



June 20, 2019

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Reference: Associate Award No. 7200AA19LA00001 Titled "Strengthening Surveillance, Monitoring, and Evaluation for Malaria Control and Elimination (Malaria SM&E)" under Leader with Associates Cooperative Agreement (LWA) No. AID-OAA-L-14-00004.

Dear Dr. Thomas:

Pursuant to the authority contained in the Foreign Assistance Act of 1961, as amended, the U.S. Agency for International Development (USAID) hereby awards to The University of North Carolina at Chapel Hill, hereinafter referred to as the "Recipient", the sum of \$35,942,805 to provide support for a program titled "Strengthening Surveillance, Monitoring, and Evaluation for Malaria Control and Elimination (Malaria SM&E)" as described in the Schedule of this award and in Attachment B, entitled "Program Description."

This Cooperative Agreement will be effective June 19, 2019. Obligation will be made upon receipt of the Recipient's acknowledgement and shall apply to expenditures made by the Recipient in furtherance of program objectives during the period beginning with the effective date June 19, 2019 and ending June 18, 2024. USAID will not be liable for reimbursing the Recipient for any costs in excess of the obligated amount.

This Cooperative Agreement is made to The University of North Carolina at Chapel Hill, on condition that the funds will be administered in accordance with the terms and conditions as set forth in Attachment A (the Schedule), Attachment B (the Program Description), and Attachment C (the Standard Provisions), and the Leader Award referenced above all of which have been agreed to by your organization.

Please sign the second page of this cover letter to acknowledge your receipt of this award and e-mail a scanned copy of only the signed page to Anna Nelson at annelson@usaid.gov with a cc: to Patricia Bradley at pbradley@usaid.gov.

Sincerely,

A handwritten signature in cursive script that reads "Patricia Bradley". The signature is written in black ink and is positioned above the typed name and title.

Patricia Bradley
Agreement Officer

ATTACHMENT B – PROGRAM DESCRIPTION

EXECUTIVE SUMMARY

Success in malaria control must build on progress over the past decade while considering challenges that have arisen. Global experts are calling for new approaches, more cost-effective interventions, and broader availability of tools and guidance to leverage the evidence of what is working. Thus, the President’s Malaria Initiative (PMI) seeks a central point to gather the best thinking on malaria surveillance, monitoring, and evaluation (SME) to galvanize program and policy decision making and reduce disease burden.

PMI has authorized the Malaria SM&E Associate Award (AA)—henceforth “Malaria SME” or “the project”—under the United States Agency for International Development (USAID)- and President’s Emergency Plan for AIDS Relief (PEPFAR)-funded MEASURE Evaluation Phase IV Leader Award. Through this award, PMI seeks to (1) strengthen country-level capacity to collect, analyze, and use routine malaria health data; (2) improve country-level ability to manage health information systems (HIS) to serve malaria needs; and (3) adapt and develop tools for these ends and share among malaria stakeholders the approaches needed and gains made.

Our proposal outlines a targeted approach, building on project **leadership** through **collaboration** with global funders and partners on the ground and cognizant of current and divergent malaria transmission contexts. As the malaria transmission burden shifts from high to low, we need tailored approaches to match. For example, data need to be more granular, because low-transmission settings require immediate and case-based data, whereas high-transmission settings can rely more upon aggregate data. Regardless of transmission setting, use of high-quality surveillance data can be a powerful asset to inform service delivery.

To begin, the project will classify countries’ transmission context against malaria SME needs to inform appropriate intervention design. We will further reinforce this approach through intensive country support through regional advisors, mentoring, and transition support. We buttress strengthened country data and interventions with an overarching layer of technical assistance to strengthen country management of malaria systems overall. This effort can help ensure that divergent malaria needs within a country are coordinated, so that resources arrive where they are needed most and so that stakeholders share information and successful strategies. This enabling environment can foster policies to define the needs of transmission settings—including building evidence for intervention costs. It also can help to harmonize data collection, reporting, and analysis; foster interoperable HIS for malaria and (potentially) other diseases; and support and reinforce a culture of self-reliance.

The project will develop strategies for classified malaria transmission settings, improve management and governance for country systems, and promote self-reliance. These efforts will yield credible data on what works by context, what data and analysis are needed, and what outcomes can be anticipated. PMI expects a growing knowledge base and requires increased use of new and adapted tools and methods. We will inventory gains made in all transmission settings and go a step further, to compile guidance on methods and tool use. We will proactively disseminate successes to the global malaria community through an online platform of protocols, guidance, and publications. And we will communicate directly through social media, global fora, and project-convened special meetings.

TECHNICAL NARRATIVE

B.1 INTRODUCTION

As new challenges in malaria control arise, the global fight against malaria must employ new approaches. One approach is to take advantage of recent advances in HIS to reveal at the local level where the cases are and where to allocate resources. To achieve sustained reduction in malaria burden, country and global partners have given priority to moving from reliance on national aggregate-level malaria data to more granular case-based malaria surveillance data.

