income you can buy mosquito coils, etc., but for people living in poverty that's not possible. They need to feed their families."

— IMPLEMENTER STAKEHOLDER

IPTp

Seven stakeholders discussed IPTp treatment for pregnant mothers. Zambia's 2011-2016 NMSP follows the WHO recommended three doses of SP during pregnancy. Most stakeholders felt that IPTp is working well and that medicine is consistently available nationwide. One implementer believed that IPTp coverage is much higher in Zambia than in other countries but could still be better. Another implementer stakeholder described incomplete implementation of IPTp:

" I've never seen IPTp distributed to people in many areas. Many people have never seen nets distributed at ANC clinics. Part of that is a gap in provinces and who is procuring nets. There are gaps in timing and location."

— IMPLEMENTER STAKEHOLDER

A decision maker felt that the NMCC must strengthen the IPTp program. While MCDMCH is responsible for implementing IPTp, the NMCC allocates the funds. According to this stakeholder, more funding should be allocated for IPTp.

Surveillance

Ten stakeholders discussed surveillance as an approach that needs to be scaled and strengthened, particularly to accelerate toward elimination. These stakeholders felt that as the country shifts from a control strategy to an elimination strategy, the emphasis on surveillance will need to increase and the current system will need to be expanded. Surveillance will be especially important for regions with lower transmission rates where efforts must focus on tracking and treating to bring rates down to zero.

A decision maker said that current capacity limitations pose the greatest challenge to scaling the surveillance system:

“ For surveillance the guidelines are all in place. The challenge is the shortage of staff... They may rush and compromise on some services. That is a weakness in the surveillance system. Certain efforts are neglected due to lack of staff capacity.”

— DECISION MAKER STAKEHOLDER

Another decision maker emphasized the need for more human resources to implement surveillance, particularly more surveillance technologists in MOH and MCDMCH.

Regional coordination

Stakeholders also discussed regional coordination at the district and community level, highlighting two major challenges that must be overcome:

- **Differing malaria burdens:** Differing malaria burdens in the eight countries bordering Zambia require targeted yet coordinated strategies. Namibia and Botswana are moving towards elimination, while most other countries in the region are still in the control phase. Zambia shares its longest border with DRC, where the malaria burden is high and current government to government coordination is non-existent.
- **Population mobility:** Population mobility leads to many imported and exported malaria cases due to porous borders and limited border screening. People from bordering countries – particularly Mozambique, DRC, and Angola – are often treated in Zambia. Oftentimes local populations on both sides of a border speak the same language, trade actively, and cross the border frequently. Commodities such as ITNs are frequently picked up in Zambia and taken back across borders. The population mobility challenge requires active border patrols as well as common treatments on both sides of borders to effectively move toward elimination.

Human resources

Stakeholders discussed human resource challenges at the lower levels of government. Stakeholders described limited numbers and capacity and highlighted the need for more trained health personnel and for finding ways to increase motivation for existing personnel—through financial incentives or other forms of motivation.

“ As you are aware, MOH has many human resource deficiencies. Most health facilities have limited workers vs. many patients. Imagine going a mile further to do elimination. We cannot use the same limited resources to eliminate when we cannot control.”

— IMPLEMENTER STAKEHOLDER

Staffing was described as an issue for many provinces – Luapula, for example, lacks permanent malaria specialists and has few qualified health workers. District and facility levels were also mentioned as requiring increased numbers of human resources.

Human resources often lack incentives as well, leading to retention challenges across health system levels but particularly at the lower levels. Trained staff moving on is a major challenge in some regions. In certain regions, the health sector competes with the mining industry for workers, meaning that staff are often only available certain times of the year. Incentives, training, and supervision must be improved for human resources to be strengthened across all levels of the health sector.

Community engagement

Community engagement is one of the most important components to successful implementation of malaria efforts and also one of the areas with the greatest room for improvement according to stakeholders. Community engagement was discussed by 78% of stakeholders – particularly current examples of community involvement, community resistance, and successful community engagement strategies that should be further utilized.

Community awareness

Stakeholders felt that the greatest reason for community resistance to malaria efforts is lack of understanding. The most frequently mentioned community resistance challenges included refusal to sleep under ITNs, inappropriate use of ITNs for fishing or gardening, selling ITNs to residents of neighboring countries, resistance to IRS, not seeking malaria treatment when sick, failure to complete antimalarial treatment courses, and failure to keep environments clean.

One health management stakeholder noted:

“ The community must be empowered with information. The community needs to understand what the government is trying to do with its interventions, or it will reject them.”

— HEALTH MANAGEMENT STAKEHOLDER

IEC/BCC

IEC/BCC (Information, Education, and Communication/ Behavior Change Communication) was mentioned by 14 stakeholders as one of the most important activities for addressing community resistance challenges.

“ The weakest link is not the strategies. It’s how the communities are brought together with these strategies.”

— IMPLEMENTER STAKEHOLDER

“ We need to continue consistently providing information on the patient side. People need the right information. Some people think that malaria is the result of witchcraft. They may rely on traditional medicine and end up dying.”

— DECISION MAKER STAKEHOLDER

Stakeholders discussed the critical need for behavior change efforts so that people participate in malaria programs and use commodities appropriately. Stakeholders at the district level described efforts to establish IEC/BCC campaigns. One stakeholder mentioned working with chiefs and tribal structures to communicate malaria prevention and treatment messages to the community.

At the national level, IEC/BCC programs were described as understaffed, as they are managed by only one person at MCDMCH and one person at NMCC.

CHWs

CHWs work with the population against malaria at the local level. Stakeholders described how CHWs volunteer several hours per day on average with the communities performing malaria testing and treatment and counselling on health care issues. They also support malaria case follow-up. CHWs work to sensitize the community on the importance of being tested for malaria and help to dispel misunderstandings. One health management stakeholder related how community

members were previously against being tested because they thought their blood was ‘being taken away for secret purposes.’ CHWs also provide reactive case detection in some areas. One CHW in Southern Province said:

“ I do door-to-door malaria work. In short, I am a doctor out in the community. When someone comes to my house who is sick, I’ll give them an RDT. If they test positive, I’ll treat them and then I’ll go out to their home and test everybody within a 140 meter radius. Then I’ll treat everybody who tests positive for malaria. I know that as a Community Health Worker I am a volunteer.”

— HEALTH MANAGEMENT STAKEHOLDER

Stakeholders said that case follow-up is a critical component to case management performed by CHWs, but regular occurrence depends upon the leadership strength and the incentives provided to CHWs. As volunteers, CHWs do not typically receive compensation for their work, although some organizations do provide meals, small stipends or bicycles for transportation. Stakeholders reported that when CHWs are provided with incentives they are more active and remain motivated. Providing adequate training, supervision, transportation, and incentives was described as critical for CHW retention.

Several implementers believed that the MOH should provide managers to train and oversee CHWs, holding them accountable for task completion and ensuring they are empowered with enough information. Stakeholders noted that if CHWs are not familiar with tools like RDTs they will not use them. This challenge often affects data collection, as CHWs must comply with data and reporting requirements. Delays are caused when they do not receive enough support or supervision. Improved training is also critical for CHWs as activities such as surveillance ramp up. According to one health management stakeholder, information management and sharing is a major challenge because health workers don’t have the training and tools to succeed.

Community engagement strategies

Stakeholders offered recommendations to strengthen community engagement:

- **Work through community leaders** to increase community support. Village headmen, chiefs, and religious leaders are important to engage with to share health information

because they are respected and trusted by their communities.

- **Nominate and incentivize community mobilizers** to publicize upcoming campaigns for IRS, ITN distribution, or other interventions. One implementer shared that this technique was particularly effective for IRS campaigns. This stakeholder nominated community mobilizers, had them form committees to organize their efforts, and provided incentives when they reached 85% buy-in from their areas (25 kwacha per person per community). According to this implementer, using community members as mobilizers is effective because they are well-known and trusted.
- **Increase door-to-door mobilization.** When health care workers go door-to-door to check on people, they are more likely to accept testing and treatment and follow-up is ensured. Peace Corps volunteers frequently conduct door-to-door bednet checks to create accountability in the community and to provide education on malaria.
- **Incentivize CHWs to increase motivation and retention.** Although volunteers, CHWs are committed to helping their communities and they deserve support.
- **Engage politicians to support malaria efforts** at the local, district, and national levels. One implementer suggested having politicians engage people about the importance of bednets, IRS, early treatment, case follow up, and environmental challenges.
- **Partner with the private sector.** One stakeholder said that Tanzania had a text messaging and radio message campaign in the evenings, reminding people to sleep under their bednets. Zambia could similarly partner with communications companies to spread awareness.
- **Increase funding for IEC/BCC efforts.** This can include information campaigns to spread awareness and increase community support for malaria efforts.

