# Funding Request Form

Allocation Period 2020-2022

Refer to the "Program Continuation" Instructions to complete this form.

# **Summary Information**

,	
Country(s)	Zambia
Component(s)	Malaria
Planned grant(s) start date(s)	1 January 2021
Planned grant(s) end date(s)	31 December 2023
Principal Recipient(s)	Ministry of Health, Zambia Churches Health Association of Zambia
Currency	USD
Allocation Funding Request Amount	\$65,131,160
Prioritized Above Allocation Request (PAAR) Amount <sup>1</sup>	\$39,041,991
Matching Funds Request Amount <sup>2</sup> (if applicable)	N/A

<sup>&</sup>lt;sup>1</sup> PAARs can only be submitted with the Funding Request. To complete a PAAR, fill-in the Excel template that you will receive from the Global Fund Secretariat.

<sup>&</sup>lt;sup>2</sup> This is only relevant for applicants with designated matching funds as indicated in the allocation letter.



# 1. Investing to Maximize Impact to End the Epidemics

Referring to available evidence, lessons learned and inputs from technical partners and key stakeholders, explain how the current program continues to be relevant, and is on track to achieve results and impact.

The current strategy to eliminate malaria in Zambia is guided by the National Malaria Elimination Strategic Plan 2017-2021 (NMESP 2017-2021). In March of 2017, the WHO had issued a new guidance document, namely, "A Framework for Malaria Elimination, WHO, 2017," which covered the tools, interventions and activities, dynamic strategies and steps required to achieve interruption of transmission and to prevent re-establishment of malaria and the adoption of surveillance as a core intervention. The principles of this Framework are embedded in Zambia's NMESP 2017-2021. The implementation of the current malaria elimination strategy began in 2017 and ends in 2021. A Mid-term Review (MTR) was conducted in 2019 and an End Term Review is planned for 2021.

The country is stratified into five epidemiological levels defined by malaria transmission intensity, and a specific set of interventions is implemented in each level (Annex 1). The health facility catchment area (HFCA) is the operational unit (NMESP 2017-2021, p 20). In higher transmission settings (stratification levels 2–4) the strategy aims to bring to scale the coverage of effective curative and preventive interventions and strengthen information systems to ensure each case is reported and followed. In low transmission settings (levels 0 and 1) surveillance and response are the core interventions, informed by population-based reporting from HFCAs with high and reliable case notification (NMESP 2017-2021, p18).

The National Malaria Elimination Centre (NMEC) and its partners (hereafter: "the Program") are on track to achieve the intended results. For example, malaria mortality has reduced from 15.2 per 100,000 population in 2015 to 7 per 100,000 population in 2019 (HMIS). Case incidence has been on a downward trend, from 304 per 1,000 population in in 2016 to 296 per 1,000 population in 2019. IRS coverage has increase from 55% of eligible structures in 2018 to 84% in 2019 and it is expected that coverage will exceed 90%. The proportion of suspected malaria cases that received a parasitological test at public sector facility increased from 87.5% in 2016 to 98% in 2019 (HMIS). The percentage of facilities with complete reporting increased from 92% in 2017 to 96% in 2019 (HMIS). The number of community health workers (CHWs) has increased from 3,600 in 2018 to 9,000 in 2019 and is expected to reach 12,000 at the close in 2020. Mass drug administration (MDA), which is targeted to selected HFCAs in level 2, has reached high operational coverage rates of 93.6% in 2017/2018 and 96.5% in 2018/2019 (i.e., 244,041 treated out of 260,595 people reached and 114,337 treated out of 118,497 people reached, respectively; (Mid-Term Review of NMESP [MTR 2019 p 2]) and NMEC MDA Program Report ). In 2020 the Program expects to deliver MDA to 4,826,214 achieving 94% coverage of the target population. The Program has also scored major achievements in procurement and supply management. For example, in preparations for the 2020 IRS campaign, which launches in September, all commodities had been procured by June. The malaria partnerships have been strengthened and the annual implementation rate of planned activities was 86% in 2019 against a target of 95%.

The foregoing evidence of the relevance of the current strategy and its operations justifies Zambia's application status as a Program Continuation grant. Refer to Section 3, below, for a detailed description of what the Program has adopted from the normative guidance and technical approaches issued by WHO to make tactical operational changes which did not warrant a change in strategy.

During the current grant period, the Program received \$69 million within-allocation funding as well as an additional \$22 million in portfolio optimization funding amounting to a total of \$91 million. The Program takes cognisance of the reduction to \$65 million within-allocation funding in this Program Continuation Funding Request (FR) as well as Zambia's constrained domestic fiscal space.

For the 2021-23 Grant Period, the Program aims to maintain high levels of coverage across all interventions. With current support from GF and other partners, the Program expects to achieve universal coverage of vector control by the end of 2020. To protect gains, in 2021 and 2022 IRS will need to be repeated at similar level, whereas from 2023, the Program aims to deploy LLINs as the primary vector control intervention and scale back IRS to be deployed in hot spots.

The total Program need for the period 2021-2023 is \$280,508,183; commitments amount to \$176,335,052 and the funding gap is \$104,173,131. The Program is requesting \$65,131,160 within allocation and \$39,041,991 in Prioritized Above Allocation Request (PAAR). (Refer to the budget summary in Annex 3). For the main interventions, all the needs are catered for in this request.

### **Progress**

The Program has made significant progress in recent years (MTR, p 37). Although not all targets in malaria burden reduction were met, malaria mortality has been reduced from a baseline of 15.2 per 100,000 population in 2015 to 7 per 100,000 population in 2019, as mentioned (HMIS [Zambia Malaria Essential Data Tables 2015-2019]). This exceeded the target which was set at 9 per 100,000 (Zambia Malaria FR Performance Framework). The malaria incidence declined from 335 (per 1,000 population) in 2015 to 296 in 2019, short of the target of 191 (HMIS [Zambia Malaria Essential Data Tables 2015-2019]). At the end of 2019, 40% of HFCAs against a target of 50% for 2018 reported incidence of less than 50 per 1,000 population. The malaria prevalence in children under five reduced from 17% in 2015 to 9% in 2018 (National Malaria Indicator Survey 2018 [MIS]). The proportion of suspected malaria cases receiving parasitological diagnosis increased from 88% in 2015 to 98% in 2019 (HMIS [Zambia Malaria Essential Data Tables 2015-2019]). Please refer to Annex 4 for the results and targets for selected outcome and coverage indicators.

Zambia has a strong malaria elimination program with strong political and partner support. It has a track record of successful grant management overall. The current Global Fund grant achieved the following results for the two Principal Recipients, namely:

Ministry of Health (MOH), a cumulative absorption rate of 85% against a benchmark of 80% (Progress Update & Disbursement Request [PUDR] Jan-Dec 2019) and the Grant Management Letter ratings of B1 for the periods, January-June 2018, July-December 2018 and January-June 2019

ii) Churches Health Association of Zambia (CHAZ), a Grant Management Letter rating of A2 for January-June 2019.

The program impact is assessed and measured through the analysis of the routine data (HMIS and entomological surveillance), periodic national household surveys and specific research studies. (Examples of key studies include: *Impact of indoor residual spraying (IRS) on malaria transmission 2018; Retrospective evaluation of the effectiveness of IRS with Pirimiphos-Methyl (Actellic) on malaria transmission in Zambia, 2018; Impact of mass drug administration (MDA) in Zambia 2018; Impact of reactive case detection on malaria transmission, 2020; Developing innovative approaches to increase rural access to commodities for the case management of severe malaria in Zambia Evaluation of pre-referral rectal Artesunate at community, 2018).* 

The Program conducts harmonized annual work planning for the national, provincial and district levels using the electronic African Leaders Malaria Alliance (ALMA) scorecard work planning tool. This has improved programming and coordination. The Program plans to expand the scorecard to the health facility and community levels. The NMEC and its partners meet every month to review program implementation and address any threats to program implementation.

The following lessons have been learnt from the implementation of the current Program, as captured, for example, in MTR findings and PUDR observations:

- The IRS commodities' procurement challenges experienced in 2018 led to delays in implementation of spray campaigns in some districts and consequent failure to reach the 2018 targets. Nevertheless the population protected by IRS increased by 26% from 5,930,141 to 7,451,289 (MTR 2019 p 25, 33-35). In 2019, the program experienced challenges in the procurement of spray pumps and a national security challenge (in late 2019 and early 2020) that led to the suspension of the IRS campaign in some areas. The country has proven its capacity to distribute LLINs at large scale. In 2017-18, a total of 10,077,036 LLINs were distributed through a mass campaign, protecting 21,036,289 people In 2019, the Program successfully distributed 1,463,901 LLINs through ANC, EPI, School, and a mop-up campaign (NMEC, 2020).
- However, in 2020 the Program has mobilized the requisite resources and adequately prepared for the 2020 spray campaign. Recognizing that there are operational challenges in achieving full vectoral control coverage, as called for in the current strategy, the Program is taking deliberate efforts deploy IRS and LLINs in a more efficient and complementary fashion. Beginning in 2020, the Program is conducting detailed planning exercises using innovative GRID-3 mapping for IRS and LLINs (see Annex 2). It is recognized that COVID-19 may negatively impact the international supply chain for commodities (see risk management framework in Section 6) and increase the cost and implementation time of IRS and ITN campaigns.
- In 2023, there will be a tactical operational shift to prioritize LLINs for high burden areas and IRS in a reactive approach, following international best practice. According to WHO, "In high-transmission areas, IRS can be used to rapidly bring malaria transmission down to a level that can subsequently be sustained through a high proportion of the population using LLINs (Operational Manual for IRS for Malaria Transmission Control & Elimination, WHO, 2015, p 8). This tactical operational shift does not represent a change in strategy. The shift is expected to be validated in the planned End Term Review of the current NMESP and incorporated in the subsequent strategic plan.

- Zambia's extensive recent expansion of community case management of malaria undertaken in the context of integrated community case management (iCCM) has been based on the revised and harmonised national curriculum for training of CHWs. This includes the provision of a standard package of enablers (bicycles, commodities kit, T-shirt, phone) and co-ordinated operations. The NMEC's partners have rallied behind this approach, minimizing duplication of effort. (A map of CHWs deployment by partners is given in Annex 12). The Program will build on this momentum to further expand iCCM to increase access to care, especially in the hard-to-reach areas.
- Adoption of surveillance as a core intervention in malaria programming has led to an
  increasing culture of improving data quality and use. The imperative to use surveillance data
  to guide programming has fostered investments from GRZ, WHO, GF, PMI, PATH and other
  partners to improve HMIS, adopt malaria rapid reporting (MRR), real-time data tracking tools,
  and support harmonized planning, data reviews, data quality audits (DQA). These efforts
  continue to contribute to improved data quality and use. The Program will continue to
  strengthen surveillance.
- The experience from the impact of COVID-19 disruption of international supply chains reinforces the need for the Program to meet the international best practice of maintaining a six months buffer stock of commodities.
- The deployment of a full package of interventions, as called for in the NMESP (p 23), has been implemented in Southern Province and parts of Western Province. The combination of IRS, LLINs, case management (facility and community), reactive case detection (RCD) and MDA has led to marked, sustained reduction in malaria burden. Going forward, the Program aims implement the full package in the rest of the country.
- Entomological monitoring and surveillance have enabled the Program to deploy and rotate efficacious insecticides in IRS campaigns and provided the evidence to switch from conventional to PBO LLINs. However, capacity needs to be expanded, including scale up from the current 22 to 39 monitoring sites in order to improve national representativeness.
- The program conducts net durability studies and the results show that the LLINs' physical integrity lasts only for approximately 1.5 years. The Program will enhance net care and repair through SBC and explore alternative approaches/channels for continuous net distribution.
- The Program monitors the in-vivo therapeutic efficacy of first line anti-malarial and MDA drugs, and no significant pattern of resistance has emerged to date. The Program plans to establish therapeutic efficacy studies sites in all 10 provinces (an increase from the current 3 sentinel sites) in order to ensure national representativeness and obtain a full epidemiological profile.
- The malaria trend in high burden areas seems to be plateauing and this may be attributable to the fact that the Program has not taken the intervention packages to scale. For example, timely IRS had not been applied to scale until 2019, the LLINs longevity is shorter than the three-year campaign intervals, and MDA has not been scaled up as planned. Therefore, going forward, the Program will strive to take interventions to scale.
- In the face of the COVID pandemic, the Program has adapted malaria programming in line with GRZ and WHO guidance, and remains committed to continued provision of malaria preventive services, care and treatment while maintaining a safe healthcare environment for clients and staff. (Speech by Hon. Minister of Health on World Malaria Day Commemoration, 25 April 2020).

The Program is largely on track in implementing the current elimination strategy, which will undergo its routine End Term Review in 2021. We expect that the technical strategy to remain

largely unchanged but may need to make tactical adjustments. The strategy will continue to be supported by various partners through technical assistance, commodity procurement and operations. These partners include, among others: WHO, ALMA, the South African Development Community Malaria Elimination 8 (SADC/E8), The Global Fund, PMI, PATH/MACEPA, Isdell:Flowers Foundation, the World Bank, Rotarians, and Mobilising Access to Maternal Health Services (MAMaZ) Against Malaria; mines, plantations and other private sector partners; research and academic institutions; and local Civil Society Organizations (CSOs).

Considerations regarding contextual factors, such acute emergencies or chronic instabilities7 for countries classified as challenging operating environments, should be explained.

Zambia experienced a domestic security situation in late 2019/early 2020, which disrupted the later weeks of IRS operations in several provinces. The Program will develop contingency plans to mitigate such situations or outbreaks.