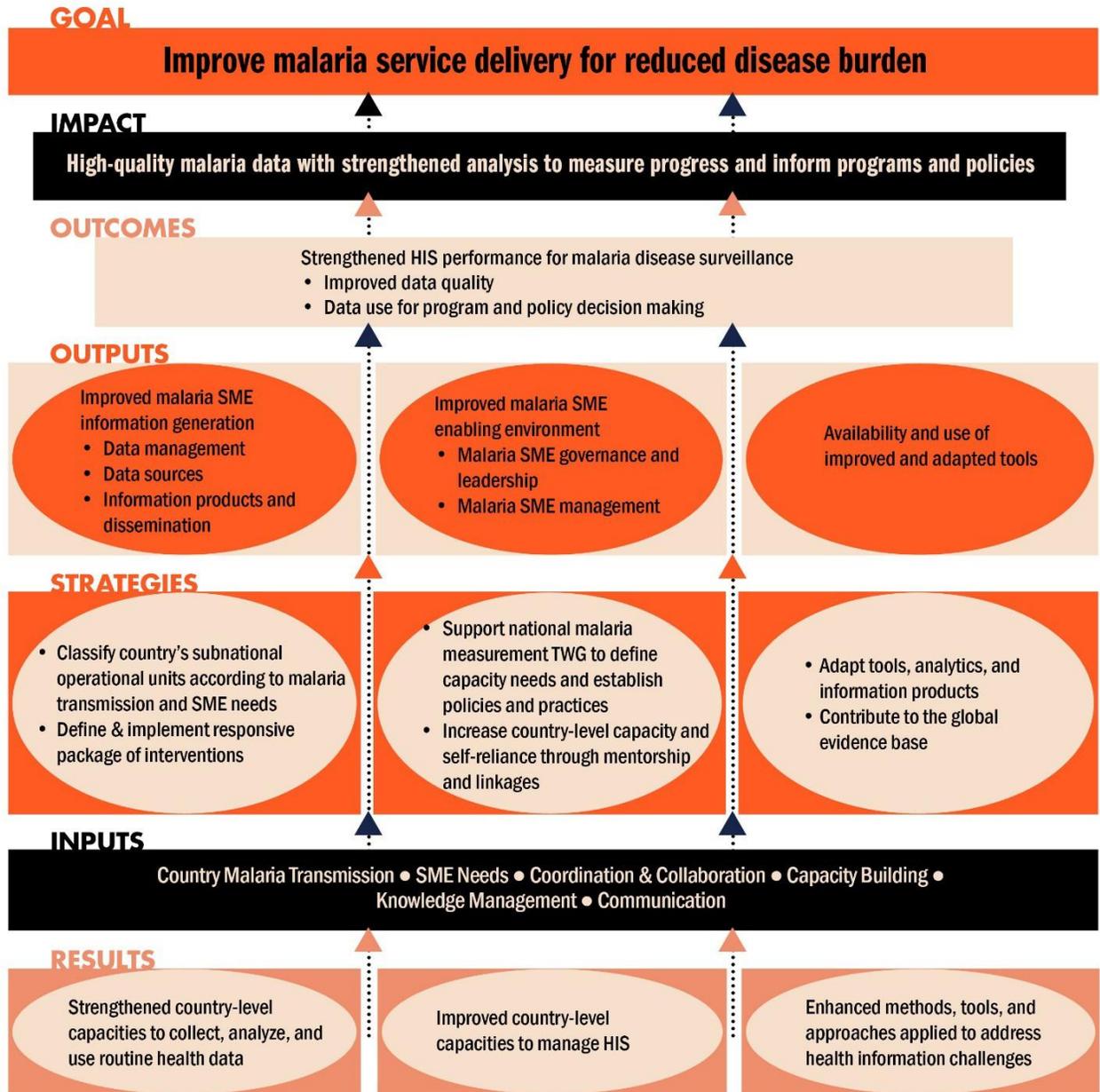
This shift will require **leadership** in optimizing malaria control systems, and **collaboration** with international, national, and subnational organizations so the systems are fully embraced by all stakeholders, making them more sustainable and self-reliant. MEASURE Evaluation, USAID's flagship project for strengthening HIS, has prominently led and collaborated in strengthening malaria SME over the past two decades in more than 10 countries.

MEASURE Evaluation's recent **leadership** has included, for example, the development of malaria SME curriculum to transfer skills on the collection, analysis, and use of essential malaria information to stakeholders. In the Democratic Republic of the Congo (DRC), we worked with the Ministry of Health (MOH) to establish SME Centers of Excellence to serve as examples of improved data collection and use. Over the next five years of this award, we will need to optimize the use of these advances and create a set of standard malaria SME practices across PMI priority countries.

Our approach in strengthening systems has always been highly **collaborative** with international and national malaria programs and their partners. For example, at the request of Madagascar's MOH we helped develop a plan to strengthen malaria surveillance and reporting. And at the request of Liberia's National Malaria Control Program (NMCP), we developed with them a data analysis mentoring plan. Following country-driven initiatives in these ways promotes lasting improvements in capacity and quality of SME, as countries move toward greater self-reliance.

In the following pages, we describe how we will build on the gains achieved through our history of leadership and collaboration to achieve the Malaria SME Project (hereafter, "the project") objective of ensuring high-quality malaria-related data with strengthened analysis and use for improved programs and policies. The project results are foundational to our strategic approaches and are illustrated as such in this proposal and in our logic model (following page). We have oriented the project's pathway to success along the Health Information Systems Strengthening Model¹ (HISSM), whereby our strategies contribute to a strengthened malaria SME enabling environment and information generation. This stronger structure will lead to improved performance for malaria disease surveillance, as represented by improved data quality and data use. Strengthened HIS performance ultimately contributes to improvement of service delivery quality on the pathway to reduction of disease burden.

B.2 LOGIC MODEL



In Figure 1 we diagram how the components of the project prescribed in the RFA work together to achieve the stated results and project objective.