Infrastructure and Supply Chain Management

Infrastructure

Stakeholders discussed both the national health system infrastructure and district and facility level infrastructure. One decision maker said that the health system needs to be strengthened before anything else:

“ I don't even think we should be talking about elimination. First there needs to be a clearer picture of the health care structure and the supply bottlenecks and other challenges that may impede its functioning. There needs be improvements in the health system first.”

— DECISION MAKER STAKEHOLDER

Other stakeholders discussed the need to strengthen facility capacity at lower levels, specifically storage facilities so that they are able to store products for malaria control in bulk.

Supply chain management

Nearly half of stakeholders reported supply chain management issues throughout the country that affect the availability of commodity stocks and impede ordering processes. While several stakeholders noted improvements in recent years, the majority of supply chain management conversations centered on the need for improved management across all levels.

Twenty stakeholders highlighted the need for supply chain management improvements. Forecasting was identified as a barrier by multiple stakeholders. District and facility levels often face confusion around how much product to order from the central stores. Forecasting difficulty affects overall stock management, another challenge highlighted by stakeholders. One implementer described the negative impact supply chain management issues can have on malaria efforts:

“ A couple of years ago there was a stockout with Coartem due to a challenge at the national level with ordering. You can see a spike in the malaria incidence at this point. You have to plan the inventory to avoid stockouts. You can see the rise in malaria incidence when mistakes/problems happen.”

— IMPLEMENTER STAKEHOLDER

Stakeholders also discussed logistical challenges in transferring commodities from the central level down to lower levels. The procurement stakeholder emphasized the challenge of delivering commodities to the district level, noting that this is primarily due to lack of clear direction from the central level. One decision maker shared that commodities are often available at the central level but not at the facility level; at times the central level submits orders but does not plan lead times appropriately.

Seventeen stakeholders described how these supply chain management issues can result in stockouts. Stakeholders emphasized that when stockouts occur they are due to in-country supply chain management challenges, whether at the central, province, or district level. Out of all commodities, RDT stockouts were the most frequently reported, even though stakeholders noted RDT availability is improving in some places. When ACT stockouts occur, stakeholders reported that CHWs have to use a different dose pack. ITN stocks were mentioned to often be insufficient in many locations by three stakeholders.

Stockout frequency was reported to vary according to location. Health management stakeholders believed Lusaka, Central, and Southern provinces are the best stocked but still experience some challenges. Southern and Lusaka provinces were frequently discussed because interviews were conducted in these locations.

In Southern Province, three stakeholders stated that stockouts no longer occur. One stakeholder said that delivery delays do sometimes occur due to transport. Other stakeholders felt that stockouts do still occur— one stakeholder mentioned stockouts for non-malaria commodities including blood supplies, drugs including Doxyl, and anti-retroviral medicines. Two stakeholders said that local clinics and health centers in Southern Province still run out of RDTs and ACTs. Health management facilities occasionally run out of the shorter course Coartem, but do have a 24 tablet course available. ITN availability has increased but ITNs are still not as widely available as they could be stakeholders felt.

Lusaka Province faces the same forecasting and ordering challenges as other provinces. A health management stakeholder reported that Lusaka used to have significant RDT stockouts, but the situation is improving.

Other provinces – including Luapula, Northern, Northwestern, Western and Eastern – were reported by stakeholders to have recurring challenges with stockouts. In Luapula diagnostics procurement is not predictable and stakeholders discussed the need for a reliable, consistent supply of diagnostics and medications. In Northwestern Province there are stockouts at times for drugs and diagnostics. A health management stakeholder reported that the main issue in Northwestern Province is a supply chain challenge within the province – the logistical challenge of ensuring all hospitals are stocked with commodities because some hospitals frequently run out. In Western Province stakeholders said that stockouts frequently occur due to challenging terrain; some places are inaccessible for 3-4 months of the year. In Eastern Province two stakeholders

reported that the greatest challenge was RDT stockouts: many facilities do not have sufficient supplies.

Supply chain studies

Stakeholders said that several supply chain studies and projects are underway to address supply chain management challenges. According to one decision maker, the World Bank, the European Union (EU), SIDA, DFID, and other partners completed a pilot project and an impact evaluation for a ‘pull-driven system’ rather than the current ‘push-driven system.’ A pull-driven system would be demand driven and would increase district participation in supply chain management and M&E. This project was rolled out in 72 districts, with supply orders driven by consumption data. However, according to this decision maker, this system did face the challenge of the central stores being empty – something that would need to be solved to effectively institute such a plan nationwide.

An implementer said that an upcoming study in Chipata and Chadiza districts in Eastern Province will look at weaknesses in the supply chain management system, particularly at stock management and ensuring sufficient supplies for CHWs. This study will use an SMS management system for stock and health management.

One decision maker discussed an upcoming expenditure review of the supply chain:

“ When you look at the budget, the allocation towards commodities has gone up in recent years. But availability is still not going up. We’re planning to do an expenditure review of the system. Maybe the system is inefficient. CMS does distribution while MOH does procurement. There is a mismatch and an inadequate flow of information. Perhaps only 50% of the budget is being disbursed on commodities. So we look at how best to structure the health system. ”

— DECISION MAKER STAKEHOLDER

Transportation

Six implementer and health management stakeholders discussed transportation challenges. Transportation is especially difficult in many of the regions furthest from Lusaka where the malaria burden is highest. According to stakeholders, poor transportation infrastructure makes it difficult to transport malaria products throughout the

country and to ensure that malaria interventions reach the population in rural areas. Stakeholders especially highlighted transportation gaps at the district and facility levels.

Procurement process

Fourteen stakeholders believed that the procurement process requires improvements. One decision maker noted that procurement integration between malaria commodities and other health commodities is nonexistent, leading to system inefficiencies. Procurement challenges, particularly delays, are often caused by poor communication and funding delays from the national level.

Procurement delays

Stakeholders shared that procurement delays have made it difficult for MCDMCH to implement district level IRS before the rainy season. According to a decision maker, procurement delays are due to the complicated government process rather than issues with funding. This stakeholder said that for IRS procurement the Ministry of Justice is involved and that it often takes the Minister or Permanent Secretary to ensure forward momentum.

Insufficient communication

Several implementer and private sector stakeholders believed insufficient communication from the MOH was a major procurement challenge. According to these stakeholders, when the government recently shifted the required insecticide to Actellic it failed to notify the relevant parties procuring and implementing IRS. Stakeholders attributed procurement delays to the late communication and the increased cost of Actellic – Actellic costs five times more than the previously used insecticide and this increased cost was not anticipated. One implementer mentioned having to spray twice in one season due to the changed policy and late communication.

Funding delays

One stakeholder whose organization procures ITNs and diagnostics for the private sector and the government identified national funding availability as a major challenge for procurement. This stakeholder noted there are never delays with procurement for the private sector because funding is readily available and as a result stockouts are never an issue. This stakeholder shared that MOH funding is typically challenging and often delays the procurement process because it is not available at the time of contract signing. According to this stakeholder, this delayed process often results in stockouts.

This stakeholder also noted that delayed funding places local companies at a disadvantage compared to global companies that are willing and able to provide credit. This stakeholder felt that if smaller, local companies refuse delivery without payment they risk being blacklisted from the contract bidding process by the MOH or its partners.

The procurement stakeholder shared that in addition to funding delays, procurement funding does not always cover distribution, which is handled separately. This stakeholder highlighted a situation where their company was able to support both procurement and distribution – a solution which increased efficiency and saved the GRZ a significant amount of money. This stakeholder felt that exploring integration between the supply chain stages may increase efficiencies and create cost savings.



PLANNING & OPERATIONS RECOMMENDATIONS

1. Work through chiefs, village headmen, and local leaders to sensitize communities.
2. Increase IEC/BCC efforts so that the population is educated about the importance of malaria prevention, diagnosis and treatment.
3. Explore incentive strategies and provide adequate training and supervision to CHWS.
4. Improve supply chain management and procurement processes to ensure availability of malaria commodities.

