The Global Fund
To Fight AIDS, Tuberculosis and Malaria

STANDARD CONCEPT NOTE

Investing for impact against malaria

A concept note outlines the reasons for Global Fund investment. Each concept note should describe a strategy, supported by technical data that shows why this approach will be effective. Guided by a national health strategy and a national disease strategic plan, it prioritizes a country's needs within a broader context. Further, it describes how implementation of the resulting grants can maximize the impact of the investment, by reaching the greatest number of people and by achieving the greatest possible effect on their health.

A concept note is divided into the following sections:

Section 1: A description of the country's epidemiological situation, including health systems and barriers to access, as well as the national response.

Section 2: Information on the national funding landscape and sustainability.

Section 3: A funding request to the Global Fund, including a programmatic gap analysis, rationale and description, and modular template.

Section 4: Implementation arrangements and risk assessment.

***IMPORTANT NOTE:* This template and core tables are subject to minor changes pending further decisions by the Board in March, 2014.**

Applicants should refer to the Standard Concept Note Instructions to complete this template.

SUMMARY INFORMATION			
Applicant Information			
Country	**Zambia**	**Component**	**Malaria**
Funding Request Start Date	**01 January 2015**	**Funding Request End Date**	**31 December 2017**
Principal Recipient(s)	1. **Ministry of Health Zambia** 2. **Churches Health Association of Zambia (CHAZ)**		

Funding Request Summary Table

A funding request summary table will be automatically generated in the online grant management platform based on the information presented in the programmatic gap table and modular templates.

SECTION 1: COUNTRY CONTEXT

This section requests information on the country context, including the disease epidemiology, the health systems and community systems setting, and the human rights situation. This description is critical for justifying the choice of appropriate interventions.

1.1 Country Disease, Health and Community Systems Context

With reference to the latest available epidemiological information, in addition to the portfolio analysis provided by the Global Fund, highlight:

a. The current and evolving epidemiology of the disease(s) and any significant geographic variations in disease risk or prevalence.

b. Key populations that may have disproportionately low access to prevention and treatment services (and for HIV and TB, the availability of care and support services), and the contributing factors to this inequality.

c. Key human rights barriers and gender inequalities that may impede access to health services.

d. The health systems and community systems context in the country, including any constraints.

2-4 PAGES SUGGESTED

1.1 Country Disease, Health and Community Systems Context

Zambia has historically been a highly malaria-endemic country surrounded by 8 neighbouring endemic countries. During the last decade under the previous (2005–2010) and current (2011–2016) National Malaria Strategic Plan (NMSP), Zambia has made substantial progress in scale-up of proven malaria interventions including: long-lasting insecticide-treated mosquito nets (LLINs), indoor residual spraying of insecticide (IRS), prevention during pregnancy with LLINs and intermittent preventive treatment (IPTp), and improved case management with diagnostic confirmation using rapid diagnostic tests (RDTs), microscopy, and treatment with artemisinin combination therapy (ACTs). In this context, during the 2015–2017 term under this proposal, Zambia seeks to solidify the strong program of malaria prevention and treatment it has established, as that serves as the basis for embarking on the next NMSP and the country's ultimate aspiration for infection, illness, and death reduction leading to malaria elimination.

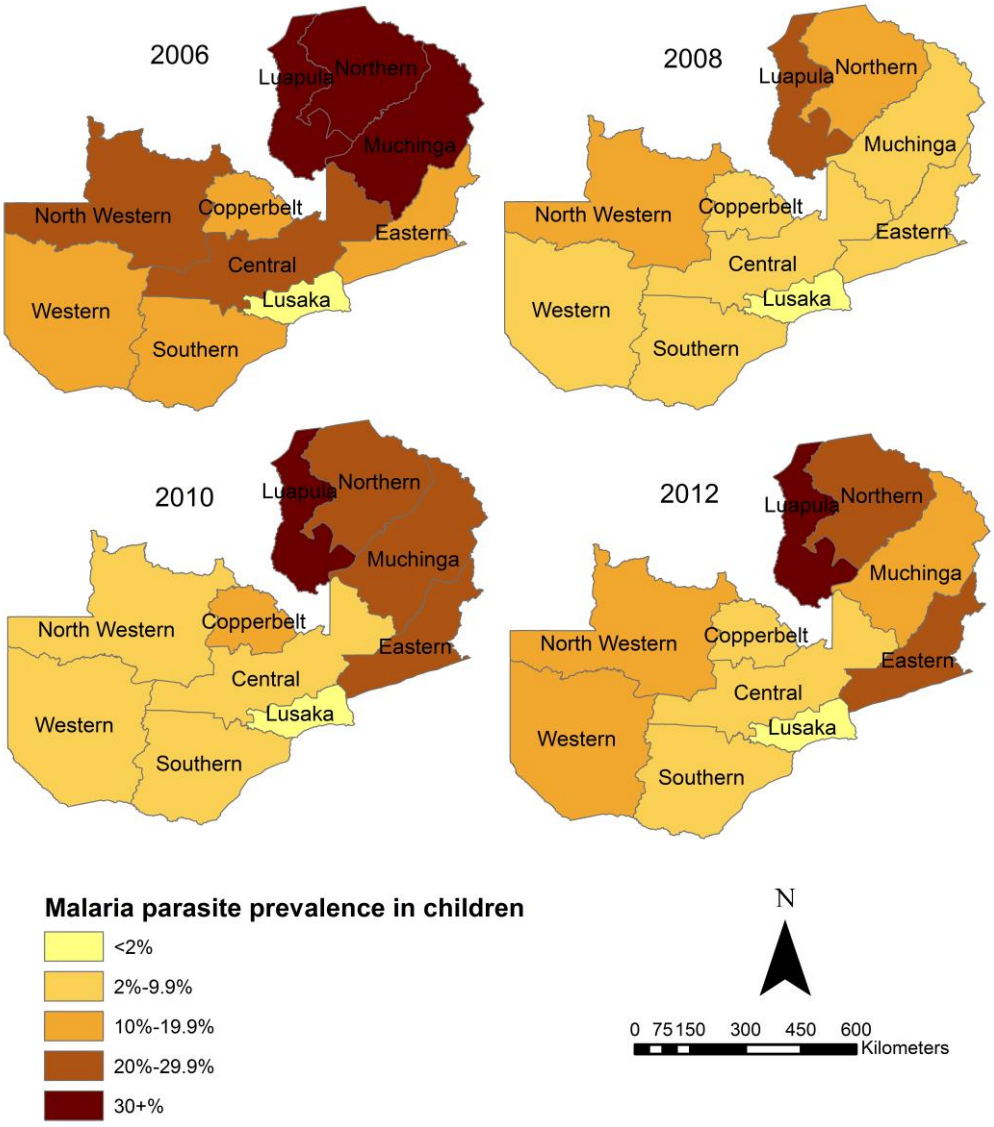
a. Current and evolving epidemiology

Malaria parasites, vectors, and transmission: The burden of malaria has markedly decreased in Zambia with massive scale-up of control efforts in the past decade. The disease remains endemic but with wide variation in prevalence of infection across districts (Malaria Indicator Survey [MIS] 2012). In Zambia, malaria is caused by the four main *Plasmodium* species that infect humans, namely *P. falciparum*, *P. malariae*, *P.vivax*, and P. *ovale*, with *P. falciparum* accounting for 98% of all infections. The species of mosquitoes responsible for malaria transmission in the country are members of the *Anopheles gambiae*

complex and the *Anopheles funestus* group.

Geographic variations: The incidence of malaria varies widely from <200 per 1,000 in some districts to above 600/1,000 in others (Health Management Information System [HMIS] 2013). Prevalence of infection in the most vulnerable age group (children under five years of age) varies from below 2% in some districts like urban Lusaka to over 30% in others. There have also been changes in disease prevalence within the same locations over time owing to variations in coverage rates of preventive interventions. Figure 1 shows the trends in pattern of malaria parasite prevelance in under-five children in Zambia between 2006 and 2012 (MIS 2012).

Figure 1: Trends in malaria parasite prevelance in under-five children (MIS 2012; pp.49)



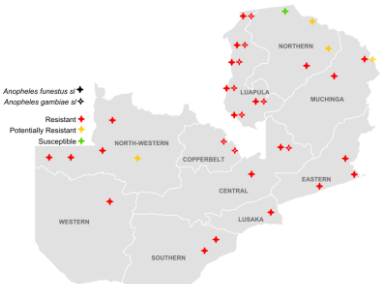
Pockets of high transmission persist in four of the ten provinces, namely Luapula, Muchinga, Northern, and Eastern, with recent resurgence of malaria in North-Western Province, which was categorized as a low-burden area in 2008. On the other hand, districts in Lusaka and Southern provinces have continued to report low malaria confirmed cases

(Figure 5a and 5b). The gains and losses shown in the maps reflect fluctuations in both the climate (a long and productive rainy season in 2010) and fluctuations in resources to sustain interventions including IRS in targeted areas and LLIN ownership between campaigns. It is anticipated that stable funding from the Government of the Republic of Zambia (GRZ) and from core partners such as the Global Fund to Fight Aids, Tuberculosis and Malaria; the President's Malaria Initiative (PMI); the Department for International Development (DfID) and others can help stabilize these fluctuations so that steady progress can be made.

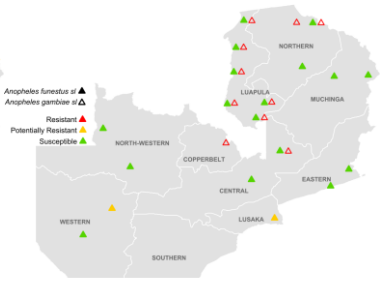
Vector resistance: The effectiveness of vector control is being threatened by the emergence of insecticide resistance. Insecticide susceptibility studies show high levels of dichlorodiphenyltrichloroethane (DDT), carbamates, and pyrethroid resistance for *An. Gambiae*, while *An. funestus* is resistant to pyrethroids and carbamates. Both vectors are susceptible to organophosphates (Chanda et al. 2011).[1] Based on similar findings in 2012, the Insecticide Resistance Technical Working Group recommended use of organophosphate in the 2013/2014 spraying period. An insecticide resistance management strategy is being implemented to address this issue. The NMCP has developed an insecticide resistance management plan in line with the Global Insecticide Resistance Management Plan to facilitate the smooth implementation of the national insecticide resistance strategy. Figure 2 is a recent map showing the distribution of vector resistance in Zambia.

[1] Chanda E, Hemingway J, Kleinschmidt I, Rehman AM, Ramdeen V, Phiri FN, Coetzer S, Mthembu D, Shinondo CJ, Chizema-Kawesha E, Kamuliwo M, Mukonka V, Baboo KS, Coleman M: **Insecticide resistance and the future of malaria control in Zambia.** *PLoS One* 2011, **6:**e24336

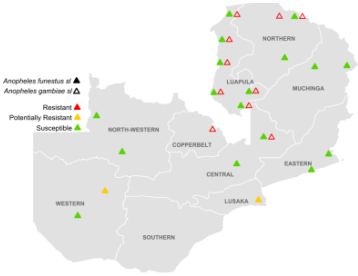
Figure 2: Resistance of malaria vectors to insecticides in Zambia (NMCC 2012)



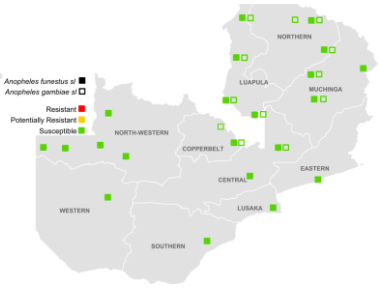
Pyrethroid resistance



Carbamates resistance



DDT resistance



Organophosphates

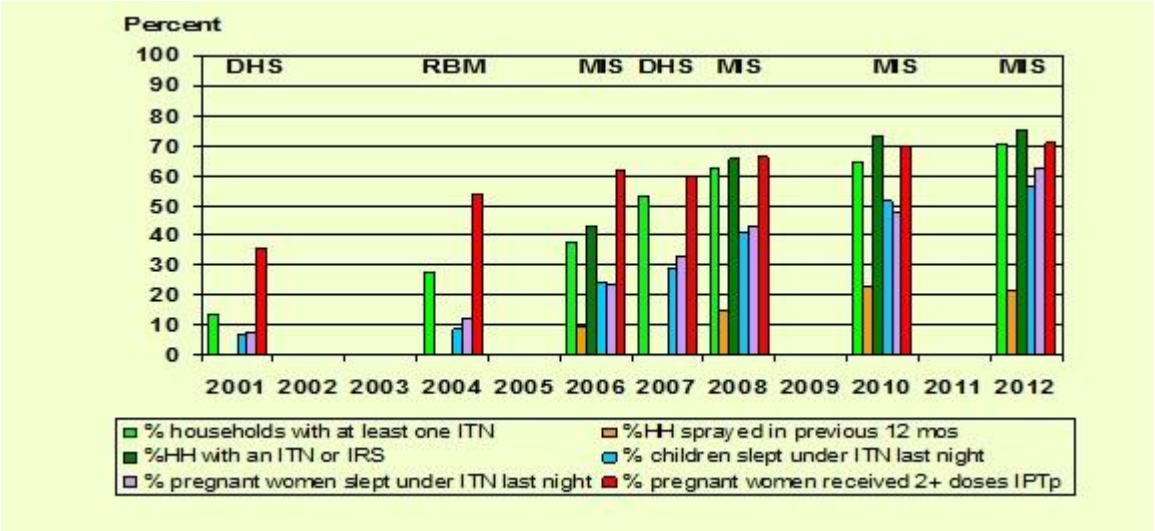
By 2011 resistance to pyrethroids and DDT was documented. Resistance to pyrethroids is present in 15 districts located in Luapula, Eastern, Northern, Muchinga, and North-Western provinces.

Resistance to carbamates has been reported in 10 districts located in Luapula, Northern, Muchinga, and Eastern province

DDT resistance has been reported in 7 districts located in Luapula and Northern Provinces.

Intervention coverage and disease trends—morbidity and mortality: The introduction and scaling up of malaria control interventions across the country has altered infection, morbidity, and mortality rates associated with malaria. Malaria intervention coverage and use improvements are shown in Figure 3.

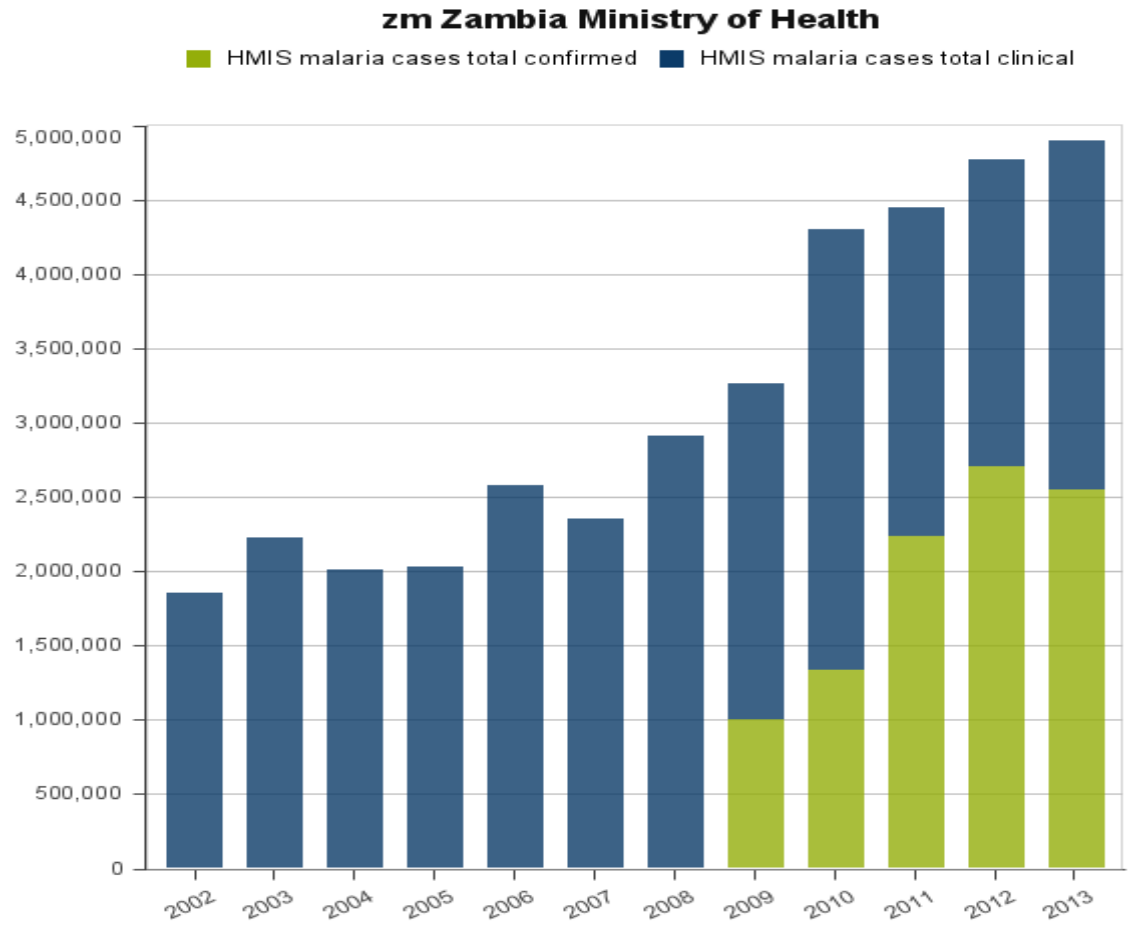
Figure 3: Increasing coverage of malaria interventions and use in Zambia, 2001-2012



There have been substantial declines in inpatient cases, deaths (more than a 60% decline), and anaemia in children under five years of age between 2001 and 2012. In the past three years alone, inpatient malaria deaths for all ages decreased by more than 25% from 3.9/10,000 in 2010 to 2.8/10,000 in 2012 (Midterm Review 2013). This follows a decade-

long trend in declining malaria deaths. The number of reported malaria cases, however, increased between 2009 (3,250,128) and 2013 (5,465,122), principally associated with a combination of improved surveillance reporting by expansion of health posts and clinics, as well as expansion of testing and treatment services to community level, thus resulting in increased out-patient department (OPD) attendance reporting. In addition, low coverage of effective interventions in some areas has contributed to increased reported malaria cases. Malaria is known to contribute substantially to child mortality. In terms of child mortality trends, Zambia has seen an improvement in health indicators for children. For instance there has been a 29% decrease in all-cause under-five mortality, including 38% and 36% reductions in infant mortality and one-to-four-year-old child mortality, respectively.