The project's approach will be influenced by **contextual factors** including multiple, uncoordinated systems generating various data components, and inconsistent data quality, but also the benefit of other agencies and organizations contributing significantly to the building of malaria M&E systems, such as national malaria programs and the World Health Organization (WHO). The **resources** available also play an important role. These resources include the countries' existing

information systems and trained personnel, local capacity building (CB) organizations, MEASURE Evaluation offices and personnel in countries most affected by malaria, and time-tested tools and guidance for strengthening M&E systems developed by MEASURE Evaluation and others. We anticipate a few **constraints** in deploying these resources and implementing the strategic approaches. They include M&E systems for other health conditions whose developers and decision makers are sometimes reluctant to coordinate; economic factors that provide insufficient impetus and constrain resources for a local agency to become self-sustaining and self-reliant; and the funding ceiling for this project relative to the number of countries and systems in need of resource and capacity investments. To achieve expected results, we will institute a variety of inputs across the three result areas, including collaboration and coordination within countries, across countries, and across USAID projects to build capacity, and information sharing and knowledge management (KM) and communication. These inputs are critical to the achievement of each of the three results, and therefore will require sufficient core and field funding—a critical assumption of the results framework.

Our approach is presented by result area; however, there are instances of overlap between activities and result areas. For example, the tools we discuss for development or adaptation in Result 3 will benefit Results 1 and 2. We emphasize the overlap and coordination of strategic approaches throughout this proposal.

Further, within the context of the World Health Organization (WHO) Global Technical Strategy for malaria, a need exists to tailor our strategic approaches to respond to differential SME needs based on a malaria transmission continuum. We will use the WHO classifications of transmission,² but may vary them slightly by country to facilitate operationalization of malaria surveillance. Transmission level can be matrixed to malaria SME needs (Table 1): data needed, reporting tools, capacity and skills, equipment, processes, quality, analyses, and data use.

Table 1: Surveillance, monitoring, and evaluation needs based on malaria transmission

	High transmission	Moderate transmission	Low transmission
Scope	•Operational unit ³ level	•Operational unit and facility levels	•Facility level and below

<p>Data needed</p>	<ul style="list-style-type: none"> ● Monthly aggregate surveillance data from routine health information systems (RHIS) ● Monthly aggregate service delivery data from RHIS ● Aggregation by age and sex ● Cause-of-death data ● Community data ● Population-based surveys ● Facility surveys ● Entomology surveillance ● Sentinel parasitological surveillance ● Drug and insecticide efficacy surveillance ● Climate data ● Program data ● Cost of SME system 	<ul style="list-style-type: none"> ● Monthly or weekly aggregate surveillance data from RHIS ● Monthly or weekly aggregate service delivery data from RHIS ● Cause-of-death data ● Aggregation by age and sex ● Community data ● Population-based surveys ● Facility surveys ● Entomology surveillance ● Sentinel parasitological surveillance ● Drug and insecticide efficacy surveillance ● Climate data ● Program data ● Cost of surveillance system ● Data from private providers ● Population movement data 	<ul style="list-style-type: none"> ● Immediate case notification ● Case-based data ● Foci detection and classification ● Case report with age, sex, location, and travel history ● Classification of case report ● Facility surveys ● Entomology surveillance ● Sentinel parasitological surveillance ● Drug and insecticide efficacy surveillance ● Climate data ● Program data ● Cost of detecting and responding to cases ● Data from private providers ● Population movement data
<p>Essential reporting strategies and tools for surveillance data⁴</p>	<ul style="list-style-type: none"> ● Outpatient and inpatient registers; antenatal care (ANC) register; monthly summary forms; community summary forms; stock card ● Potential tool for reporting specific program interventions ● Health management information system (HMIS) data management protocol ● Transition to digital reporting at all levels 	<ul style="list-style-type: none"> ● Outpatient and inpatient registers; ANC register; monthly summary forms; community summary forms; stock card ● Potential tool for reporting specific program interventions ● HMIS data management protocol ● Entomological monitoring form ● Transition to digital reporting at all levels 	<ul style="list-style-type: none"> ● Outpatient and inpatient registers; monthly summary forms; community summary forms; stock card ● Potential tool for reporting specific program interventions ● Individual patient forms ● Case investigation forms ● Case detection protocol ● Entomological monitoring form ● Cross-border reporting tool

Human element: Essential skills	<ul style="list-style-type: none"> ●Correctly complete and transmit forms ●Use digital platforms ●Assess data quality ●Run and interpret basic trend analyses ●Understand and use multiple data sources ●Identify abnormal caseload ●Quantify commodities based on need ●Provide constructive feedback ●Develop evidence-based action plan ●Foster communication and coordination 	<ul style="list-style-type: none"> ●Correctly complete and transmit forms ●Use digital platforms ●Assess data quality ●Run and interpret trend analyses ●Understand and use multiple data sources ●Identify abnormal caseload ●Quantify commodities based on need ●Provide feedback ●Develop evidence-based action plan ●Assess performance of surveillance system ●Foster communication and coordination 	<ul style="list-style-type: none"> ●Correctly complete and transmit forms ●Use digital platforms ●Assess data quality ●Run and interpret trend analyses ●Conduct active case detection and response ●Assess performance of surveillance system ●Understand epidemic preparedness (early warning system) and response ●Foster communication and coordination
Essential infrastructure	<ul style="list-style-type: none"> ●Hardware and software ●Power and connectivity ●System archiving ●Guidelines for optimal and secure use of hardware and software 	<ul style="list-style-type: none"> ●Hardware and software ●Power and connectivity ●System archiving ●Guidelines for optimal and secure use of hardware and software 	<ul style="list-style-type: none"> ●Hardware and software ●Power and connectivity ●System archiving ●Guidelines for optimal and secure use of hardware and software
Essential information generation processes	<ul style="list-style-type: none"> ●Training ●Recording ●Monthly data transmission ●Revision of key tools and documents ●Electronic HIS support and maintenance 	<ul style="list-style-type: none"> ●Training ●Recording ●Monthly or weekly data transmission ●Revision of key tools and documents ●Electronic HIS support and maintenance 	<ul style="list-style-type: none"> ●Training ●Immediate case notification; focus investigation ●Revision of key tools and documents ●Electronic HIS support and maintenance
Essential data quality assurance mechanisms	<ul style="list-style-type: none"> ●Monthly malaria data review meeting protocol ●Quarterly feedback and supportive supervision to lower levels ●Regular technical working group (TWG) meetings 	<ul style="list-style-type: none"> ●Monthly malaria data review meeting protocol ●Quarterly feedback and supportive supervision to lower levels ●Regular TWG meetings 	<ul style="list-style-type: none"> ●Quarterly feedback and supportive supervision to lower levels ●Epidemic response team meetings