# 2. Epidemiological Contextual Updates

Describe any significant changes to the country's epidemiological context since the last funding request. Consider the following areas in your response:

- Important changes in trends in incidence/notification rates or prevalence;
- Key social, structural and behavioral drivers of the epidemics;
- Changes in human rights and gender-related barriers and inequities;
- Drug/insecticide resistance; and
- Coverage of interventions in the general population and specific key and/or vulnerable populations.

The country continues to make progress in reducing malaria burden. As mentioned previously, malaria incidence declined from 335 per 1,000 population in 2015 to 296 per 1,000 population in 2019. The malaria prevalence in children under five reduced from 17% in 2015 to 9% in 2018 (MIS 2018, p. 10). The proportion of suspected malaria cases receiving parasitological diagnosis increased from 88% in 2015 to 98% in 2019 (HMIS 2019). The mortality reduced from a baseline of 15.2 per 100,000 population in 2015 to 7 per 100,000 population in 2019 (HMIS, 2019).

The national reduction in malaria incidence is reflected in the increasing proportion of HFCAs which are classified in the strata of level 1 or level 1 (<50 cases/1000 pop/yr and <200 cases/1000 pop/year, respectively). The HFCAs in the higher strata tend to concentrate in the northern half of the country, where the rainy season is longer (Figure 1). Residents of Luapula province, Eastern Province, North-Western Province, and rural Copperbelt tend to bear a higher risk of malaria than their counterparts from other provinces. In 2019, 46% of HFCAs fell into these lower strata, corresponding to 62% of the population (Table 1). This represented a significant improvement from 2016, at which time 568 HFCAs were in levels 1 and 2, corresponding to 39% of the population.

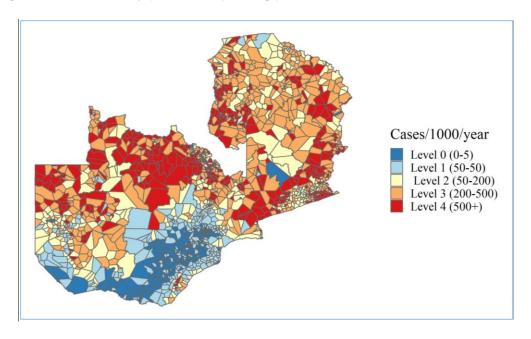
As mentioned, the NMESP employs a stratified approach to targeting of interventions, whereby the package of priority intervention differs between higher and lower burden HFCAs (Annex 1).

The stratified approach has been strengthened by improvements in data quality and analysis in recent year. This allows for better analysis and targeting of the intervention packages as outlined in the NMESP.

Table 1: Malaria incidence by HFCAs in 2019

Stratification level	Stratification level	Incidence group	Count of facilities	Population (2019, GRID3)	%
Level 0	Level 0	0	0	0	0.0%
Level 1	Level 1	>0-<50	551	8,728,805	40.5%
Level 2	Level 2	50-<200	343	4,744,112	22.0%
Level 3	Level 3	200-<500	557	5,565,136	25.8%
Level 4 TOTAL FACILITY	Level 4	500+	482	2,562,438	11.9%
LEVEL			1958	21,600,490	100%

Figure 1: Malaria incidence by HFCA, 2019. (Source data: HMIS outpatient attendance, discharges and community passive reporting.)



The program does not yet collect data on: (i) annual blood examination rate, (ii) proportion of cases investigated and classified, (iii) proportion of foci investigated and classified.

Plasmodium falciparum continues to account for 98 percent of all cases in Zambia. Plasmodium ovale, vivax and malariae account for 2% of the cases, occurring as co-infections with *P. falciparum* (NMESP 2017-2021 p 13; MTR 2019, p 15).

Key social, structural and behavioral drivers of the epidemics

There are no major changes. Women, children and the immune compromised are at higher risk of malaria than the rest of the population. The risk for malaria is higher among fishermen and security personnel deployed to field stations, and in flood prone areas (NMESP 2017-2021 p 15)

#### Funding Context 2015-2019

There have been no major changes in the funding context. Government allocation to the health sector, out of the total national budget, increased from 8.9 percent in 2017 to 9.3 percent in 2019 while government allocation to malaria programming is as follows: \$24.8 million in 2015, \$25.5 million in 2016, \$28 million in 2017, \$29.4 million in 2018 and \$30.87 million in 2019. Various partners have continued to support the malaria Program in Zambia. USAID/PMI support increased from US\$25m per year in 2015–2017 to \$30m per year for 2018–2019. The Global Fund provided a US\$69 million grant covering 2018–2020 and an additional US\$12 million portfolio optimization fund. PATH/MACEPA (Bill & Melinda Gates Foundation funding) provided US\$6 million per year in addition to technical support. Against Malaria Foundation provided 3,023,550 LLINs for the 2017 mass campaign while other partners providing financial and technical support included SADC E8, Isdell-Flowers Cross Border Malaria Initiative, Mining companies, Zambia Sugar and Rotarians (MTR 2019 page 23):

### Changes in human rights and gender-related barriers and inequities

There are no major changes. Indices of equitable access to malaria intervention by gender, wealth and urban/rural status continue to be favourable, and in most cases continue to improve.

In 2018, the percentage of children under five years who slept under an ITN was similar by sex, higher in rural than urban (77.4% versus 69.3%) and generally lower among children from the urban provinces (such as Copperbelt and Lusaka) than the rural provinces ( $\underline{\text{MIS 2018}}$ , p 31). Among pregnant women, ITN use increased from 58% in 2015 to 71% in 2018. The increase in ITN use was noted among women from both rural and urban settings (52% to 63% for urban areas and 61% to 74% for rural areas) ( $\underline{\text{MIS 2018 p}}$  33-34). The percentage of households receiving IRS was higher among rural than urban areas (43.2% versus 23.8%) with variations across provinces (ranging from 19% in Lusaka to 64.9% in Northern provinces respectively). There was a decline in households sprayed with IRS in the urban areas from 30% in 2015 to 24% in 2018 while in the rural areas, there was an increase in households sprayed from 27% in 2015 to 43% in 2018 ( $\underline{\text{MIS 2018 p}}$  9.41).

The proportion of pregnant women receiving 3 or more doses of IPT during pregnancy was similar by rural and urban setting, with variations among provinces (lowest in Western Province at 57.6% and highest in North-Western province at 81.8%). IPT3+ was lowest among women from lowest wealth quintile than those from the highest wealth quintile (52.4% versus 68.5%). The national average for IPT3+ was 67.3% (MIS 2018, p 47). Among children with fever, 20.7% sought prompt treatment nationally while variations were noted by wealth quintile with more children from households in the lowest wealth quintile seeking care promptly than those from the highest wealth quintile (24% versus 14%) (MIS 2018, p 47).

### Anti-malarial drug resistance 2015-2019

Zambia routinely monitors the therapeutic efficacy of Artemether-lumefantrine (AL), which is used as first line malaria treatment and Dihydroartemisinin-piperaquin (DHAP), which is reserved for MDA. There has been no change in parasite resistance to both drugs with adequate clinical and parasitological response still at 100% (Report on Therapeutic Efficacy Testing for Artemether-Lumefantrine, Artesunate-Amodiaquine and Dihydroartemisinin-Piperaquine in Selected Sites in Zambia, 2017 and 2019).

#### Insecticide resistance 2010-2019

Zambia has a National Insecticide Resistance Management and Monitoring Plan 2014–2017 (IMMR), revised in 2018 (IMMR 2018), which guides the resistance monitoring of insecticides for periodic, evidence-based, scheduled rotation of insecticides for the IRS program, to mitigate vector resistance. Given the documented pyrethroid resistance (see Annex 5 showing insecticide resistance profile from 2010 to 2019), especially in *Anopheles gambiae*, Zambia's policy is to use non-pyrethroid pesticides in IRS and implement a mosaic that includes clothianidin, DDT, clothianidin-deltamethrin, among others and with regards to LLINs, switch to PBO nets. The Program expanded entomological sentinel sites (see Annex 6) for entomological monitoring and surveillance from 12 in 2017 to 22 in 2019 and plans to expand to 39 sites.

# Coverage of interventions in the general population and specific key and/or vulnerable populations 2015-2019

The trends in selected coverage indicators from the Zambia Demographic and Health Survey (ZDHS) and Malaria Indicator Surveys (MIS) as of 2018 are shown in Annex 9 (MIS 2018, p 11).

The Program has recorded increased uptake of vector control interventions. As mentioned, the population protected by IRS increased from 5,930,141 persons in 2015 to 7,451,289 persons in 2018 (26% increase) while the percentage of targeted structures sprayed increased from 90% to 92% over the same period as shown in Annex 7 (MTR 2019, Page 25). The spray coverage in 2019 was 95%. The national ITN ownership in the general population increased from 74% in 2015 to 80% in 2018 and so did the proportion of household members who slept under an ITN as shown in Annex 8. The proportion of people protected by either IRS or ITN increased from 78% in 2015 to 84% in 2018 (MIS 2018, Page 11).

Improvements were also reported in malaria diagnosis and treatment. The proportion of patients with suspected malaria who received parasitological diagnosis by RDT and/or microscopy increased from 80% in 2015 to 98% in 2018 while proportion of patients with confirmed malaria who received an antimalarial increased from 92% in 2015 to 100% in 2018. The percentage of children with a fever who had blood taken from a finger or heel for testing increased from 36% in 2015 to 55% in 2018 (MIS 2018, p 11). The percentage of children aged 0-59 months with fever taking antimalarial drugs, which were ACTs increased from 92% in 2015 to 96% in 2018 (MIS 2018, p11). The proportion of women who received 3+ doses of IPT during ANC visits during their last pregnancy remained about 50% (53% in 2015 to 52% in 2018) (MTR 2019, p 28). The percentage of pregnant women receiving at least two doses of IPT increased from 79% in 2015 to 81% in 2018 (MIS 2018, p 11).

Overall, the observed changes in the epidemiological context, summarized in Annex 10, do not warrant a change in strategy. The MTR 2019 recommended that the Program should sustain progress in reducing malaria mortality and address the contributing factors that led to not achieving some of the targets. Further, a recommendation was made to use incidence by HFCA as an indicator and use head count for Program implementation and CSO population for indicator estimates (MTR 2019, p 39).

# 3. National Policies and Strategies: Revisions and Updates

Have new normative guidance or technical approaches been adopted within the national policy or strategy for the disease program since the last funding request?

☐ Yes **x** No

If **Yes**, explain how new normative guidance and technical approaches have been adopted in national programs, and whether these new approaches require major changes in the program.

If **No**, state when new normative guidance or technical approaches were most recently adopted, leading to an update of a national policy or strategy. If the update was more than three years ago, when are new updates planned?

#### No

The Program has taken into account several normative guidance and technical approaches issued by WHO as follows:

In February 2019, WHO issued <u>Guidelines for Malaria Vector Control</u>, which the Program adopted in November 2019. This facilitated the formulation of guidelines to strengthen decentralized management and operations to support the targeting of the package of interventions according to epidemiological stratification. These included, <u>Guidelines for IRS, 2019; IRS Brochure, 2019, DDT Guidelines for IRS in Zambia; Guidelines for Larval Source Management, 2019</u> and the <u>Insecticide Resistance Management and Monitoring Plan</u> (IRMMP) in Zambia, 2019. The Program made operational but not strategic changes. For instance, DDT was re-introduced for IRS. The operationalization of the IRMMP has guided the rotational use of insecticide in IRS to mitigate vector resistance. Furthermore, the Program adopted WHO guidance on IPTp and adjusted the national guidelines to increase IPTp from four doses to cover the entire pregnancy period up to delivery.

The adoption of new normative guidance and consequent adaptations have not changed the overall strategic approach and key programmatic interventions to maximize impact. The current strategic plan ends in 2021. An End Term Review (ETR) is planned for third quarter of 2021. The ETR findings and recommendations will inform the next strategic plan for the period 2022–2027.

The Program will continue to implement the following interventions:

#### **Vector control:**

The interventions for vector control in Zambia aimed at preventing transmission are the use of LLINs, the spraying of eligible structures and, where applicable, larval source management (NMESP 2017-2021, p 23). The National Malaria Elimination Strategic Plan 2017-2021 (NMESP), emphasizes accelerated scale-up of malaria vector control through IRS and LLINs. The national goal is for all Zambian households to have access to IRS, or LLINs, or both. The 2018 Malaria Indicator Survey found that 84% of household owned at least one net or had received IRS in the past 12 months. (61% of household owned one net per two people or had received IRS.) It is imperative that during the coming years this coverage level be at least maintained and preferably pushed even higher.

IRS: The goal is to attain operational coverage of over 90 percent of eligible structures (as per WHO guidelines – <u>An Operational Manual for IRS for Malaria Transmission Control & Elimination, WHO, p 12)</u> benefitting up to 80 percent of the population of Zambia, in a timely manner according to transmission season. To mitigate the reported vector resistance to insecticides in Zambia, the

WHOPES approved insecticides will be used in rotation but are to be reviewed as per Zambia Insecticide Resistance Management Plan.

Long-lasting insecticide-treated nets (LLINs): Since the conclusion of the 2017 campaign, and continuing through 2022, the country deploys LLINs as the secondary vector control intervention, complementing IRS and filling gaps. This is accomplished both through (a) continuous routine LLIN distributions in ANC and EPI clinics nationwide, to ensure maximal coverage of vulnerable populations and (b) through periodic mass LLIN campaigns, to ensure that populations not covered by IRS will receive protection. LLINs are prioritized for to people living in high burden and malaria receptive areas but in IRS ineligible structures and to vulnerable groups such as children under the age of five years and pregnant women. Continuous distribution of LLINs are conducted through channels such as antenatal care (ANC) nationwide, Expanded Program for Immunization nationwide, and primary schools in selected districts as resources allow. Mass campaigns will continue to be conducted every three years to ensure universal coverage.