Figure 4: Malaria cases reported through the HMIS, 2002–2012



The overall number of malaria cases reported through the Health Management Information System (HMIS) showed a rise from 2002 to 2013 (Figure 4). The increase in confirmed cases coincides with improved access to parasitological confirmation using rapid diagnostic tests (RDTs) and microscopy. The overall increase in reported OPD visits is due to a combination of improved reporting through the HMIS and higher OPD attendance through improved access and available services (OPD visits numbered 13,697,003 in 2009 and

increased by 58% to 21,668,763 in 2012).

Malaria epidemiological zones and associated interventions: Based on the reported confirmed and clinical malaria data from the HMIS, MIS survey results, and expert opinion, the epidemiological zones are presented in the maps below which reflect the latest annual (2013) reported incidence for both confirmed (Figure 5a) and total (clinical + confirmed) (Figure 5b) malaria case reporting and as well as the relevance of these zones to the planned interventions, strategies, and activities.

Figure 5a: Malaria epidemiologic zones from confirmed case reporting, 2013

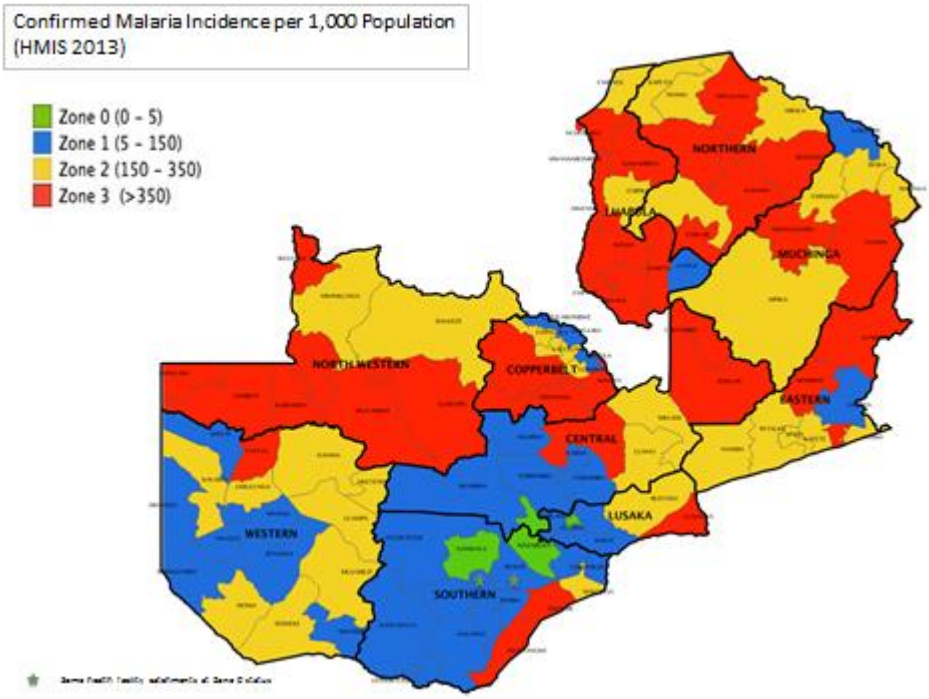
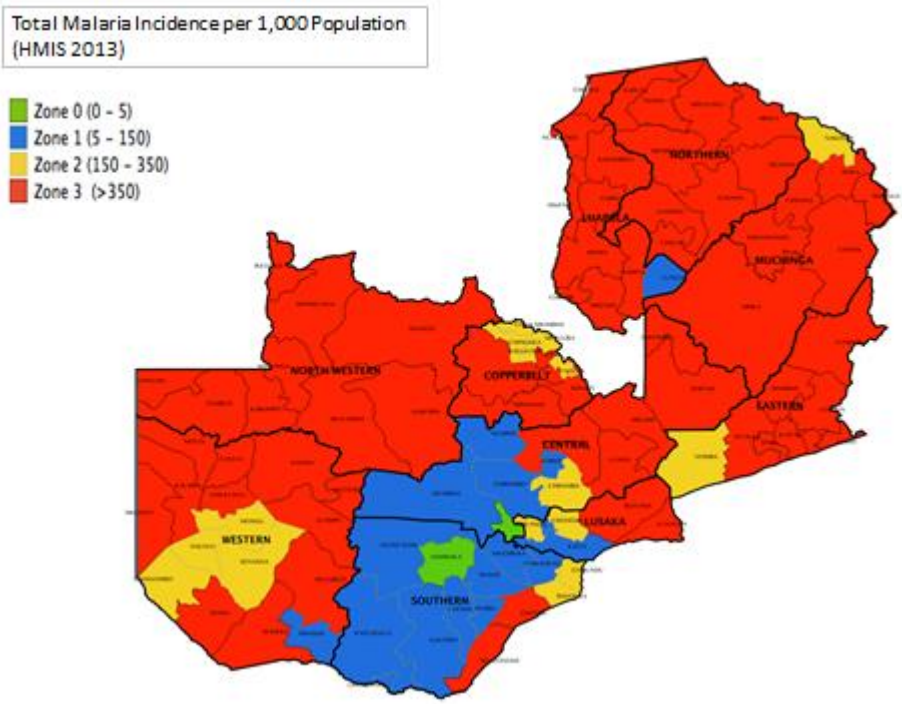


Figure 5b: Malaria epidemiologic zones from total (confirmed+clinical) case reporting, 2013



Important to note is that despite the overall increase in the uptake of diagnostic tests for clinical management, the number of clinical cases reported is still high and therefore when discussing total malaria burden, the vast part of Zambia remains high burden and high risk areas, apart from some areas in Lusaka urban and Southern Province. These lower burden areas still present areas of risk complicating the ability to reduce coverage of interventions. The Concept Note request prioritizes high burden areas, but the overall strategic planning includes, for example, ITN distributions for Zones 1, 2 and 3. ITNs are the primary vector control strategy. IRS is targeted to higher burden more densely populated areas and is used to help mitigate the effects of insecticide resistance in areas where resistance has been documented.

Table 1: Epidemiological zones and relevant malaria interventions and strategies

Table 1a: Malaria epidemiologic zones

Malaria epidemiologic zones			
Zone 0**:** Very low burden/low risk: Urban hub areas including Lusaka City/District, Livingstone, certain areas in southern Zambia targeted for elimination (including part of Namawala, Mazabuka)	**Zone 1:** Low burden, but moderate risk including Southern Province (above the escarpment excluding some flood plain areas of the Kafue river), Western Province (excluding Lukulu, Kalbo and flood plain areas of the Zambezi), Lusaka Province (except areas east of Chongwe), other urban areas in Central and Copperbelt	**Zone 2:** Moderate-to-high burden/moderate-to-high risk including Central, Copperbelt, Southern Province (below the escarpment along Lake Kariba), Western Province (Lukulu, Kalabo, and flood plain areas), Lusaka Province east of Chongwe	**Zone 3:** High burden/high risk and noted efficacy challenges with current control tools including Northwestern, Eastern, Luapula, Northern, and Muchinga provinces

Table 1b: Strategies for malaria preventions

Strategies for malaria preventions				
Key strategies, interventions, and activities	**Zone 0**: Very low burden/low risk	**Zone 1:** Low burden, but moderate risk	**Zone 2:** Moderate-to-high burden/moderate-to-high risk	**Zone 3:** High burden/high risk and noted efficacy challenges with current control tools
Mass ITN distributions	Not applicable	Applicable although transitioning to strengthening surveillance to drive increasingly focalized distributions	Applicable	Applicable
ANC and other continuous distributions	Not applicable	Applicable although transitioning to strengthening surveillance to drive increasingly focalized distributions	Applicable	Applicable
Focal ITN distribution	Applicable	Applicable	Applicable	Applicable

Indoor residual spraying	Applicable, although targeted to higher population density areas and focal hotspots for elimination.	Applicable, although targeted to higher population density areas. Consideration for IRS is also given in relation to ITN deployment with priority given to higher burden and known pyrethroid resistance areas	Applicable, although targeted to higher population density areas. Consideration for IRS is also given in relation to ITN deployment with priority given to higher burden and known pyrethroid resistance areas	Applicable, although targeted to higher population density areas. Consideration for IRS is also given in relation to ITN deployment with priority given to higher burden and known pyrethroid resistance areas

Table 1c. Strategies for malaria treatment

Strategies for malaria treatment				
Key strategies, interventions, and activities	**Zone 0**: Very low burden/low risk	**Zone 1:** Low burden, but moderate risk	**Zone 2:** Moderate-to-high burden/moderate-to-high risk	**Zone 3:** High burden/high risk and noted efficacy challenges with current control tools
Parasitological confirmation of all cases through RDT	Applicable; National Treatment Guidelines require testing for all suspected cases	Applicable; National Treatment Guidelines require testing for all suspected cases	Applicable; National Treatment Guidelines require testing for all suspected cases	Applicable; National Treatment Guidelines require testing for all suspected cases
First line uncomplicated malaria – ACT	Applicable for locally imported cases from other areas of Zambia and referrals	Applicable	Applicable	Applicable
Severe malaria: current transition from IV quinine to IV artesunate	Applicable for locally imported cases from other areas of Zambia and referrals centers	Applicable; quantification based on facilities offering severe case management services	Applicable; quantification based on facilities offering severe case management services	Applicable; quantification based on facilities offering severe case management services
Intermittent preventive treatment during pregnancy (IPTp)	Not Applicable, but applicable especially for travelers to Zones 2 and 3	Applicable, applicable especially for travelers to Zones 2 and 3	Applicable	Applicable

Malaria case management at community level/Integrated Community Case Management (iCCM)	Applicable in rural areas, although in urban centers emphasis is on health facility service provision	Applicable	Applicable	Applicable

Table 1d. Behavioral change communication

Behavioral change communication				
Key strategies, interventions, and activities	**Zone 0**: Very low burden/low risk	**Zone 1:** Low burden, but moderate risk	**Zone 2:** Moderate-to-high burden/moderate-to-high risk	**Zone 3:** High burden/high risk and noted efficacy challenges with current control tools
All priority activities	Elimination-specific messaging is a priority	Supportive of key interventions above especially related to uptake of interventions at household level, prompt treatment-seeking behavior, and case management according to national guidelines, as well as advocacy generation for increased national and international funding	Supportive of key interventions above especially related to uptake of interventions at household level, prompt treatment-seeking behavior, and case management according to national guidelines, as well as advocacy generation for increased national and international funding	Supportive of key interventions above especially related to uptake of interventions at household level, prompt treatment-seeking behavior, and case management according to national guidelines, as well as advocacy generation for increased national and international funding

Table 1e. Surveillance and monitoring and evaluation

Surveillance and M&E				
Key strategies, interventions, and activities	**Zone 0**: Very low burden/low risk	**Zone 1:** Low burden, but moderate risk	**Zone 2:** Moderate-to-high burden/moderate-to-high risk	**Zone 3:** High burden/high risk and noted efficacy challenges with current control tools
National HMIS – using DHIS v2 platform	Applicable	Applicable	Applicable	Applicable
Weekly reporting of cases and use of thresholds to detect epidemics.	Applicable	Applicable	Applicable	Applicable
Rapid reporting/m-health technologies of all malaria patients	Applicable	Applicable	Applicable	Applicable
Active case investigation and active contact screening of household members	Applicable	Applicable	Not applicable	Not applicable
Household survey/MIS/DHS	Applicable for coverage assessment	Applicable for coverage assessment	Applicable	Applicable
Case management facility/community treatment (iCCM) survey	Applicable	Applicable	Applicable	Applicable
Entomological surveillance	Applicable for hotspot areas	Applicable for hotspot areas	Applicable	Applicable
Supervision for various interventions/activities	Applicable	Applicable	Applicable	Applicable

b. Key populations with low access to services

The health sector-wide strategic plan and the NMSP address the relevant issues related to equity and improved access to services. Key populations that tend to suffer greatest from malaria are pregnant women and children. However, Zambia has adopted malaria

preventions and treatment service delivery strategies that benefit all community members equitably, which includes those most vulnerable and with least access. Malaria preventions services, in particular insecticide-treated nets (ITNs), show high levels of coverage across all the wealth quintiles and the rural urban divide from household surveys. This is the result of the adoption of full coverage targets and strategies such as mass distributions targeting all members of communities.

The National Health Strategic Plan (NHSP) 2011–2016 recognizes that in urban areas approximately 99% of households are within 5 kilometres of a health facility, compared to 50% in rural areas. Increased access to malaria case management services in rural areas therefore requires expansion of integrated community case management (iCCM). Zambia has adopted iCCM as a strategy to target populations in rural communities and "hard-to-reach areas" with limited access to health facilities. A comprehensive strategy for the delivery of essential treatment for leading causes of childhood morbidity and mortality (namely malaria, diarrhoea, pneumonia, and malnutrition), iCCM is critical for strengthening progress in the fight against malaria.

In addition, the NMCP is collaborating with PMI to distribute LLINs to HIV/AIDs patients through a US Government President's Emergency Plan for Aids Relief (PEPFAR) project.

c. Human rights and barriers and gender inequalities

There are no known human rights barriers or gender inequalities with regard to malaria of note on account of the equitable nature of the strategies used for malaria control in Zambia. Pregnant women are given priority attention in the distribution of free LLINs and administration of IPTp at antenatal clinics to minimize the adverse consequences of their vulnerability to malaria infection. Under-five children (the other vulnerable group) also benefit from LLIN distribution during immunization services. The proportion of pregnant women that receive at least two doses of IPTp in Zambia is 72.5% (MIS 2012; pp. 31).

d. Health systems and community systems

In line with Zambia's Health Sector vision, the National Malaria Control Programme (NMCP) seeks to achieve equitable access to cost-effective malaria services close to the household and to bridge the documented gap in the systems effectiveness of malaria case management (Littrell, M, 2013). While Zambia continues to face human resource for health challenges (MOH 2012 annual report; pp. 15), in order to address this the GRZ has committed to recruit and train additional health workers at all levels—including community health assistants (CHAs)—who are anticipated to positively affect delivery of malaria services. In addition, the government will construct 650 rural health posts.

A strong health system will provide a platform for effective delivery of interventions such as LLINs and iCCM. The country is in the process of expanding continuous/routine LLIN

distribution channels through schools and communities. The case management strategy in Zambia includes iCCM as a means of targeting the hard-to-reach rural household with limited access to health facilities. Employing the iCCM strategy requires a robust investment in community system strengthening. Furthermore, to ensure timely and cost-effective distribution of commodities to end-users, Zambia has recently taken steps to improve a logistics and supply management system which has recently decentralized its operations.

There is also the need to strengthen logistics, health information, and reporting systems at community level. This strategy is implemented through the Ministry of Community Development, Mother and Child Health (MCDMCH) with partner support through trained community health workers (CHWs) and CHAs. Currently, 3,039 CHWs and CHAs have been trained since 2011 but not all are active and adequately supplied with commodities. If health facilities do not have a full supply of malaria commodities they will not be able to share with the CHWs. In addition, the number of patients seen by CHWs is not adequately captured in the HMIS and they may be left out of the supply system for necessary commodities. Access to malaria case management services in rural areas therefore requires expansion of iCCM.

Cross cutting health systems strengthening—strengthening the national supply chain: Medical Stores Limited (MSL) is the government institution mandated to store and distribute pharmaceutical and medical supplies. With the growth in antiretroviral treatment, tuberculosis, malaria, and other programs, storage space has become a major constraint to achieving national targets for health and supply chain risk management. In response, the GRZ and partners have drafted the National Supply Chain Strategy to address supply chain challenges faced by the sector. The GRZ together with cooperating partners have adopted a new distribution strategy which is based on the establishment of six storage and distribution hubs and seven staging posts to enable last-mile delivery to target service delivery points. The Ministry of Health (MoH) has issued a directive to implement the hubs strategy. Pending the full implementation, the central medical store is running beyond maximum capacity and the US Government (USG) is paying for temporary warehouse space (a Global Fund grant has done the same in the past), a situation that represents a risk to supply chain security. The long term security of the chain requires construction of storage facilities in all regions.

Three hubs are currently operational in Southern, Eastern, and Western provinces and are all operating from leased facilities, with support from Swedish International Development Agency (SIDA). The plan and financing to turn these into permanent structures is underway and expected to be funded by GRZ in 2015.

The cost of the construction of the three remaining hubs is US $9 million to which USG has

committed US $3 million and DfID US $600,000 to pay for the building and equipping of two of the three remaining hubs (Phase 2). The remainder of the hub construction is provided under the HIV Concept Note. This application includes US $2.3 million as a cross cutting investment in direct allocation to support operation costs of two of the total of six hubs for a period of three years.

1.2 National Disease Strategic Plans

With clear references to the current **national disease strategic plan(s)** and supporting documentation (include the name of the document and specific page reference), briefly summarize:

a. The key goals, objectives and priority program areas.

b. Implementation to date, including the main outcomes and impact achieved.

c. Limitations to implementation and any lessons learned that will inform future implementation. In particular, highlight how the inequalities and key constraints described in question 1.1 are being addressed.

d. The main areas of linkage to the national health strategy, including how implementation of this strategy impacts relevant disease outcomes.

e. For standard HIV or TB funding requests[2], describe existing TB/HIV collaborative activities, including linkages between the respective national TB and HIV programs in areas such as: diagnostics, service delivery, information systems and monitoring and evaluation, capacity building, policy development and coordination processes.

f. Country processes for reviewing and revising the national disease strategic plan(s) and results of these assessments. Explain the process and timeline for the development of a new plan (if current one is valid for 18 months or less from funding request start date), including how key populations will be meaningfully engaged.