Stakeholders across all groups discussed the need for sufficient evidence around new tools and approaches to support policy change and national program adoption.

Three stakeholders detailed how significant research efforts by partners have helped to push through necessary treatment changes over time. For example, stakeholders shared that Chloroquine was previously used as an antimalarial but was not liked by people due to its bitter taste so many people would fail to finish the course of the medicine. Several stakeholders discussed how partners provided substantial data to convince the government to change from Chloroquine to Coartem. According to these stakeholders, DHA-p is now being used as an alternate treatment. It has a post-treatment prophylactic effect and was strongly advocated for by a TWG working group. One decision maker noted that additional technical expertise will be required for DHA-p to become a first-line treatment. An implementer felt that single low-dose Primaquine should be added as a first-line antimalarial nationwide, but this will also require additional evidence.

In addition to describing the successes resulting from a strong evidence base, five stakeholders highlighted the need for increased research producing strong local evidence to make the case for increased investment in malaria efforts. One implementer pointed out that most of the malaria mobility studies are from Asia; research from southern Africa is limited, which weakens the case for increased political and financial support.

Stakeholders also advocated for increased and strengthened evidence for a number of specific areas, including population-wide approaches, insecticide resistance, ITN development, IRS, entomology, population mobility, and elimination.

Population-wide approaches

PATH MACEPA is currently partnering with the NMCP to assess the effectiveness of Mass Drug Administration (MDA) and focalized MDA (fMDA) as a strategy for reducing parasite prevalence in areas of high and low transmission. Thus far, more than 150,000 people have participated in the study, which is being conducted in Southern Province. MDA involves treating entire populations in target areas with an effective antimalarial (such as DHA-p), even in the absence of an infection identified by RDT. RDTs can miss low-density malaria parasite infections among asymptomatic individuals,

thereby leaving a reservoir of infection in the community untreated. With fMDA, only those living in households where at least one resident tests positive for malaria receive treatment.

One-third of stakeholders discussed MDA – its successes, challenges, and the need to scale it throughout the country. Multiple stakeholders advocated for MDA to be scaled to cover additional provinces, particularly areas in Luapula and Northern provinces which include many bodies of water and populations that live in temporary structures due to their work fishing.

An implementer discussed hopes to add in MDA as a national intervention, but noted the need for strong research to support such a move. This stakeholder mentioned needing to see good data that demonstrates MDA is an effective tool for malaria elimination. This stakeholder also mentioned that to gain regulatory approval in Zambia, local evidence is needed.

Some stakeholders felt that MDA could make a dramatic difference as Zambia accelerates towards elimination. According to several health management stakeholders, in Southern Province MDA has helped to lower the malaria burden in the areas where it is administered. One health management stakeholder in Southern Province described the role of MDA in reducing malaria in recent years:

“As for what interventions have helped to produce this reduction, I believe that the MDA campaign in Siavonga District has helped. The mass distributions of ITNS and IRS spraying have also been helpful.”

— HEALTH MANAGEMENT STAKEHOLDER

A health management stakeholder in Eastern Province hoped that MDA would be implemented in their district in the future, sharing that MDA would dramatically help to reduce the pool of parasites in the population.

However, several stakeholders in Southern Province reported challenges with MDA. Health management stakeholders reported that some participants had taken the antimalarial drugs during the first round but then did not participate in the second round because they had felt side effects. These stakeholders said that the drugs must be taken on an empty stomach, which can make people feel dizzy. People would like a drug that can be taken after eating to help prevent such

side effects. In addition, the MDA program in one area was started during the rainy season, when many people were working in the fields and were missed by the campaign. Several health management stakeholders felt that MDA rounds should be conducted when people are more likely to be in their homes and should cover entire districts because people move around and are often missed.

According to stakeholders in Southern Province, it is critical to sensitize the population on the importance of taking all recommended doses during MDA campaigns. Stakeholders also felt strongly that MDA campaigns should not replace other interventions, particularly IRS and ITN distribution, or community sensitization programs.

Eleven stakeholders highlighted the importance of both scaling existing interventions to increase coverage and sustaining them over the long term for increased, ongoing impact, particularly in relation to MDA.

Four stakeholders advocated for the MDA work currently being administered in Southern Province to be scaled throughout the country, particularly in the northern areas where other interventions aren't successful. However, one implementer stakeholder pointed out that scaling up anything is a challenge because it requires resources, and funding is one of the biggest issues the country faces. Consistent funding is also needed to ensure sustained approaches.

“ So it depends on the type of interventions and their sustainability. That’s the key word – sustainability. Interventions can’t be started and then scaled down. They need to be sustained to be effective. Malaria interventions are very expensive – everyone knows that. But people don’t want to talk about this.”

— HEALTH MANAGEMENT STAKEHOLDER

Insecticide resistance

Six stakeholders shared the need for research on Zambia’s growing resistance issues. Insecticide resistance, particularly in bednets, was greatly feared and something that stakeholders felt warranted immediate investigation and a long term strategic plan to address.

ITN development

Two stakeholders advocated for research on bednets. A procurement stakeholder felt that research is needed on the usage rates for various types of nets, looking specifically at size, shape and material. An implementer would like to see a durability study on available nets so that longer lasting bednets are procured in the future.

IRS

One decision maker stakeholder highlighted the opportunity for an upcoming research study with national IRS implementation. Three out of 103 districts will be left out of the IRS campaign because they do not yet qualify. This stakeholder mentioned the national government may take the opportunity to use these districts as research control communities.

Entomology

Three stakeholders shared the need for entomological studies to help better understand the behavior of mosquitos so that interventions are more effective against the specific species in each area.

Population mobility

Two stakeholders felt socio-anthropological research was needed to better understand the behavior of people throughout the country. One stakeholder specifically mentioned the need to look at mobile populations.

Elimination evidence base

Finally, one donor stakeholder was not convinced that sufficient evidence had been generated to justify proceeding toward elimination. This stakeholder would like to see more thorough research about where malaria is present, as well as additional analysis to justify proceeding with an elimination strategy. This stakeholder noted that donors are willing to pay for data collection, but “do not like it when things move too quickly.”



Nineteen stakeholders discussed new tools that could help accelerate the elimination timeline.

Antimalarial drugs

Five stakeholders discussed the need for new antimalarial drugs. A decision maker stated that there are newer drugs on the market that Zambia should be incorporating right now, rather than waiting.

Diagnostics

Two stakeholders discussed the need for new more sensitive RDTs to detect low parasitemia, making it possible to clear parasites from the population. The procurement stakeholder highlighted the importance of only having one or two RDT versions on hand, because stocking multiple brands leads to confusion for CHWs who are not trained to understand how to use all of them. This stakeholder also shared that a highly sensitive test kit is being developed that will have 10x the sensitivity for low transmission areas. Two other stakeholders shared the need for better and increased supply of microscopes. If microscopes were available at every health center, health workers would be able to read slides immediately without having to refer them to district level.

ITNs

Another five stakeholders advocated for development of new ITNs. Several discussed the need for ITNs with dual insecticides to try to prevent further insecticide resistance. An implementer called for more durable options. A health management stakeholder discussed the need to develop nets with better ventilation if possible and to consider height and length because many people complain about the utility of existing nets – they often do not cover beds and do not reach mats on the floor. A procurement stakeholder voiced concerns that current ITNs are not the right shape or size. People also complain that the rectangular shape is too coffin-like according to many stakeholders. The procurement stakeholder noted that in Rwanda they are buying circular nets. This option might be preferable in Zambia as well.

Vaccine

Another five stakeholders discussed the strong need for a malaria vaccine. A vaccine could complement existing efforts while increasing the feasibility of elimination. One stakeholder hoped to specifically see a gametocyte blocking vaccine.

Drug and insecticide resistance

Finally, stakeholders described the challenge of insecticide and drug resistance to current planning and operations interventions – which is being reported in increasing numbers. One decision maker highlighted that ACT resistance is developing, and in order to be ahead of the game Zambia must develop and incorporate better drugs. Another decision maker believed that improved insecticides for IRS are required to combat resistance. This stakeholder also felt that prioritizing IRS spraying each year so that it is conducted at the right time – before the rainy season – could help.