In 2017/2018 the Program conducted a mass campaign and distributed 10 million nets (against a head count of 21,036,289 people) based on the previous control strategy. The Program achieved universal coverage. The follow up campaign, which is scheduled in 2020, will benefit the population that resides in areas not eligible for IRS. Recognizing the operational challenges in this gap-filling approach, the NMEP has developed a detailed planning process, taking advantage of state-of-the-art mapping techniques (See Annex 1.) In 2018 and 2019 the Program continued routine distribution of nets through ANC, EPI and piloted school distribution in selected districts in 2018 and 2019. The lessons learnt have been incorporated in the revised LLINs guidelines.

The Program will deploy IRS at full coverage (100%) of 3,821,517 and 4,203,668, eligible structures in 2021 and 2022 respectively. This will bring to three years of full IRS implementation. The Program will evaluate the impact of IRS in first quarter of 2023 to determine future expansion of interventions or reduction of target areas and objectives in line with WHO (WHO recommends that IRS evaluations be carried out after the completion of 2–4 spray rounds to identify trends, and strengths and weaknesses that could be instrumental in making decisions about future expansion of interventions or reduction of target areas and objectives - paraphrased from An Operational Manual for IRS for Malaria Transmission Control & Elimination, WHO, 2015, p 64).

In 2023, following three consecutive years (2020-2022) of effective IRS coverage, the Program expects a reduction in malaria burden to levels that will allow for transitioning to LLINs. This is as guided by WHO ("In high-transmission areas, IRS can be used to rapidly bring malaria transmission down to a level that can subsequently be sustained through a high proportion of the population using LLINs" An Operational Manual for IRS for Malaria Transmission Control & Elimination, WHO, 2015, p 8). However, the Program anticipates that there will be hot spots where reactive IRS will be required. For 2023, the Program estimates 591,283 structures for reactive IRS (refer to Annex 11). Local Government involvement in IRS management may include financing, planning, implementation and monitoring. This would be a major tactical shift in vector control operational approach and hence would be considered when the current strategy is reviewed in 2021, and perhaps pilot tested in one or two districts. The NEMP would retain the technical oversight, coordination and policy guidance for IRS. This implementation approach would be consistent with the national decentralization policy, at it would involve the devolution of primary health care to Local Government.

Resources for IRS and Entomologic Monitoring in 2021-22

The Program needs to spray 3,821,517, 4,203,668 and 561,617 structures, in 2021, 2022 and 2023 respectively. The IRS needs for 2021, 2022, and 2023 are \$24,839,860.50, \$27,323,842.00 and \$3,650,510.50, respectively for the procurement of insecticides, sprayers and personal protective equipment, environmental safeguards and operational costs. The total need for 2021-2023 is \$55,814,213.00. GRZ and partners have committed \$41,649,380.63 for 2021-2023 (\$20,695,782.64, \$17,336,860.36 and \$3,616,737.63 for 2021, 2022 and 2023). The gap for 2021-2023 is \$14,164,832.37. Therefore, the Program is requesting a total of \$14,164,832.37 for 2021-2023 (\$2,861,899.74 and \$11,302,932.64 in 2021 and 2022) within Allocation (see Table 4 below). The 2021 request of \$2,861,899 is for IRS operations.

To inform effective monitoring and evaluation of vector control interventions, the Program plans to expand entomologic sentinel sites from the current 22 to 39. The total need for entomological monitoring and surveillance for 2021-2023 is \$5,063,092.00, broken down as follows, \$1,671,164.00, \$1,680,964.00 and \$1,710,964.00 in 2021, 2022 and 2023 respectively. The commitments are \$552,220.00, \$534,365.00 and \$510,000.00 for 2021, 2022 and 2023 (a total of \$1,596,585.00). The gap is \$3,365,652.65. The Program is requesting \$786,960.86 within allocation and the balance of \$2,679,546.14 in PAAR.

#### Resources for LLINs distribution in 2021-23

To implement continuous, routine LLIN distribution, the Program needs to procure 2,218,057; 2,282,602 and 2,349,026 for routine distribution in 2021, 2022 and 2023 respectively. This translates into a need of \$7,763,201.95, \$7,989,107.70 and \$8,221,591 in 2021, 2022 and 2023 (total need of \$23,973,900.65 for 2021-2023). The commitments for 2021, 2022 and 2023 are \$6,869,416.00 annually (\$20,608,248.00 for the three years). The Program is requesting \$3,365,652.36 within Allocation.

To implement the mass LLIN campaign in 2023, the Program will need to procure and distribute 13,312,149 LLINs for mass campaign distribution, at a total cost of \$73,216,814.00. The projected commitments are \$11,550,000 and \$37,589,078 from PMI and GRZ, respectively. This leaves a gap of \$24,127,736, the entirely of which is proposed to be covered in this FR, broken down as follows:

- An amount of \$2,208,300.00 is requested within Allocation for the procurement and distribution of one million standard LLINs. These nets will be distributed in the high burden provinces of Luapula, Muchinga and Northern which will have received standard LLINs in the 2020 mass campaign.
- The balance of \$21,919,436.00 is requested in PAAR for the procurement of the balance of PBO nets for distribution in the rest of the provinces.

The quantification for LLINs in the 2023 campaign is based on transitioning of HFCAs from IRS to LLINs as the malaria burden reduces (see Annex 11). The Program would have preferred PBO nets, which are known to be more impactful, but is requesting standard LLINs due to budget constraints. In the coming two years, the Program will explore resource mobilization from domestic and international sources in hopes of covering the extra costs of PBO nets for 2023.

#### **Case Management**

The objective of the Program is to attain 100% performance on the following indicators:

 Proportion of suspected malaria cases that received a parasitological test at public sector facilities (HMIS).

- Proportion of malaria cases (presumed and confirmed) that received first line anti-malarial treatment (HMIS).
- The proportion of suspected malaria cases receiving parasitological diagnosis.
- The proportion of children under 5 with fever who took an anti-malaria which was an ACT.

The MTR found that 98% of suspected malaria cases had received a parasitological test at public sector facilities (HMIS) and 100% of malaria cases (presumed and confirmed) received first line anti-malarial treatment (HMIS), in 2018. The proportion of suspected malaria cases receiving parasitological diagnosis increased from a baseline of 80% in 2015 to 96% in 2018 (MIS 2018 p29). The proportion of children under 5 with fever who took an anti-malaria which was an ACT increased from 92% in 2015 to 96% in 2018 (MIS 2018 p 29). However, among children with fever the per cent who took anti-malarial treatment the same day or next day was 20.7%. To further improve access, the Program is expanding community case management through training and deployment of CHWs (see Annex 12 for the current CHWs deployment by partners). The 2018 MIS found that the percentage of febrile children who received treatment for malaria from a CHW has increased 2% in 2010 to 22% in 2018 (MIS 2018 p 58).

In the period 2021-2023, investment will be made to sustain quality of case management at public health facilities through ensuring commodity security (RDTs, microscopes & supplies, ACTs, injectable & rectal Artesunate).

The need for ACTs for routine case management is \$9,738,189.00, \$9,461,412.00 and 9,002,942.00 for 2021, 2022 and 2023, respectively, for a total need of \$28,202,543.00. The projected commitments are \$7,545,022.75, \$7,450,765.75 and \$7,297,944.75 in 2021, 2022 and 2023, for a total of \$22,293,733.25. This leaves a gap of \$5,908,809.74, all of which is requested in the FR within Allocation.

The need for ACTs for routine reactive case detection (RCD) is \$9131,951.00, \$185,036.00 and \$180,364.00 for 2021, 2022 and 2023 (total need of \$497,351.00) and the commitment is \$131,951.00, \$185,036.00 and \$180,364.00 in 2021, 2022 and 2023 (a total of \$497,351.00). There is no gap.

The need for low-dose Primaquine (which has a role in treating malaria in low-burden areas, as per the NMESP 2017-2021 (page 24) and WHO guidance) is \$25,441.00, \$24,678.00 and \$23,444.00 for 2021, 2022 and 2023 (total need of \$73,563.00) and the commitment is \$25,441.00, \$24,678.00 and \$23,444.00 for 2021, 2022 and 2023 (total need of \$73,563.00). There is no gap.

The need for injectable Artesunate is \$965,618.79, \$936,650.23 and \$889,817.71 for 2021, 2022 and 2023 (a total need of \$2,792,086.73). The commitment is \$965,618.79, \$936,650.23 and \$513,114.64 for 2021, 2022 and 2023 (a total of 2,415,383.66). The gap of \$376,703.07 is requested within Allocation.

The need for RDTs for routine testing in case management is \$6,553,204.61, \$6,607,662.40 and \$6,659,740.32 for 2021, 2022 and 2023 (a total of \$19,820,607.33) and the commitment is \$4,061,243.75, \$4,061,243.75 and \$4,061,243.75 in 2021, 2022 and 2023 (a total of \$12,183,731.25) The gap \$3983,204.61 and is requested within Allocation.

The need for RDTs for RCD is \$1,807,247.65, \$2,055,983.53 and \$2,069,157.39 for 2021, 2022 and 2023 (a total of \$5,932,388.57) and there are no commitments and the gap of \$5,932,388.57 is requested in PAAR.

The Program will expand microscopy and quality assurance in diagnostics to ensure resilience given the ongoing international supply chain challenges and the budget constraints. Furthermore, investments will be needed for mentorship and supervision, as well as for strengthening of pharmaceuticals and supply chain. To achieve this, the Program needs \$2,467,305.96 to procure microscopes and supplies in 2021. There is no commitment and the gap is \$2,467,305.96 and is requested within Allocation. The investment needed for mentorship, quality assurance and procurement & supply management is \$989,076.00, \$1,530,669.00 and \$1,621,149.00 for 2021, 2022 and 2023, respectively (a total of \$4,140,894.00). The commitment is \$676,068.41 annually for 2021, 2022 and 2023 (a total of \$2,028,205.23). The gap is \$772,693.14 and is requested within Allocation.

Additionally the Program will continue to expand access through the training of CHWs to deliver community case management. The Program will need to train and deploy for case management 4,500, 6,000 and 4,317 CHWs in 2021, 2022 and 2023 respectively (a total of 14,817 CHWs for the three years) translating into a financing need of \$7,114,500, \$9,486,000 and \$6,825,177 in 2021, 2022 and 2023 respectively (at a unit cost of \$1,581 per CHW). The commitments are \$5,007,027, \$5,007,027 and \$5,005,446 in 2021, 2022 and 2023. The gap is \$1,791,911, \$1,581,000 and \$1,581,000 respectively and the Program is requesting for all the three years (\$4,953,991) within Allocation and \$3,663,177 in PAAR.to train and deploy 2,317 CHWs.

To improve surveillance at community level, the Program needs to train and deploy 1,350 CHWs annually from 2021-2023 (4,051 CHWs for three years) at a cost of \$527 per year (\$2,134,877 for three years). This is requested for in PAAR (see Table 2 below).

Table 2: CHWs Need, Gap & Request for iCCM Expansion

Community Case Management & Surveillance	# CHWs						
Country Need for CHWs to expansion of iCCM to saturation (Based on 1 CHW per	18,631						
500 population, current number of trained CHWs discounted and downward							
adjustments for CHWs needed for cities like Lusaka, Livingstone							
CHWs needed for case management (CM), factoring 60% urban/40% rural population	11,817						
ratio							
CHWs needed for surveillance	6,814						
Commitments (PMI and World Vision)	9,500						
Gap	9,131						
Requested within allocation: \$4,953,991 to train and deploy 3,000CHWs for case management							
Requested in PAAR: \$5,798,054 (broken down as follows 2,317 CHWs for case management							
(\$3,663,177) and 4051 CHWs for surveillance (\$2,134,877).	_						

The NMESP set the target to achieve at least 80% coverage of MDA for populations in eligible HFCAs from 2018 onwards. The MDA coverage in selected HFCAs in 2017/2018 was 93.6% (244,041 treated out of 260,595 people reached) in populations assessed to be in category 2 (MTR 2019, p 29). The MDA coverage in selected HFCAs in 2018/2019 was 96.5% (114,337 treated out of 118,497 people reached) in populations assessed to be in category. In 2020 the Program expects to deliver MDA to 4,826,214 achieving 94% coverage of the target population. Going forward, the Program will expand the strategy to the rest of the country, while continuing to invest also in low burden areas to maintain the gains. The resources for planned MDA will not be requested from the GF.

# **Intermittent Preventive Treatment of Malaria during Pregnancy (IPTp)**

The percentage of pregnant women who received >3 doses of IPT during ANC visits during their last pregnancy dropped from 52% in 2018 to 38.5% in 2019 (HMIS) due to stock outs in SP. The IPTp need is \$1,169,718.17, \$1,203,756.97 and \$1,203,756.97 for 2021, 2022 and 2023 respectively (a total need of \$3,612,261) and the commitment is \$591,238.60 annually for 2021-2023 amounting to the total of \$1,773,715.80. In 2021 the Program aims to achieve uptake of doses of IPTp of 53%, 70% and 95% in 2021, 2022 and 2023 respectively. The Program is requesting \$1,838,545.92 within allocation to improve availability of SP for IPTp and improve the uptake of >3 doses of IPT by pregnant women during ANC.