4-5 PAGES SUGGESTED

National Malaria Strategic Plan (2011–2016)

The Zambia NMSP 2011–2016, which has the theme "Consolidating malaria control gains for impact," was updated in 2014 to take advantage of lessons learned from the first two years and to address implementation challenges identified during the Midterm Review conducted at the end of 2013. The revised strategic plan, whose focus is to consolidate malaria gains for impact, seeks to strengthen program strategies to continue to build on the implementation gains of four successive strategic plans and move the country into a pre-elimination phase. This strategic plan is aligned with the Zambia National Health Sector strategy that envisions a "Malaria-free Zambia." The strategies proposed in the NMSP 2011–2016 are focused on giving full effect to the mission statement of the Zambia NMCP which is "to facilitate equity of access to quality assured, cost effective malaria

[2] Countries with high co-infection rates of HIV and TB must submit a single concept note for HIV and TB. Countries with high burden of TB/HIV are considered to have a high estimated TB/HIV incidence (in numbers) as well as high HIV positivity rate among people infected with TB.

prevention and control interventions close to the household."

a. Key goals, objectives and priority program areas

The NMSP 2011–2016 has the following key goals, objective, and priority strategic interventions:

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 five "malaria-free districts" in Zambia.

Objectives
1. To have 100% of households and persons at risk have access to evidence-based vector control and other preventive interventions by 2016.
2. To have, by 2016, 100% of suspected-malaria cases in all health facilities receive parasitological confirmation (microscopy or RDT) and 100% of malaria cases at facility and community levels receive prompt and appropriate treatment, as detailed in national diagnosis and treatment guidelines.
3. To strengthen surveillance monitoring and evaluation (M&E) systems in order to ensure timely availability of quality, consistent, and relevant data on malaria control performance by 2016.
4. By 2016, to ensure that all prioritized operations research is conducted in order to generate evidence to support informed decision-making on policy and implementation of the malaria program and iCCM.
5. To increase knowledge levels of malaria to 100% and improve uptake and correct use of interventions to 80% by 2016.
6. To improve capacity in coordination, leadership, governance, and resource mobilization for effective and efficient management of the NMCP.

The following are the priority areas:

Vector control: Malaria epidemiology, including burden and risk, in Zambia is heterogeneous and rapidly evolving, necessitating stratification at district level for planning (Figure 5a and 5b). In light of observed epidemiological heterogeneity, the program will aim to achieve and sustain universal ITN coverage in Zones 1, 2, and 3 and utilize a focal data-driven approach to prioritize IRS.

***Long-lasting insecticidal nets (LLINs)*:** Zambia seeks to attain and sustain universal LLIN coverage in Zones 1, 2, and 3. This entails covering all sleeping spaces with LLINs (at least one LLIN per sleeping space) through nationwide mass campaigns and

maintaining high coverage through the boosting of continuous LLIN distribution channels.

Indoor residual spraying (IRS): IRS will target areas of documented insecticide resistance. Priority will be given to districts and communities with high disease burden and population density. The use of IRS will be guided by epidemiological data, information on ITN use, operations research, and vector susceptibility studies. For example, insecticide resistance monitoring in 2012 and 2013 has demonstrated increasing pyrethroid resistance and for the 2014 season, LLINs with pyrethroids (the only available LLIN insecticide) will continue to be used and the IRS insecticide will be moved to an organophosphate (Actellic CS).

Entomological monitoring and surveillance: The increase in the use of insecticides in malaria vector control has resulted in increased resistance to insecticides and calls for prioritization of insecticide resistance monitoring and management. The insecticide resistance program will be coordinated by the Insecticide Resistance Technical Working Group; key activities will include developing and implementing an insecticide resistance management plan, vector susceptibility testing, and mapping and mitigation strategies such as the rotation of insecticides used for IRS.

Prevention of malaria in pregnancy using intermittent preventive treatment (IPTp): The malaria control program is implementing a well-defined Malaria in Pregnancy (MIP) policy, which includes the provision of free IPTp with at least three doses of sulfadoxine pyrimethamine (SP) during pregnancy, free ITNs, and free prompt diagnosis and treatment of clinical malaria. This malaria control package is implemented as part of routine focused antenatal care (ANC) and, despite having some of the highest coverage levels in Africa, will continue to be strengthened, especially through ensuring earlier antenatal care in rural areas.

Diagnosis and treatment: Training, supervision, procurement of medicines, diagnostic test kits, and supplies for provision of quality-assured diagnosis and treatment of uncomplicated and severe malaria in public and private health facilities are the priority areas. In 2003, the country adopted the use of ACTs in the management of uncomplicated malaria and the drug of choice is artemether plus lumefantrine (AL). Following the revision of the treatment guidelines in 2014, dihydroartemisinin-piperaquine (DHA-PPQ) was added to AL as an additional and alternative first line option for treating uncomplicated malaria. While AL remains highly effective, DHA-PPQ is expected to be equally effective and requires only three doses of the drug for standard therapy (instead of six doses for AL)—this may improve compliance for clinical cases and for possible use among larger populations for infection clearance. The MoH conducts antimalarial drug efficacy studies every other year. The ongoing study is due for completion in December 2014.

Building strong integrated community health systems: One critical development area for the future of malaria control and ultimate elimination in Zambia is the building of strong community-based systems. This work will include: (1) mobilization of community leadership to take increasing responsibility for malaria prevention and control, (2) support for iCCM, (3) expansion of community-based health information systems and surveillance that includes or incorporates timely reporting and response to malaria infections, and (4) strengthened information, education, and communication systems that can link health work with community understanding of their required actions. These aspects are further described in the following sections.

Integrated community case management (iCCM): The iCCM strategy, implemented through MCDMCH with partner support through trained CHWs and CHAs, is critical to strengthening progress in the fight against childhood illnesses. Developed as a comprehensive strategy for the delivery of essential treatment for leading causes of childhood morbidity and mortality (namely malaria, diarrhoea, pneumonia, and malnutrition), iCCM was adopted by Zambia in May 2010 to target populations in rural communities and "hard- to- reach areas" with limited access to health facilities. Additionally, the GRZ has committed to addressing human resource for health challenges by recruiting and training additional health workers (including community health workers who are anticipated to positively affect delivery of iCCM services) and commencing construction on 650 rural health posts where CHAs and CHWs will operate.

CHAs, who receive iCCM training as part of their training course, are a higher skilled cadre of community health care worker who receive training for one year and are meant to supervise the activities of CHWs (volunteers) in areas were CHAs operate. Gradually expanding in number, there were 300 CHAs in the inaugural class began service in late 2012 and early 2013. The second class of CHAs is currently being finalized for uptake during 2014. CHWs on the other hand have relied on a network of funding and partners to receive training. CHAs and CHWs report to their supervisors in the health centre.

Following the 2003 new drug policy change, when ACTs became the first line drug for treatment of uncomplicated malaria, replacing chloroquine and following the introduction of malaria RDTs, the NMCP introduced malaria case management at community level, a program referred to as Home Management of Malaria (HMM). Many community health workers in selected districts were trained in malaria diagnosis using RDTs and treatment using ACTs. In 2012, high level discussions to transform HMM into iCCM began. The strategy was to begin by providing additional training to cover pneumonia and diarrhea treatment to CHWs that were trained only in malaria case management. The objective was to have only one iCCM program. This was the basis for including iCCM in both the NMSP

and in the Global Fund New Funding Model (GF-NFM) Concept Note.

Since 2011 over 3,000 CHWs and CHAs have been trained in issues related to community malaria case management, including iCCM. Key partners in this have been USAID through the Zambia Integrated Systems Strengthening Project (ZISSP) and Canadian International Development Agency (CIDA) through the Malaria Consortium and UNICEF. USAID has provided support for training CHWs in iCCM and rolled out trainings in various districts where ZISSP operates. CIDA support was largely targeted for iCCM in Luapula Province and while it was operating, also included support for procurement of commodities related to iCCM, although the project ended. Other partners have also been involved to a smaller degree in training CHWs on iCCM, although it should be noted that, apart from the efforts in Luapula, most locations included did not receive sufficient support to reach the necessary number of CHWs to population ratio expected by Government strategic planning. Further, support to date was not approached in a comprehensive manner in that reporting systems, supervision, logistics, and monitoring were either not provided with trainings or were not sustained once project funds ended.

Additional challenges exist with the current iCCM effort apart from those highlighted above. Retention of CHWs and malaria agents operating at community level has been a major problem. Across partners, mechanisms of incentivizing retention and engagement differ leading to the impression of ad hoc systems operating at community level. While a number of supervisors at facility level have been trained, sufficient numbers of health care workers, either via existing facility staff or CHAs, to supervise CHWs do not exist. Finally a more comprehensive approach is needed for how partners choose to engage in the roll out of iCCM and the support for iCCM in the Concept Note will address these challenges both in the strengthening the reporting, supervision, and engagement at community level structures as well as in direct support for iCCM trainings and commodities.

To date, several key steps have been accomplished with respect to developing a national strategy for the roll out of iCCM. First, as part of the national Integrated Management of Childhood Illness (IMCI) Technical Working Group (TWG), a subcommittee on iCCM has been formed and meets regularly. Second, iCCM as the national strategy for malaria case management has been incorporated in the NMSP. Third, national policy guidelines on iCCM are available allowing for use of antibiotics by CHWs. Further, community data monitoring and supervision tools have been developed and over 500 facility-based staff have been trained to provide oversight to CHWs implementing iCCM activities.

Through the National IMCI TWG and iCCM Subcommittee, the following key steps have been outlined as a way forward for iCCM. These include the development of the national scale-up plan and resourcing plan including submission of iCCM as part of the GF

Concept Note. A priority has been set to begin the rollout of newborn care alongside iCCM beginning in Eastern Province where infant mortality is higher compared to other provinces. To address the broader systems issues, strengthening of the supply chain at the provincial and district level is needed. Supportive evaluation of iCCM is also needed to continue to justify the investment which will include operational research and innovative communication and the mHealth supervision tool to improve the flow of commodities to CHWs and improve the quality of supervision and ultimately the quality of iCCM delivered at the community level.

Currently, the Concept Note outlines available resources committed for iCCM. This includes GRZ commitments of just over US $3.5 million and approximately US $450,000 from both USAID and UNICEF for the period 2015–2017. USAID resources for iCCM will likely fall under a new health systems strengthening and malaria-specific grant which will be released for bidding during the second half of 2014. iCCM will be covered under this grant but will focus in four provinces (Luapula, Northern, Muchinga and Eastern), although the scale of coverage is likely similar to the past contract and therefore will not provide sufficient funding to cover all gaps in these four provinces. Save the Children UK, which to date have been conducting iCCM activities in one district in Cooperbelt, have also applied for resources from Crown Foundation for approximately US $600,000 for three years for iCCM, however this amount has not been included in the available resources since funding is still at proposal stage and not awarded.

Going forward, expansion of iCCM with support from the malaria Concept Note will prioritize North-Western province and Eastern, Muchinga, Northern, and Luapula provinces where malaria burden is the greatest and not otherwise covered by PMI resources. Coordination of the expansion in Eastern, Muchinga, Northern, and Luapula provinces will occur with PMI resources to help ensure complete coverage and operations of iCCM in these high malaria burden areas. Targeting by PMI and Global Fund resources will be at district level, whereby in Eastern, Muchinga, and Northern provinces, PMI resources will focus on certain districts and Global Fund resources will target different districts to ensure all targeted districts and areas are covered in these priority provinces.

Surveillance, monitoring and evaluation, and operations research: Measurement of objectives and indicators is critical to inform the progress of malaria control program efforts. The National Malaria M&E Plan includes standardized indicators for routinely monitoring and evaluating impact of malaria control activities. Further, it includes periodic surveys to assess coverage and quality of key interventions at household and facility level. The M&E Plan also includes priority operational research issues to aid in ensuring an efficacy of interventions, ensuring strategies for uptake and use of interventions, and

testing new methods of deploying existing interventions.

Some notable achievements in the past few years include the Malaria Indicator Survey 2012 (building on the MISs of 2006, 2008, and 2010) being successfully conducted, routine information systems being strengthened through upgrading of the DHIS to version 2 (a web-based version), introduction of rapid reporting of key malaria and intervention commodity indices into the DHIS 2.0 in districts in several provinces, and capacity building activities being conducted at all levels of the health system in surveillance, monitoring, and evaluation. In districts targeted for elimination, community level surveillance and case follow-up are being implemented. At the same time, in some provinces, data collection at the lower levels of the new DHIS 2.0 is still paper-based and data reporting is neither timely nor complete in the HMIS. Other challenges include lack of personnel at district and provincial levels to deal with surveillance issues and inadequate funding toward operational research that will guide improved program action in the future. In order to improve data quality the MoH with support from the Global Fund has embarked on training district and provincial health information officers in data management and providing all districts with necessary HMIS data collecting tools. Initial steps have been made to develop a CHA reporting system and to develop a larger platform for community-based reporting linking with the HMIS at facility level.

Information, education, communication (IEC)/behaviour change communication (BCC): Behaviour change communication is an essential component of the malaria control program. These strategies are meant to galvanize support for implementation of the malaria program, raise knowledge levels about malaria prevention and treatment in the communities, and create demand for and raise levels of utilization of malaria control interventions and services. The implementation of IEC/BCC activities is guided by the malaria control communication strategy. National surveys suggest that good progress has been made in general malaria knowledge and in the importance of using malaria interventions. Achievements in IEC/BCC include the training of malaria focal persons in IEC/BCC planning and implementation, malaria IEC/BCC materials being developed and disseminated to target audiences, the launch of the Zambia-Zimbabwe Cross Border Initiative in 2013, the launch of the Stop Malaria Campaign in 2012, capacity building for media personnel and malaria media awards ceremonies, and the MIS 2012 revealing high levels of knowledge about malaria, representing an increase from 2010 levels. The main challenge under IEC/BCC has been the weak monitoring and evaluation of IEC/BCC activities. The support for implementing IEC/BCC and M&E at community level will be strengthened with community-level HMIS and reporting from community structures. The shift in focus to treatment and prevention at community levels requires more focused activities on IEC/BCC at this level to ensure uptake of interventions and wider access to

treatment services.

Program management: The program has made progress in the development of a robust strategic framework, mobilizing additional domestic resources and engendering effective partnership for malaria prevention and control. Below are highlights of specific achievements.

Human resources and capacity development: The MoH in collaboration with partners developed and operationalized the National Human Resource for Health (HRH) Strategic Plan for 2011–2015. Furthermore, the NMCP conducted training of health workers, CHWs, and CHAs.

Resource mobilization: There has been a general increase in domestic funding of the malaria program in the last two years. A major achievement toward this has been the policy decision of the Zambian Government to allocate approximately US $24 million annually toward the procurement of anti-malaria commodities, beginning in 2013.

Medical products and transportation (procurement and supply management): The National Malaria Control Centre (NMCC) coordinated quarterly meetings for forecasting and quantification of anti-malaria commodities and supplies which contributed toward steady and consistent availability. The NMCC also maintained three fifteen-tonne trucks which supplemented Medical Supplies Limited's distribution of ITNs to provinces.

Strengthening coordination, leadership, planning, and supervision: The health sector is led and coordinated by two ministries, the MoH and the Ministry of Community Development, re-aligned in 2011 as Ministry of Community Development Mother and Child Health (MCDMCH).

The NMCP consists of MoH and MCDMCH. The NMCC is a unit in the MoH under the Directorate of Disease Control, Surveillance and Research (DCSR) that coordinates malaria prevention and control activities throughout the country. There is a malaria unit under the Department of Mother and Child Health within the MCDMCH. The malaria program is the overarching term that describes the national efforts including the Government and partners to control malaria.

The NMCC is responsible for malaria policy, guidelines, national and provincial coordination, surveillance, monitoring and evaluation, research, procurement, and resource mobilization. NMCC provides technical support at national, provincial and district level. Provincial Health Offices serve as an extension of the MoH/NMCC and provides leadership and coordination at the provincial and district levels.

The malaria unit under MCDMCH has the responsibility to implement IRS, ITN distribution

and malaria case management at level 1 hospitals, health centers, and community levels through the District Community Medical Offices (DCMO). Additional responsibilities include supervision at district, health center, health post, and community levels and district and community coordination. The DCMO provides overall planning, coordination, and monitoring of malaria activities within their districts.

The NMCC and malaria unit under MCDMCH collaborate and coordinate planning, implementation and monitoring of activities as well as meet to agree on required resources as allocated by the Ministry of Finance and cooperating partners including Global Fund.

The NMCP Technical Working Groups (IRS, ITN, Case management, BCC, and M&E) are a forum for planning, communication, and coordination of program activities between the two ministries, partners and stakeholders. There are ongoing discussions regarding colocation of the MCDMCH malaria staff to the NMCC. In order to improve communication and effective coordination of malaria activities, the NMCC and the malaria unit under MCDMCH will share secretariat responsibilities for the malaria TWGs. Furthermore partners will assume chairmanship/co-chair functions of ensuring that the TWG meetings occur in a timely manner.

Procurement and supply chain management (PSM): The National Supply Chain Strategy for Essential Medicines (2013–2016) covers several key objectives relevant for malaria including establishing coordinated and efficient supply chain, reducing shortages, and ensuring supplies of medical commodities, ensuring accuracy in quantifications and forecasting, mobilizing resources, and improving quality assurance of supplies. The MoH in collaboration with the MCDMCH, have taken measures to improve the quantification process and also to expedite the procurement process. Recent progress in improving the supply chain management system includes creating regional hubs for decentralization of storage and distribution. Biannual quantification meetings are held to quantify malaria commodities led by the NMCC. The MoH has also recently established a pharmacist position at the NMCC to improve procurement and to coordinate partners and malaria interests with the national PSM Technical Working Group.