VI. CONCLUSIONS AND NEXT STEPS

This Zambia stakeholder analysis report and its supporting qualitative data are meant to serve as a baseline for the ongoing analysis of the enabling environment for national malaria policy and implementation efforts and to capture and share critical information to inform strategies that influence the adoption of new tools and approaches for elimination. This information will be useful to inform policies and plans to accelerate progress in reducing and eliminating the burden of malaria in Zambia, particularly to inform the development of the next NMSP and National Malaria Elimination Strategy.

BUILDING BLOCKS	RECOMMENDATIONS
 <p>POLICY</p> <p><i>A supportive policy environment and an existing framework to facilitate national decision-making. Sufficient data, knowledge, and access to information for decision makers to sufficiently support changes in policy, strategy, and guidance on malaria efforts.</i></p>	<ul style="list-style-type: none"> • Finalize National Malaria Elimination Strategy and develop 2017-2021 NMSP that includes operationally, technically and financially feasible elimination targets. • Develop annual malaria elimination operational plans to guide elimination efforts and align resources that address systems, budget, and implementation requirements. • Continue to incorporate latest tools and approaches for parasite clearance into national policies, strategies, and treatment guidelines.
 <p>GOVERNANCE</p> <p><i>Sense of national ownership and commitment to the country's malaria initiatives. Defined architecture to ensure coordinated planning and implementation. The exercise of political, economic, and administrative authorities in the management of malaria efforts at all levels. Support or engagement in regional collaboration and cross-border initiatives focused on malaria.</i></p>	<ul style="list-style-type: none"> • Empower NMCP management to coordinate national malaria elimination agenda, guide Government of the Republic of Zambia (GRZ) and partner strategy development and operationalization, and offer a strong voice for Zambia's malaria efforts within the GRZ, the Elimination 8, and the international global health community. • Support technical capacity at NMCC through regular reviews of staffing needs, and training, hiring and retention of sufficient personnel with core skillsets (including surveillance, M&E, IEC/BCC, and elimination planning) to manage the development and implementation of national policies and strategies. • Convene annual review and meetings with key partners and stakeholders to review operational challenges and opportunities related to the NMSP and operational plan. • Promote partner alignment and coordination by regularly holding TWG meetings with broad, representative partner participation. • Engage and provide leadership in regional coordination mechanisms such as the Elimination 8 to strengthen regional elimination initiatives and leverage learnings from neighboring countries.
 <p>FINANCING</p> <p><i>Long-term commitment of domestic funds from national programs for malaria efforts. External donor willingness to support approved tools and interventions. Sufficient access to information needed by donors to make empowered decisions. General understanding of total cost required for effectiveness.</i></p>	<ul style="list-style-type: none"> • Develop resource mobilization strategy for Zambia to align existing funding in support of NMSP goals and targets and to grow new sources of funding, with a focus on increasing private sector engagement. • Advocate for and ensure that additional financial resources are available for capacity building at the NMCC. • Increase private sector engagement (e.g., financial contributions, logistics support, IEC/BCC messaging and health services for workers and local community members) in malaria efforts. • Create and strengthen public-private partnerships and cross-sectoral (i.e. mining/extraction, agricultural and banking sectors) and pooled private sector initiatives at national and regional levels.



PLANNING AND OPERATIONS

Adequate manufacturing, infrastructure, and human resources to implement malaria control and elimination efforts. Specific plans for scale-up of new approaches, products, and strategies. Realistic timeline for country-wide implementation.

- Promote multiple channels of ITN distribution to sustain coverage between mass distribution campaigns.
- Optimize IRS by improving planning, timely implementation and targeting, and actively engaging local partners in the implementation process.
- Engage community leaders and communities, and develop more nuanced, informative, and appealing messaging for IEC/BCC, regarding the importance of ITN use, IRS acceptance, and prompt treatment seeking.
- Strengthen supply chain management through proactive logistics management at provincial and district levels and strong planning and needs forecasting among GRZ and partners at the national level, with regular convening of relevant TWGs and partner groups.



EVIDENCE BASE

Sufficient data to support current strategy and approaches and/or to guide future policy changes.

- Investigate impact of cross border population movement on malaria transmission to identify appropriate intervention strategies.
- Support capacity building for domestic research into new tools and approaches.
- Ensure that new evidence regarding transmission reduction strategies and case investigation relevant to the Zambian context is disseminated in a prompt and inclusive manner within the GRZ and with partners.



TOOL DEVELOPMENT

Necessary product development for new tools.

- Support field validation of point of care diagnostics with improved sensitivity and specificity.

The Zambia MOH, in partnership with PATH MACEPA, intends to conduct the next round of stakeholder analysis interviews in approximately two years' time in order to examine changes in perceptions and prioritization of elimination over time.

Topic Guide A: Decision makers (Donors, National Government)

OBJECTIVES

To assess decision maker's (both individual and organizational)

- Commitment to national targets (specifically 5 malaria free districts by 2016) and future national elimination targets at described in the National Malaria Elimination Strategy précis (National elimination by 2020);
- Prioritization of malaria among other health and development efforts;
- Understanding of technical, operational and community components of accelerating elimination;
- Willingness to mobilize/commit financial and human resources toward elimination; and
- Perceptions around barriers/opportunities for malaria elimination.

NMSP 2011-2016 GOALS:

By 2016, to (1) reduce malaria incidence by 75% of the 2010 baseline; (2) reduce malaria deaths to near zero and reduce all-cause child mortality by 20%; and (3) establish and maintain 5 "malaria-free districts" in Zambia.

NATIONAL ELIMINATION STRATEGY

currently under development with NMCC, précis of Strategy launch at World Malaria Day 2015

Goal: 2020 National Elimination of Malaria
Maintain malaria free status and prevent reintroduction of malaria due to importation

- **Describe your individual role and your organization's role in Zambia's malaria efforts.**
- **What are the three most important successes your country/organization has had in the effort to greatly reduce and eliminate malaria?**
 - > Moving forward, what are the highest priority opportunities that your country/organization can take advantage of in the effort to eliminate malaria nationally by the year 2020?
 - > Can you provide us with some specific examples of how strategies for elimination will be different than existing (control) strategies?
 - > What are you or your organization currently doing to take advantage of these opportunities?
- **What are the three highest priority challenges your country/organization faces in the effort to greatly reduce and eliminate malaria by 2020?**
 - > What are you currently doing to address these challenges?
 - > How well are these efforts working?
 - > How will you know you have been successful?
 - > What additional resources would help you to address these challenges?
- **How is malaria control and elimination prioritized against other national health and development priorities, i.e. other diseases and development issues (HIV, water and sanitation, education, etc.)?**
- **Is current financing enough to realize a malaria-free Zambia by 2020?**
- **Are there specific funding gaps at present? Do you foresee other sources of funding emerging as Zambia continues down the road to elimination?**

- **What future actions do you feel are necessary for progress towards malaria elimination in Zambia by 2020?**
 - > By the MOH/NMCC? MCDMCH? Implementing partners? Private sector?
 - > What do you see your office's or organization's role being in these future efforts?
 - > What do you see your individual role being in these future efforts?
- **What role can regional coordination play in accelerating towards malaria elimination?**
 - > What are the challenges in working with neighboring countries?
 - > What are the opportunities?
 - > Are you familiar with existing regional coordination mechanisms among neighboring countries?
 - > If so, how do you think they are working? How could they be working better?
- **Do you personally believe national elimination is achievable? Is it possible by 2020?**
 - > What efforts would national elimination require? For how long?
 - > What are the obstacles to eliminating malaria?
 - > What changes need to take place to eliminate malaria by 2020? (across process, tools, systems, people, communities, communication)
 - Process:*** Population wide approaches looking for infections in people – targeting the asymptomatic reservoirs, targeted vector control, improved case management
 - Tools:*** Drugs, Dx, vector control, new tools, guidelines
 - Systems:*** Logistics, information, procurement, financing, regulatory
 - People:*** expertise, skillset, quantity, NMCC structure
- **What provinces do think will be the first to eliminate malaria?**
- **Where will the hardest places be?**
- **How can we increase support for malaria elimination?**
 - > Financial? Political? Societal/community?
- **Whose responsibility is it to get rid of malaria?**

Topic Guide B-1: Regulatory (National Regulatory Agencies)

OBJECTIVES

To assess regulatory stakeholder's (both individual and organizational)

- Views on national regulatory policies and processes for malaria control and elimination and awareness of any barriers or challenges that impede the regulatory process
- Familiarity with newer tools and approaches (ie DHA-P, sldPQ and approaches focused on clearing parasites out of people/attacking the asymptomatic reservoir), and
- Perceptions around the level/type/quality of evidence (safety and efficacy data) needed for registration of new tools and approaches.