Essential analysis and visualization	<ul style="list-style-type: none"> ● Monthly trend analysis by operational unit ● Automated analysis at facility level ● Analysis protocol ● Burden reduction dashboard and bulletin ● Detection of abnormal caseload ● Commodities forecasting ● Triangulation and visualization of data from multiple sources 	<ul style="list-style-type: none"> ● Weekly trend analysis by operational unit ● Automated analysis at facility level ● Analysis protocol ● Burden reduction dashboard and bulletin ● Detection of abnormal caseload ● Commodities forecasting ● Triangulation and visualization of data from multiple sources 	<ul style="list-style-type: none"> ● Classification, temporal and spatial distribution of cases ● Classification of foci ● Analysis protocol ● Low-burden dashboard ● Weekly epidemic report ● Detection of epidemics ● Assessment of effectiveness of epidemic response ● Triangulation and visualization of data from multiple sources
Data use	<ul style="list-style-type: none"> ● Create and use decision- support tools ● Disseminate quarterly trend bulletin ● Disseminate quarterly data quality bulletin ● Quantify commodity and supply ● Annual strategic planning 	<ul style="list-style-type: none"> ● Create and use decision- support tools ● Disseminate monthly trend bulletin ● Disseminate monthly data quality bulletin ● Quantify commodity and supply ● Annual strategic planning 	<ul style="list-style-type: none"> ● Create and use decision- support tools ● Disseminate weekly epidemic report bulletin ● Disseminate regular data quality bulletin ● Quantify commodity and supply ● Annual strategic planning

B.3 STRATEGIC APPROACHES

In sections that follow, we describe for each result the current challenges and opportunities, our strategic approaches to address them, illustrative activities, and select milestones.

B.3.1 Result 1: Strengthened country-level capacities to collect, analyze, and use routine health data

Information generation, as described in the MEASURE Evaluation HISSM, encompasses the collection, cleaning, processing, managing, and analysis of health data from a variety of sources and the creation and distribution of health information products for use. NMCPs and their partners have shown tremendous improvement in malaria information generation to strengthen program interventions. Today, routine malaria data may be reported and analyzed each month— especially at the national level—but have limited links to decision making. Similarly, malaria TWGs convene and coordinate stakeholders, but they may not have the mandate to translate data into action. Operational units, which may be defined as a district or province, may experience challenges

monitoring data quality and coordinating with facilities. When this is the case, the effort and resources expended to collect data are not optimized for use.

Further, data systems and use must be adapted to respond to different SME needs, based on the malaria transmission continuum. Data available at subnational levels are essential, because as malaria burden decreases, the disease becomes more focal and requires more-detailed and frequent reporting of individual cases, rather than aggregate counts. Many countries have shown staggered success in reducing burden within their borders implementing high-burden and low-burden interventions simultaneously. Thus, they need flexible, comprehensive routine data.

Building on our **leadership** and in-country presence, the project will **collaborate** with NMCPs to classify subnational operational units according to transmission and subsequently implement and assess a responsive package of interventions. Our network of resident advisors will foster self-reliance, by supporting NMCPs to lead their subnational officers to improve collection and analysis of data for action; use existing data in novel ways; and prioritize data quality.

Strategic Approach 1.1: Classify each country's subnational operational units according to malaria transmission and SME needs.

Working with PMI and NMCPs, MEASURE Evaluation has developed country RHIS architecture profiles that outline the systems collecting routine malaria data, track which systems capture key malaria data elements, and share examples of data demand and use. Using these profiles as a starting point, the project and NMCPs will classify and map each country and each operational unit's specifics of malaria transmission in terms of epidemiology, HMIS maturity, and related capacity for SME. We will use a tool MEASURE Evaluation and WHO are currently developing to provide robust and much-needed evidence on how to assess and systematically strengthen malaria surveillance systems.

Illustrative Activities:

- Assess countries' current processes and capacity for data collection and reporting, quality assurance, analysis, and use.
- Conduct rapid needs assessment of data and supportive infrastructure, including electricity and Internet communication at all levels.
- Map assessments to the malaria transmission continuum, to define and classify SME needs.

Strategic Approach 1.2: Define and implement a package of approaches responsive to malaria SME needs by transmission setting.