Cross border malaria control: Zambia and Zimbabwe launched the Zambia-Zimbabwe Cross Border Malaria initiative in April 2013 in order to reduce the malaria burden among the border districts on both sides. The initiative is not yet operational. Similar initiatives exist between Zambia and other neighbouring countries such as the Zambia-Malawi-Mozambique Initiative and the Trans Zambezi Initiative encompassing five countries (Angola, Botswana, Namibia, Zambia, and Zimbabwe). A regional initiative under the auspices of the Southern African Development Community (SADC), called the Elimination 8 (E8) has been proposed to hasten progress toward malaria elimination in eight

countries. The eight countries have proposed to submit a joint request for funding to the Global Fund. The strategic objectives of the request (joint concept note) are strengthening regional surveillance systems, developing regional harmonized protocols on quality assurance/quality control (QA/QC), and incentivizing accelerated impact through regional collaboration.

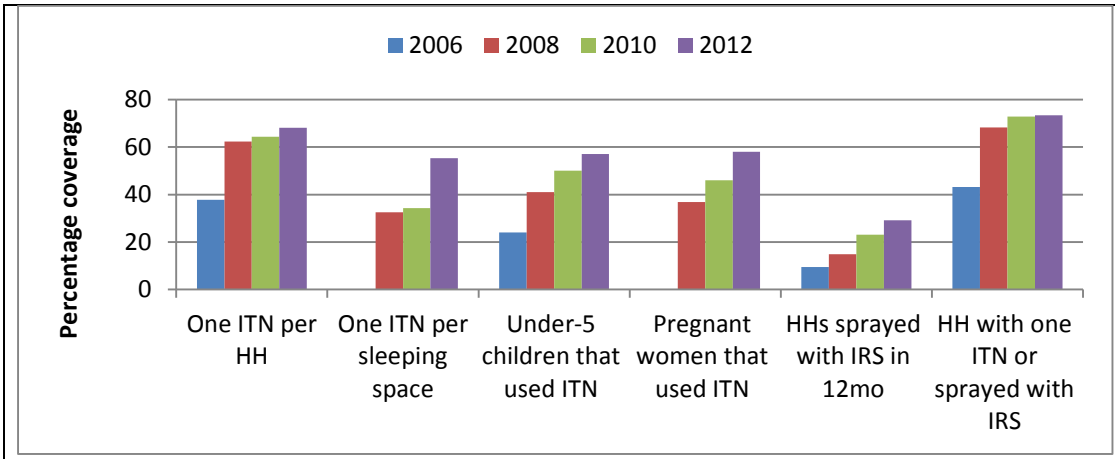
b. Implementation to date, main outcomes, and impact

As noted in Section 1.1, Zambia has demonstrated the ability to rapidly scale up the full spectrum of malaria prevention and control interventions to high levels of national coverage (see Figure 3). This work has led to marked reductions in malaria infection, illness, and severe morbidity and death. And, the program at national, provincial, and district levels has learned from each effort about means to improve and increase the efficiency of the work. These aspects are described in each of the following intervention sections.

Vector control

Long-lasting insecticidal nets (LLINs): The objective of this strategic plan is to give "100% of households and persons at risk in malaria access to evidence-based vector control and other preventive interventions by 2016." During this period, the country will be implementing targeted use of IRS and mass distribution of LLINs free to all populations at risk. LLINs were also routinely distributed to pregnant women and infants through the ANC and immunization (EPI) clinics respectively. The program has not yet achieved the objective of 100% coverage but has continued to achieve steady gains in coverage and approaching the target. The proportion of households with that has at least one LLIN or IRS spray within 12 months reached 75% in 2012. It is hoped that the country will achieve universal coverage in the campaign which will commence in 2014, and is predominantly supported by a Global Fund grant received under the Transitional Funding Mechanism (2013/2014) meant to prevent major gaps in essential malaria interventions. A summary of the progress made so far toward achieving the objective of universal coverage (up to the MIS 2012) is shown in Figure 6.

Figure 6: LLIN and IRS coverage and use in Zambia, 2006–2012



Indoor residual spraying (IRS): Zambia has been a leader among nations in sub-Saharan Africa in introducing and then expanding coverage of IRS nationally and specifically targeting areas and populations most in need because of high transmission intensity and/or variations in mosquito resistance to insecticides. The proportion of households sprayed with IRS yearly increased from 9.5% in 2006 to 29% in 2012, demonstrating the national expansion of the IRS program. The use of IRS had previously targeted more urban (33.8%) than rural households (18.9%) but more rural households were sprayed during this plan period than in previous years in response to realigning IRS with improvements in the national surveillance of malaria burden (MIS 2012; pp. 60). IRS program data suggests that IRS is achieving >85% coverage of households in targeted areas. Following the revision of the strategic plan, IRS will target areas with confirmed vector resistance, high burden of malaria, and high population density, most which are in rural areas. This strategy is aimed at mitigating the effect of vector resistance to insecticides used in LLINs and IRS, while also rapidly reducing disease burden and malaria deaths in these communities. The strategy is to rotate insecticides for IRS based on evidence from vector resistance studies. In keeping with these criteria, the Kasempa, Solwezi, Mwinilunga, Zambezi, Chavuma, Mufumbwe, Kabompo, and Lufwanyama districts in the North-Western and Western provinces—where the highest malaria incidence and death rates are currently reported—will be targeted for IRS since there is also evidence of insecticide resistance in this area. Several districts in the Northern Province which had similarly high infection burden are currently benefiting from IRS with support from the US Government (PMI). The map of Zambia showing the reported malaria cases per 1,000 population (which are highest in the North-Western districts) is presented in Figure 7 while Figure 8 shows that the burden of disease is higher in rural than urban areas as reflected by high parasitaemia in under-five children (Midterm Review 2013: pp.10; MIS 2012: pp,47).

Figure 7: Malaria cases (MTR 2013; pp.10)

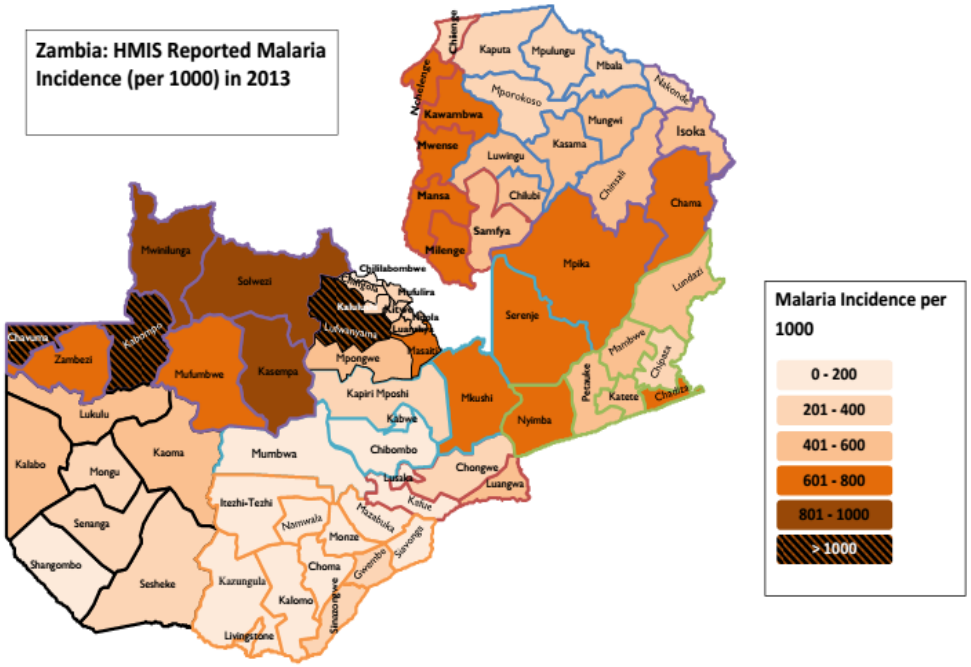
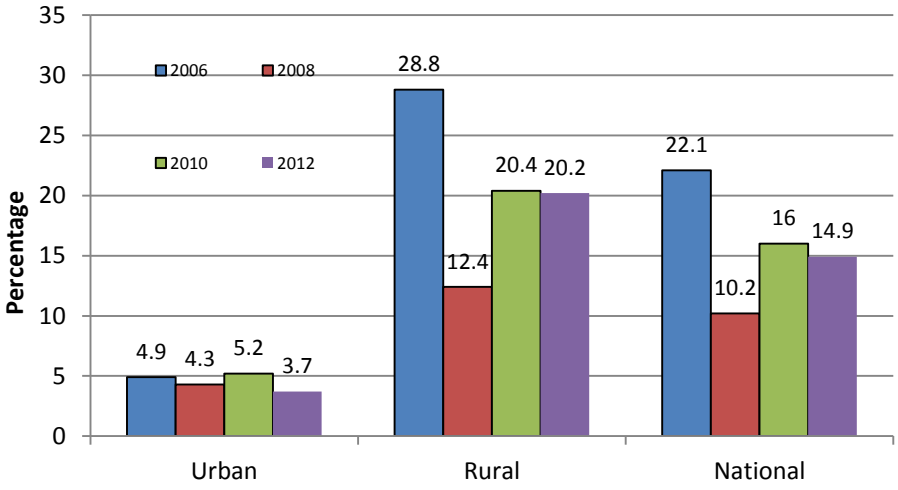


Figure 8: Malaria parasite rates in children <5 years (MIS 2012; pp. 47)



Prevention of malaria in pregnancy (MiP): Zambia stands out as the nation with the earliest adoption and now one of the very highest rates of malaria prevention coverage for pregnant women; yet further improvement is still warranted. The malaria in pregnancy (MIP) program includes the provision of intervention at no cost to the pregnant woman. Interventions include IPTp, ITNs, and prompt diagnosis and treatment of clinical malaria. This package of interventions is implemented as part of routine focused ANC. The implementation of IPTp is fully integrated with the reproductive health service and benefits from high antenatal clinic attendance recorded nationwide in Zambia. The high ANC attendance in the country and a long-standing consistent policy have resulted in high

uptake of IPTp, with 72% reported to receiving at least two doses and 54% of pregnant women receiving at least three doses of SP in 2012 (MIS 2012). According to the NMSP 2011–2016 the target is to have 85% of pregnant women attending ANC receive at least two doses of IPTp by 2016. The government has made a commitment to procure SP and PMI is adequately complementing the investment of the government for IPTp. Prevention of malaria in pregnancy is therefore adequately supported and will not be part of the funding request to the Global Fund.

***Case management*:** Significant progress has been made toward achieving the objective of parasitological confirmation of all suspected malaria cases with microscopy or RDT and treating with ACTs as in national diagnosis and treatment guidelines. The Health Facility Survey in 2011 showed that 93% of hospitals performed malaria diagnostic tests with RDT or microscopy, and 63% of health centres could test for malaria mostly with RDTs. The proportion of suspected malaria cases tested with microscopy or RDTs increased from 31% in 2010 to 57% in 2012 but had yet to reach the national target (80%). Among children treated with antimalarial drugs, the proportion that received the recommended first line drug (AL) increased from 29.5% in 2008 to 76.2% and 85.2% in 2010 and 2012 respectively.

The GRZ is committed to making treatment services more accessible to children in hard-to-reach rural areas, and began the implementation iCCM with modest support from several partners (namely USAID/ZISSP, UNICEF, World Vision, Malaria Consortium, Save the Children, the Churches Health Association of Zambia [CHAZ], and WHO). Most of these efforts have predominantly been in training CHWs to test and treat malaria cases along with other common childhood health problems. Full implementation of iCCM is ongoing only in a few districts, with some evidence of positive impact. Recent MISs have shown an increase in the percentage of AL received from CHWs from 2.1% in 2010 to 8.5% in 2012 (MIS 2012; pp.38). The Midterm Review of the MSP 2011–2016 identified scale-up of iCCM as a priority strategy for expanding access to quality assured treatment for under-five children in rural areas. The revised strategic plan seeks to scale up iCCM beginning in rural areas in districts with high disease burden.

Progress toward elimination in five areas

Zambia has focused its initial elimination work in Lusaka District and in a set of districts in Southern Province. In Lusaka District, with improved surveillance via health facility data that provides information on confirmed cases, a case investigation strategy has been undertaken to identify cases the few remaining cases and investigate them, their households and the neighbourhood households to detect possible source and spread of infection. Essentially, it has been demonstrated that the cases in Lusaka town are imported through travel to other endemic areas. As a consequence, the town/city of

Lusaka has withdrawn its IRS program and further invested in the surveillance and case investigation program. A similar set of activities is underway in a set of districts in Southern Province, with the support of the Malaria Control and Elimination Partnership in Africa (MACEPA), a program at PATH, through the Bill and Melinda Gates Foundation, where very few cases are now being seen and these are being systematically investigated for source of infections, possible spread and final containment.

Of particular note, progress in elimination builds on high coverage of the basic package of proven malaria interventions, including prevention and case management. Thus, maintaining the strong prevention and case management component of the malaria program is critical as steps are taken to achieve elimination.

These investments in malaria elimination are helping to better define areas that have little or no malaria, including at community level, and are providing the evidence upon which the five elimination areas will be achieved. It is hoped that the elimination areas and a broader framework for achieving subnational elimination, which does not currently exist in the wider malaria community even beyond Zambia, will be a regional and global example to continue to drive improvements, investments, and momentum in malaria control and elimination programming.

c. Limitations to implementation and lessons learned

Limitations in LLIN distribution strategy: The rolling (or staggered) nature of LLIN campaigns tended to leave gaps that resulted in uneven coverage of LLINs across districts. Also coverage levels achieved during mass campaigns have not been sustained because routine (or continuous) distribution channels have so far been limited to ANC clinics and EPI clinics with no channels available to other members of the community who may have been omitted during campaigns or whose nets have become damaged or ineffective. This tends to result in marked decline in LLIN ownership between campaigns as was the case in Western Province where household LLIN ownership fell from 75% in 2010 to 52% in 2012. By 2012, 55% of households in the country have at least one LLIN for each sleeping space indicating full access for all persons in those households (MIS 2012). These observations were validated by a situational analysis and stakeholders NetCalc workshop held in Zambia in January 2014 supported by the NetWorks Project. The analysis concluded that ANC/EPI channels were not sufficient to replace worn out nets over time, and additional channels were required. After reviewing different scenarios, NMCP and partners reached a consensus to add primary schools and community-based distributions to the existing ANC/EPI channels. NetCalc shows that these four channels can maintain LLIN ownership levels at 90%. Full implementation of the additional channels (school-based, ANC, and community replacement) will take time, thus another mass

campaign is planned for 2017 to 'top-up' coverage as a complement to these additional continuous channels.

Vector resistance to insecticides: Insecticide resistance is an increasing challenge to vector control efforts in the country, as well as globally. The NMCP has set up a technical working group to address this collaboration partners and other line ministries. The program has prioritized entomological monitoring and operations research to guide efforts to mitigate the growing risk posed by vectors resistance such as concurrent use of IRS and LLINs in areas with high vector resistance.

***Decline in resources to support IRS implementation*:** Targeted implementation of IRS has contributed significantly to the reduction in malaria disease burden recorded in Zambia between 2006 and 2012. The resources for IRS had come from the Government of Zambia with predominant contributions by the US Government (PMI) with some input (2014–2015) from the UK Government (DfID). The implementation cost of IRS has recently increased significantly because of the need to use more expensive insecticides (organophosphates) as part of the rotational application of insecticides to mitigate effects of vector resistance to the commonly used and relatively cheaper insecticides (pyrethroids, DDT, and carbamates). In response to the increasing costs, the GRZ has significantly increased its contribution to IRS activities during 2014 and plans to continue this level of support going forward.

Non-compliance with malaria test results: This remains a problem among health practitioners, especially doctors. The 2011 Health Facility Survey showed that 14% of suspected malaria cases were treated with ACTs despite negative malaria test results. Training and re-training of health practitioners on the national malaria treatment guidelines is planned to address this issue.

Limited access to facility-based care in hard-to-reach rural communities: Limited access to facility-based care is a key challenge to the attainment of the strategic objective of prompt diagnosis and treatment for all persons with suspected malaria. Lessons from implementation of iCCM in four rural districts in Zambia through the Health for the Poorest Populations Project supported by UNICEF showed that this strategy improves the access to healthcare for the rural poor and populations in hard-to-reach areas. The revised NMSP 2011–2016 prioritized the scale-up of iCCM, building on lessons learnt from these implementation experiences. For example, the experience corroborates earlier reports that CHWs can prepare and interpret RDTs accurately and safely using written instructions (Harvey S. et al.).[3]

[3] Harvey S et al. Malaria Journal 2008; 7(1): pp. 160

Challenges with HMIS: Devising an effective strategy to integrate community data into the HMIS remains an important challenge. For example, monitoring and evaluation of community-based interventions such as iCCM requires that the information is collected by a CHA with the help of health facility staff and then included into the HMIS and DHIS-2 reporting. Interventions to strengthen community information system have been proposed for funding in this concept note. Also, in order to measure the impact of iCCM implementation, a baseline and end-line survey will be conducted in early implementing districts. Evaluation of iCCM activities more broadly into malaria surveys and M&E is planned. In addition, recent experience with rapid reporting in several provinces has shown that timely and quality-improved reporting that connects directly with the DHIS-2 and routine systems can be used efficiently. This model will be expanded and linked to the iCCM system so that all reporting is within one major channel of the HMIS DHIS-2 system.

World Malaria Report (WMR) data on reported malaria confirmed rate (microscopy and/or RDT) for Zambia has not been reported. This is due to the fact that data on confirmed malaria cases reported through the HMIS is not disaggregated by the type of diagnostic test used as required by the WMR. This issue will be addressed in the next revision of the relevant HMIS tools. Also, due to incomplete reporting, the suspected malaria cases that receive a parasitological test were also not reported in the WMR. This has now been addressed and subsequent reports of the WMR will include these data.

d. Main areas of linkage to national health strategy

The Zambia Health Sector Strategic Plan 2011–2016 emphasizes decentralization of service delivery with provincial and district authorities playing the dominant role in provision of preventive and treatment services while the central administration provides policy and technical guidance as well as resources and supervision. The implementation of NMSP 2011–2016 follows this pattern of service delivery ensuring that districts are given the technical guidance and support to deliver malaria control services to communities under their jurisdiction. The Health Sector Strategy provides free preventive services to the whole populace; treatment services are also free for children, pregnant women, and for endemic diseases like malaria, HIV/AIDS, and TB. The NMSP provides all malaria control services at no cost to the populace.

e. Country process for reviewing and revising the national malaria strategic plan

In 2013, the MoH with support from partners conducted a Midterm Review (MTR) of the National Malaria Strategic Plan (NMSP) 2011–2015 to assess progress in the two-and-a-half year period (2011–2013) of implementation of the current NMSP and make recommendations for better performance and impact. Among the partners and stakeholders involved in the process were WHO, PMI/USAID, PATH-MACEPA, CHAZ,

UNICEF, and DFID.