NMSP 2011-2016 GOALS:

By 2016, to (1) reduce malaria incidence by 75% of the 2010 baseline; (2) reduce malaria deaths to near zero and reduce all-cause child mortality by 20%; and (3) establish and maintain 5 "malaria-free districts" in Zambia.

NATIONAL ELIMINATION STRATEGY

currently under development with NMCC, précis of Strategy launch at World Malaria Day 2015

Goal: 2020 National Elimination of Malaria
Maintain malaria free status and prevent reintroduction of malaria due to importation

- **Describe your individual role and your organization's role in Zambia's malaria efforts.**
- **What specific challenges do you see with current drugs, drug management, and diagnostics?**
- **If you're considering using a drug or combination in a population-wide approach – like MDA, where non-infected, asymptomatic and symptomatic individuals will be given treatment – what is the required safety profile? What level of risk are you willing to accept as a regulator?**
- **What is the regulatory process for approving and incorporating new diagnostics into your national guidelines?**
 - > Do you require data from local populations for new device approval? Or would you accept data from studies conducted with regional populations?
 - > What kind of specificity would you look for?
 - > Approximately how many months does it take to conduct such a study? If you don't know, how long has it taken to do a diagnostic evaluation in the past?
 - > Assuming the study produces promising results, what are next steps towards integrating the new diagnostic into the national health system?
 - > Are diagnostic manufacturers required to register with the national regulatory authority? If not, what quality assurance procedures does the MOH or the central medical store have in place to assure quality products?
- **What is the regulatory process for approving and incorporating new drugs into your national guidelines?**
 - > Do you require data from local populations for new drug approval? Or would you accept data from studies conducted with regional populations?
 - > What kind of efficacy would you look for? What level of parasite clearance do you require for approval?

- **What is the regulatory process for approving and incorporating new vector control tools into your national efforts?**
 - > Do you require data from local populations for new insecticide approval? Or would you accept data from studies conducted with regional populations?
 - > What kind of efficacy would you look for?
- **Are national regulatory authorities provided enough resources (funding, staff capacity, systems/ infrastructure)?**
- **Describe your office's interactions with manufacturers and/or the developers of new drugs, diagnostic tools, and vector control technologies.**

Topic Guide B-2:

Procurement (National Procurement Committees/Agencies)

OBJECTIVES

To assess procurement stakeholder's (both individual and organizational)

- views on national procurement policies and processes for malaria control and elimination and awareness of barriers or challenges that impede the procurement process

NMSP 2011-2016 GOALS:

By 2016, to (1) reduce malaria incidence by 75% of the 2010 baseline; (2) reduce malaria deaths to near zero and reduce all-cause child mortality by 20%; and (3) establish and maintain 5 "malaria-free districts" in Zambia.

NATIONAL ELIMINATION STRATEGY

currently under development with NMCC, précis of Strategy launch at World Malaria Day 2015

Goal: 2020 National Elimination of Malaria
Maintain malaria free status and prevent reintroduction of malaria due to importation

- Describe your individual role and your organization's role in Zambia's malaria efforts.
- What specific challenges do you see with the procurement and supply management for current malaria elimination efforts?
 - > Do you face challenges related to facility ordering (if applicable)? Storage? Transportation? Stock outs? Data/inventory management systems?
- As malaria case management will increasingly take place at community level (vs facility), is the current supply chain system and request process prepared to support this shift?
- What is the procurement process for incorporating new diagnostics into your national efforts?
 - > Are the procurement and supply chain management processes the same, regardless of the donor?
 - > Who manages the procurement process for malaria diagnostics? (GF, PMI, Zambia MOH, etc.)
 - > Are lead times for the procurement of malaria RDTs longer than expected?
 - > How does information about malaria RDT price and quality factor into procurement decisions?
 - > Which is more important in the final decision making process: price, quality, or another variable (specify)?
- What is the procurement process for incorporating new drugs into your national efforts?
- What is the procurement process for incorporating new vector control technologies into your national efforts?
- Are procurement programs properly resourced? (Funding, staff capacity, infrastructure)

Topic Guide C: Implementers

National Malaria Program, members of Relevant Technical Working Groups, Private Sector Provider Associations, Faith Based Organizations, other Implementing and Research Partners

OBJECTIVES

To assess implementing stakeholder's (both individual and organizational)

- level of understanding of technical and operational components of accelerating reduction/elimination of malaria,
- familiarity with newer tools and approaches (ie DHA-P, sldPQ and approaches focused on clearing parasites out of people/attacking the asymptomatic reservoir),
- perceptions around technical and operational feasibility of national elimination goals given the tools, approaches, human resource capacity we have today, and
- perspective on challenges/opportunities for malaria elimination.

NMSP 2011-2016 GOALS:

By 2016, to (1) reduce malaria incidence by 75% of the 2010 baseline; (2) reduce malaria deaths to near zero and reduce all-cause child mortality by 20%; and (3) establish and maintain 5 "malaria-free districts" in Zambia.

NATIONAL ELIMINATION STRATEGY

currently under development with NMCC, précis of Strategy launch at World Malaria Day 2015

Goal: 2020 National Elimination of Malaria
Maintain malaria free status and prevent reintroduction of malaria due to importation

- **Describe your individual role and your organization's role in Zambia's malaria efforts.**
- **How would you describe recent past efforts (past decade) toward greatly reducing malaria to date?**
 - > What were factors for success (or lack of success)?
 - > What were the challenges?
 - > What additional resources would help you to address these challenges?
 - > What are the highest priority opportunities that your country/organization can take advantage of in the effort to greatly reduce and eliminate malaria? [For NMCC] Can you provide us with some specific examples of how strategies for elimination will be different than existing (control) strategies?
- **Is current financing enough to realize a malaria-free Zambia by 2020?**
- **Are there specific funding gaps at present? Do you foresee other sources of funding emerging as Zambia continues down the road to elimination?**
- **What future actions do you feel are necessary for progress towards elimination malaria in Zambia by 2020?**
 - > By the MOH/NMCC? MCDMCH? Implementing partners? Private sector?
 - > What do you see your office's or organization's role being in these future efforts?
 - > What do you see your individual role being in these future efforts?

- **What role can regional coordination play in accelerating towards malaria elimination?**
 - > What are the challenges in working with neighboring countries?
 - > What are the opportunities?
 - > Are you familiar with existing regional coordination mechanisms among neighboring countries?
 - > If so, how do you think they are working? How could they be working better?

- **Do you personally believe national elimination is achievable? Is it possible by 2020?**
 - > What is needed to achieve elimination by 2020?
 - > What efforts would national elimination require? For how long?
 - > What are the obstacles to eliminating malaria?
 - > What do you feel are critical inputs?
 - > What kinds of tools are needed? Drugs, Dx, Vector control, new tools?
 - > What kinds of approaches are needed?
 - Probe on:** Population wide approaches looking for infections in people – targeting the asymptomatic reservoirs, targeted vector control, improved case management
 - Probe on:** systems such as logistics, information, procurement, financing
 - Probe on:** needed capacity including expertise, skillsets, reporting/supervision
 - Probe on:** communities, communication, behavior change

- **What provinces do you think will be the first to eliminate malaria?**
- **Where will the hardest places be?**
- **How can we increase support for malaria elimination?**
 - > Financial? Political? Societal/community?
- **Whose responsibility is it to get rid of malaria?**

Topic Guide D: Provincial/District/Facility Health Management

OBJECTIVES

to assess provincial/district/facility health management stakeholder's:

- level of understanding of technical and operational components of accelerating elimination,
- familiarity with newer drugs and approaches (ie DHA-P, ivermectin, sldPQ and approaches focused on clearing parasites out of people/attacking the asymptomatic reservoir),
- perceptions around technical and operational feasibility of national elimination goals given the tools, approaches, human resource capacity we have today, and
- perspectives on challenges/opportunities for malaria elimination.