Countries vary in their transmission status and SME needs, and will require different approaches in strengthening country-level capacities in malaria data collection, analysis, and use. Based on the assessment and classification conducted in Strategic Approach 1.1, the project, the NMCP, and RHIS stakeholders will collaborate to define a tailored package of approaches. This package will pull components from a standard package of cross-country or country-specific activities, as

illustrated in Table 2. The package will build on our existing work but will highlight standard processes at the service delivery point to collect, format, and process data for action; streamlined methods and tools for secondary analyses and interpretation of various types of data (epidemiological, cost, logistical, programmatic, and contextual data); and skills for decentralized data use and decision making. Underlying all this work is a commitment to seeing countries progress in their journey to self-reliance, so all activities will be done in coordination with the NMCP and other relevant stakeholders.

Table 2: Illustrative components of the technical assistance package for cross-country and country-specific activities

Cross-country (core)	<ul style="list-style-type: none"> ● Engage with global malaria SME efforts, to ensure country needs and priorities are addressed ● Adapt and enhance methods and approaches to optimize RHIS for malaria SME needs ● Provide technical leadership in priority areas ● Co-lead regional SME workshops and disseminate global goods to equip countries with tools, methods, and technical skills to become self-reliant
Country-specific (field)	<p>Collaborate with NMCP to:</p> <ul style="list-style-type: none"> ● Develop a capacity strengthening plan for using data for malaria SME ● Classify operational units by transmission ● Identify trends and gaps in coverage in malaria morbidity and mortality ● Co-lead country-specific malaria SME workshop or trainings on data collection, quality, analysis, and use ● Develop/revise and implement a malaria data quality review manual; DHIS 2 roadmap for malaria integration; data sharing and use guidelines; data security, privacy, and confidentiality guidelines; national malaria SME plan; malaria surveillance guidelines ● Develop/revise and implement a protocol for malaria data analysis, presentation, and use at national and subnational levels that includes dashboards, bulletin, and decision-support tool ● Develop case investigation recording and reporting tools and active case detection and investigation guidelines ● Triangulate routine malaria data with other sources of available data ● Build a cadre of local technical experts through regional trainings and masters/training programs in partnership with universities <p>At the operational unit level:</p> <ul style="list-style-type: none"> ● Coordinate data review meetings, supportive supervision, and action plans ● Support feedback, data analysis, and visualization at health facilities ● Support development of functional SME plan at operational unit ● Automate routine data quality assessment (RDQA) and analysis processes

The project will partner with NMCPs and stakeholders to implement the tailored package of technical support to improve malaria SME using data from the RHIS. Implementation will include innovations such as automated data review and analysis processes at all levels, improved and

expanded data quality reviews, routine monthly reporting of indoor residual spraying (IRS) and seasonal malaria chemoprevention that are traditionally reported only through program data. If prioritized, a national repository will link epidemiological data with other data in DHIS 2 and streamline the triangulation and use of scenario-based decision-support tools tailored for transmission patterns to define action.

To implement the package, we must nimbly respond to the growing scale and complexity of requests as more USAID missions prioritize malaria SME needs. Our resident advisors work together with NMCPs in several countries. However, not all countries may require or be able to afford this intensive support, and as NMCPs become more self-reliant through mentoring (Strategic Approach 2.1), transition to a less intensive model of support may be beneficial.

Regional hubs will efficiently and effectively provide ad hoc support to NMCPs, covering a range of countries with fewer resources. Regional hubs may help transform one-off best practices into standard practices that inform regional and global perspectives. They can also respond to cross-country concerns and coordinate regional initiatives, such as SME workshops.

To further support the journey to self-reliance, we will collaborate with local institutions, building upon MEASURE Evaluation's existing partnerships in PMI countries. These institutions will help target SME interventions at subnational levels and collect feedback for use by the national level. We also expect these institutions to contribute to a local cadre of technical experts and build mechanisms for sustainable resources, such as advocacy for national funding, to support the NMCP without MEASURE Evaluation.

Using the mapping activity from Strategic Approach 1.1 as a baseline, the package of interventions will be assessed on the two components of HIS performance, as outlined in the HISSM: ensure quality of relevant data and increase use of data at the national, operational unit, and service delivery levels, while accounting for transmission patterns (See Monitoring, Evaluation and Learning).

Illustrative Activities:

- Collaboratively develop a standard package of approaches that map to a country's malaria transmission and SME needs.
- Install a full-time senior malaria resident advisor at the NMCP or provide short-term technical assistance for a regional malaria advisor to aid and build capacity in data analysis, collection, and reporting.
- Develop proof-of-concept regional hubs (East and West Africa) covering a range of countries to provide ad hoc support to NMCPs.

Result 1 Milestones

Year 1	Year 3	Year 5
3–5 countries supported to classify operational units by malaria transmission	<p>3–5 additional countries supported to classify operational units by malaria transmission</p> <p>3–5 countries implement a package of interventions that respond to their subnational malaria SME needs</p> <p>3–5 countries demonstrate improved capacity for information generation, as demonstrated by:</p> <ul style="list-style-type: none"> • 3–5 countries have implemented automated data review and analysis • 3–5 countries are conducting routine data reviews 	<p>All Malaria SME-supported countries have classified their operational units by malaria transmission</p> <p>3–5 countries show improvement in:</p> <ul style="list-style-type: none"> • quality of routine health data • use of routine health data for program improvement

B.3.2. Result 2: Strengthened country-level capacities to manage health information systems

Many countries have developed integrated HMIS strategies that consider the specific SME requirements of the NMCP. This integration depends on coordination and **collaboration** across teams within the MOH. The need for coordination is heightened by changing transmission patterns that may require updated policies, guidelines, electronic data management systems, and standard operating procedures (SOPs) to ensure that malaria SME needs continue to be met. The **leadership** needed to bring about **collaboration** and facilitate the management, policies, and practices of an HMIS are collectively referred to as the HMIS enabling environment in the MEASURE Evaluation HISSM.