The MoH, with support from partners, plans to conduct a comprehensive malaria program review (MPR) in 2016. The MPR has been budgeted for in the concept note. The MPR will provide evidence to guide the development of the next NMSP (2017–2021) which will also take place in 2016. The MPR process will draw from experience of previous review exercises and international best practice articulated in technical guidance manuals issued by the World Health Organization and Roll Back Malaria Partnership. The NMCP has an active and vibrant group of partners, led by government and coordinated through national technical working groups across the key service delivery and priority areas relevant for achieving the goals and objectives in the NMSP. The process for developing, reviewing, and updating the current NMSP involves broad stakeholder consultations, public forums for expressions of interest and vetting of ideas, coordination through technical working groups, and ultimately channelling content and interests through a core steering committee for documentation and drafting.

Aside from the extraordinary coordination and consultation that comprises the development of the NMSP and their reviews, during the regular course of a year Technical Working Groups are tasked to meet at least quarterly for normal service delivery issues. Functionally, they meet as often as is needed and often form sub-committees to address specific issues, such as conducting national surveys, or quantifications for upcoming service delivery campaigns. This process is continually active during the course of a calendar year.

SECTION 2: FUNDING LANDSCAPE, ADDITIONALITY AND SUSTAINABILITY

To achieve lasting impact against the three diseases, financial commitments from domestic sources must play a key role in a national strategy. Global Fund allocates resources which are far from sufficient to address the full cost of a technically sound program. It is therefore critical to assess how the funding requested fits within the overall funding landscape and how the national government plans to commit increased resources to the national disease program and health sector each year.

2.1 Overall Funding Landscape for Upcoming Implementation Period

In order to understand the overall funding landscape of the national program and how this funding request fits within this, briefly describe:

a. The availability of funds for each program area and the source of such funding (government and/or donor). Highlight any program areas that are adequately resourced (and are therefore not included in the request to the Global Fund).

b. How the proposed Global Fund investment has leveraged other donor resources.

c. For program areas that have significant funding gaps, planned actions to address these gaps.

1-2 PAGES SUGGESTED

The GRZ plans to provide core annual funding dedicated to the procurement of key malaria control commodities (ACTs, RDTs, LLINs, and IRS [insecticides and equipment]), and operational costs, increasing the investment it has made the past two fiscal years —US $28 million, $28.5 million, and $29 million for 2015, 2016, and 2017 respectively. Development partners are a major source of funding for malaria control in Zambia. Table 2 shows the financial support for malaria control for 2015–2017.

Table 2: Financial contribution by partners

Available Funds/Needs (US $)	2015	2016	2017	TOTAL
Govt. of Republic of Zambia (GRZ)	**28,000,000**	**28,500,000**	**29,000,000**	**85,500,000**
PMI	**24,000,000**	**24,000,000**	**24,000,000**	**72,000,000**
DFID	**3,292,000**	**0**	**0**	**3,292,000**
WHO + UNICEF	**400,000**	**400,000**	**400,000**	**1,200,000**
Malaria No More	**180,000**			**180,000**
PATH- MACEPA	**2,500,000**	**0**	**0**	**2,500,000**
Private Sector	**1,124,832**	**1,181,074**	**1,240,128**	**3,546,034**
Total available support (USD)	59,496,832	54,081,074	54,640,128	**168,218,034**
Zambia Malaria funding Needs	**92,922,493**	**99,996,687**	**111,887,885**	304,807,064
Financial Gap (USD)	33,425,661	45,915,613	57,247,757	136,589,030

Coordination of partner activities are handled through the NMCP TWGs for issue-specific areas (IRS, ITNs, case management, IEC/BCC, M&E, operational research, procurement and supply chain, program management, and iCCM through Integrated Management of Childhood Illness). These TWGs have been operational for several years and provide the platform to ensure partner coordination and complementary resource allocation. A core steering committee and joint planning meetings are used to coordinate the activities of the TWGs and national stakeholder meetings are called periodically. Key partners participate actively in the TWGs and steering committee including PMI, WHO, UNICEF, and MACEPA. MoH and MCDMCH are working together to coordinate the core steering committee.

a. Availability of funds for each program area and the source

Funds currently allocated to each program intervention area and the sources are summarized below in Table 2. The allocation of remaining funds committed by PMI and GRZ will occur during annual planning exercises and based on real-time assessment of gaps and the identified priorities given available resources. Overall, the largest costs and the current largest funding gaps are in vector control measures—with the recognition that good vector control substantially reduces the cost of health care including the need for RDTs, ACTs, additional in-patient service needs and health worker time in caring for malaria cases.

Long-lasting insecticidal nets (LLINs): Funds required for LLINs for 2015–2017 are US $71.1 million; the available funding is US $18.1 million; with a funding gap of US $53 million. The available funds are contributed by GRZ, PMI/USAID, and DfID. The nationwide LLIN mass campaign planned for 2017 explains the high funding need and gap for that year. The mass campaign planned for 2017 does not include areas with low risk and low burden (ie. Zone 0: Lusaka urban and environs).

Indoor residual spraying (IRS): Funding required for IRS for 2015–2017 is US $55.1 million. The available funds are expected to be US $53.8 million; leaving a gap of US $1.3 million. The available support comes from GRZ, PMI/USAID, and mining companies on the Copperbelt Province.

Table 3: Sources of funds available for malaria control in Zambia, 2015–2017 (commitments to date)

Sources	Funds currently allocated by intervention for malaria control 2015-2017 (USD)				
	ITNs	IRS	Case management	M&E/OR/Capacity Building	IEC/BCC
GRZ	4,475,000	30,375,000	28,721,000	-	-
USAID/PMI	11,801,000	19,650,001	22,950,000	7,950,000	5,799,000
DfID	1,782,000	-	1,510,000	-	-
Malaria No More	-	-	180,000	-	-
Private Sector	-	3,546,034	-	-	-
WHO	-	-	-	754,500	-
UNICEF	-	-	-	-	450,000
MACEPA	-	250,000	750,000	1,400,000	-
Total support (US$)	18,058,000	53,821,035	54,111,000	10,104,500	6,249,000
Total Need	71,166,506	55,100,000	121,225,983	15,956,887	8,238,687
Anticipated Gap	**53,108,506**	**1,278,965**	**67,114,983**	**5,852,387**	**1,989,687**

Case management including artemisinin-based combination therapy (ACTs): The funds required for ACTs, RDTs, funding for iCCM expansion at community level for 2015–2017 is US $121.2 million. The funds available for the period are US $54.1 million with a gap of US $67.1. The support is provided by GRZ, PMI/USAID, DFID, Malaria No More, and PATH MACEPA.

***Program management*:** Total funding needed for program management is US $6.75 million; available funding ($2 million) is predominantly provided by GRZ. These costs also include support for grant management and costs for filling crucial human resource gaps in NMCC, namely entomologist and epidemiologist/statistician. These

resources also provide support for grant management, financial and administration support within the PRs. The anticipated gap is approximately US $4.75 million.

Community system strengthening (CSS): The budget proposed for this request was based on estimates made specifically for implementing selected priority CSS activities in high burden communities in North-Western Province where expansion of iCCM and continuous community LLIN distribution are planned. The whole funding request ($14,700,000) is made from the Global Fund New Funding Model (GF NFM) indicative fund and above allocation. Government support for CSS is ongoing in the forms training of CHWs and establishing community health posts (650). This further includes substantial direct allocation resources for supporting the roll out of community-based HMIS for monitoring and supervision for accountability.

Monitoring and evaluation (M&E)/operational research: The total funding needed for monitoring and evaluation and operational research is US $15.7 million and the available funding is US $10.2 million from GRZ and PMI. Additional funding is expected from PATH MACEPA (a major partner that has supported NMCP for several years with surveys, surveillance system development with support from the Bill and Melinda Gates Foundation) but commitment is yet to be confirmed beyond 2015.

b. How the proposed Global Fund investment has leveraged other donor resources

The investments by each of Zambia's partners have historically leveraged each other across the spectrum of malaria control work. This is evident throughout the financial and technical support and is clearly evidenced in Tables 2 and 3 above. As an example, in the annual development of the US-PMI Malaria Operational Plans, these Malaria Operational Plans take into account all of the resources from the partners, especially those from the Global Fund and look to provide complementary support that helps build the full malaria control portfolio.

Of particular note, building on the success of recent years, the GRZ has increased its domestic support with finances to specifically fund most of the costs of drugs for treating malaria and diagnostics for properly directing those treatments. The GRZ has also provided substantial funding for the IRS and LLIN coverage and these commitments have increased by more than 25-fold in the past two years and now include commitments for the coming three years included for this proposal.

Additional examples of the leveraging of donor resources are noted below:

iCCM: Motivated by the opportunity provided by the current GF NFM grant allocations to

provide substantial funding for scale up of iCCM, the International iCCM Task Team is collaborating with Zambian authorities to mobilize resources from other sources to complement the resources that will come with GF NFM allocation and incentive funding. Additional funding for iCCM will be provided by PMI and Global Fund resources will complement the expansion in similar areas to allow for better coverage in these high burden areas.

M&E: The assurance that funding for the next MIS 2015 will be provided with support from GRZ and partners to continue to benchmark malaria control progress is one example of partner leverage for M&E. GF support for the MIS 2017 and a survey to assess the quality of case management at facility and community levels. These resources will complement existing partner resources for a strong M&E system.

c. Actions planned to address major funding gaps

As noted in the previous section, Zambia has benefitted greatly from its multi-partner relationships whereby investment from one partner helps build confidence from another partner. The three major areas with funding gaps—LLINs, case management including iCCM, and M&E especially at community level—are noted below and described in terms of both domestic mobilization of resources as well as multi-partner negotiations for multiple contributions.

***LLIN*s (Funding gap: US $53.1 million):** The bulk of the gap comes from the cost for the top-up mass campaign in 2017 (US $32.8 million) for which a request is made to GF in direct allocation to catalyze additional resources for this and for additional funds just over half of the need for the top-up campaign in the above allocation. There are indications that GRZ and partners are likely to mobilize resources to fund for remaining routine LLIN gap (currently in the above allocation request) if GF grants the incentive funding for the 2017 mass campaign.

***Case management including iCCM* roll out (Funding gap of US $67.1million):** This funding gap is largely the result of shortfalls in RDTs and treatments, plus the costed anticipated gap as a result of expanding iCCM to all areas including in the current iCCM strategy. However, the funding request to Global Fund includes direct allocation for the necessary RDT and treatment amounts, and expansion of iCCM to the high priority, high malaria burden areas in north western, and northern and eastern areas where concomitant roll out of iCCM is expected with PMI funding (Zones 3 and 4). This will create quality and full coverage of iCCM in these areas. Additional iCCM funds are included in the above reflecting the potential expansion that could be absorbed during the three year grant period. The international iCCM financing Task Team is also collaborating with Zambian authorities

to mobilize resources for iCCM to complement the GF support for iCCM in Zambia.

M&E especially at community level **(<u>Funding gap: US $5.8 million</u>):** These funds are required to supporting national routine system updates and rollouts, support for surveys to assist in the evaluation of case management at community and facility levels, as well as impact and coverage of malaria control activities. Additional M&E support for rolling out essential community system activities in areas where scale-up of iCCM and continuous community LLIN distribution are planned. This is indicated under Community Systems Strengthening activitie. Thirty percent will be requested from indicative allocation while the rest will be above allocation. A strong community system will promote effectiveness of planned community-based interventions both for malaria and tuberculosis which also has a vital community component. This funding has potential to leverage additional funding from other departments and partners working in the communities involved.

2.2 Counterpart Financing Requirements

Complete the Financial Gap Analysis and Counterpart Financing Table (Table 1). The counterpart financing requirements are set forth in the Global Fund Eligibility and Counterpart Financing Policy.

a. Indicate below whether the counterpart financing requirements have been met. If not, provide a justification that includes actions planned during implementation to reach compliance.

Counterpart Financing Requirements	Compliant?	If not, provide a brief justification and planned actions
i. Availability of reliable data to assess compliance	☒Yes ☐ No	
ii. Minimum threshold government contribution to disease program (low income-5%, lower lower-middle income-20%, upper lower-middle income-40%, upper middle income-60%)	☒Yes ☐ No	
iii. Increasing government contribution to disease program	☒Yes ☐ No	

b. Compared to previous years, what additional government investments are

committed to the national programs (malaria) in the next implementation period that counts toward accessing the willingness-to-pay allocation from the Global Fund. Clearly specify the interventions or activities that are expected to be financed by the additional government resources and indicate how realization of these commitments will be tracked and reported.

c. Provide an assessment of the completeness and reliability of financial data reported, including any assumptions and caveats associated with the figures.

2-3 PAGES SUGGESTED

In order to scale up health interventions to reach the health-related Millennium Development Goals, donors and government have to increase their efforts to ensure adequate funding for health. At the current funding levels huge funding gaps are bound to arise. In order to mitigate the funding gap the government has been increasing the overall expenditure on health over the years, particularly in the past two. According to budget estimates for NHSP 2011–2015 there is anticipated 10% annual increment in government support toward health.

There has been a major achievement toward additional domestic funding with the policy decision by the GRZ to allocate US $24 million annually toward the procurement of anti-malaria commodities, namely ACTs and RDTs, beginning in 2013. This is a substantial increase from the roughly US $700,000 to US $800,000 annual domestic operating budget for the NMCP that had been available prior to 2013. Government funding to the NMCP in 2013 constituted 47% (US $24.8 million/US $52.8 million) of the total malaria financing for that year. Furthermore, the GRZ provides 5% to 8% of the funding for all roads and large capital projects toward the environmental impact assessment which indirectly benefits malaria control service delivery. In order to raise more funds the GRZ plans to increase domestic funding through the introduction of a National Social Health Insurance Scheme. Further government commitment toward increased health financing has been demonstrated through building 650 new health posts across the country.

Tracking of the committed funds will be done through the GRZ Expenditure Framework (Yellow Book) and the tracking of the commodities will be done through the supply and logistics management pipeline reports submitted by Medical Stores Limited to the Ministry of Health. In terms of reporting interventions and activities, the Midterm Expenditure framework (MTEF) reports provide information on funding and status of implementation of activities.

In terms of completeness and reliability of the financial data reported in this application, the GRZ Expenditure Framework (Yellow Book), MTEF, and National Health Account reports provide regular complete and reliable financial data in Zambia.

SECTION 3: FUNDING REQUEST TO THE GLOBAL FUND

This section details the request for funding and how the investment is strategically targeted to achieve greater impact on the disease and health systems**.** It requests an analysis of the key programmatic gaps, which forms the basis upon which the request is prioritized. The modular template (Table 3) organizes the request to clearly link the selected modules of interventions to the goals and objectives of the program, and associates these with indicators, targets, and costs.

3.1 Programmatic Gap Analysis

A programmatic gap analysis needs to be conducted for the three to six priority modules within the applicant's funding request.

Complete a programmatic gap table (Table 2) detailing the quantifiable priority modules within the applicant's funding request. Ensure that the coverage levels for the priority modules selected are consistent with the coverage targets in section D of the modular template (Table 3).

For any selected priority modules that are difficult to quantify (i.e. not service delivery modules), explain the gaps, the types of activities in place, the populations or groups involved, and the current funding sources and gaps.

1-2 PAGES SUGGESTED – ***only for modules that are difficult to quantify***

The five modules within our funding request are (1) vector control, (2) case management, (3) program management, (4) community system strengthening, and (5) monitoring and evaluation. Program areas covered under vector control (LLINs and IRS) and case management (diagnostics, antimalarial drugs, and integrated community case management) have been quantified and are presented in the gap analysis table (see Table 3) for currently ear-marked available resources. In this section we present a narrative description of the gaps, the types of activities, and the populations or groups involved in the program management and community systems strengthening modules. The current funding sources and gaps for these modules have been summarized in Table 4.

Table 4: Funding sources for program management and CSS

Funding sources	Program Management	CSS**
Government (GRZ)	1,950,000	-
Partners (UNICEF, PMI)	100,000	-
Total available support	**2,050,000**	**-**
Total Financial Need	**6,750,000**	**14,700,000**
Financial Gap	**4,700,000**	**14,700,000**

Program management: The activities included in the program management module are (1) policy, planning, coordination, and management, (2) supporting procurement and

supply management, (3) grant management, (4) human resource/technical assistance. The scope of impact of the funds invested in program management goes from national through provincial to district levels and partners to whom MoH and MCDMCH has an oversight obligation. Table 4 shows the available funding (US $2.05 million), the sources, and gap (US $4.7 million). These available funds come from GRZ budget allocation to administrative costs of NMCP (average US $550,000–$650,000 yearly). At MoH, the NMCP currently supports two senior technical personnel (one physician and one M&E expert) who are responsible for malaria grant management within the program management unit of the MoH. These personnel have been supported from existing GF funds and a request ($328,000 yearly) has been made in the Concept Note (from allocation) to sustain the support if these two positions. The 2013 Midterm Review (MTR) identified an inadequate number of essential technical personnel (due to high attrition) as a major challenge to NMCP in the discharge of its technical responsibilities and oversight roles. The revised budget for program management in response to the MTR observation makes provision for US $328,000 annually as human resource costs for technical assistance in key areas, namely data management and vector monitoring/research.

Monitoring and evaluation: The total funds that will be needed for M&E activities and procurement resources for 2015–2017 will be $15.9 million. The amount available is $10.7 million, leaving a financial gap of $5.8 million**.** Among the key activities plan in the M&E budget include support for HMIS (include capacity building in DHIS2), malaria indicator surveys (in 2015 and 2017), a quality of case management survey at community and facility levels (2016), and baseline and interval iCCM surveys (2015 and 2017).