### **Program Management**

The NMESP 2017-2021 identified the need to improve program coordination and activity implementation and targeted an annual implementation rate of 95%. The Program expected 86% achievement in first year of implementation but achieved 51% at mid-year point in 2019. The baseline for five year period (2011-2016) was 36% in 2016. The Program introduced Directorate meetings during the current grant. Additionally, the Program develops, annually, a harmonised malaria work plan across partners and utilises an online management tool to enable transparent review of progress throughout the year. The regular activity reviews against a key indicator dashboard allows the program to address any bottlenecks in program implementation at national, provincial, district and soon to be included health facility level. The ability to drill down to the lowest level allows for targeted support as required to improve program performance. In the current Grant, Program undertook NMEC infrastructure refurbishments (with support from PMI, PATH and GF), invested in strengthening the transport system and increased staffing level at central (laboratory, entomology and M&E personnel), provincial and district levels (Malaria Elimination Officers). The Program plans to sustain these interventions and make additional investment in laboratory staff and CHAs; conduct monthly NMEC and partners meetings; annual review meetings; harmonization of work plans; cross border collaboration; end term review of the NMESP 2017-2021 and development of a strategic plan for the period 2022-2027 and with a supporting 3 year operational plan and M&E plan; technical support for CSOs; support for HRH (staff recruitment and secondment); administrative and running costs; procurement and maintenance of vehicles; procurement of office equipment; and refurbishment and maintenance of NMEC infrastructure. The Program Management need is \$4,266,280.67, \$4,150,856.78 and \$4,174,113.20 for 2021, 2022 and 2023, respectively (a total of \$12,591,250.65). There is no commitment and therefore the gap of \$12.591,250.65 is requested within Allocation. Furthermore, \$717,323.82 is needed for finance management and this is also requested within Allocation (see Table 3 below)

# **Social Behavioural Change**

The National Communication Strategy for Malaria Elimination (NCSME) 2017-2021 is designed to increase the demand, promote acceptance and ownership of the elimination interventions outlined in the NMESP 2017-2021. The following indicators illustrate progress made in the uptake of selected interventions. The proportion of population with access to an ITN increased from 47% in 2013-14 to 60% in 2018. During the same period, the proportion of population that slept under an ITN the night before the survey increased from 35% to 46% (ZDHS 2018, p 203). The 2018 MIS found that the percentage of febrile children who received treatment for malaria from a CHW had increased 2% in 2010 to 22% in 2018 (MIS 2018, p 58). During the implementation of the current Grant, the MOH established the Department of Health Promotion, with which the Program collaborates. In this period, formative research was conducted(An Exploration of Social Behavioural and Normative Factors Underlying Malaria Prevention for the Design of Effective Communication Strategies), which informed the development of the National Communication

Strategy for Malaria Elimination; commemorated the annual World Malaria Day, SADC Malaria Week, Child Health Week, Safe Motherhood Week, National Health Week; convened chiefs & parliamentarians indaba. The Program was instrumental in the successful establishment of the <a href="Zambia End Malaria Council">Zambia End Malaria Council</a> and Fund which are vehicles for advocacy and resource mobilization.

The Program need is \$3,376,880.00, \$1,880,718.00 and \$2,177,672.00 in 2021, 2022 and 2023 respectively (a total of \$7,435,270.00). The commitment is \$1,172,709.87, \$1,172,709.87 and \$1,172,709.87 (a total of \$3,518,129.61) The gap is 3,917,140.39 and is requested within Allocation to enable the Program continue implementing the following SBC activities, in line with the current strategy: community mobilization and engagement activities to promote correct net utilization, care and repair (for nets distributed through routine and mass campaigns); annual commemoration of World Malaria Day, SADC Malaria Week, child health week, safe motherhood week, national health week; capacity building in behaviour change programming (BCP) for provincial, district and health facility health promotion officers; support civil society organizations (CSOs) to expand SBC activities and material production. The Program will continue with community systems strengthening through support to 26 CSOs. These will conduct advocacy and demand creation for enhanced uptake of malaria prevention and treatment through community engagement, community led monitoring, activation and establishment of community champions and champion communities. The activities will include door to door interaction, village meetings, TV and radio spots. The current communication strategy will be reviewed in 2021so that the SBC approach will be based on local conditions and behaviours.

# **Surveillance, Monitoring, Evaluation and Operations Research (SMEOR)**

The following principles and assumptions guide SMEOR: progress on the path to malaria elimination in Zambia will be based on surveillance efforts; progress will be measured using multiple data sources, including routine information systems, household and health facility surveys, and longitudinal studies (NMESP 2017-2021, p 35). During the implementation of the current Grant, the Program consistently conducted data reviews and data quality assessments that have resulted in high completeness of facility reporting of more than 91% from 2017 to 2019 (HMIS). The Program detected an upsurge in malaria cases and deaths in the first guarter of 2020 and has mounted a response. Additionally, DHIS-2 was upgraded to include community HMIS, which has been rolled out to Eastern, Northern Muchinga & Western Provinces. The expansion of Malaria Rapid Reporting System at health facility and community, which compliments the HMIS, has resulted in improved reporting rates and granularity of data to facilitate identification of transmission hot spots and targeting appropriate responses. Consequently, reactive case detection has expanded in areas where this intervention is applicable. The Program conducted a MIS in 2018 and a MTR of the NMESP 2017-2021 in 2019. The monitoring of the rapeutic efficacy of anti-malarial drugs continues to guide our treatment policy. The current drugs are still efficacious. The rectal Artesunate (RAS) evaluation revealed better outcomes for severe malaria when pre-referral treatment with RAS is used and this has already been incorporated in the malaria treatment guidelines. Therefore, the Program will take this to scale (2018 MAMaZ Against Malaria [MAM] Project Report). The Program is conducting a study on parasite prevalence and the active case detection under the WHO Afro II project. Program is also developing a plan and guidelines for epidemic preparedness and response for provinces and districts.

The need for SMEOR is \$\$3,376,880.00, \$1,880,718.00 and \$2,177,672.00 for 2021, 2022 and 2023, respectively (a total of \$7,435,270.00). The commitment is \$1,172,709.87 annually for 2021-2023 amounting to \$3,518,129.61 and the gap is \$3,917,140.39 and is requested within allocation to do the following: monitor and evaluate performance through HMIS data review & data quality assessments, conduct out-reach technical & supportive supervision; expand

entomological surveillance by increasing sentinel sites from 22 to 39 & supporting operations; conduct therapeutic efficacy monitoring; conduct MIS in 2021, conduct end term evaluation of the <a href="NMESP 2017-2021">NMESP 2017-2021</a> in 2021; conduct priority research studies and continue to strengthen surveillance and community level.

Table 3. Summary of Intervention, Need, Commitment & Request

Summary of Intervention, Need, Commitment and Request													
					-								
	Need				Commitment				Request Within Allocatio				Request in PAAR
	2021	2022	2023	3 year Need	2021	2022	2023	3 year Commitment	2021	2022	2023	Total 3 year	
Vector Control													
IRS	24,839,860.50	27,323,842.00	3,650,510.50	55,814,213.00	20,695,782.64	17,336,860.36	3,616,737.63	41,649,380.63	2,861,899.74	11,302,932.64		14,164,832.37	
Entomology surveillance	1,671,164.00	1,680,964.00	1,710,964.00	5,063,092.00	552,220.00	534,365.00	510,000.00	1,596,585.00	260,645.23	260,645.23	265,670.39	786,960.86	2,679,546.14
ILIN: ANC + EPI	7,763,201.95	7,989,107.70	8,221,591.00	23,973,900.65	6,869,416.00	6,869,416.00	6,869,416.00	20,608,248.00	3,365,652.36			3,365,652.36	
LLINs: mass campaign	-	-	73,216,814.00	73,216,814.00	-		49,089,078.00	49,089,078.00		-	2,208,300.00	2,208,300.00	21,919,436.00
Case Management				-	-	-						-	
ACTs for routine CM	9,738,189.00	9,461,412.00	9,002,942.00	28,202,543.00	7,545,022.75	7,450,765.75	7,297,944.75	22,293,733.25	5,908,809.74			5,908,809.74	
ACTs for RCD	131,951.00	185,036.00	180, 364.00	497,351.00	131,951.00	185,036.00	180,364.00	497,351.00					
Primaquine	25,441.00	24,678.00	23,444.00	73,563.00	25,441.00	24,678.00	23,444.00	73,563.00					
Injectable Artesunate	965,618.79	936,650.23	889,817.71	2,792,086.73	965,618.79	936,650.23	513,114.64	2,415,383.66	376,703.07			376,703.07	
Rectal Artesunate	121,631.62	94,714.74	66,117.10	282,463.46	15,858.98	94,714.74	66,117.10	176,690.82	105,772.64			105,772.64	
RDTs routine	6,553,204.61	6,607,662.40	6,659,740.32	19,820,607.33	4,061,243.75	4,061,243.75	4,061,243.75	12,183,731.25	3,983,204.61	3,653,671.47		7,636,876.08	
Microscopes & supplies	2,467,305.96			2,467,305.96					2,467,305.96			2,467,305.96	
Mentorship, QA, PSM, etc	989,076.00	1,530,669.00	1,621,149.00	4,140,894.00	676,068.41	676,068.41	676,068.41	2,028,205.23	772,693.14	620,261.88	719,733.74	2,112,688.76	
iCCM:train & deploy CHWs	8,036,861.00	10,197,450.00	7,537,154.00	25,771,465.00	5,007,027.00	5,007,027.00	5,005,446.00	15,019,500.00	877,316.25	682,014.11	682,014.11	2,241,344.47	8,510,620.53
RDTs for RCD	1,807,247.65	2,055,983.53	2,069,157.39	5,932,388.57	-								5,932,388.57
IPTp	1,169,718.17	1,203,756.97	1, 238, 786. 30	3,612,261.44	591, 238.60	591,238.60	591,238.60	1,773,715.80	1,838,545.92			1,838,545.92	
CHA salaries	1,329,917.44	1,329,917.44		2,659,834.88					1,329,917.44	1,329,917.44		2,659,834.87	
SMEOR	3,376,880.00	1,880,718.00	2,177,672.00	7,435,270.00	1,172,709.87	1,172,709.87	1,172,709.87	3,518,129.61	1,955,678.26	556,273.01	1,405,189.12	3,917,140.39	
SBC	2,386,894.87	1,455,552.16	1,601,107.38	5,443,554.41	1,203,353.32	1,104,161.32	1,104,242.32	3,411,756.96	1,023,335.35	504,231.05	504,231.05	2,031,797.44	
Program Management	4,266,280.67	4,150,856.78	4,174,113.20	12,591,250.65	-				4, 266, 280.67	4,150,856.78	4,174,113.20	12,591,250.65	
Finance management	332,898.31	192,212.75	192,212.75	717,323.82	-				332,898.31	192,212.75	192,212.75	717,323.82	
Sub Total	77,973,342.54	78,301,183.70	124,233,656.65	280,508,182.89	43,860,859.92	80,034,448.20	37,856,925.31	176,335,052.21	31,726,658.68	23,253,016,36	10,151,464.36	65,131,139.39	39,041,991,24
Total													

# 4. Opportunities for Integration

Explain how the proposed investments take into consideration:

- Needs across the three diseases and other related health programs;
- Links with the broader health systems to improve disease outcomes, efficiency and program sustainability.

# Health products management systems

The Logistics Management Information System (LMIS) training for health facility staff across the country is integrated to address health system logistics training needs, leading to improvement of logistics management capacity across health programs. The use of onsite mentors is contributing towards improving prescribing, dispensing and use of medicines. These improvements benefit not only the malaria but all health programs. In addition, in the current implementation arrangement, Global Fund resources have been used to support the operations of the three hubs, Kabompo, Choma and Chipata. The support includes locating technical officers in the hubs to transfer skills to MSL staff and support the development of hub system for warehouse management and last mile distribution. The support has been successful in ensuring accountable management of grant funds ring-fenced for hub operations as well as in establishing and maintaining hub systems and operations. The hubs supported in this way routinely scored higher on achievement of distribution schedules than non-supported hubs. This resulted in better product availability in health facilities served by these supported hubs compared to others. Funds requested in this application will be used to continue current support to the three hubs and two additional hubs in Mongu and Mansa.

# Health Management Information Systems and M&E

The malaria Program supports the training of national, provincial, district and health facility staff in HMIS. The training covers health information collection, analysis and reporting principles. These improvements in data and information management have improved capacity of M&E staff in the health sector.

# Human Resources for Health, including community health workers

The Program will continue to support the training of community based volunteers (CBVs) e.g., Community Health Workers (CHWs) and co-financing salaries for 250 Community Health Assistants (CHAs). A sustainability strategy for CHA salaries is yet to be developed while the sustainability strategy for nurses' salaries is in place. Zambia has a good track record of transitioning health workers onto government payroll following donor support from Centres for Disease Control (CDC), Swedish International Development Cooperation Agency (SIDA), United Kingdom Department for International Development (DFID), Clinton Health Access Initiative (CHAI) and Johns Hopkins Program for International Education in Gynecology and Obstetrics (JHPIEGO). Additionally, the current Global Fund grant, supports recruitment and salaries for nurses in which 250 were transitioned in 2018 and a further 150 in 2019. By continuously absorbing staff initially employed on GF grants, this leads to continuity and sustainability as domestic resources are then used to retain staff to provide much needed services at both facility and community level. As a result, the MOH has even created a department of Community Health to continue to plan and coordinate community health services. The MOH human resources department continues to coordinate HRH at all other levels.

# Integrated service delivery and quality improvement

The Program supports integrated data verification and iCCM trainings and will, in 2022, support the development of a database for CHAs and CHWs. CHAs have been employed to supervise the CHWs in their respective catchment areas so as to ensure quality health services are provided at community level.

# **Financial management systems**

The Program will continue to contribute to the roll out of financial management system (NAVISION) while strengthening financial management systems (FMS) for CSO and FBO implementers, such as, the installation of *QuickBooks* to enhance data integrity and storage of financial information.

### Health sector governance and planning

The Program supports the annual medium term expenditure framework (MTEF) development process.