In the Malaria SME project, we will foster an enabling environment, starting at the national level, through **collaboration** across public health stakeholders to strengthen HMIS capacity and maturity and update policies and practices (see Table 3). Much of this work will be coordinated through malaria-specific TWGs that will advise on policies and SOPs and improve the interoperability of information systems. To increase country self-reliance, local counterparts will work alongside resident advisors, mentored and linked to SME resources and global fora.

Table 3: Illustrative package for strengthening capacity to manage HIS for malaria

Cross-country (core)	<ul style="list-style-type: none"> • Harness best practices and strategic policies from low-transmission settings such as Greater Mekong Subregion • Organize regional cross-fertilization meetings • Organize regional forum to showcase progress in malaria SME, share scientific results, and bring together high-level stakeholders
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	<ul style="list-style-type: none"> ● Participate in global fora such as RBM Monitoring and Evaluation Reference Group (MERG) and international conferences ● Continue building inventory of country strategic plans and policy documents
Country-specific (field)	<ul style="list-style-type: none"> ● Map stakeholder HIS needs and interests related to malaria SME needs from increasingly electronic information systems <p>Assess capacity in setting enabling environment for malaria SME needs Support malaria TWG to:</p> <ul style="list-style-type: none"> ● Meet regularly, define needs, and link with HMIS TWG and DHIS 2 maintenance team ● Support functionality of HMIS TWG, as needed ● Receive and address feedback from operational units ● Support NMCP to revise or develop normative guidance and strategic policies ● Coordinate between NMCP and integrated disease surveillance and response (IDSR) teams, plus other stakeholders ● Cost surveillance systems ● Establish and maintain platform to collate all malaria SME tools, policy documents, and reference materials ● Organize biannual forum to showcase progress in malaria SME, share scientific results, and bring together high-level stakeholders

Strategic Approach 2.1: Support national malaria measurement TWG to define capacity needs and establish policies and practices for data collection, quality, analysis, and use.

The project will support the installation, revival, or continued support of regular malaria measurement TWGs that will bring together all partners. We will complement these efforts with national-level capacity building using the Monitoring and Evaluation Capacity Assessment Toolkit (MECAT) to assess organizational and behavioral capacity. This will ensure that NMCPs can easily articulate SME needs in varying transmission settings and related analyses and that they can advocate legislation to maintain data privacy, security, and confidentiality; increased domestic funding; and national authorities for data collection and analysis. NMCP SME teams will be coached to lead the TWGs, by presenting the strategic vision, developing agendas to address gaps or challenges, and disseminating information products.

The TWG will develop normative and strategic documents to facilitate use of high-quality malaria data. These products may include SME strategic plans, SOPs for surveillance and decision making, master facility lists, data dictionaries, and data exchange mechanisms. The malaria TWG will have subgroups to address different transmission settings and to coordinate across operational units that have tailored interventions for their transmission level. The specific

focus on malaria will allow deep dives into disease-specific issues. By pooling diverse perspectives on these issues, participants will build understanding of how to address SME complexities in various transmission settings. The outputs of the TWG will have the consensus backing of members and will therefore be stronger advocacy tools.

Understanding the costs of these systems will be critical to advocate increased domestic resources to address malaria SME needs and strengthen self-reliance. An initial priority for the TWG will be to develop a process to ensure that HIS and new surveillance policies are costed. Costed plans allow NMCPs to define priorities and ensure effective and efficient use of investments and resources. Costing on surveillance systems along the transmission continuum will also contribute to a nascent global evidence base on the cost of transforming surveillance into a core intervention for malaria.

By reminding partners of a unified goal in strategic information and use, these TWGs may also harmonize indicator definitions and data sources and create a foundation for improved interoperability of information systems. The malaria TWG will engage with the HMIS working group so that required changes—e.g., revised data elements—are easily surfaced. The TWG will also link with the IDSR team in low-transmission settings where malaria is a notifiable disease, to bridge interoperability gaps between aggregate monthly data and IDSR data.

Illustrative Activities:

- Install or support regular malaria measurement TWGs
- Assess NMCP/TWG organizational and behavioral capacity using the MECAT
- Collect data to assess the costs of creating, maintaining, and improving a malaria surveillance system

Strategic Approach 2.2: Increase country-level capacity and self-reliance through mentorship and linkage to SME resources and global opportunities.

Governance and management of systems and practices must begin at the country level. Our resident advisors will serve as initial champions, to build a culture of data use and to follow up on action points determined at TWG meetings. To work toward country self-reliance, resident advisors will engage and mentor a local counterpart for transitioning into the role of champion. Through this collaboration, we will co-develop country malaria strategic documents (Strategic Approach 2.1), connect local champions to global resources, and elevate their work within global fora (Strategic Approach 3.2).

MEASURE Evaluation will collaborate with local counterparts and malaria stakeholders to develop a country-specific portal on the inventory platform to house malaria SME tools, policy documents, and reference materials. The portal will facilitate dissemination of country-specific information products and improve access to local protocols and policies. Complementing this country-specific resource will be a biannual forum to showcase progress in malaria SME, share scientific results, and bring together high-level stakeholders.

Illustrative Activities:

- Expand inventory of strategic and technical resources on malaria SME, through an online platform; link to local stakeholders and country NMCP.
- With local stakeholders and data champions, develop country-specific portals to house key SME documents and resources.