Community system strengthening (CSS): CSS planned in this request will support the development of community level structures to support the implementation of malaria interventions, including the delivery of ITNs, IRS, and community case management. The main activities planned include capacity building of community institutions, leadership, community-based monitoring, and social mobilization. The strengthening of the Neighborhood Health Communities, including leveraging of local leaders including Chiefs and non-health related district authorities, for the advocacy, messaging, and malaria promotion will occur. These activities will target high disease burden communities in targeted areas for interventions and will be done to support the expansion of iCCM and continuous community LLIN distribution areas. The total cost (US $14,700,000) will be requested from GF indicative allocation (31%) and above allocation (69%).

***IEC/BCC*:** The Midterm review the Zambia NMSP 2011–2016 identified limited funding for consistent and sustained implementation of planned IEC/BCC activities as a major obstacle to the attainment of the behaviour change objectives of the NMCP BCC strategy.

The revised NMSP has allocated a budget of $8.2 million to IEC/BCC activities. It has not been possible to produce a comprehensive summary of the contributions made by government and collaborating partners toward IEC/BCC because these costs are often impeded in the cost of services that they IEC activity is meant to promote. One of the distinct contribution to IEC/BCC in Zambia is the US $2 million budgeted by PMI/USAID in 2014 toward the implementation of a wide range of national and community-level IEC/BCC activities to improve knowledge and uptake of malaria control and related service like ANC.

Funding gaps exist for several service-related activities included in this Concept Note, and provision for IEC/BCC has been made within each of the service-related modules, namely vector control and case management. For instance, the cost of IEC/BCC has been imbedded into the LLIN mass distribution campaigns to facilitate appropriate and regular use. Also IEC/BCC is a key component of iCCM. The implementation of the entire vector control interventions and those in case management require IEC/BCC, and create a financial gap which will be filled through budgeted funds received along with funding for these key interventions.

3.2 Applicant Funding Request

Provide a strategic overview of the applicant's funding request to the Global Fund, including both the proposed investment of the allocation amount and the request above this amount. Describe how it addresses the gaps and constraints described in questions 1, 2 and 3.1. If the Global Fund is supporting existing programs, explain how they will be adapted to maximize impact.

4-5 PAGES SUGGESTED

Strategic overview of request

Zambia requests Global Fund support for the period 2015–2017, representing the final two years of its current National Malaria Strategic Plan (NMSP) and a transitional year. The current NMSP prioritizes universal coverage of vector control through the use of mass ITN distribution campaigns (in 2013–2014) and targeted use of IRS which are expected to contribute to significant reductions in malaria. Substantial efforts are also directed toward expanding access to quality malaria case management at facility and in particular community levels through the expansion of iCCM to support the creations and expansion of malaria-free zones. Zambia's fifth Malaria Indicator Survey is scheduled for 2015, and will be followed by a Malaria Program Review leading to the development of the next strategic plan. This funding request builds on the progress made in increasing coverage of interventions and controlling malaria over the past decade, and is informed by an increasingly robust evidence base. The funding request expresses the critical projected funding required to sustain and expand the coverage and impact of Zambia's

malaria control efforts in high burden areas during this period.

Zambia's total estimated budget requirement for the remaining three years of the NMSP (2014–2016) is approximately US $283.3 million, of which US $192.9 million are required to fund the final two years, 2015–2016. Further, projecting the costs of the current strategy out through 2017, the total funding needs to meet the national targets for the period 2015–2017 is US $304.8 million. GRZ is committing US $85.5million of this cost, while other development partners, not including the Global Fund are providing US $82.7 million. The gap is US $136.5 million.

Currently available resources, particularly for ACTs and IRS, have been prioritized by the Government and partner resources. This reflects the strategic priority of mitigating the effects of resistance and the expansion of access to treatment services.

The GF allocation of US $51,490,180 will be allocated to pay for portions of the following interventions: vector control (LLINs for continuous and mass distribution channels, and entomologic monitoring), case management (diagnostics such as microscopy and RDTs, first-line antimalarial drugs such as ACTs, and expansion of iCCM), community system strengthening (including community-level HMIS support), health systems strengthening (procurement and supply management capacity), program management, and monitoring and evaluation. A summary of the indicative allocation and above allocation funding requests for the Zambia malaria Concept Note is presented in Table 5.**Table 5 Summary of funding (US$) request for Zambia Malaria GF Concept Note**

Modules	Allocation	% Alloca-tion	Above allocation	Full request	% full request
Vector control total • LLINs Campaign • LLINs Continuous • IRS • Entomologic monitoring	16,050,842	31%	24,897,389	40,948,226	**42%**
Case management • RDTs • ACTs • iCCM • Therapeutic efficacy monitoring	18,067,869	35%	12,080,000*	30,131,014	**31%**
Community systems strengthening**	4,550,000	9%	10,150,000	14,700,000	**15%**
Health Systems Strengthening – PSM**	2,296,578	4%		2,296,578	**2%**
Program management	4,736,074	9%		4,736,074	**5%**
Monitoring and evaluation	5,825,676	11%		5,825,678	**6%**
Grand Total	**51,527,039**	**100%**	**47,128,189**	**98,655,228**	**100%**

*Above allocation request under case management is for iCCM only.

** These allocations were not originally a part of the National Malaria Strategic Plan 2011–2016 budget calculations since these are cross-cutting. In order to match the above table with the NMSP 2011–2016 budget gaps, these amounts would be considered separately.

The prioritization of these interventions is based on the strategic objectives of the Zambia NMSP 2011–2016, namely:

- Attaining universal LLIN coverage through mass campaign and continuous distribution.
- Attaining efficient and effective use of IRS to mitigate insecticide resistance and reduce transmission in all targeted high burden districts and communities.
- Strengthening case management both at facility and community levels with emphasis on parasitological testing and confirmation, and increasing access to hard-to-reach communities through scale-up of iCCM.
- Sustaining control efforts and scaling up improved surveillance.
- Strengthening the program management capacity of the NMCP.

The GF indicative funding allocation of US $51,490,180 will pay for the following :

- 2.7 million LLINs to support the continuous distribution in targeted areas and leverage support for mass distribution in 2017. Together with other financing the NMCP should reach 74% of the national target in 2016.

- ACTs for 5.2 million malaria cases in mostly children under five (11%, 20%, and 13% of the full need in 2015, 2016, and 2017 respectively). Together with other financing the NMCP should reach 100% of the national target in these three years. The Government of Zambia and partners are currently providing nearly half the total needs for case management, including all the remaining needs for ACTs.

- Rapid diagnostic testing of 14.2 million fever cases representing 17%, 25%, and 29% of the national needs in 2015, 2016, and 2017 respectively. Together with other financing the NMCP should reach 100% of the national target in both of these years.

- Integrated community case management (iCCM) services for 662,500 under-five children without access to facility-based treatment in high burden areas of North-Western, Eastern, Muchinga, and Northern provinces representing 15%, 29%, and 28% of the national need in 2015, 2016, and 2017 respectively.

- US $4.5 million for planned interventions to strengthen community systems in areas were initial scale up of iCCM is planned, representing 45% of the national

target in 2015–2017.

- Provision of financial needs for planned activities and procurement of resources in the prioritized areas of program management (US $4,736,074), as well as monitoring and evaluation (US $5,825,678).
- A cross cutting investment of US $2,296,578 is requested for supply chain strengthening. If approved, the investment will support the operational cost of the 2 of the hubs for three years.

Over and above the allocated amount, the Global Fund is requested to consider the balance of the full estimated need for incentive funding and/or unfunded quality demand

- For 2017, when the next LLIN mass "top-up" campaign is planned, an unfunded shortfall remains of 6.0 million LLINs to meet the national mass distribution campaign and 1.3 LLINs for routine distribution during Years 2 and 3. The Concept Note is requesting US $17.1 million above the allocation to meet approximately two-thirds of the need for national (top-up) mass LLIN distribution campaign in 2017.
- In order to cover the gap in 2015–2017, US$ 6.5 million is being requested for routine LLIN distribution to vulnerable groups (infants and pregnant women through ANC and EPI) and continuous distribution through schools in rural high burden area to fully cover the continuous distribution gap in Years 2 and 3.
- Given GRZ and other donor funding commitments for IRS, a small above allocation requested gaps of US $1.2 million is being requested to meet this remaining gap; and thus provide spraying for the full NMCP target during 2017. The vast majority of the needs for IRS have been allocated through existing resources by government and partners, including the costs of more expensive insecticides for mitigating the effects of insecticide resistance.
- For iCCM, a gap of US $41 million (representing 78%, 69%, and 61% of national need) remains for 2015, 2016, and 2017 despite funding by GRZ and donors. Zambia is requesting for 30% of the pending gap (US $12.1 million) representing gaps for 2015 and 2016. The efforts of GRZ in partnership with the international iCCM financing task team to mobilize resources for iCCM in Zambia will seek to raise additional resources to fund the additional gap.
- The strengthening of community systems where iCCM is being implemented has a

gap of US $10. 2 million. Zambia is requesting this amount above the allocation to cover the remaining gap.

Details of proposed investment

Vector control

Zambia's vector control strategy is based on achieving sustained universal coverage of LLINs for all sleeping spaces, principally through periodic mass campaigns. The campaigns are complemented by strengthening continuous distribution through, schools, ante-natal consultations and through communities channels to avoid past swings in coverage at provincial that have results from gaps between mass campaigns. IRS is targeted at densely populated areas, areas with identified insecticide resistance, and areas with particularly high transmission. Given increasing evidence of insecticide resistance, strengthening entomological monitoring is essential to informing the targeting of these vector control interventions.

LLINs: This application assumes that the whole population is at risk of malaria, and is in line with the strategic decision to make universal coverage in Zones 1, 2, and 3 (excluding Zone 0) with LLIN the principal vector control intervention while IRS will be used only in targeted populations with vector resistance guided by epidemiological and entomological research evidence. The national target is to achieve universal coverage with effective LLINs at all times in targeted areas ensuring preferably one LLIN for each sleeping space or at least one LLIN for two persons.

LLIN mass campaigns: With support from the Global Fund and other partners, Zambia embarks on nationwide LLIN mass campaign in 2014 to ensure universal coverage is achieved in line with the national strategic objective. In order to sustain the population-wide protection achieved by the 2014 mass campaign, it will be necessary to conduct a nationwide LLIN distribution campaign in 2017 to replace these LLINs distributed in 2014, which will have become badly damaged, ineffective, or lost at that time. A total of US $33 million will be needed to procure and distribute 6.0 million LLINs during the 2017 mass campaign for targeted areas in Zones 1–3. While the Government of Zambia and partners will be expected to provide the LLINs required for continuous distribution in 2017, a major financial gap remains for the funding needed to procure LLINs and conduct the 2017 mass LLIN campaign.

Zambia requests in total the sum of US $22.3 million from the GF to support targeted mass LLIN campaign efforts in Zambia in 2017. US $5.2 million is being requested in direct allocation in support of the mass distribution and to kick-start the process of funding allocation amongst partners in order to leverage additional partner support.

***LLIN continuous distribution*:** The MTR identified limited channels for continuous distribution of LLINs between mass campaigns as a major reason for the nation's inability to sustain high LLIN coverage between campaigns. From 2015 to 2017, the total cost for providing LLINs for routine distribution to vulnerable groups (infants and pregnant women through ANC and EPI) and continuous distribution through schools in rural high burden areas will be US $38,329,450 million (annual average of US $12.8 million). The anticipated investment of the GRZ and PMI during this period will be approximately US $18.1 million representing 47% of the total cost for this intervention. The Concept Note makes a request for US $8.5 million from the allocation funding and $6.5 million from above allocation to cover the gap. LLINs for routine distribution leverages this GRZ investment. It is likely that the government will be amenable to make additional allocations from the yearly malaria budget to cover the gap in LLINs required for routine distribution in 2017 thus leaving the gap for LLIN need for mass campaign for which a request is made above allocation, from the GF incentive funds.

Indoor residual spraying (IRS): In order to mitigate insecticide resistance and improve the vector control impact of LLINs, the NMCP will add focal IRS to the LLIN coverage in high malaria burden areas (Zones 2 and 3). HMIS data indicates that there are some high transmission areas even within some of the low burden provinces. Most of the districts and communities to be covered by IRS are located in high burden provinces (North-Western, Luapula, Northern, Muchinga, and Eastern) while 20% are in moderate burden provinces (Copperbelt, Central, and Western), and about 10% in low burden provinces (Lusaka and Southern). These areas were chosen on the basis of epidemiological data and information on insecticide resistance. Pirimiphos-Methyl 300 CS (a relatively expensive organophosphate insecticide) has been chosen to mitigate the effects of vector resistance in affected areas.

Available domestic and other resources (from PMI, DfID, and the GRZ) will provide sufficient IRS coverage during years one and two of the Concept Note Grant. The above allocation amount requested for year three for IRS is meant to cover an anticipated gap among nearly 290,000 people during 2017.

Entomological monitoring: The sum of US $1,066,616 (average US $355,539 per year) will be requested from the indicative funding allocation for entomological monitoring and management insecticide resistance. Entomological monitoring for insecticide resistance in Zambia revealed high levels of DDT, pyrethroid, and carbamate resistance (see Figure 2). Extensive work on insecticide resistance monitoring is ongoing in Zambia supported by GRZ and PMI/USAID. The funds requested for entomological monitoring within the vector control module of the Concept Note will add to the support currently provided by GRZ and PMI toward this. It will particularly contribute to the implementation of the insecticide

resistance monitoring and management (IRM) plan. Zambia has developed an IRM plan for 2015–2017 to guide activities and investment in insecticide resistance monitoring (including strengthening sentinel sites, laboratory, insectary facilities, and human resources). Data obtained from the susceptibility testing will be fed into the national database and provide evidence for decision-making on IRS and LLIN implementation. The fund request will help ensure that these plans are effectively implemented.

Case Management

Zambia's case management strategy is based on achieving high levels of prompt and effective treatment of confirmed malaria cases. Continued expansion of the use of RDTs to confirm suspected malaria cases is essential, both at the facility and at community level. Quality assured ACTs, principally AL, are the first line treatment. Expansion of iCCM and the increased engagement of communities in the management of malaria are key elements in expanding access to quality case management. Zambia also continues to place a priority on monitoring the efficacy of the drugs being used.

Rapid diagnostic tests (RDTs): To increase the proportion of suspected malaria cases that receive a parasitological test, the country aims to procure 19.2 million RDTs in 2015, 19.7 million RDTs in 2016, and 20.9 million RDTs in 2017 at a cost of at a total cost of US $4.8 million, US $4.9 million, and US $5.2 million respectively. The Government and PMI will provide US $11.4 million to meet 76% of the RDT need leaving a gap of US $3.5 million (24%). This gap in funding will be met within the GF direct allocation in order to avoid stock-outs of RDT for facility-based and iCCM. These funds add up with the cost of procuring ACTs to give the funds requested under facility-based treatment in the case management module of the Concept Note modular template. No above indicative funding request was targeted for RDTs or ACTs in this application.

Antimalarial drugs: Based on adjusted consumption data derived from the Essential Medicines Logistics Improvement Program (EMLIP),[4] the treatment courses of AL required for 2015, 2016, and 2017 will be 12,923,242; 11,808,972; and 10,902,714 respectively. The GRZ and partners (PMI/USAID) will provide funding support for 11.4 million treatments in 2015 (89%) and 9.4 million each year in 2016 (80%) and 2017 (87%), leaving the gap of 1.4 million treatments in 2015, 2.3 million in 2016, and 1.4 million in 2017. The total cost of procuring all antimalarial treatments planned for 2015 to 2017 will be US $28.5 million with the Government and partners providing US $24.3 million (85%) leaving a funding gap of US $4.1 million (15%), which will be funded from

[4]EMLIP is a demand driven system in which individual health facilities submit monthly reports on consumption of commodities to their respective District Health Offices. ACT consumption for the country was extrapolated from data obtained in 27 EMPLIP Districts.

the GF indicative funding allocation to ensure that there are adequate ACTs for facility-based treatments and iCCM.

Integrated Community case management (iCCM): The national target population for iCCM implementation comprises under-five living in communities with limited access to facility-based healthcare. The funding need for full implementation of iCCM in target areas for 2015–2017 is US $49,983,884; available funding support from GRZ and partners is US $4,013,165 leaving a funding gap of US $45,970,719. A request for US $2,272,375 (for 2015), US $3,260,825 (2016), and US $1,976,900 (2017) is made from the direct funding allocation to target 132,500; 265,000; and 265,000 under-five children in most underserved areas of North-Western, Eastern, Muchinga, and Northern provinces. A request for US $12.1 million is made above allocation funding to further expand the iCCM service in 2015 (US $3.7 million); 2016 (US $5.2 million), and 2017 (US $3.2 million). Resources from GF will be used to leverage additional resources for iCCM to finance the remaining plans for expansion,

Therapeutic efficacy monitoring: A total of US $250,000 will be requested from the indicative funding allocation for therapeutic efficacy studies and surveillance activities. The planned therapeutic efficacy tests will study AL and the newly introduced ACT—dihydroartemisinin-piperaquine—using the standard in-vivo protocol of the WHO.

Community system strengthening

Several interventions included in the Zambia national malaria strategic plan require strong community institutions and systems to thrive. Of particular note, plans for integrated community case management (iCCM) require engaged communities for achieving care seeking and service delivery milestones, initiatives to sustain high community knowledge, ownership and use of LLINs as well as general need to improve health information at community level. During a recent discussion between the malaria control and the HIV/AIDS teams as part of the ongoing national dialogue for the development of the Zambia concept notes, both groups reached a consensus to include a request for funds to strengthen community systems in order to enhance the quality and coverage of service delivery at community level. To ensure widespread coverage of interventions at community level there is a need to improve the capacity of community institutions such as neighbourhood health committees, community-based organizations, and community health workers to collect, report, and use health information. These latter activities will be used to expand the community-level HMIS, building off of the nascent community HMIS efforts started through CHAs and CHWs systems already operating. This request is therefore expected to impact positively on the quality and scope of service delivery as

well as monitoring and evaluation for the three diseases.