# **Community systems strengthening**

The Program will continue to support the roll out of community HMIS and co-finances the salaries for CHAs. Other planned activities that contribute to community systems strengthening include: CSOs engagement/contracting as a methodology for strengthening CBV (including exit strategy for CSOs); CHWs training; developing and printing data collecting tools; procuring enablers for CHWs; creating community linkages; building capacity & coordinating community actors; and implementing community based monitoring to ensure availability, quality and accessibility of services. Others include monitoring local conditions in the community and providing relevant feedback to the health systems for action through CBOs that are linked to the HFs; advocacy for

the needed improvements in service delivery; strengthening the health facility-community interface and supporting mapping of CBVs.

Laboratory systems Collaborate with HIV, TB (disease specific), Public Health (Community Health, Child Health, Adolescent) and Health Promotions Departments

The Program will procure microscopes that are used for other diagnostic purposes, besides malaria. The malaria Program continues to collaborate with MOH Community Health and Child Health Departments in implementing a diagnostic strategy in the context of integrated community case management (iCCM). Health information messaging including review of a communication strategy is conducted in collaboration with the MOH Health Promotion Unit and other stakeholders. Laboratory quality improvement activities are undertaken in collaboration with Department of Clinical Care and Quality Improvements Directorate, the resulting quality improvements benefit the laboratory services being offered at various levels in the health sector. Most of these activities are budgeted under relevant service delivery areas. Improving the infrastructure and capacity at the malaria reference laboratory for molecular studies helps in building capacity at health facilities and provides facilities for molecular testing beyond malaria.

# 5. Promote and Protect Human Rights and Gender Equality

Considering current grant(	<li>s), is there a need to intensify, modify, and/or scale-up activities to:</li>
(i) address human rights a	nd gender-related barriers and inequities to access health
services, and (ii) to ensure	appropriate focus on interventions for key and/or vulnerable
populations?   Yes	X No

If **Yes**, please explain how and when these activities will be intensified or modified in the next grant.

If **No**, please explain how the activities in the current grant(s) still adequately address human rights and gender-related barriers and inequities to access health services and ensure appropriate focus on interventions for key and/or vulnerable populations.

### No

**Vulnerable and most at risk population**: Although the entire population is at risk of malaria infection, some groups are at greater risk than others. The most vulnerable groups for adverse health outcomes, severe malaria and malaria death in Zambia include young children aged 0-5 years, pregnant women and their unborn babies (HMIS). Malaria services for both groups include routine distribution of ITNs targeting EPI and ANC clinics as the distribution modes and providing IPTp during ANC visits. Other populations at risk include people living in hard to reach rural areas, in lower altitudes and/or living close to water bodies, mobile populations such as the military and police personnel, farmers, fishermen who seasonally shift from their usual places of residence, people with disabilities, prisoners and children living on the streets. High risk groups are prioritised during IRS and ITN mass campaigns based on information provided by CSOs, local community leaders and CHWs. People living in orphanages, boarding schools and special dwellings for migrant workers will be targeted with ITNs or IRS as applicable. NMEC collaborates with the Ministry of Defence to ensure that the security personnel on special operations receive LLINs. (Plan of Action for the 2020 Mass Distribution of Long-Lasting Insecticidal Nets, MOH

Page 23). For communities living around flood prone areas, vulnerability assessment surveys (VAS) conducted by the Disaster Management and Mitigation Unit (DMMU) under the Office of The Vice-President ensures a multi-sectoral response, which include tailored malaria interventions, is implemented. Funds are being applied for in this grant to improve contingency planning so as to secure adequate emergency commodities.

Hard to reach rural populations: The predominantly rural provinces report higher malaria prevalence, i.e. in 2018, Luapula, Muchinga, North-Western, and Northern reported prevalence rates in children of 30.4%, 23.0%, 13.2% and 11.0%, respectively, whereas the more urban provinces of Lusaka and Southern provinces reported 0.1% and 0% respectively (MIS 2018, p 68). Strengthening of community malaria management improves outcomes. GF resources are requested for the continued expansion and roll out of iCCM, the number of CHWs trained and deployed is planned for with frontloading in year one to ensure benefits are accrued over the grant implementation period. The planned training and deployment of CHWs will expand and contribute to improved access coverage, especially in hard to reach rural populations. Scaling up pre-referral treatment with RAS is expected to improve outcomes for children with severe malaria who are referred from far flung areas.

**Prevention of malaria in pregnant women:** All pregnant women continue to receive LLINs at antenatal clinics and IPTp is fully integrated with reproductive health services and delivered within the ANC package. The percentage of pregnant women receiving at least three doses increased from 51% in 2013/14 to 59% in 2018 while the IPT-2 percentage increased from 79% in 2015 to 81% in 2018 (MIS 2018, p 11). Since the 2020 HMIS data shows that almost all pregnant women in Zambian attend ANC, continuing to ride on the ANC for providing malaria services among pregnant women has improved access and coverage in both rural and urban areas. GF resources will be requested for the procurement of SP and LLINs to improve the supply and availability of these essential commodities for malaria in pregnancy.

**School age children**: School aged children, between 5-19 years, have been shown to have low access to LLINs (MIS 2018 p 33). Therefore, the LLINs requested for in this grant will be distributed through the EPI and ANC in 2021 and 2022 followed by mass distribution in 2023, this way access to LLINs will be assured in the general population. In addition, all boarding schools will be sprayed. This tactical approach is expected to further increase access to either ITNs or IRS.

**Refugees:** Zambia is host to over 76,000 refugees and asylum-seekers. Although refugees reside mainly in the settlements in line with the encampment policy, some refugees have already been provided with agricultural land in order to improve their livelihoods. Furthermore, both refugees and asylum-seekers have access to existing social services provided by the Government. (<a href="http://reporting.unhcr.org/zambia">http://reporting.unhcr.org/zambia</a>) The refugees living in camps are covered under tailored health services, including malaria interventions under the United Nations Human Commission for Refugees (UNHCR) in collaboration with MOH/NMEC (Plan of Action for the 2020 Mass Distribution of Long-Lasting Insecticidal Nets, MOH Page 23).

**Human rights:** Malaria prevention and treatment is universal in Zambia. The country's health care delivery is guided by several key principles which include equity of access irrespective of one's geographical location, gender, age, race, social, economic, cultural or political status; while ensuring that gender sensitivity and balancing in the management of health system and delivery of services are observed at all levels (<u>Zambia National Health Strategic Plan 2017-2021</u>, p 45-46). User fees removal policy which is being implemented country wide in the public sector

facilities has helped to remove financial barriers and reduce catastrophic expenditures for people who have malaria. Since majority of the population use public health facilities, funds under this grant will be used to improve availability of commodities and services in all public health facilities countrywide.

### Street children:

Street children are not discriminated against in terms of malaria treatment and prevention interventions. Since malaria prevention and treatment is universal, expanding the involvement of civil society organisations (CSOs) is planned for under this grant to ensure street children and other vulnerable groups are not excluded in the design and delivery of malaria interventions. The Program is requesting support under SBC to review the communication strategy in 2021 to ensure that it is responsive to the needs of street children and facilitate appropriate development of targeted malaria messages. The Program will collaborate with CSOs on the review and implementation of the strategy. The Program will also offer LLINs or IRS to shelters for street children.

# People with disabilities:

In Zambia, like other low and middle income countries, poverty, poor health, lack of education and disability are strongly interlinked, and disability is unevenly distributed among the population (Government of Republic of Zambia, 2013). An estimated 10.9% of Zambians are living with a disability. More men than women with disability live in urban areas, while more women than men with disability live in rural areas, where concentration of poverty is highest (76%) (Zambian Disability Survey, 2018). Zambians with disability do not only report lower years of schooling but also have limited access to social-economic services – 94% are unable to access empowerment and welfare services. The majority (up to 92%) of people with disability access health services and information (Zambian National Disability Survey, 2015) – although they report being treated badly by health providers and services to be of poor quality

People with disabilities are not discriminated against in terms of malaria testing and treatment and prevention (IRS & LLINs) interventions. Since malaria prevention and treatment is universal, the planned increased involvement of civil society organisations (CSOs) will ensure that people with disabilities and other vulnerable groups are not excluded in the design and delivery of malaria interventions. The Program, in collaboration with CSOs, will develop targeted messaging for people with disabilities. For instance, during campaigns, people with disabilities (PWD) will be identified in their diversity, documented and targeted (positive discrimination) for ITNs distribution (also support people to hang nets) or IRS.

**Gender related barriers:** The country is guided by the key principle which ensures that gender sensitivity and balancing in the management of the health system and delivery of health services at all levels is observed (Zambia National Health Strategic Plan 2011-2015, p 46). Gender related barriers affect women and girls' ability to access health care delivery as a result of distance to health facilities and decision making which is rooted in cultural beliefs that give men decision making powers over women (National Gender Policy 2014, p 13). Nets are given free of charge, so barriers to owning a net have been removed. However, there may be risk of discrepancy in net utilisation in households with paternalistic tendencies due to imbalance of power attributed to gender roles at household level. This is being addressed by reviewing the communication strategy to ensure gender barriers are minimised. Also, working with various CSOs, ongoing sensitisation efforts have continued to yield positive results. For example, among households with at least one ITN, 65% of pregnant women slept under an ITN the night before

the survey (ZDHS 2018, p 205). Women are not required to present their spouse or seek permission when accessing ANC services. Rural women in agriculture and fishing camps are likely to be more exposed than their male counterparts. Also, men in construction and fishing may also suffer higher risk of malaria than their female counterparts. Nonetheless, by ensuring universal access to malaria prevention and treatment as per strategic approach (NMESP 2017-2021), these discrepancies are gradually being addressed. Pregnant women who are uneducated and poor are less likely to go for ANC (ZDHS 2018) and thus would miss out on IPTp. The same is true for women who are pregnant and are residents of Luapula and Muchinga provinces who are also less likely to be seen by a skilled provider. No difference in seeking care for a child with fever by sex has been reported in Zambia (ZDHS 2018). Treatment is provided free at the service delivery point in all public sector facilities, which account for majority of the services provided, especially in the rural areas. However, in the private sector, this may be an issue. Gender related barriers affect women and girls' ability to access health care delivery as a result of distance to health facilities and decision making which is rooted in cultural beliefs that give men decision making powers over women (National Gender Policy 2014). Cultural beliefs with early seeking for ANC may affect IPTp initiation. However, with the recorded IPT1 at 92%, Zambia has made strides in addressing these barriers. Women tend to play care giving roles in households. However, the extent of the inequality is not well understood in Zambia. By focussing on universal access to malaria treatment and prevention, while paying attention to targeted messaging, the gender barriers will be addressed. Furthermore, the Program, will moving forward ensure that the gender sensitive indicators relevant to malaria are tracked. Under this grant, funds are requested to improve availability of commodities for malaria prevention and treatment, expanding the role of iCCM, improving engagement of CSOs and strengthening M&E.

By strengthening community-led monitoring of local health conditions and determinants of health; and the availability, quality and accessibility of the malaria prevention and treatment services being delivered to the communities, it is expected that the gender, human rights and vulnerability dimensions of malaria will be addressed. This will be complemented by appropriate reporting and feedback to the health system actors and community leaders to ensure focus areas are identified timely and remedial actions implemented on an ongoing basis using strengthened systems approach.

# 6. Effectiveness of Implementation Approaches

Are the current implementation arrangements still effective to deliver on the program objectives and anticipated impact for the next allocation period (including the same Principal Recipient and main sub recipients)?

X Yes □ No

If **Yes**, please explain how the implementation arrangements for the current grant(s) are still effective. Responses should include key risks that may negatively affect the broader health system. For further guidance see *Instructions*.

If **No**, explain the changes needed in the implementation arrangements.

Implementation Arrangement: The Country Coordinating Mechanism (CCM) in Zambia has maintained the two Principal Recipients (PRs) for this FR based on past experience and good

performance. These are the MOH Program Management Unit (PMU) and Churches Health Association of Zambia (CHAZ). The CCM rated MOH B1 for all the periods Jan-June 2018; July-Dec 2018 and Jan – June 2019 while CHAZ was rated A2 for Jan-June 2019. The implementation arrangement between the two PRs provides for the following: MOH will maintain their presence in all 10 provinces to conduct IRS and continuous LLINs distribution; in partnership with other implementers; both PRs will implement iCCM in collaboration with other partners; CHAZ will support the three Provinces, namely, Eastern, North-Western and Central working with the 3 Provincial Health Offices and close to 32 district health offices, as well as providing technical and financial support to 3 MSL Hubs indicated on the grant; and MOH will provide oversight in all the ten provinces. This arrangement will be maintained in this FR as it has proved to be effective. (Annexes 13 and 14 show the organogram and implementation arrangement map, respectively).

Participation of representatives of women's organizations, vulnerable and most at risk populations in the implementation of Malaria Elimination in Zambia: MOH and CHAZ will continue to work with women through women organizations at national and sub-national levels. Community case management of malaria is implemented by CHWs (67% Male, 33% Female). The Program makes deliberate efforts to recruit more women as spray operators during the IRS campaigns. The Ministry of Community Development and the Disaster Management and Mitigation Unit under the Vice-President's Office identify vulnerable members of the communities to facilitate the implementation of targeted response to vulnerable members of society based on the vulnerability assessment studies which are routinely undertaken.

**Engagement of CSOs:** The Program will continue to work closely with CSOs and FBOs at community level to increase access, acceptance and use of key interventions. In order to strengthen collaboration with CSOs and FBOs, social contracting will be undertaken and the number of CSOs and FBOs engaged is expected to expand. Furthermore, relevant support to strengthen aspects of the Zambia Public Procurement Authority (ZPPA) Act will be rendered to prepare for transitioning of CSOs from GF grant to government. The LLIN mass distribution campaign planned for 2023 will be conducted by community based volunteers through a door to door distribution model based on lessons learned from the past campaigns which showed that the sleeping space to net ratio is much better when this model is employed. CSOs and FBOs will be engaged after a vetting process to ensure accountability and prudent use of resources.