Result 2 Milestones

Year 1	Year 3	Year 5
3–5 countries supported to launch or revive malaria TWG	3–5 additional countries supported to launch or revive malaria TWG 3–5 country champions identified and mentored to improve their malaria SME capacity 3–5 countries demonstrate improved HMIS enabling environment practices, as demonstrated by: <ul style="list-style-type: none"> ● 3–5 countries with TWGs that developed or adapted tools or practices ● 3–5 countries with TWGs that support operational units’ own monitoring body to implement action plan 	All Malaria SME-supported countries have an operational malaria TWG 3–5 country champions supported to disseminate malaria SME products, results, and/or best practices 3–5 countries demonstrate improved maturity in at least one HMIS enabling environment component or domain

B.3.3 Result 3: Enhanced methods, tools, and approaches applied to address health information challenges

MEASURE Evaluation will **collaborate** with local and global partners to adapt existing tools to address the needs of malaria SME globally, nationally, and at the operational unit. When a needed tool doesn’t exist, we will work with stakeholders to create a new one: for example, by developing new malaria-related modules and dashboards for DHIS 2. The adaptation of existing tools and the use of new and innovative methods will enable countries to detect abnormal increases in malaria cases, streamline data collection processes, improve access to high-quality data from a variety of sources, and track progress in strengthening malaria surveillance systems. Any tools, methods, or approaches providing such gains in one country will be valuable to all countries. We will satisfy that need by making these resources available online and providing guidance on their use. Thus, we envision two main strategic approaches for this Result: (1) the adaptation and development of tools, methods, and approaches for malaria to support work in PMI countries to strengthen malaria information systems, and (2) the dissemination of products that contribute to the global evidence base on how HIS can be strengthened to optimize malaria program performance at the national and subnational levels.

Strategic Approach 3.1: Adapt tools, analytics, and other information products to support countries in strengthening malaria information systems.

In the course of the Malaria SME project, countries will request help to achieve desired advances in their malaria HIS and along the transmission continuum. As we negotiate the work plan with them, we will explore whether an existing HIS strengthening tool, method, or approach will meet their needs. In some instances, we will be able to apply an existing tool without adaptation. Other instances will be opportunities to adapt a tool developed for some other health outcome for use in the domain of malaria.

If the tools to achieve a country's goal do not yet exist, stakeholders can agree on what they need. In these instances, we will collaborate with the stakeholders—international, national, or subnational—to develop, assess, and implement the needed resource.

Illustrative Activities:

- Adapting data quality assessment (DQA) tools, such as the Spatial Quality Anomalies Diagnosis tool to improve quality of geospatial information systems (GIS) data or the RDQA+Gender tool to examine gender-specific and sensitive indicators
- Development and deployment of standard national and subnational surveillance dashboards, including descriptive and prescriptive analytics to automate data analysis and interpretation for use
- Development of models based on surveillance data (including climate and entomological data, together with routinely collected data), such as interrupted time-series models and dose response models at the district, or subdistrict level

Strategic Approach 3.2: Develop and disseminate critical information products that contribute to the global evidence base for how health data can be used to maximize malaria program performance at the national and subnational level.

In adapting existing resources and creating new ones, we will be providing needed evidence for best practices and thought leadership in malaria HIS strengthening. All malaria-specific HIS strengthening resources will be made available to other interested parties by a variety of means.

- (1) Convey information directly to international collaborators. UNC and its partners have served as technical partner and secretariat for the RBM MERG, are members of the WHO SME technical expert group, and share ongoing collaborations with private-sector entities working in malaria. Through these relationships, we will share developments directly with other global stakeholders, such as WHO, the Centers for Disease Control and Prevention (CDC), and the Bill & Melinda Gates Foundation (BMGF).
- (2) Make information available online. MEASURE Evaluation has compiled an inventory of strategic and technical resources on malaria SME. The inventory platform assembles more than 30 categories of technical resources, including malaria strategic plans, IDSR guidelines, outpatient registers, and monthly summary forms. Technical resources are further categorized by the health system level where they are used (i.e., national, operational unit, health facility,

and community level). This platform will continue to be expanded to include global information products, reports on use of resources, contributions to the evidence base, and a set of frequently asked questions generated through our experience working in this area.

- (3) Use social media to direct attention to the availability of the material online.
- (4) Presentations and peer-reviewed publications. High-profile malaria conferences are the American Society of Tropical Medicine and Hygiene Annual Meeting and the Multilateral Initiative on Malaria (MIM) Pan-Africa Malaria Conference. For peer-reviewed publications, we will target open-access journals.

As we collaborate with stakeholders, TWGs, and NMCPs, we will ensure that country professionals are engaged in these opportunities, as discussed under Strategic Approach 2.2.

Illustrative Activities:

- Publish in peer-reviewed journal on modeling approaches used under Strategic Approach 3.1, in collaboration with country stakeholders.
- Design and develop an online malaria HIS strengthening resource platform.
- Design and implement a dissemination strategy for contributions to the global evidence base for HIS strengthening to improve malaria outcomes. The strategy would include key conferences, planned peer-review articles, associated media (including social media) dissemination strategies, and target audiences.

Result 3 Milestones

Year 1	Year 3	Year 5
Conduct landscape analysis to identify gaps in existing analysis methods/tools	3–5 analysis tools and methods developed and/or adapted	4–6 countries apply adapted and/or new analysis tools and methods
3–5 information products and/or publications developed and shared with stakeholders	5–10 additional information products and/or publications developed and shared with stakeholders	10–15 additional information products and/or publications developed and shared with stakeholders

In each of the Malaria SME’s results, we bring to bear MEASURE Evaluation’s history of **leadership** and **collaboration**. Through our knowledge and experience, we can lead the way to optimization of malaria HIS elements. And by collaborating at international, national, and subnational levels, we enable stakeholders to feel ownership of the systems we help them strengthen, thereby facilitating sustainability and self-reliance. We will use our leadership and collaboration skills strategically to help countries move toward lower malaria transmission.