The request for CSS is a US $14.7 million of which US $4.6 million is made from the indicative allocation while US $10.1 million request is made from above allocation. The funds requested from the allocation fund will be used to implement activities in the districts target for immediate scale-up of iCCM and community-based continuous distribution of LLINs. The above indicative funding will need to achieve the full objective in all the areas planned with a view to supporting community-based services for malaria, HIV, and TB control among other community interventions in the health sector.

Cross cutting health systems strengthening – supply chain strengthening

Medical Stores Limited (MSL) is mandated to store and distribute pharmaceutical and medical supplies. With the growth in ART, tuberculosis, malaria, and other programs, storage space has become a major constraint. In response, the GRZ and partners have drafted the National Supply Chain Strategy to address supply chain challenges and adopted a new distribution strategy based on the establishment of six storage and distribution hubs and seven staging posts to enable last mile delivery to target service delivery points. Pending the full implementation the central medical store is running beyond maximum capacity and the USG is paying for temporary warehouse space (a Global Fund grant has done the same in the past), a situation that represents a risk to supply chain security. The long term security of the chain requires construction of storage facilities in all regions.

Three hubs are currently operational in Southern, Eastern, and Western Provinces from leased facilities with support from SIDA. The plan and financing to turn these into permanent structures is underway and expected to be funded by GRZ in 2015.

The cost of the construction of the three remaining hubs is US $9 million to which USG has committed US $3 million and DFID has committed US $600,000 to pay for the building and equipping of two of the three remaining hubs, Phase 2 works.

The request in the Concept Note includes US $2.9 million in direct allocation for operational costs of maintaining 2 regional hubs for three years.

Program management

The total funding request for program management (2015–2017) is US $4,736,074. The activities included under the module and the allocated funds are: (a) policy, coordination and administration (US $2,607,572); (b) support for procurement and supply management (US $718,502); (c) grant management and technical assistance to fill critical human

resource gaps in NMCC, namely entomologist and epidemiologist/statistician (US $1,410,000).

Monitoring and evaluation

The total sum of US $5.8 million is requested for monitoring and evaluation from the indicative fund allocation. This will be predominantly invested in supporting sector-wide efforts to strengthen the national health management information systems (US $3.7 million) both at national and subnational levels. The funds will also support malaria indicator survey (2017) as well as a quality of malaria case management at community and facility level survey in 2016. A further direct allocation amount of US $2.3 million is included under strengthen community systems for development of the community-level HMIS.

3.3 Modular Template

Complete the modular template (Table 3). To accompany the modular template, for both the allocation amount and the request above this amount, briefly:

a. Explain the rationale for the selection and prioritization of modules and interventions.

b. Describe the expected impact and outcomes, referring to evidence of effectiveness of the interventions being proposed. Highlight the additional gains expected from the funding requested above the allocation amount.

3-4 PAGES SUGGESTED

a. Rationale for the selection and prioritization of modules and interventions

The selection and prioritization of modules was guided by the priorities of the revised Zambia NMSP (2011–2016).

Vector control module

LLIN mass campaign: An LLIN mass campaign in 2017 will ensure sustained universal LLIN coverage for six years (2014–2020); failing to do so could lead to decline of effective coverage by at least 50%, since over half of the LLINs distributed are likely to become ineffective. It is expected that with effective IEC/BCC, LLIN use during this period will reach the national target of 80%. With LLIN use at 80% or higher (augmented by IRS serving to mitigate effect of vector resistance in target locations), malaria transmission is likely to decline to pre-elimination levels in many (if not all) districts in Zambia. It is likely that 2017 may be the last time Zambia will require a nationwide mass LLIN campaign since it is envisaged that continuous LLIN distribution will be scaled up and sustained at such high levels (with a push and pull system) at community level, health facility level, and at schools to make mass LLIN campaigns unnecessary by 2020 when Zambia will have been due for another of mass campaign after 2017.

Routine/continuous distribution**:** This will provide LLINs to protect infants and pregnant women (9% of population). Prevention of low birth weight, maternal anaemia, and severe anaemia in infants are some of the proven benefits of using LLINs in addition to reducing the incidence of clinical malaria. Continuous distribution of LLINs through schools and other community channels will sustain high coverage in between campaigns.

IRS: The Concept Note is only asking for a small amount of IRS support in above allocation due to the commitment by GRZ and PMI which is nearly sufficient to address the gaps. Given the high level of insecticide resistance in Zambia, using IRS in the same areas with LLINs has become necessary for mitigation of vector resistance. The current effort to prioritize areas where vector resistance co-exists with high malaria burden will also help to markedly reduce infection in these areas and prevent malaria deaths. The

funds requested along with resources from GRZ and partners will help achieve national IRS targets for 2015–2017.

Resistance monitoring and management: The effectiveness of the LLINs and IRS depends on the susceptibility of the vectors to the insecticides. The emergence and spread of vector resistance to commonly used insecticides (including pyrethroids, which are the only insecticides used in all WHO-approved LLINs) necessitates careful monitoring with timely action to mitigate resistance where it exists. A request is made in the Concept Note to support this essential activity.

Case management module

Appropriate treatment with an ACT is dependent on sufficient ACT procurement and a supply chain system that can ensure timely delivery of the commodity to the facility in the required amounts. A request is made in this Concept Note (within the indicative allocation) for resources to sustain high-quality, facility-based treatment (including RDTs, ACTs, IEC/BCC, training, and supervision). The logistic and supply chain management issues related to malaria commodities will also be supported through a request made under the program management module.

Facility-based treatment in Zambia has been improving. The request for RDTs and ACTs along with GRZ and partner support will help achieve national target of 100% testing at facility level and zero stock out for ACTs and RDTs. The challenge posed by limited access to segments of the populace in hard-to-reach areas is being addressed by iCCM and community system strengthening requests.

The case management strategy in Zambia includes iCCM--implemented through MCDMCH-MOH with partner support through trained community health workers and community health assistants—with the target population being rural communities with limited access to health facilities. The need to provide community level case management through iCCM is more urgent in districts where the number of malaria infection has remained high or worsened. Expanding iCCM will greatly improve access to health care including malaria and prevent malaria deaths. The request for funds and resources to expand iCCM for impact in North-Western, Eastern, Muchinga, and Northern provinces is within the indicative allocation.

b. Expected impact and outcomes

Vector control module

LLIN: Zambia has made gains in malaria control and lost some of these (shown in Figure 1 of this document) largely due to the failure to sustain investment in vector control and the

emergence of insecticide resistance. Provision of the required resources to achieve and sustain universal LLIN coverage to rapidly bring down disease burden in areas with the highest infection rates will prevent more malaria deaths and sustain coverage through to pre-elimination by the next planning phase. Providing adequate funding for the planned supply of LLINs for routine distribution and mass campaign will have a definite impact achieving universal access, and increase the use for LLINs from the current level (of 57%, 58%, and 49% for under-five children, pregnant women, and all household members respectively) to the national target of 80% by 2017 (MIS 2012). Key to sustaining high coverage levels will be efficient linkages between expanding continuous and the planned mass distribution in 2017.

Case management module

Diagnostics (RDTs): Currently, only 57% of malaria cases reported by HMIS are tested (HMIS 2012). Also, only 23% of children with fever received finger or heel prick for test (MIS 2012). Funds requested for malaria diagnostics (RDTs) will help Zambia to achieve the national target (>80%) and move toward universal testing. This will improve the quality of care and also help track the burden of malaria infection.

Prompt access to treatment (ACTs): Ensuring every suspected malaria case is confirmed with a diagnostic test and treated with ACTs will ensure cure and prevent progression to severe or fatal malaria. iCCM will improve access to early diagnosis and treatment of malaria, leading to fewer cases of severe malaria and death. It will also improve quality and access to treatment of other childhood illnesses like pneumonia, diarrhoea, and malnutrition. Supporting iCCM will have a far-reaching positive impact across these diseases and improve child survival. With particular reference to malaria, the proportion of under-five children receiving treatment with ACT from a community health worker will increase from current level of 8.5% to over 60% by 2016 as planned in the Zambia NMSP 2012–2016.

Program management module

Efficient coordination and supervision of planned activities in a multi-donor, multi-partner, multi-intervention environment is essential for the attainment of program goals and objectives. The request will enable the sound administrative and financial management of the grant within the principal recipients' administrative structures and through the strengthened Program Management Unit (PMU). Within the NMCP coordination structure, the request will support the established processes of convening Technical Working Groups for intervention and issue specific coordination, as well as planning processes for annual implementation and for the transition and development of the next National Malaria Strategic Plan. The request will strengthen the logistic and human resource capacity of the NMCP, Ministry of Health, and MCDMCH to deliver on the planned activities. There has

been an additional effort in this request to strengthen the capacity of provincial and district authorities to effectively discharge their oversight and supervisory roles in all areas of program activities.

3.4 Focus on Key Populations and/or Highest-impact Interventions

This question is <u>not</u> applicable for low-income countries.

Describe whether the focus of the funding request meets the Global Fund's Eligibility and Counterpart Financing Policy requirements as listed below:

a. If the applicant is a lower-middle-income country, describe how the funding request focuses at least 50 percent of the budget on underserved and key populations and/or highest-impact interventions.
b. If the applicant is an upper-middle-income country, describe how the funding request focuses 100 percent of the budget on underserved and key populations and/or highest-impact interventions.

Zambia is a lower-middle-income country and therefore required to ensure that at least 50% of funds requested for in this Concept Note will address the needs of underserved populations and key populations, and that the interventions planned will achieve the high impact.

Underserved and key populations: The focus of the Zambia National Malaria Strategic Plan is to attain and sustain universal LLIN coverage through the mass LLIN distribution campaign since everyone is at risk of infection. The previous rolling nature (staggered) of LLIN distribution often left pockets of communities uncovered with such gaps leading to unequal coverage as reflected by results of successive malaria indicator surveys. This has been resolved by adopting a uniform, nationwide mass campaign with extensive logistic planning to ensure that no community or household is left out. A large percentage of the funding being requested for LLINs will be for a nationwide mass campaign which will ensure that all populations are served at about the same period.

Limited access to malaria case management: There is evidence that up to 50% of the Zambian population (especially those in rural areas) have limited access to facility-based health care. To address this with respect to malaria and other common causes of childhood mortality, iCCM is being scaled up across the country targeting the underserved areas. Funding requests for iCCM will target specifically these underserved populations.

Over 80% of the funds requested will be invested in four high impact interventions, namely LLIN, IRS, and iCCM, as well as facility-based diagnosis and treatment and will take steps

to reach all communities and population groups. This therefore fulfils the requirement to ensure that the requested funds will reach key and underserved populations with high impact interventions.

SECTION 4: IMPLEMENTATION ARRANGEMENTS AND RISK ASSESSMENT

4.1 Overview of Implementation Arrangements

Provide an overview of the proposed implementation arrangements for the funding request. In the response, describe:

a. If applicable, the reason why the proposed implementation arrangement does not reflect a dual-track financing arrangement (i.e. both government and non-government sector Principal Recipient(s).

b. If more than one Principal Recipient is nominated, how coordination will occur between Principal Recipients.

c. The type of sub-recipient management arrangements likely to be put into place and whether sub-recipients have been identified.

d. How coordination will occur between each nominated Principal Recipient and its respective sub-recipients.

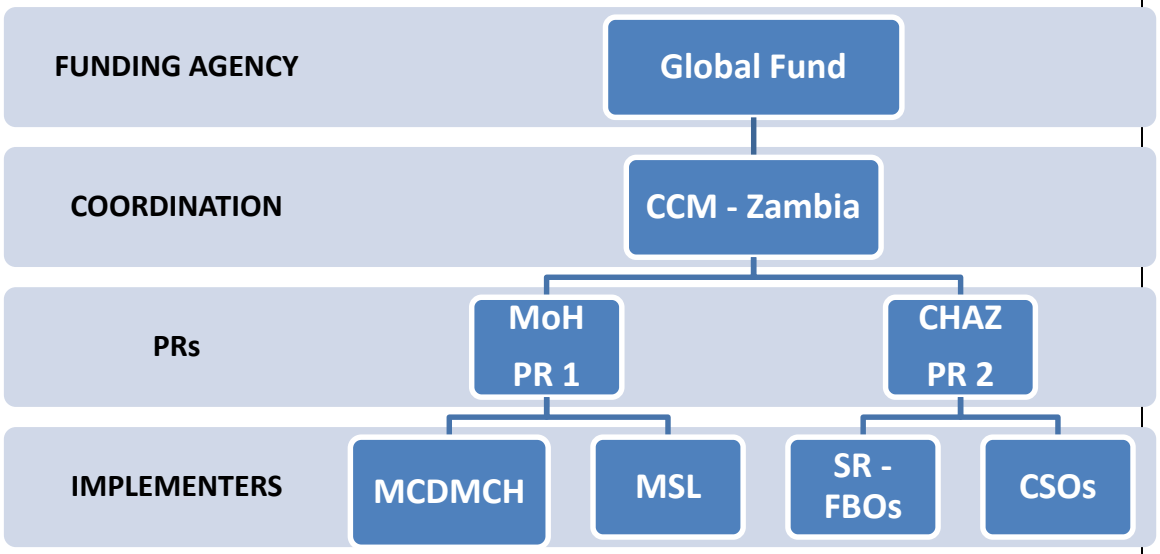
e. How representatives of women's organizations, people living with the three diseases, and other key affected populations will actively participate in the implementation of this funding request.

1-2 PAGES SUGGESTED

a. Dual track financing arrangements

The Country Coordinating Mechanism (CCM) has nominated the Ministry of Health (MoH) and Churches Health Association of Zambia (CHAZ) as the Principal Recipients (PRs). The grant will be split as 65% MoH and 35% CHAZ. The dual track financing will ensure absorptive capacity, efficiencies and effectiveness of program implementation based on experience and reach of the two PRs. The MoH will focus on working with Ministry of Community Development, Mother and Child Health and Medical Stores Limited while CHAZ will focus on faith based organisation hospitals, civil society organisations, and private sector such as the mine hospitals. This extended reach will in turn result in reaching out to community based organisations. This will be in line with dual track financing that will ensure the joint country response is achieved. Figure 9 below depicts the flow of funds from GF to sub-sub recipients.

Figure 9. Flow of funds from GF



b. Coordination between PRs

The CCM oversees the management of grants from Concept Note development, to grant disbursement ready grants. The CCM ensures that GF resources are being used accountably, efficiently and effectively for the benefit of the country. The CCM provides strategic direction to the PRs and ensures that the PRs comply with oversight recommendations and requested corrective actions.

How coordination occurs between the PRs and the CCM

The CCM has three subcommittees: Oversight, the Strategic Planning and Investments Committee, and the Executive Committee. The CCM coordinates the PRs through these structures, which also functions as a forum for dialogue between the CCM and the PRs. These subcommittees produce reports outlining their progress, challenges and programmatic information relevant to CCM strategic planning. These reports are presented to the CCM, which provides feedback and strategic direction as necessary.

Coordination among PRs

In addition to the CCM subcommittees, the PRs also have various structures through which they coordinate their actions. Membership of the theme groups is drawn from sectoral institutions based on mandates, interests, and technical expertise.

PRs also meet to review the national progress and to coordinate among themselves. The PRs meet regularly to discuss procurement needs, to forecast requirements, to work out logistical arrangements, to share lists of potential sub-recipients (SRs) to ensure that no double funding occurs, to share reporting formats, to align processes and procedures and

discuss program challenges. The PRs also routinely communicate with each other to ensure that they are able to respond effectively to challenges that arise. Where gaps arise, PRs work together to ensure that the needs of the national response are met.

The MoH has a memorandum of understanding (MOU) with CHAZ that further provides for coordination platforms between the two PRs and information and resources are shared across. The two PRs from government and non-governmental sectors have enhanced the public-private partnership approach through sharing of pharmaceutical drugs and medicines with the private sector and coordinating training and monitoring and evaluation. They have also signed MOUs with various partners and SRs regarding the delivery of the health service and in particular HIV and AIDS services.

Coordination of SRs by PRs

Each PR has its own SR coordination mechanism and set of work plans, which are aligned with the NMSP.

The PRs and SRs are an integral part of the monitoring and evaluation system. CHAZ is not only a PR but is also a coordinating body in its own right, while the Ministry of Health has put in place a functioning Program Management Unit to strengthen the relationship with its SRs. The PRs have developed their own monitoring and evaluation frameworks and have recruited monitoring and evaluation, grants and compliance staff who will work closely with the SRs coordinating the implementation of their grant agreements.

c. SR management arrangements and…

d. Coordination

The sub recipients will serve under both PRs as highlighted in section a. The Ministry of Health will have two SRs in place, MSL and MCDMCH. Medical Stores Limited (MSL) will be responsible for Storage and distribution of commodities for all three diseases. MSL will focus on warehousing and distribution of pharmaceuticals to the service-delivery points (SDPs). The health sector is led and coordinated by two ministries, the Ministry of Health (MoH) and MCDMCH.

The mandate of MoH includes:

- Planning, health policy and guidelines.
- Delivery of health services at second- and third-level hospitals and training institutions.
- Surveillance, disease control and research.
- Infrastructure and medical equipment, drug supply, logistics and other medical commodities.
- National and provincial coordination.

The MCDMCH responsibilities include the following:

- Primary health care service delivery.
- Implementation of health activities at district, health center, health post, and community levels.
- Supervision at district, health center, health post, and community levels.
- District and community coordination.

The National Malaria Control Programme (NMCP) consists of MoH and MCDMCH. The National Malaria Control Centre (NMMC) is a unit in the MoH under the Directorate of Disease Control, Surveillance and Research (DCSR) that coordinates malaria prevention and control activities throughout the country. There is a malaria unit under the Department of Mother and Child Health within the MCDMCH. The malaria program is the overarching term that describes the national efforts including the Government and partners to control malaria.