NMSP 2011-2016 GOALS:

By 2016, to (1) reduce malaria incidence by 75% of the 2010 baseline; (2) reduce malaria deaths to near zero and reduce all-cause child mortality by 20%; and (3) establish and maintain 5 "malaria-free districts" in Zambia.

NATIONAL ELIMINATION STRATEGY

currently under development with NMCC, précis of Strategy launch at World Malaria Day 2015

Goal: 2020 National Elimination of Malaria
Maintain malaria free status and prevent reintroduction of malaria due to importation

- **Describe your individual role and your organization's role in Zambia's malaria efforts.**
 - > What personally motivates you in your role?
- **How far has your [province/district] come in regard to reducing malaria?**
 - > What factors do you attribute success to?
 - > Where are the gaps?
- **What is the current prevalence rate in the province/district/catchment that you're working in?**
 - > Describe how much malaria you are seeing in your community.
 - > How much malaria do you consider to be a burden to your community?
 - > What malaria partners operate in your area?
 - > What (potential) private sector partners are present here?
- **Is elimination of malaria in all of Zambia achievable by 2020?**
 - > What are the obstacles to reaching this goal?
 - > What changes need to take place to reach these goals?
 - > What area will be the first to get rid of malaria? Where will be the last places? Why?
- **Is elimination of malaria in your Province, District or Health Facility catchment achievable? When?**
 - > Probe: What's needed to achieve them?
 - > Probe: What are the obstacles?
 - > Probe: Reflecting on changes that need to take place to meet elimination targets across process, tools, systems, people –
 - > What communication resources are present in your area (radio stations, ZANIS, etc.)

- **How active are your communities in the fight against malaria as Zambia pursues its aggressive malaria elimination agenda?**
 - > Give an example of how a community leader has influenced malaria efforts.
 - > How do you support your Community Health Workers?
 - > Do CHWs conduct door-to-door malaria work in your area?

- **Where do you need more support from the MOH and MCDMCH? Other implementing partners?**
 - > Probe: Population wide approaches looking for infections in people – targeting the asymptomatic reservoirs, targeted vector control, improved case management
 - > Probe: Drugs, Dx, vector control, new tools
 - > Probe: Systems such as logistics, information, procurement, financing
 - > Probe on needed capacity including expertise, skillsets, reporting/supervision

- **What role can regional coordination play in accelerating towards malaria elimination?**
 - > What are the challenges in working with neighboring countries? (in Nyimba ask about Mozambique, in Siavonga ask about Zimbabwe)
 - > What are the opportunities?
 - > Do you coordinate/interact at all with your cross-border counterparts?
 - > Are you familiar with existing regional coordination mechanisms among neighboring countries?
 - > If so, how do you think they are working? How could they be working better?

- **What would malaria elimination mean to your community?**
- **What are the main issues affecting your community (other health issues, lack of employment, etc.)**
- **Whose responsibility is it to get rid of malaria?**

Topic Guide E: Community Level Influencers

OBJECTIVES

to assess community level influencer's:

- level of commitment to elimination/malaria reduction at community level,
- the extent to which malaria is prioritized among other health and community development efforts, and
- community responsibility and community willingness to mobilize/commit financial and human resources toward elimination.

NMSP 2011-2016 GOALS:

By 2016, to (1) reduce malaria incidence by 75% of the 2010 baseline; (2) reduce malaria deaths to near zero and reduce all-cause child mortality by 20%; and (3) establish and maintain 5 "malaria-free districts" in Zambia.

NATIONAL ELIMINATION STRATEGY

currently under development with NMCC, précis of Strategy launch at World Malaria Day 2015

Goal: 2020 National Elimination of Malaria
Maintain malaria free status and prevent reintroduction of malaria due to importation

- **Is elimination of malaria in all of Zambia achievable by 2020?**
 - > What are the obstacles to reaching this goal?
 - > What changes need to take place to reach these goals?
 - > What area will be the first to get rid of malaria? Where will be the last places? Why?
- **Is elimination of malaria in your Province, District or Health Facility catchment achievable? When?**
 - > Probe: What's needed to achieve them?
 - > Probe: What are the obstacles?
 - > Probe: Reflecting on changes that need to take place to meet elimination targets across process, tools, systems, people –
 - > What communication resources are present in your area (radio stations, ZANIS, etc.)
- **How active is your community in the fight against malaria as Zambia pursues its aggressive malaria elimination agenda?**
 - > Give an example of how a community leader has influenced malaria efforts.
 - > How do you support your Community Health Workers?
 - > Do CHWs conduct door-to-door malaria work in your area?
- **What would malaria elimination mean to your community?**
- **What are the main issues affecting your community (other health issues, lack of employment, etc.)**
- **What resources can the community contribute to the fight against malaria?**
- **Whose responsibility is it to get rid of malaria?**
 - > Probe to determine whether community sees itself as a primary player.

Topic Guide F: **Private Sector**

OBJECTIVES

to assess:

- the level of commitment to malaria reduction and elimination among private sector actors,
- the extent to which private sector actors prioritize malaria among other health and community development efforts,
- the willingness of private sector actors to mobilize and/or commit financial and human resources toward elimination.

NMSP 2011-2016 GOALS:

By 2016, to (1) reduce malaria incidence by 75% of the 2010 baseline; (2) reduce malaria deaths to near zero and reduce all-cause child mortality by 20%; and (3) establish and maintain 5 “malaria-free districts” in Zambia.

NATIONAL ELIMINATION STRATEGY

currently under development with NMCC, précis of Strategy launch at World Malaria Day 2015

Goal: 2020 National Elimination of Malaria
Maintain malaria free status and prevent reintroduction of malaria due to importation

- **Describe your company’s line of work and your individual role at the company.**
- **What are the major obstacles you see to getting rid of malaria in the communities where your company operates?**
 - > How can these be addressed?
- **How would you rank the importance of addressing malaria compared to other health and social problems in the communities where your company operates?**
- **What effort is your company making to reduce the malaria burden for its employees and the communities where it operates, both as part of your core business and any corporate social responsibility programs?**
- **Do you liaise with GRZ in your fight against malaria?**
- **Are you interested in a long-term partnership around malaria elimination efforts? (vs one-off support, e.g., during World Malaria Day)**
- **If so, what sort of publicity/recognition/benefits would you expect as part of that partnership? (media coverage, corporate branding, cost-sharing, etc.)**
- **What are the opportunities you see that would contribute to getting rid of malaria?**
 - > What is the role of the private sector to take advantage of these opportunities to eliminate malaria?
 - > Who should lead this process?
 - > What resources are the business community best positioned to contribute, both direct investment and in-kind (tapping your comparative advantage, for example)?
 - > Do you operate in other countries in the region, i.e., are there opportunities for multi-country company engagement towards Zambia’s elimination agenda?

- Describe your company's experiences, if any, with Zambia's regulatory process when developing or manufacturing new drugs, diagnostic tools, and vector control technologies.
- How can the NMCC and its partners better engage the private sector in malaria efforts?
- Whose responsibility is it to get rid of malaria?
 - > Probe to determine whether respondent views the private sector as a primary player.
- Do you personally believe national elimination is achievable? Is it possible by 2020?
 - > What efforts would national elimination require? For how long?
 - > What are the obstacles to eliminating malaria?
 - > What changes need to take place to eliminate malaria? (across process, tools, systems, people, communities, communication)
 - Process:** Population wide approaches looking for infections in people – targeting the asymptomatic reservoirs, targeted vector control, improved case management
 - Tools:** Drugs, Dx, vector control, new tools, guidelines
 - Systems:** Logistics, information, procurement, financing, regulatory
 - People:** expertise, skillset, quantity, NMCC structure

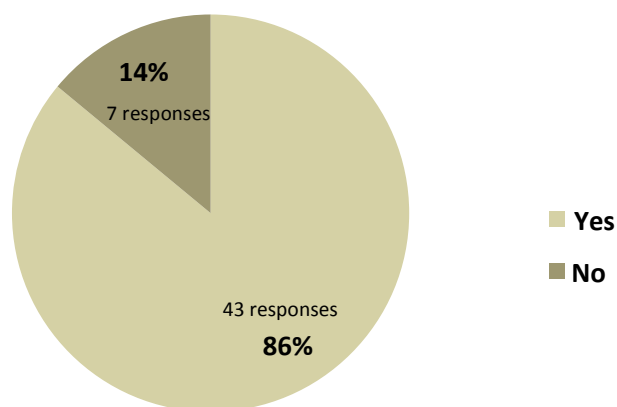
TOTAL INTERVIEWS

Category	Total respondents ¹⁷	Total interviews
Decision makers	8	8
Implementers	18	14
Private sector	6	5
Regulatory	1	1
Procurement	1	1
Health management (district + facility)	15	15
Community level influencer	1	1
Total	50	45

MULTIPLE CHOICE

Q1 Response Overview

- Do you think that Zambia should set a target to eliminate malaria nationally?