B.4 MONITORING, EVALUATION, AND LEARNING

We will realize the project’s overall objective—ensuring high-quality malaria-related data with strengthened analysis and use for improved programs and policies—through our achievements in the three result areas. Table 4 presents illustrative indicators of success on the pathway toward achieving the overall objective. Crosscutting output indicators track progress toward result area-specific outcomes, which will then contribute to comprehensive performance outcomes. We will routinely collect data for all output indicators through an adaptation of the management information system (MIS) developed for MEASURE Evaluation Phase IV; additional data sources to document achievements against outcome indicators are listed below, in italics. The final list of indicators will be developed in collaboration with USAID.

Table 4. Illustrative indicators of success

Outputs	Outcomes	Performance Outcomes
Number of countries supported by Malaria SME to improve health information for malaria surveillance (disaggregated by partner; type of support; HIS maturity level) Number of training events conducted with Malaria SME support (disaggregated by country; type of training) Number of participants in Malaria SME supported training events (disaggregated by country; type of training; participant organizational affiliation and sex) Number of methods, tools, and/or approaches	Result 1	Number of countries supported by Malaria SME that demonstrate improvement in the percentage of health facilities and/or districts submitting timely monthly health data reports using the DHIS 2 (disaggregated by country, region, district) <i>DHIS 2</i>
	Number of countries supported by Malaria SME that demonstrate improved capacity for information generation (disaggregated by partner; type of capacity) <i>HMIS maturity & capacity assessment; interviews</i>	
	Result 2	Number of countries supported by Malaria SME that demonstrate improvement in the percentage of health facilities and/or districts submitting complete monthly health data reports using the DHIS 2 (disaggregated by country, region, district) <i>DHIS 2</i>
	Number of countries supported by Malaria SME that demonstrate improved maturity in at least one HMIS enabling environment component or domain (disaggregated by partner; HMIS component or domain; HMIS maturity level) <i>HIS maturity & capacity assessment</i>	
	Result 3	

<p>developed or adapted with Malaria SME support (disaggregated by type; technical area; audience)</p> <p>Number of information products and publications on Malaria SME developed and published/shared with stakeholders (disaggregated by product/publication type; technical area; audience)</p>	<p>Number of Malaria SME methods, tools, and/or approaches applied (disaggregated by type; technical area; country; partner)</p> <p><i>Project MIS; stakeholder survey</i></p>	<p>Number of countries with documented instances of malaria data used for program/policy improvement with support from Malaria SME (disaggregated by country; partner; health system level)</p> <p><i>Supervision/RDQA reports; data review meeting notes; interviews</i></p>
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Approach to Monitor Performance

Two key resources to monitor performance are the USAID-approved work plans that will guide all Malaria SME activities and our MIS. Work plans will describe activity deliverables, timelines, expected results, and budget, and the MIS will rapidly and efficiently collect information on activity progress against USAID-approved work plans. Quantitative and qualitative data elements tracked through the MIS will allow us to monitor activity implementation and spending, identify and address issues, and synthesize results to inform project learning on a regular and ongoing basis. The MIS will synthesize selected data elements in performance dashboards that project staff and the USAID management team can monitor at any time. The Monitoring, Evaluation and Learning (MEL) team will also use the MIS to review progress updates on an ongoing basis. The team will flag any current or potential issues with activity implementation and bring them to the attention of project management for corrective action. The MIS maximizes efficiencies, by enabling rapid exchange of information between the MEL team and Malaria SM&E activity leads; near real-time results tracking and documentation to inform project learning; and access by USAID to project information.

To ensure efficiency and cost-effectiveness of results documentation, the MEL team will standardize additional data collection needed to document project successes. We will work with in-country project staff to conduct mapping assessments (Strategic Approach 1.1) as a baseline, and implement routine, informal HIS maturity and capacity assessments to monitor and document improved outcomes in Malaria SME-supported countries. We will leverage existing MEASURE Evaluation tools, including the HIS Stages of Continuous Improvement Toolkit, the HIS Interoperability Maturity Toolkit, the HIS Strengthening Model, and the MECAT, to structure these assessments, tailoring them to minimize cost and maximize efficiency. We will also conduct targeted stakeholder surveys and interviews, as needed, to supplement documentation of Malaria SME outcomes.

Performance Outcomes: Documenting data quality improvements, such as timeliness and completeness of routine malaria reporting, is critical for demonstrating the project’s impact, and the MEL team will monitor malaria data quality from HIS using routine data collected in DHIS.

2. Collecting and verifying data quality improvement without access to HIS data would be costly and time-consuming; securing access to data from individual country HIS instances is therefore critical for the project to be able to efficiently monitor and document data quality improvements.

Building on learning from the Leader Award, we will document the use of routine health data for program improvement, by incorporating data-use follow-up in Malaria SME-supported RDQAs, supportive supervision visits, and data review meetings, as applicable, and by conducting targeted follow-up interviews with stakeholders, as needed.

Malaria SME will also engage in regular pause-and-reflect moments to synthesize our results and learning; communicate best practices and support their application across the project; and strategize approaches to address implementation challenges and ensure achievement of results.

We will also leverage these reflection opportunities to inform our global leadership and contributions to the global evidence base on improving health information for malaria SME.

[END OF ATTACHMENT B]