The NMCP is responsible for malaria policy, guidelines, national and provincial coordination, surveillance, monitoring and evaluation, research, procurement and resource mobilization. NMCP provides technical support at national, provincial and district level. Provincial Health Offices serve as an extension of the MOH/NMCC and provides leadership and coordination at the provincial and district levels.

The malaria unit under MCDMCH has the responsibility to implement IRS, ITN distribution and malaria case management at level 1 hospitals, health centers, and community levels through the District Community Medical Offices (DCMO). Additional responsibilities include supervision at district, health center, health post, and community levels and district and community coordination. The DCMO provides overall planning, coordination, and monitoring of malaria activities within their districts.

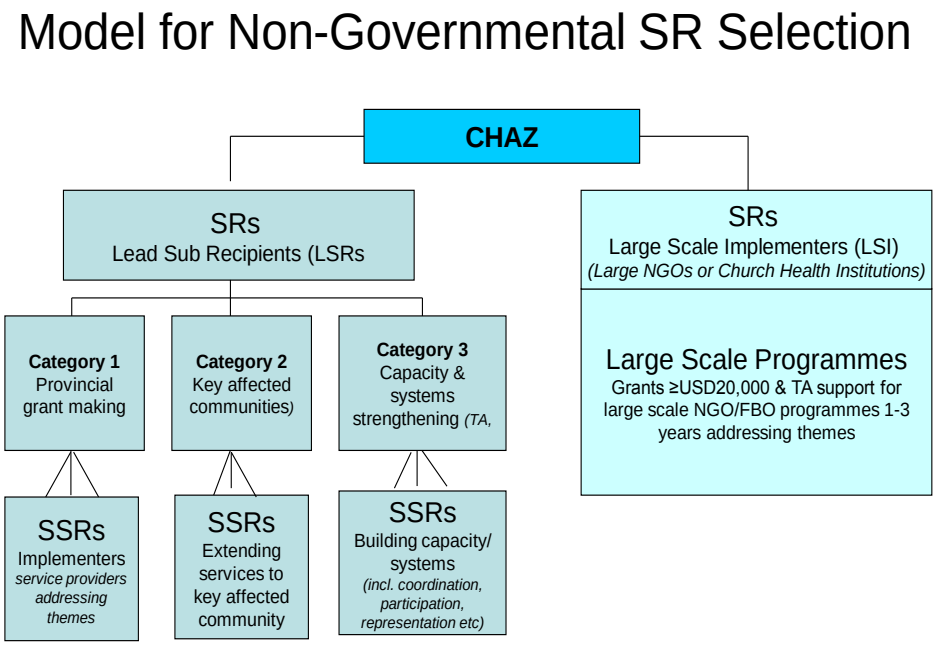
The NMCC and malaria unit under MCDMCH collaborate and coordinate planning, implementation and monitoring of activities as well as meet to agree on required resources as allocated by the Ministry of Finance and cooperating partners including Global Fund.

Under CHAZ, while the majority of SRs have been identified, an ongoing process exists to identify and assess others. CHAZ currently has 110 sub-recipients operating on its existing single stream financing grant that include faith-based organizations (FBOs), nongovernmental organizations (NGOs), private sector, quasi government, and line ministries. The number of SRs under CHAZ is expected to reduce for this application, with the quasi-government and line ministry SRs going back to MoH, CHAZ will focus on FBOs, NGOs and the private sector implementers. This will ensure the PR is more

effective and focused toward the high impact areas identified. CHAZ has an SR accountability framework that requires detailed grant agreements to be signed between PR and SR and has adequate implementation arrangements in place that include guidance manuals on CHWs and standard operating procedures on implementation, reporting and risk management.

However, in keeping with efforts to strengthen community systems and mechanisms for disbursing accountable grants to the non-governmental sector, CHAZ will maintain its funding model to identify any new SRs that will demonstrate efficiencies and focus toward program goals. Figure 10 below highlights the CHAZ funding model approach that ensures targeted geographical coverage, key affected populations and capacity building to organizations and people in need.

Figure 10: Sub recipients under CHAZ



Category 1 SR: Provincial grant making: In order for targeted financial resources to reach hard to reach provinces in the country, SRs that are identified should have an established provincial presence to ensure geographical spread with evidence of key stakeholder support, i.e., civil society organizations (CSOs)/FBOs that will receive support through these SRs.

Category 2 SR: Sub-granting to key affected communities (KAC): Eligible organizations

under this category should have a strong historical relationship with named KAC—evidence of stakeholder support—and a history of grant management and disbursement of accountable grants.

Category 3 SR: Capacity/systems strengthening: SRs to provide capacity and systems strengthening to sub-sub recipients should have a strong history of assessing and addressing capacity development and systems strengthening needs at strategic, operational, national and sub-national or decentralized levels. They should have a strong history of grant management and transparent disbursement of accountable grants.

Large scale implementers: These will be large scale NGO or health facilities with an established health centre providing primary health care. The health facility will have an existing treatment program and a specified catchment population falling with the national health public system.

e. Active participation of representatives of women organizations, people living with the two diseases and other key populations

Participation of all active groups is first guaranteed from the CCM representation where women organizations, people living with or affected by the diseases, and other key populations are represented. Additionally the key affected groups participate in strategic planning, priority identification, program design and implementation. CHAZ currently supports various organizations that include Non-Governmental Coordinating Council (NGOCC) that is a women-based coordinating council for all women-affiliated NGOs. CHAZ will continue to implement programs through some of these key groups in the NFM.

4.2 Ensuring Implementation Efficiencies

Complete this question only if the Country Coordinating Mechanism (CCM) is overseeing other Global Fund grants.

Describe how the funding requested links to existing Global Fund grants or other funding requests being submitted by the CCM.

In particular, from a program management perspective, explain how this request complements (and does not duplicate) any human resources, training, monitoring and evaluation, and supervision activities.

1 PAGE SUGGESTED

At the moment there are two Global Fund grants running under both UNDP and CHAZ, and Transitional Funding under Malaria Round 7. This proposal will complement the current grants through the following ways.

Sustaining coverage and impact

The existing Global Fund grant (TFM) has provided essential commodities for malaria

control. The Concept Note will augment these resources for sustaining coverage according to the NMSP targets and goals.

Monitoring and Evaluation

Global Fund resources are strengthening existing systems within Zambia, including the HMIS and procurements and supply chain systems. For example, under the current Global Fund grant (TFM), the Ministry of Health has upgraded the district information system to a web-based version (DHIS 2.0). In view of this development the NMCP will embark on training district information officers in the operation of the new DHIS which will be funded through this funding request.

Planning and Supportive Supervision

Currently the supervision of health centre staff and community health workers is weak. The NMCP plans to strengthen support supervision to ensure adherence to treatment protocols and improvement in management of supplies.

4.3 Minimum Standards for Principal Recipient (PR) and Program Delivery

Complete the table below for each nominated PR. For more information on Minimum Standards refer to the Concept Note Instructions.

PR 1 Name	**MoH**	**Sector**	**Gov't**
Does this PR currently manage a Global Fund grant(s) for this disease component or a stand-alone cross-cutting HSS grant(s)?		☐Yes ☑ **No**	
Minimum Standards		**CCM assessment**	
1. The Principal Recipient demonstrates effective management structures and planning		YES. The PR was given a B2 rating for this requirement because the PR has strong Management Systems/Structures and processes in place built with the Global Fund assistance, and is working. These are demonstrated through existing infrastructure capacity, competent technical staff, robust systems such as the M&E, financial, procurement, risk management, and the supply chain.	
2. The Principal Recipient has the capacity and systems for effective management and oversight of Sub-Recipients (and relevant Sub-Sub-Recipients)		YES. The PR was scored with a B2 rating under this requirement. Two SR's are proposed, that is MCDMCH and Medical Stores Limited (MSL). MSL will be responsible for storage and distribution of medical products. MCDMCH will be responsible for program implementation at District and Community level.	

	MoH has rolled out updated HMIS to all sites at district and provincials levels, including sites that are under MCDMCH. MoH also has a country-wide coverage of M & E systems.
3. There is no conflict-of-interest for the selection of the Principal Recipient(s) and Sub-Recipients	NO. The PR was scored with a B1 rating under this requirement because, though MSL and MCDMCH structures are all interconnected with MOH and fall under the Government of the Republic of Zambia, both MCDMCH and MSL will be operating as SRs under grant agreement arrangement. Conflict of Interest will have to be managed in such a manner that Government cannot compromise the implementation of the grant activities.
4. The program-implementation plan provided in the Concept Note is sound	This requirement was not rated by the CCM because the Concept Note(s) was not ready at the time of the assessment. However, the program implementation plan is in place and is sound (Ref. Section #... of the concept note).
5. The internal control system of the Principal Recipient is effective to prevent and detect misuse or fraud	YES. The PR was scored with an A2 rating under this requirement because its internal control systems are in place and are working. Compliance is demonstrated through the use of the use of Navision and the country-wide established internal and external audit system from which the NFM grant will benefit.
6. The financial management system of the Principal Recipient is effective and accurate	YES. The PR was scored with an A2 rating under this requirement because the PR has strong financial systems in place, and underwent Global Fund capacity building to manage grants. The PR has also deployed an accounting package called Navision country-wide, and has trained all finance staff in Navision programming. The financial policies/procedures manual was also completed.
7. Central warehousing and regional warehouse have capacity, and are aligned with good storage practices to ensure adequate condition, integrity and security of health products	YES. The PR was scored with a B1 rating under this requirement because the PR has the biggest centralized warehouse in the country managed by MSL under contract. The PR has recently opened warehouse hubs in Choma and Chipata under MSL

	and plans to open more in other provincial headquarters.
8. The distribution systems and transportation arrangements are efficient to ensure continued and secured supply of health products to end users to avoid treatment / program disruptions	YES. The PR was scored with a B1 rating under this requirement because the PR candidate has logistical management systems and Procurement Supply Chain Management policies in place. Though transportation infrastructure is in place, MOH needs a new fleet to complement the existing old fleet.
9. Data-collection capacity and tools are in place to monitor program performance	YES. The PR was scored with a B1 rating under this requirement because the PR has an updated Health Management Information System (HMIS) in place which has defined relevant indictors used to routinely monitor interventions and the targets presented in various program Performance Frameworks (PF).
10. Implementers have capacity to comply with quality requirements and to monitor product quality throughout the in-country supply chain	YES. The PR was scored with an A2 rating under this requirement because the quality assurance plan is in place, and was reviewed and approved by Zambia Medicines Regulatory Authority (ZAMRA). In addition, the PR has commenced a sampling process along the supply chain.
11. A functional routine reporting system with reasonable coverage is in place to report program performance timely and accurately	YES. The PR was scored with a B1 rating under this requirement because the PR has rolled out DHIS and HMIS in all the 10 provinces of Zambia. The 3 disease programs are included in the DHIS and HMIS systems for reporting.
12. The CCM actively oversees the implementation of the grant, and intervenes where appropriate	This requirement was not rated by the panelists because this responsibility falls under the CCM. More comments on this section can be found in the PR Assessment report.

PR 2 Name	**CHAZ**	**Sector**	**FBO**
Does this PR currently manage a Global Fund grant(s) for this disease component or a stand-alone cross-cutting HSS grant(s)?		☑Yes ☐No	
Minimum Standards		**CCM assessment**	
1. The Principal Recipient demonstrates effective management structures and planning		YES. The PR was given an A2 rating for this requirement because the PR has well established working country-wide	

	management structures in place and this is demonstrated in the management of 110 Sub recipient (SR).
2. The Principal Recipient has the capacity and systems for effective management and oversight of Sub-Recipients (and relevant Sub-Sub-Recipients)	YES. The PR was scored with a B1 rating under this requirement because the PR currently has capacity to manage 110 SRs. The PR has also increased coverage of M & E staff from 4 provinces to 8 provinces. •The PR also has technical staff at provincial and district level to monitor SR grant performance.
3. There is no conflict-of-interest for the selection of the Principal Recipient(s) and Sub-Recipients	NO. The PR was scored with a B1 rating under this requirement because, although the PR membership is mainly FBOs, the SR candidacy is open to non-FBO Civil Society Organization (CSO) and Government ministries. The proportion of FBOs against non-FBOs in SR selection is reasonable. The SR's were selected through an open tender advertisement placed in local print media for at least 4 weeks, and the last CSO's SR selection process was conducted by a Consultant provided by UNAIDS.
4. The program-implementation plan provided in the Concept Note is sound	This requirement was not rated by the CCM because the Concept Note(s) was not ready at the time of the assessment. However, the program implementation plan is in place and is sound
5. The internal control system of the Principal Recipient is effective to prevent and detect misuse or fraud.	YES. The PR was scored with an A2 rating under this requirement because the PR has an effective audit department in place and has strong and working internal control systems.
6. The financial management system of the Principal Recipient is effective and accurate	YES. The PR was scored with a B1 rating under this requirement because the PR has strong control systems in place and is working. The PR indicated very strong commitment to secure both Global Fund and other partners grant funds and demonstrated strong financial management systems.
7. Central warehousing and regional warehouse have capacity, and are aligned with good storage practices to ensure adequate condition, integrity and security of health products	YES. The PR was scored with a B1 rating under this requirement because the PR has an adequate central warehousing facility that meets the required standards. Central warehousing complements Government's

	warehousing system at the Medical Stores Limited (MSL).
8. The distribution systems and transportation arrangements are efficient to ensure continued and secured supply of health products to end users to avoid treatment / program disruptions	YES. The PR was scored with a B1 rating under this requirement because the transportation and distribution system is in place. However, there is need to purchase a new fleet of delivery vehicles to facilitate effective distribution of supplies.
9. Data-collection capacity and tools are in place to monitor program performance	YES. The PR was scored with a B1 rating under this requirement because the PR has a good M & E and program performance plan and system in place for grant monitoring from central to sub-national level.
10. Implementers have capacity to comply with quality requirements and to monitor product quality throughout the in-country supply chain.	YES**.** The PR was scored with a B1 rating under this requirement because, the PR has strong quality assurance systems in place and they collect product samples at delivery points before distribution to clients.
11. A functional routine reporting system with reasonable coverage is in place to report program performance timely and accurately	This requirement was not rated because this responsibility solely fell under the Ministry of Health (MOH), which is the custodian of the Country's Health Management Information System (HMIS).
12. The CCM actively oversees the implementation of the grant, and intervenes where appropriate	This requirement was not rated by the panelists because this responsibility falls under the CCM. More comments on this section can be found in the PR Assessment report.

4.4 Current or Anticipated Risks to Program Delivery and Principal Recipient(s) Performance
a. With reference to the portfolio analysis, describe any major risks in the country and implementation environment that might negatively affect the performance of the proposed interventions including external risks, Principal Recipient and key implementers' capacity, and past and current performance issues. b. Describe the proposed risk-mitigation measures (including technical assistance) included in the funding request.
1-2 PAGES SUGGESTED **Analysis of Risks and Proposed Mitigation**

Implementation of activities under the NMCP will be subject to several risks which will require timely and appropriate mitigation. The table below presents analysis of possible risks and proposes mitigation.

Risk Rating	Risk Description	Proposed Mitigation Measures
Low	Program management: ▪ The responsibility for managing the NMCP is now shared between two ministries; the MoH and MCDMCH. The MoH will transfer the management of some NMCP functions to the MCDMCH.	▪ A strategic plan to manage the transition period will be developed by the two ministries. The plan will also clearly articulate the roles and responsibilities of each ministry in the NMCP.
High	Human resources: ▪ Inadequate number of technical staff at NMCP ▪ CHWs not enough for iCCM scale up.	▪ The Ministry of Health has developed a National Human Resources for Health Strategic Plan (NHRHSP) 2011–2015 aimed at addressing the human resources crisis in the health sector. The NMCP and partners will use the NHRHSP as a basis for improving staffing levels at NMCP. ▪ The NMCP will engage the Child Health Unit in the MCDMCH and partners to pool resources for scale up of iCCM.
High	Financing: ▪ Inadequate funding to the health sector	▪ The MoH and other stakeholders in the health sector including the Parliamentary Committee on Health will advocate for the increased allocation of resources to the health sector by the Government of Zambia in order to achieve the Abuja Target of 15%. ▪ The MoH is currently developing a national health financing strategy that will help mitigate the inadequate funding to the sector.
High	Procurement issues: ▪ Delays in procurement of malaria commodities by the MoH and partners resulting in unexpected stock-outs.	▪ The NMCP will establish a procurement supply management (PSM) TWG to coordinate and monitor procurement of malaria commodities. All key partners will be part of the PSM TWG.
Low	Political stability: ▪ Zambia will hold national presidential,	▪ Zambia has remained stable since independence and conducted peaceful free and

	parliamentary and local government elections in 2016.	fair multi-party elections that have seen five changes of government since 1991.
High	Decreased durability of ITN: ▪ Recent research reports show that nets may not last for 36 months as manufacturers suggest. This may require that nets be replaced at 12–24 months intervals, increasing the cost of the ITN program by 1/3 to 2/3.	▪ The NMCP will conduct operations research on the durability of different types of LLINs to guide future procurement recommendations.
High	Vector resistance to insecticides: • Emergence and spread of malaria vector resistance to commonly used insecticides (namely pyrethroids, DDT and carbamates) has potential to diminish the effectiveness of IRS or ITNs.	• The NMCP and partners will implement a well-coordinated and intensive surveillance system to collect insecticide resistance data for informed response. Clearly articulated resistance mitigation plans will be developed to response to inform to this challenge. This may result in increased funding requirements for IRS.

CORE TABLES, CCM ELIGIBILITY AND ENDORSEMENT OF THE CONCEPT NOTE

Before submitting the concept note, ensure that all the core tables, CCM eligibility and endorsement of the concept note shown below have been filled in using the online grant management platform or, in exceptional cases, attached to the application using the offline templates provided. These documents can only be submitted by email if the applicant receives Secretariat permission to do so.

☒ Table 1: Financial Gap Analysis and Counterpart Financing Table

☒ Table 2: Programmatic Gap Table(s)

☒ Table 3: Modular Template

☒ Table 4: List of Abbreviations and Annexes

☒ CCM Eligibility Requirements

☒ CCM Endorsement of Concept Note

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