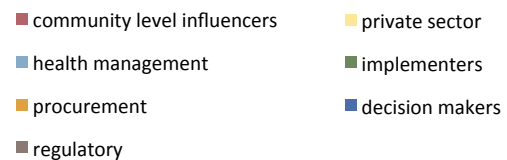
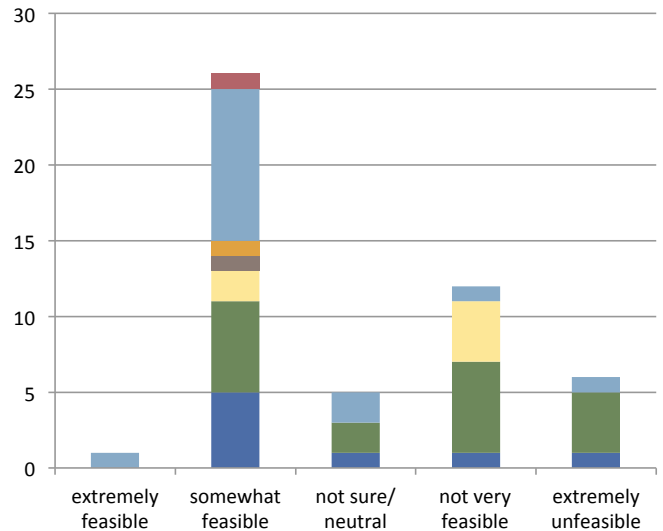
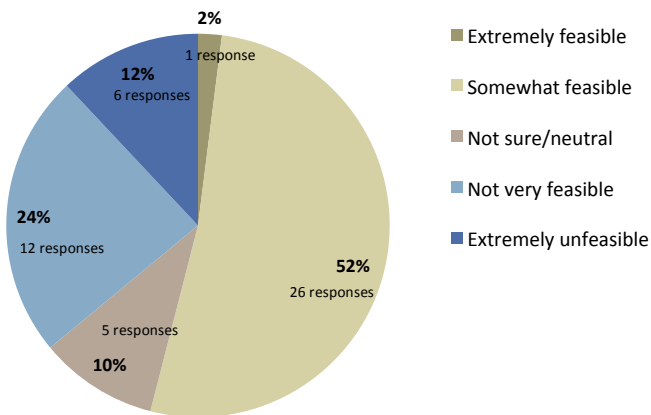
Why/why not? (Optional):

YES	NO
<ul style="list-style-type: none"> • Without a target it will never be completed as there are no defined objectives. • It is possible. We cannot continue with control forever. • If everyone is involved and we do things right. • Targets are motivating and keep people accountable. • I think if you set a target there will be more of a push. • The target for the country is to eliminate malaria. • Good to work towards a target but it should be a long term target, not 2020. • It would assist in working towards the set goal rather than just shooting blindly. • Due to a marked progress scored so far. • Helps to maintain momentum. • That's when performance can be measured. • A strategy is needed. • It is always nice to work towards a goal. • To be more focused with effective interventions. • It will help the government to know if there is an improvement or if there is no progress. • For focus and informing decision making. 	<ul style="list-style-type: none"> • We should do by district. • I feel local or regional targets would work best for us. • We need to organize ourselves first before setting target.

YES	NO
<ul style="list-style-type: none"> • Because it is achievable and I believe in targets. • Because malaria is causing so much loss of income for this country. It is the biggest loss of income and it is preventable. • It will guide the entire programme/response. • This should be the ultimate goal but can be achieved incrementally throughout the country. • I think that if there is only one part we need to eliminate malaria. There is a potential that it can easily come back because we are surrounded by areas with malaria. If it is countrywide and one area eliminates it will encourage other areas to work toward a target. We don't want to be left out in rural provinces if other areas eliminate so we should do it nationwide. • It's feasible in many parts of the country and lessons learned can be used to contribute to elimination in other parts. • They have their own challenges that are different from other countries. • Without a target and vision we will not have action. • All stakeholders would work towards achieving the same goal. • It is achievable if we put our efforts into it. Malaria is causing high morbidity and mortality. If we are able to deal with it by way of elimination it would save us resources in the future for other areas. • I strongly feel yes. That is the best way to go. We start from somewhere but we must target to eliminate nationally, even if we are not at the same level everywhere. We must talk about control in some areas, then pre-elimination, then elimination. • We need the target to accelerate our efforts. Over the next 5 years we are yet to decide how to approach elimination - in a phased way or nationally. My feeling is that it is better to do everything across the board in all provinces. 	

Q2 Response Overview

• In your opinion, how feasible is national malaria elimination in Zambia by 2020?

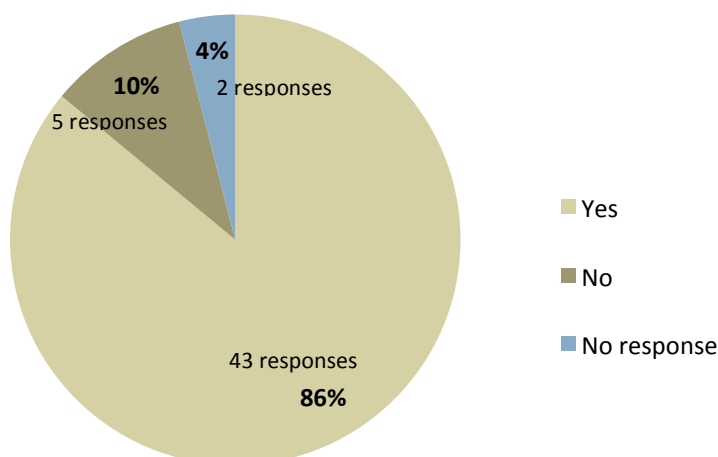


Explain your answer (Optional):

EXTREMELY FEASIBLE	SOMEWHAT FEASIBLE	NOT SURE/ NEUTRAL	NOT VERY FEASIBLE	EXTREMELY UNFEASIBLE
<ul style="list-style-type: none"> Because the number of cases of malaria are reducing. 	<ul style="list-style-type: none"> It needs more work on non-malaria issues like poverty eradication. 2020 is too soon. The number of malaria cases are reducing but the community has to come on board. Only in certain areas, not the whole country. If we go out and intensify the interventions it is very possible to eliminate malaria by 2020. Communities, government, donors and partners should cooperate through resources aimed at fighting malaria. The resource gaps, capacity, everything needs to be addressed. Well we have scaled up malarial interventions to the whole and given the next 5-6 years it is possible. It depends on what kind of interventions are instituted. If other interventions such as larvaciding and environmental management included. If we scale up IRS, ITNs, larvacides and environmental modification, IEC. Because some people don't use ITNs for the intended purpose and ITN distribution doesn't reach everyone. In my view 2020 is only 5 years away; I think it might happen in the next 10 years. I am saying 'somewhat' because I am looking at my province. If people look at Lusaka it might be possible by 2020. There are gaps in mobilization of resources for elimination of malaria. With concerted effort, evidence created on best options and then implementing them is possible creating the good will it takes. Need for all players to work towards the goal - elimination of malaria in Zambia. It depends on the interventions that are put into place. In areas where there is high burden I don't think we will achieve elimination. We could be talking about sustained control but not elimination. We could reduce drastically the mortality in those areas but may not completely reduce transmission. I wish you had 'feasible' as an option. Extremely feasible is quite strong. We can do it by 2020, but remember that Zambia is donor dependent and most programs are run by donors. Going by the current trend it is possible. 	<ul style="list-style-type: none"> The community attitudes towards malaria elimination need to improve. I think something is going to have to change for Luapula and Eastern provinces. 	<ul style="list-style-type: none"> 2020 is only 5 years from now and is too soon. Many districts are not yet in the pre-elimination stage. Many issues must be sorted out. We need to coordinate with DRC. Only in some areas, but not nationally. 2025 nationally with the right resources. We are at a stage of understanding the strategy based on this will map up a time frame; 2020 is too soon/ambitious. Unless there is a step up in resource availability. Behavioral change takes longer. We are seeing such huge variances of the disease and the funding is not enough. We also need to focus on other areas like education and nutrition. Still a lot of work to be done in control. Large inequalities in control efforts. Hard to reach areas, funding is limited. Cross-border malaria transmission and ACT & insecticide resistance. 	<ul style="list-style-type: none"> The health system and funding are not in place. 4 years is too short due to the very high burden in most areas. Heavy funding is essential. We have less than 5 years and looking at the trend we still have work. Current data does not support the notion that this is feasible. Zambia's disease burden is still very high in some regions and needs a lot of efforts to achieve elimination.