**Procurement mechanisms**: The Global Fund and other partners, over the last few years, have and continue to invest and build capacity in the Zambian PSM system to ensure that commodities reach the intended beneficiaries, at the right time, place, price, quality and quantity. Both PRs – MOH Program Management Unit and CHAZ have responsibility for procurements on the GF grant. The Zambia Medical Stores Limited (MSL), will have procurement function responsibilities, among others. However, as MSL has never undertaken global level public procurement before, a period of capacity establishment is required before they can assume responsibility for either MOH or MOH PMU procurement. As per MTR 2019 recommendations, strengthening forecasting, storage and distribution will continue.

**Financial Management:** The MOH has adopted the use of Navision Financial Management System and CHAZ using Quickbooks to strengthen fiduciary management and budget tracking. Ongoing in service training of PMU staff planned for under program management will continue to contribute to strengthening financial management capacity. Under the Office of the Auditor General, systems are in place for oversight and early detection of financial mismanagement across sectors. CHAZ will continue to strengthen the provinces and districts it works with through

continuous training in financial reporting and management. CHAZ will install an accounting software, namely, QuickBooks in CSO and FBO implementers to ensure integrity of Financial Information. The Quick books information is consolidated at central level and transition into the SUN Accounting system for processing of transactions and reporting.

**Annual Work Plans:** The Program conducts harmonized annual work planning for the national, provincial and district levels using the electronic work planning tool integrated on the ALMA scorecard platform. This has improved programming and coordination. The Program plans to expand the scorecard to health facilities and communities.

**Real Time Implementation Tracking System**: The NMEP tracks activity implementation in "real time" using the "Tracker" functionality on the ALMA score card. This allows for assessment of timely implementation of planned activities at all levels in the annual harmonised work plan.

**Monthly NMEC Directorate & Partners Meetings:** The NMEC and its partners meet every first Tuesday of the month to review program implementation and address any threats to program implementation.

**Monitoring of Malaria Elimination Key Performance Indicators (KPIs):** KPIs are reviewed every quarter by the NMEP. These include incidence data, program implementation and intervention coverage data.

Implementation Risks: Refer to Table 4 below.

Table 4. Implementation Risk Management Framework

Risk Category (Functional area)	Key Risk	Mitigating Actions	Timeline
	Interruption to program implementation at all levels and reduction in internal financial commitments to malaria  HR shifted to COVID activities.  Disruption to the international supply chains has affected the local commodities pipelines.	Mitigating Actions  Developed, adopted and implementing COVID-19 guidelines.  Program provided guidance to provinces on prioritizing commodities for clinical case management and strengthening adherence to testing treatment guidelines.  If COVID-19 gets out of	Timeline 2021-2023
	Changes in health seeking behaviour  Increased cost of implementation of intervention, e.g. training	hand then develop and implement contingency plan (consider MDA, mini LLINs campaign, targeted messaging, engagement of local leaders and others).	

Increased rainfall	Increase in transmission of malaria leading to strained stock levels of ACTs & RDTs	Program has detected the upsurge in cases and deaths from the routine info system and has undertaken an emergency procurement of commodities  Reinforce malaria early warning system.  Contingency planning for reactive IRS, LLINs distribution and MDA.  Enhanced surveillance and follow up action  Access regional emergency resources to facilitate rapid response to trouble spots.	2021-2023
Economic downturn	Reduction in internal resources committed to malaria	Continuous resource mobilisation	2021-2023
Cross-border malaria elimination and importation of cases	Zambia continues to experience imported cases across borders	Expand cross border initiatives to include Malawi, Tanzania, Angola & DRC.  Harmonization and synchronization of interventions & services with the neighbours	2021-2023
Inadequate financing	Absolute financial gaps  Delayed flows of committed resources	End Malaria Council and Fund have been established  NHIS has been established  Continuous and innovative resource mobilization through enhanced private sector & international organization engagement	2021-2023
Reduction of efficacy of insecticides	Emergence and spread of vector resistance and resurgence of malaria cases	Rotational use of insecticides as per IRMMP  Continuously monitor vector susceptibility to insecticides	2021-2023

Potential risk of reduction of efficacy of drugs	Emergence and spread of parasite resistance and resurgence of malaria cases	Rational use of drugs  Continuously monitor the efficacy of drugs	2021-2023
Procurement Supply Chain Management	Quantification of malaria commodities remains a challenge given the lack of robust and reliable consumption data	Building systems for consumption data	2021-2023
Low community uptake of malaria services	Increase in malaria cases and deaths	Reviewing the malaria communication strategy and improving stakeholder engagement with particular attention to patients late seeking behaviour, low utilisation of ITNs by community members, low IRS acceptance rates and Knowledge action gap	2021 -2023

# 7. Co-financing and Sustainability<sup>3</sup>

Are there significant potential changes in the funding landscape, either in domestic or external funding, or other challenges impacting funding availability and program sustainability? (For example, due to arrival or withdrawal of a major donor or significant increase or decrease in domestic funding.)

#### ☐ Yes X No

If **Yes**, briefly describe whether these changes impact the ability to meet co-financing commitments for the current implementation period and if these changes will impact the ability to meet future co-financing requirements in the next implementation phase.

If **No**, confirm that co-financing commitments for the current implementation period have been met and that commitments for the next period meet minimum requirements.

GRZ has consistently met the co-financing requirements for all the three diseases. The government is committed to ensure that the needs of the health sector are met despite continued reduction in donor funding. The key Government priorities as set in the National Health Strategic Plan (NMESP 2017-2021), include recruitment of health care workers, implementation of the Health Insurance Scheme, construction of specialised hospitals and health facilities.

A total of 20,647 health workers have been recruited between 2017 and 2019. The approved staff requirement for Ministry of Health is 126,389. As of end of June 2019 there were 60,332 health workers representing 48% of required number.

Health infrastructure development continues to be a key focus area for the Government. Currently, 342 out of a target of 650 health posts have been completed. Several key facilities

<sup>&</sup>lt;sup>3</sup> Note that information derived from the supporting documentation provided in response to the questions below, including information on funding landscape or domestic commitments, may be made publicly available by the Global Fund.

including general hospitals and specialised hospitals are at an advanced completion stage. The Government has completed regional hubs for storage and distribution of drugs and supplies. In addition, the ZAMMSA main warehouse has been upgraded and expanded. It is expected that these infrastructural interventions will enhance delivery to the outlying health facilities.

The National Insurance Scheme was inaugurated in September, 2019. The scheme has the potential to cushion the health sector from the constrained fiscal space.

The national budget allocation to the health sector has been maintained at 9% between 2018 and 2020. It is worth noting that the continued investment in the health sector has increased by 1.6% from 2019 to 2020.

# Challenges related to sustainability and describe how the country plans to address them.

The bulk of the health sector budget is from external resources which affects the predictability of financing. Any changes/disruptions to external support affects the health sector negatively. In order to address this, government has embarked on improving domestic resources to the health sector by putting in place the Social Health Insurance (SHI) Act, whose implementation has already began with the operationalization of the National Health Insurance Management Authority (NHIMA). Furthermore, tax reforms are being implemented to expand the domestic revenue, and consequent allocation to health sector to avoid shocks which come with external sources of financing. The implementation of the SHI Act is also expected to reduce catastrophic health expenditure (CHE); the malaria specific CHE was estimated at 8% in 2016 (Zambia NHA Policy Brief 2103-2016).

While the nominal health sector allocation as a proportion of national budget has increased, in real terms, the allocation to the sector as a proportion of total government spending has remained about 9% between 2017 and 2020, due to constrained economic performance fuelled by poor performing copper prices.

The current COVID-19 pandemic is expected to further strain the national Treasury. In light of this, government is implementing fiscal measures aimed at keeping the economy running, while implementing a scalable multisectoral response to minimise the negative public health consequences of the pandemic (ref Ministry of Finance Briefing). Further, NMEC has developed a business plan that will enable the country to explore innovative financing mechanisms to fund its malaria elimination efforts.

In addition to these domestic governmental resources, this grant application assumes that a number of key external and additional domestic resources will continue to support the national Program. PMI remains a critical financing and implementing partner for the malaria program. PMI's contributions over the life of this grant have been estimated to the best ability possible across the various sections of the budget and grant. Additional support is provided by the private sector in Zambia for IRS in particular among the mining and sugar industries. A number of other smaller resources are coordinated within the national Programs planning process including Isdell Flowers Cross Boarder Malaria Initiative, PATH MACEPA, and various research groups. This support is assumed to continue. The Rotarian Malaria Partnership has been supporting the program with trainings for ICCM to expand CHW numbers in one province and their support is expected to continue in one additional province, with additional support planned for World Vision in 2021. The efforts of the End Malaria Council and the End Malaria Fund are also nascent to the programs resource base and are expected to contribute to some resources over the course of the grant.

# 8. Projected Need for Program Revisions (Reprogramming)

Indicate key timing for program and National Strategic Plan evaluations/reviews, outcomes of surveys, or any other relevant information that may inform the potential need for program revisions from now until the expected end of the new grant(s):

Expected documents, evaluations/reviews, surveys	Expected availability
or other relevant information	(month, year)
Household Registration for LLINs Mass Campaign 2020	September 2020
Malaria Indicator Survey	September 2021
Malaria Program Review/ End Term Review	October 2021
National Malaria Elimination Strategic Plan 2022-2026	December 2021
National Malaria Elimination Operational Plan 2022-2024	December 2021
National Malaria Monitoring &Evaluation Plan 2022-2026	December 2021
Insecticide Resistance Management and Monitoring Plan Technical	November 2021,2022,2023
Advisory Committee Report	, ,
Indoor Residual Spraying (IRS) Needs Assessment Report	January 2021,2022, 2023
Indoor Residual Spraying (IRS) Annual Report	January 2021,2022, 2023
Therapeutic Efficacy Studies	September 2021
Annual Malaria Program Reviews and Planning	January 2021,2022, 2023
(Insert additional lines as needed)	

# 9. Matching Funds (if applicable)

This question should only be answered by applicants with designated matching funds, as indicted in the allocation letter.

Describe how the programmatic and financial conditions, as outlined in the allocation letter, have been met.

[Applicant response]	
N/A	

#### LIST OF ANNEXES

# Annex 1: Operationalization of the Vector Control Targeting Strategy in Zambia

# **Background: Strategic Framework for IRS and LLIN Deployment**

The National Malaria Elimination Strategic Plan 2017-2021 (NMESP), emphasizes accelerated scale-up of malaria vector control through IRS and LLINs. The national goal is for all Zambian households to have access to IRS, or LLINs, or both. The 2018 Malaria Indicator Survey found that 84% of household owned at least one net or had received IRS in the past 12 months. (61% of household owned one net per two people or had received IRS.) It is imperative that during the coming years this coverage level be at least maintained and preferably pushed even higher. Ever since the completion of the 2017 LLIN mass campaign, the NMESP the MOH has prioritized IRS as the main vector control method for Zambia. The IRS strategy is to attain operational coverage of over 90 percent of eligible structures in each targeted community, with the cumulative effect of benefitting up to 80% of the total population of Zambia. LLINs are to be deployed as the secondary intervention, both through (a) routine LLIN distributions in ANC and EPI clinics nationwide, to ensure maximal coverage of vulnerable populations and (b) through periodic mass LLIN campaigns, to ensure that populations not covered by IRS will receive protection. In order to avoid a situation where some communities may be missed, the IRS and LLIN campaigns should be resourced adequately to allow for some degree of overlap. Communities will be considered protected if they benefit from an IRS campaign annually and/or an LLIN campaigns every three years. Of note, Zambia's approach to IRS differs from that in many other Global Fund supported countries. Unusually, Zambia targets almost all districts in the country. In support of the NMESP. The MOH expects that its major malaria control partners (e.g. Global Fund, PMI, MACEPA) would provide significant technical assistance and/or commodity assistance to implement high-quality, on-time, well managed IRS campaigns. In certain districts, mines and plantations conduct IRS campaigns to benefit their workers and communities. Under the coordination of the NMESP, IRS campaigns supported by the major public and private sector partners have covered nearly the entire country. (Example of 2019 shown in Figure 1.)

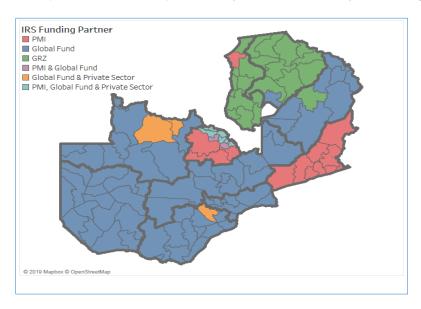


Figure i. IRS implementation map, 2019, by district and major funding source.

Moreover, Zambia does not aim to spray every inhabited dwelling in each target district. Well-established criteria are applied to define "IRS-eligible structures," based on the rationale that scattered or difficult-to-reach populations are too expensive to reach with IRS. Per longstanding Zambian practice, IRS is targeted based on criteria such as operational feasibility, high malaria burden, history of past spraying, and population density. WHO-approved insecticides are used in rotation to mitigate the reported vector resistance to insecticides in Zambia as per Zambia Insecticide Resistance Management Plan. Benefits of the Zambian approach include the ability to offer IRS to an exceptionally high number of districts for a given resource envelope.