Q3 Response Overview

- Do you think that it is feasible for Zambia to eliminate malaria in low burden areas by 2020?



If Yes: which areas? If No: why not? What timeline is feasible?

YES	NO	NO RESPONSE
<ul style="list-style-type: none"> Yes, in urban areas. In 10 years elsewhere. Lusaka/Livingstone and some part of South region. Southern province, some districts. By 2030. Southern province - Mazabuka & Livingstone. Only Southern, not near the lake. In all areas where there is zero cases of malaria. Areas in Southern province. Those areas which are far from river and lakes. Southern, Lusaka. Rural areas will be last. Southern, Lusaka, Central, Copperbelt. The valleys. Southern Province (Livingstone, Kazungula, Mazabuka, Choma), Lusaka Province. Southern & Lusaka province. Lusaka, Southern, Central, Copperbelt. It's been done before in Macha, Southern Province. Southern province where MACEPA has already showed positive outcomes. Luapula and Copperbelt. Lusaka, Southern, Western. Lusaka and Southern provinces. Eastern, Luapula and Northern. Lusaka, Copperbelt. In remote areas. Lusaka, Copperbelt, Southern provinces in selected areas. Look at the statistics. My idea is to pick areas with low prevalence and make the diameter get bigger and bigger. Start with districts in Lusaka and Southern Province, start small and keep spreading further out. Going by the experiences we have had, Lusaka and Southern province. 	<ul style="list-style-type: none"> Unless the government increases support. The country needs resources from within not dependent on partners. The country has borders with high burden areas. Cross border initiatives should target hot areas. Maybe 10 years from now which is 2025-2030. Even those areas with low burden have an unpredictable disease pattern. They need to address the mobility element and to also ensure sustained control efforts throughout the period and country. Possibly 2025 for elimination in a few provinces. 	<ul style="list-style-type: none"> I don't know because there is insufficient information. MIS should help clarify the current situation in all areas for Zambia THEN targets can be set. If there is movement between regions and if the vector is not properly controlled it can have an effect on interventions. We should also be thinking about how we can control movement of mosquitos and people. If we focus on certain areas we should also be thinking about people moving from high burden areas.

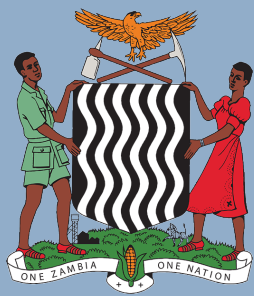
YES	NO	NO RESPONSE
<ul style="list-style-type: none"> • Copperbelt, Lusaka, Southern (Kasulunga). • Most of Southern province, Lusaka province, and Copperbelt province. • Rural but most a bit difficult. • Urban areas. • Urban areas, low elevation, water logged. • Easy to reach districts would be the cities. And strategizing the hard to reach places. • Kazungula. • Areas of low rainfall. • Southern province spreading to Lusaka area and some parts of Western province. • Southern Province, Lusaka, Western Province, parts of Central Province are low burden areas so it is possible to eliminate by 2020. 		

APPENDIX 3: STAKEHOLDER OVERVIEW

No.	Category	Sub-Group
1	Decision maker	GRZ
2	Decision maker	GRZ
3	Decision maker	GRZ
4	Decision maker	GRZ
5	Decision maker	GRZ
6	Decision maker	Donor
7	Decision maker	Donor
8	Decision maker	Donor
9	Implementer	USG
10	Implementer	USG
11	Implementer	GRZ
12	Implementer	GRZ
13	Implementer	GRZ
14	Implementer	NGO
15	Implementer	NGO
16	Implementer	NGO
17	Implementer	private sector implementer
18	Implementer	Research institution
19	Implementer	Research institution
20	Implementer	Inter-governmental organization
21	Implementer	Faith-based INGO
22	Implementer	Faith-based organization
23	Health Management	Province
24	Health Management	Province
25	Health Management	Province
26	Health Management	District
27	Health Management	District
28	Health Management	District
29	Health Management	District
30	Health Management	District
31	Health Management	District
32	Health Management	Facility
33	Health Management	Facility
34	Health Management	Facility
35	Health Management	Facility
36	Health Management	Facility
37	Health Management	Facility
38	Regulatory	Regulatory
39	Procurement	Procurement

No.	Category	Sub-Group
40	Community Level Influencers	Community Level Influencer
41	Private sector	Private sector
42	Private sector	Private sector
43	Private sector	Private sector
44	Private sector	Private sector
45	Private sector	Private sector

- ¹ The World Bank, Zambia country page. <http://data.worldbank.org/country/zambia>.
- ² 2012 Zambia National Malaria Indicator Survey. http://www.nmcc.org.zm/files/FullReportZambiaMIS2012_July2013_withsigs2.pdf. "President's Malaria Initiative Zambia Malaria Profile," PMI.gov, 2015, http://www.pmi.gov/docs/default-source/default-document-library/country-profiles/zambia_profile.pdf?sfvrsn=16.
- ³ 2012 Zambia National Malaria Indicator Survey. http://www.nmcc.org.zm/files/FullReportZambiaMIS2012_July2013_withsigs2.pdf.
- ⁴ "PMI Zambia Malaria Profile," PMI.gov, 2015, http://www.pmi.gov/docs/default-source/default-document-library/country-profiles/zambia_profile.pdf?sfvrsn=16.
- ⁵ "PMI Zambia Malaria Operational Plan FY 2015," PMI.gov, 2015, <http://www.pmi.gov/docs/default-source/default-document-library/malaria-operational-plans/fy-15/fy-2015-zambia-malaria-operational-plan.pdf?sfvrsn=3>, 16.
- ⁶ *Ibid.* 10-11.
- ⁷ *Ibid.*, 16.
- ⁸ "PMI Zambia Malaria Operational Plan FY 2014," PMI.gov, 2014, 13.
- ⁹ <http://www.postzambia.com/news.php?id=11498>.
- ¹⁰ "PMI Zambia Malaria Operational Plan FY 2015," PMI.gov, 2015, <http://www.pmi.gov/docs/default-source/default-document-library/malaria-operational-plans/fy-15/fy-2015-zambia-malaria-operational-plan.pdf?sfvrsn=3>, 13.
- ¹¹ NMCC technical working groups (TWGs) include: Case Management; LLIN; IRS/Entomology (sometimes the Entomology group meets separately from IRS, sometimes together); Surveillance, M&E and Operations Research; IEC/BCC; Supply Chain Management; Malaria Elimination (new); and Program Management.
- ¹² "SADC Overview." Southern African Development Community. <http://www.sadc.int/about-sadc/overview/>.
- ¹³ PMI FY 2015 Zambia Malaria Operational Plan, p. 18. GRZ Concept Note to the Global Fund for Malaria, p. 33.
- ¹⁴ "National Malaria Control Programme Strategic Plan for FY 2011-2015," Republic of Zambia Ministry of Health, 2011, http://www.nmcc.org.zm/files/NMSP2011-2015_Final.pdf.
- ¹⁵ PMI FY 2015 Zambia Malaria Operational Plan, p. 19.
- ¹⁶ "National Malaria Control Programme Strategic Plan for FY 2011-2015," Republic of Zambia Ministry of Health, 2011, page 3, http://www.nmcc.org.zm/files/NMSP2011-2015_Final.pdf.
- ¹⁷ Some interviews included multiple stakeholders in one interview. These cases were each counted as one interview, but sometimes resulted in more than one multiple choice response.



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