# Joint Planning of IRS and LLIN campaigns

The IRS and LLIN campaigns in 2020 are being planned carefully in tandem, so as to operationalize this national strategy. The operational approach is informed by the MOH's extensive past experience and takes advantage of state-of-the art mapping tools provided through the Gates Foundation's GRID3 project as well as technical assistance from partners such as the Alliance for Malaria Prevention (AMP), the PMI VectorLink project, MACEPA, and Akros. The approach is illustrated in the three graphics, below (Figures 2, 3 and 4). District planning teams start with the following objectives in mind: The full district population should benefit from modern vector control: IRS is their primary intervention: LLINs must cover communities who don't receive IRS; some overlap between IRS and LLINs is expected. District planners use as their starting point the IRS and LLIN resource allocations provided to them by the NMEC. Detailed, customized maps of the district are provided, showing estimates of up-to-date structure counts and population counts in each settlement. The maps and the linked planning templates are a new tool to aid the district planning process. (Figures 2 and 4.) These tools were developed in a collaborative process between NMEC, the Bill and Melinda Gates Foundation's GRID3 Project (Columbia University, USA) and Akros, with assistance from PMI and MACEPA.

District planners designate areas on the map which are in-eligible for IRS, then select areas which will receive IRS, entering the structure estimates from the map into the planning templates (Figure 3). Once the total allocation for IRS-target structure has been reached, the planners will designate the remaining areas for LLINs. The map and planning templates will provide population and net estimates for these areas, based on which planners can determine whether the NMEC-allocated resources are appropriate. If LLINs allocations are sufficient, they may designate selected areas to receive both IRS and LLINs. If gaps or large surpluses are found, the districts will notify the NMEC to allow for redistribution between districts. This process kicks of micro-planning at district level and ensuring that resources are distributed efficiently such that geographic gaps are avoided. Within the IRS-designated areas, campaign planners will then apply their usual processes of developing spray calendars by HFCA and zone. Within the LLIN-designated areas, planner will apply their usual process of developing distribution plans by locality.

Figure ii. District Planning of IRS and ITN Campaigns – Starting Points

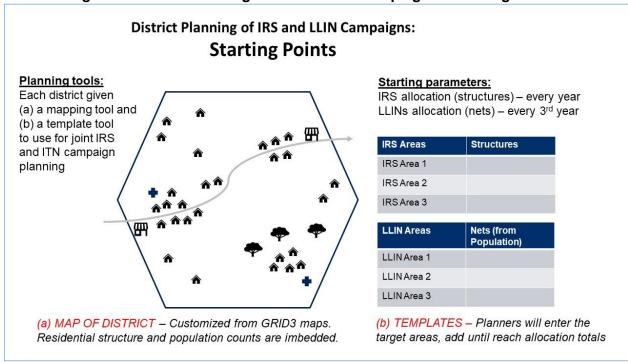


Figure iii. District Planning of IRS and ITN Campaigns – Using the tOOLS

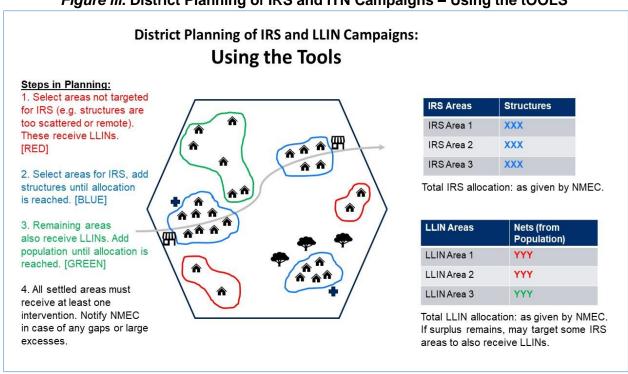
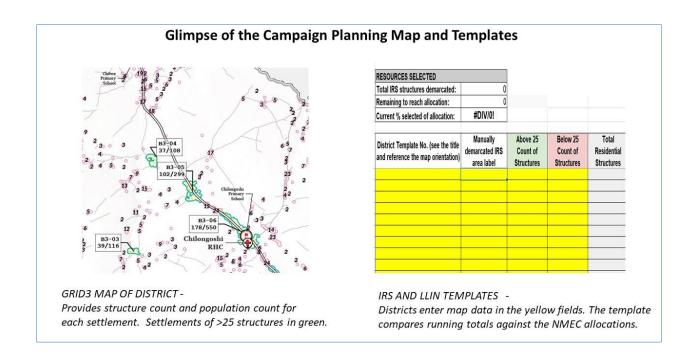


Figure iv. Glipmse of the Campaign Planning Map and Templates



# Annex 2. Transmission intensity levels and proposed intervention packages and actions in Zambia

LEVEL	MALARIA INDICATOR	INTERVENTION PACKAGE/ACTIVITIES	ACCELERATOR
LEVEL 0	0 cases, no local transmission	No malaria, maintenance of malaria-free zone  High quality surveillance and vigilance  Core vector control and case management  Case investigation capacity maintained	
LEVEL 1	1–49 cases/1,000 population/yr; Typical range <1% parasite prevalence	Very-Low malaria transmission  High quality surveillance  Vector control (possibly enhanced)  Community and facility-based case management  Case and foci investigation	Mass drug administration (may be considered under certain circumstances)
LEVEL 2	50–199 cases/1,000 population/yr; Range 0.5%–<5% parasite prevalence	Low malaria transmission  Build high quality surveillance  Vector control (possibly enhanced)  Community and facility-based case management  Establish case and foci investigation capacity	Mass drug administration
LEVEL 3	200—499 cases/1,000 population/yr; Range 5%—<15% parasite prevalence	Moderate malaria transmission  Improve quality surveillance  Vector control (possibly enhanced)  Facility-based case management; build community case management and outreach  Establish case and foci investigation capacity	Mass drug administration (may be considered for specific areas with case investigation capacity)     Enhanced vector control if relevant
LEVEL 4	>500 cases/1,000 population/yr; Range >15% parasite prevalence	High malaria transmission  Build quality surveillance  Vector control to high coverage  Facility-based case management; begin to build community case management and outreach  Prepare for case and foci investigation capacity  Prepare for MDA	Prepare for mass drug administration     Enhanced vector control if relevant

# \*explanatory notes

- Surveillance: Parasitological and entomological surveillance and potential use of molecular testing techniques for monitoring at clinic and community level
- Vector control: High community-level ITN ownership (seeking the highest possible coverage) and usage (improvement to >80% from 55% currently) and increased IRS coverage (improvement in targeting highest risk areas and seeking higher coverage to >50% from 29% currently)
- Enhanced vector control: Increased emphasis on proper use of ITNs and IRS coverage to >85% in targeted areas; introducing additional interventions where specifically appropriate (e.g., larviciding; baited traps or adulticides; space spraying; etc.); vector surveillance (abundance, species, resistance) to direct updated action
- Facility based case management: malaria infection surveillance at health facility level, including diagnostic confirmations with RDTs and treatment, strengthened microscopy and potentially more sensitive tools. Quality assurance of diagnosis and treatment, and supervision of community level case management (see below).
- Community case management: Extension of infection detection and case management into communities through community health worker outreach including integrated community case management (ICCM)
- Malaria case investigation and malaria foci investigation and transmission containment: extension of case surveillance at community level, including reporting of confirmed cases and investigation of households and local neighborhoods; identification and detection of ongoing transmission foci and active clearance of local transmission
- Use of "malaria elimination accelerator strategies" e.g., Mass drug administration (MDA): Time-limited and geographic targeted population-wide treatment with DHAp (80% coverage) to clear the infectious reservoir and prevent infection for a time interval; -- e.g., enhanced vector control strategy if relevant (larviciding, space spraying)

# Annex 3: Malaria funding request budget summary 2021-2023

Summary of Intervention, Need	, Commitment and	Request											
	Need				Commitment				Request Within Allocatio				Request in PAAR
	2021	2022	2023	3 year Need	2021	2022	2023	3 year Commitment	2021	2022	2023	Total 3 year	
Vector Control													
IRS	24,839,860.50	27,323,842.00	3,650,510.50	55,814,213.00	20,695,782.64	17,336,860.36	3,616,737.63	41,649,380.63	2,861,899.74	11,302,932.64	-	14,164,832.37	
Entomology surveillance	1,671,164.00	1,680,964.00	1,710,964.00	5,063,092.00	552,220.00	534,365.00	510,000.00	1,596,585.00	260,645.23	260,645.23	265,670.39	786,960.86	2,679,546.14
LLIN: ANC + EPI	7,763,201.95	7,989,107.70	8,221,591.00	23,973,900.65	6,869,416.00	6,869,416.00	6,869,416.00	20,608,248.00	3,365,652.36			3,365,652.36	
LLINs: mass campaign			73.216.814.00	73.216.814.00	_	_	49.089.078.00	49.089.078.00			2.208.300.00	2.208.300.00	21.919.436.00
Case Management	-	-	75,210,614.00	75,210,614.00	-	-	45,065,076.00	45,065,076.00			2,200,300.00	2,200,300.00	21,919,430.00
ACTs for routine CM	9.738.189.00	9.461.412.00	9.002.942.00	28.202.543.00	7.545.022.75	7.450.765.75	7.297.944.75	22.293.733.25	5,908,809,74			5.908.809.74	
ACTs for RCD	131.951.00	185.036.00	180.364.00	-, -,	131.951.00	, . ,	180.364.00	497.351.00	5,908,809.74			.,,	
	25.441.00	24.678.00	23.444.00	497,351.00 73.563.00	25.441.00	185,036.00 24.678.00	23.444.00	73.563.00					
Primaquine Injectable Artesunate	965.618.79	936.650.23	889.817.71	2.792.086.73	965.618.79	936.650.23	513.114.64	2.415.383.66	376,703.07			376,703,07	
Rectal Artesunate	121.631.62	94,714,74	66.117.10	2,792,086.73	15.858.98	94.714.74	66.117.10	2,415,383.66 176.690.82	105.772.64			105.772.64	
RDTs routine	6,553,204.61	6,607,662.40	6,659,740.32	19,820,607.33	4,061,243.75	4,061,243.75	4,061,243.75	12,183,731.25	3,983,204.61	3,653,671.47		7,636,876.08	
Microscopes & supplies	2,467,305.96	-	-	2,467,305.96	-	-	-	-	2,467,305.96			2,467,305.96	
Mentorship, QA, PSM, etc	989,076.00	1,530,669.00	1,621,149.00	4,140,894.00	676,068.41	676,068.41	676,068.41	2,028,205.23	772,693.14	620,261.88	719,733.74	2,112,688.76	
iCCM:train & deploy CHWs	8,036,861.00	10,197,450.00	7,537,154.00	25,771,465.00	5,007,027.00	5,007,027.00	5,005,446.00	15,019,500.00	877,316.25	682,014.11	682,014.11	2,241,344.47	8,510,620.53
RDTs for RCD	1,807,247.65	2,055,983.53	2,069,157.39	5,932,388.57	-			-					5,932,388.57
IPTp	1,169,718.17	1,203,756.97	1,238,786.30	3,612,261.44	591,238.60	591,238.60	591,238.60	1,773,715.80	1,838,545.92			1,838,545.92	
CHA salaries	1,329,917.44	1,329,917.44		2,659,834.88					1,329,917.44	1,329,917.44		2,659,834.87	
SMEOR	3,376,880.00	1,880,718.00	2,177,672.00	7,435,270.00	1,172,709.87	1,172,709.87	1,172,709.87	3,518,129.61	1,955,678.26	556,273.01	1,405,189.12	3,917,140.39	
SBC	2,386,894.87	1,455,552.16	1,601,107.38	5,443,554.41	1,203,353.32	1,104,161.32	1,104,242.32	3,411,756.96	1,023,335.35	504,231.05	504,231.05	2,031,797.44	
Program Management	4,266,280.67	4,150,856.78	4,174,113.20	12,591,250.65				-	4,266,280.67	4,150,856.78	4,174,113.20	12,591,250.65	
Finance management	332,898.31	192,212.75	192,212.75	717,323.82	-			-	332,898.31	192,212.75	192,212.75	717,323.82	
Sub Total	77,973,342.54	78,301,183.70	124,233,656.65	280,508,182.89	43,860,859.92	80,034,448.20	37,856,925.31	176,335,052.21	31,726,658.68	23,253,016.36	10,151,464.36	65,131,139.39	39,041,991.24
Total													·

### Annex 4: Targets & Results for Selected Indicators, Zambia, 2015-2020

Indicator (Data Source)	Baseline (Year)	Target (Year)	Result (Year)	
Impact				
Confirmed malaria cases (microscopy & RDT)	304/1,000	46/1,000 (2020)	296/1,000	
(HMIS)	(2016)		(2019)	
In-patient malaria deaths (HMIS)	11/100,000	8/100,000	7.7/100,000	
	(2016)	(2019)	(2019)	
Malaria parasite prevalence rate: proportion of	17%	18.5%	9%	
children aged 6-59 months with malaria	(2015)	(2018)	(2018)	
infection (MIS)				

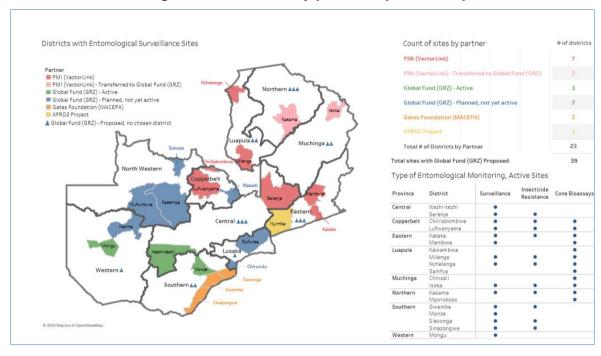
Reduce malaria incidence to less than	17.4%	50%	40%
50/1,000 population in 50 percent of HFCAs	(2017)	(2018)	(2019)
(HMIS).	(2017)	Results :21%	(2013)
Outcome		11000110 12170	
Proportion of population that slept under an	55.1%	80%	64%
ITN the previous night (MIS)	(2015)	(2018)	(2018)
Proportion of children under five who slept	57.7%	80%	69%
under an ITN the previous night (MIS)	(2015)	(2018)	(2018)
Proportion of pregnant women who slept under	58%	80%	71%
an ITN the previous night (MIS)	(2015)	(2018)	(2018)
Operational coverage of over 90% of eligible	1,798,395	Operational	2,848,342 (84%)
structures benefitting up to 80% of the	(55%) of	coverage of	out 3,381,159
population of Zambia (NMEC Program Annual	eligible	over 90% of	(2019)
Reports)	structures	eligible	
	3,281,046 33%	structures	
	in 2018,	benefitting up	
		to 80% the	
		population of	
		Zambia	
Droportion of households with at least as a ITN		1000/	640/
Proportion of households with at least one ITN		100%	61%
for every two people or sprayed by IRS in the		(2018)	(2018)
last 12 months (MIS).			
Coverage  Number of LLINs distributed to at risk	8,304,959	10,077,036	10,107,840
population through mass campaign (Campaign	(2014)	(2017)	(2017/2018)
Reports)	(2014)	(2017)	(2017/2010)
The number of LLINs distributed to targeted	1,472,530	1,129,381	1,423,901
risk groups through continuous distribution	(2016)	(2019)	(2019)
(HMIS)	, ,	,	, ,
Proportion of suspected malaria cases that	87.5%	100%	98%
received a parasitological test at public sector	(2016)	(2019)	(2019)
facilities (HMIS)			
Proportion of malaria cases (presumed and	96%	93%	100%
confirmed) that received first line anti-malarial	(2016)	(2019)	(2019)
treatment at public sector facilities (HMIS)			
Proportion of suspected malaria cases that	96%	100%	99.9%
received a parasitological test in the	(2016)	(2019)	(2019)
community (HMIS).			
Proportion of malaria cases (presumed and	99%	100%	99.5%
confirmed) that received first line anti-malarial	(2016)	(2019)	(2019)
treatment in the community (HMIS)			
Proportion of pregnant women attending ANC	54.1%	100%	38.5%
who receive three or more doses of IPT for	(2016)	(2019)	(2019)
malaria (HMIS)	00.007	000'	0.404
Proportion of facility reports over the reports	86.6%	93%	91%
expected during reporting period	(2016)	(2019)	(2019)
Ensure that quality and timely malaria reporting		100%	36% or 879 out
is available in 100 percent of HFCAs		(2019)	of 2,450 HFs
countrywide by the end of 2018.			(2019)

Increase the implementation rate of activities	36%	95%	86%
from 36 percent in 2015 to 95 percent by 2018.	(2015)	(2018)	(2018)

# Annex 5: Insecticide Resistance, Zambia, 2010-2019

Year	Reported insecticide resistance
2010	Resistance to pyrethroids and organochlorines
2012	Resistance to carbamates
2014-2019	An. gambiae s.l. and An. funestus susceptibility to organophosphate (pirimiphos methyl).
2017-2019	An. gambiae s.l. and An. funestus susceptibility to DDT and bendiocarb restored in some parts of the country such as Southern, Northern, Central, Eastern and Luapula provinces
2017-2019	An. gambiae s.l. and An. funestus resistance to pyrethroids and carbamates continues to be reported in some parts of Zambia

Annex 6: Entomological sentinel sites by partner & planned expansion, Zambia

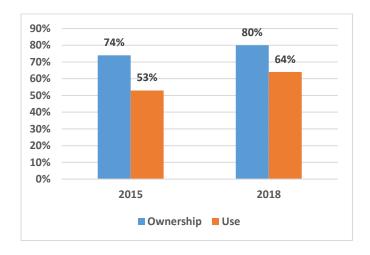


Annex 7: Per centage of targeted structures sprayed, Zambia, 2015-2018



(Source MTR 2019 p 25)

Annex 8: ITN ownership and use in general population, Zambia 2015 & 2018



Annex 9: Trends in selected coverage indicators, Zambia 2006-2018

Indicator	MIS 2006	DHS 2007	MIS 2008	MIS 2010	MIS 2012	DHS 2013/ 2014	MIS 2015	MIS 2018
% of households with at least one insecticide-treated net (ITN)	38	53	62	64	68	68	74	80
% of children ages 0–59 months who slept under an ITN the previous night	24	29	41	50	57	41	56	69
% pregnant women who splept under an ITN the previous night	24	33	43	46	58	41	NA	71
% of household members who slept under an ITN the previous night	19	N/A	34	42	49	35	53	64
% of households with at least one ITN per sleeping space	N/A	N/A	33	34	55	N/A	62	47
% of households receiving indoor residual spraying (IRS) in the previous 12 months	10	16	15	23	29	28	28	35
% of households covered by at least one ITN or recent IRS	43	N/A	68	73	74	75	78	84
% of women ages 15-49 years who received two doses of IPTp during most recent pregnancy	59	66	66	70	72	73	79	81
% of children ages 0-59 months who reported fever in the previous two weeks	33	18	28	34	24	21	16	19
% of children ages 0-59 months with fever taking antimalarial drugs which were ACTs	39	NA	30	76	85	91	92	96
% of children ages 0-59 months with fever reporting a finger/heel stick	N/A	N/A	11	17	32	49	36	55
% of women ages 15–49 years who recognize fever as a symptom of malaria	65	N/A	71	75	78	N/A	77	71
% of women ages 15–49 years who reported knowledge of mosquito bites as a cause of malaria	80	N/A	85	85	89	N/A	85	82
% of women ages 15–49 years who reported knowledge of mosquito nets/ITNs as a prevention method	78	N/A	81	82	86	N/A	91	86
% of children ages 0–59 months with malaria parasitaemia by microscopy	22	N/A	10	16	15	NA	17	9
% of children ages 0–59 months with severe anaemia (Hb<8 g/dl)	14	N/A	4	9	7	NA	6	5

Annex 10: Table Summary of Changes in epidemiological context

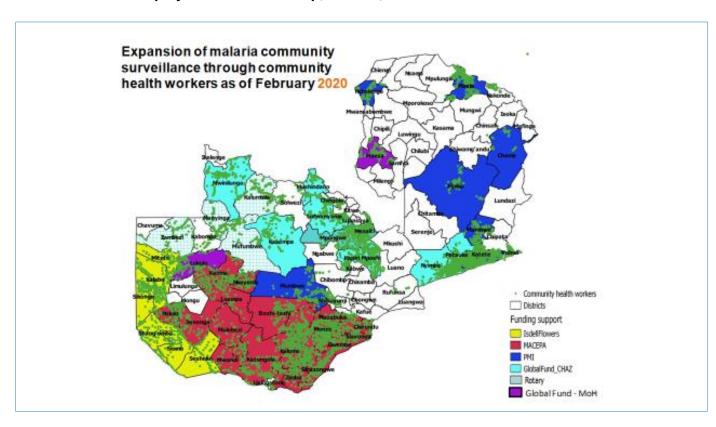
No.	Parameter	Change			Value Judgement
1.	Malaria mortality /100,000 population	Reduced from	Reduced		
2.	Incidence /1000 population	Declined from 2018	382 in 2016	to 311 in	Reduced
3.	Reported cases by species 2010- 2017	Not applicable But number of 6,077,713 in 2 2018 (Absolut	Reduced		
4.	Reported cases by method of confirmation 2010-2017	Microscopy RDT	2018 49,855 4,991,924	2019 79,935 5,063,305	Most cases confirmed by RDTs. Minimal change
5.	Commodities distribution and coverage 2015-2017, 2018-2020	# Nets (mass indicator list a			
6.	Funding 2015-2017, 2018-2020	2018-2020 ha million to \$90 introduced \$5 elimination pro additional \$2	This reduced the Program financial gap.		
7.	Drug policy 2017	ACT for treatment of pregnant women in 1st trimester (Treatment Guidelines			Minor change

		2017); IPTp from 1st trimester up to	
8.	Annual blood examination rate	delivery  Not yet tracked	Not applicable
9.	Percentage of women attending antenatal care	Increased from 94.5% in 2017 to 99.8% in 2018 and 101% as of Q1 2020	Positive change
10.	Proportion of cases investigated and classified	Not yet tracked	Not applicable
11.	Proportion of foci investigated and classified	Not yet tracked	Not applicable
12.	Key social, structural and behavioral drivers of the epidemics	Introduction of NHIS is expected to have an impact on access to health care.	Not yet evaluable
		iCCM expansion has increased access to care (up to 40% of care accessed through iCCM)	Positive change in access
13.	Changes in human rights and gender-related barriers and inequities	Not tracked systematically	Not applicable
14.	Drug resistance	Adequate Clinical and Parasitological Response remains 100% for AL and DHAP	No change
15.	Insecticide resistance	Carbamates, organophosphate, pyrethroids, & organochlorine remain resistance	Still resistant
		Chlorthianidine, Pirimiphos methyl and DDT remain sensitive	Still sensitive
16.	Coverage of interventions in the general population and specific key and/or vulnerable populations.	IPTp 2 doses increased from 79% in 2015 to 81% in 2018 I i % Household members who slept under an ITN the previous night increased from 53% in 2015 to 64% in 2018	Increased
		% U5 with fever taking antimalarial which is an ACT increased from 92% in 2015 to 96% in 2018	Increased

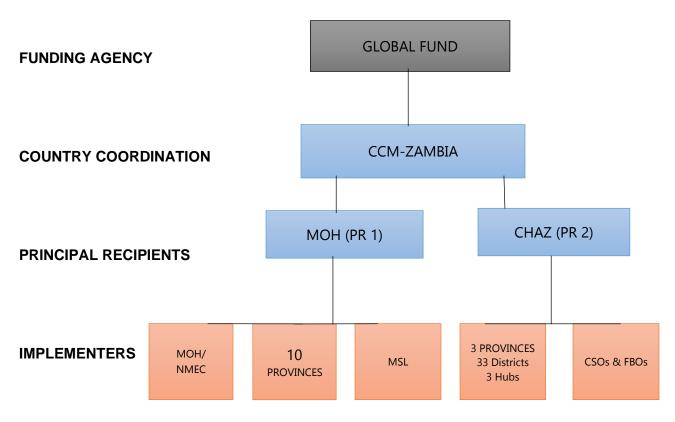
Annex 11: Basis for Quantification of LLINs and IRS needs for 2023

Stratification level	Incidence group	Count of facilities	Population (2019, GRID3)	2021(10%)	2022 (20%)	2023 (30%)
Level 0	0	0	0	87,544	322,757	812,195
	>0-<1	30		,	•	
Level 1a			875,435	1,176,068	1,631,461	1,995,977
Level 1b	1-<5	190	3,881,766	3,890,750	3,922,371	4,006,958
Level 1c	5-<50	331	3,971,604	4,048,855	4,204,327	4,417,212
Level 2	50-<200	343	4,744,112	4,826,214	4,913,945	4,841,701
Level 3	200-<500	557	5,565,136	5,264,866	4,673,132	3,824,679
Level 4	500+	482	2,562,438	2,306,194	1,844,955	1,291,469
TOTAL FACILITY LEVEL		1958	21,600,490	22,205,305	22,115,310	21,783,516
				Population that will need LLINs	24 702 546	
				LLINs need 1.8 people/LLINs	12,101,953	Levels 0, 1a, 1b, 1c, 2,3 & 4
				LLINs need 1.8 people/LLINs plus buffer	13,312,148	
				Commitment - PMI LLINs	2,100,000	
				LLINs Gap	11,212,148	
				Population that will receive reactive IRS	11,232,341.89	levels 0,1a,1b & 1c On average transmission
						intensity is level 1b (5
				Expected number of cases	56,162	cases/1000 population)
						expected number of
						structures per response is 10
				Number of structures sprayed	561,617.09	

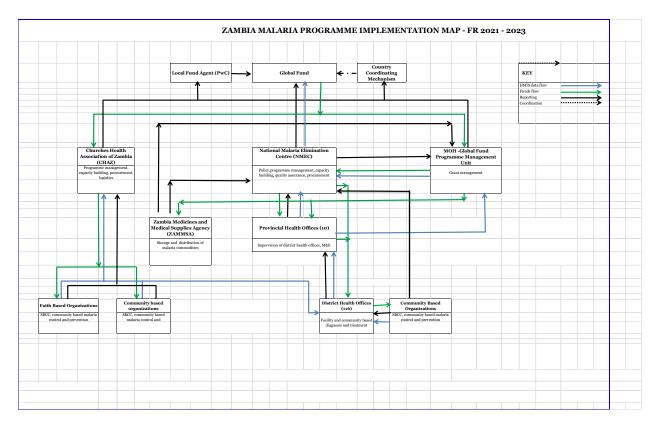
Annex 12: CHWs Deployment & Partnership, Zambia, 2020



**Annex 13: Implementation Arrangement Organogram** 



Annex 14: Zambia Malaria Program Implementation Map 2021-2023



42

# **Documents Checklist**

Use the list below to verify the completeness of your application package.

Х	Funding Request Form
Х	Programmatic Gap Table(s)
Х	Funding Landscape Table(s)
Х	Performance Framework
Х	Budget
Х	Prioritized above allocation request (PAAR)
Х	Implementation Arrangement Map(s) <sup>4</sup>
Х	Essential Data Table(s) (updated)
	CCM Endorsement of Funding Request
	CCM Statement of Compliance
	Supporting documentation to confirm meeting co-financing requirements for current allocation period
	Supporting documentation for co-financing commitments for next allocation period
	Transition Readiness Assessment (if available)
Х	National Strategic Plans (Health Sector and Disease specific)
Х	All supporting documentation referenced in the funding request
Х	Health Product Management Tool (if applicable)
Х	List of Abbreviations and Annexes

<sup>&</sup>lt;sup>4</sup> An updated implementation arrangement map is mandatory if the program is continuing with the same PR(s). In cases where the PR is changing, the implementation arrangement map may be submitted at the grant-making stage.

# Funding Request Form – Program Continuation Issue Date: November 2019