Capacity of Sierra Leone's National Malaria Control Programme for Monitoring and Evaluation

Baseline Assessment

October 2019

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CDC CENTERS FOR DISEASE CONTROL AND PREVENTION

U.S. President's Malaria Initiative

UNITY FREEDOM JUSTICE

MEASURE Evaluation

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FOREWORD

The Sierra Leone Government recognizes that malaria is a leading public health problem with the entire population at risk of being affected by this disease. Therefore, it is a cause for concern that warrants concerted efforts of all and sundry with a view to effectively controlling this disease.

The National Malaria Monitoring and Evaluation Plan 2016–2020 gives strategic direction to guide the development, implementation, monitoring, and surveillance of malaria prevention and control in Sierra Leone. It serves as a valuable guide that informs the implementation of a unified and cohesive monitoring and evaluation plan allowing the Ministry of Health and Sanitation as well as partners implementing malaria programs in Sierra Leone to align with and support the strategy of the national framework.

I must first thank all stakeholders through a participatory multistakeholder approach who contributed their time and knowledge to the development of this document. The collective experience of the MOHS staff and partners involved in malaria control implementation at the national and district levels contributed immensely to the development of this document.

I particularly thank the leadership of the Ministry of Health and Sanitation, including the Minister of Health and Sanitation, the Chief Medical Officer, and team for their support, guidance, and strategic direction. I must acknowledge the invaluable contribution of the Director and team of the Directorate of Policy Planning and Information (DPPI) for guidance and collaboration in conducting the capacity assessment and formulating the action plans.

I also thank the District Health Management Teams (DHMTs) for their commitment, support, open discussions, and contributions on ways to improve monitoring and evaluation at district levels. We look forward to their leadership in implementing this document's recommendations at the district level.

I wish to acknowledge the U.S. President's Malaria Initiative (PMI) for its commitment to funding activities to strengthen the monitoring, evaluation, and surveillance of malaria implementation at all levels. I particularly thank the United States Agency for International Development-funded MEASURE Evaluation project for technical assistance and guidance throughout the many activities that culminated in this document.

Finally, I sincerely thank our Roll Back Malaria partners for participating in this process and providing valuable experiences in the malaria control program.

The National Malaria Control Programme believes that findings from this capacity assessment and the action plans will attract full buy-in from all stakeholders and support the vision of the Ministry of Health and Sanitation on integration of health management information systems and promote data demand and use strategy at all levels.

Dr Samuel Juana Smith
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Cover

Malaria routine data quality assessment at George Brook Community Health Centre, in Freetown, Sierra Leone. Photo: Philip Brewah, Sierra Leone National Malaria Control Programme

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ABBREVIATIONS

CDC	United States Centers for Disease Control and Prevention
DDIU	data demand and information use
DHIS2	District Health Information Software, version 2
DHMT	district health management team
DPPI	Directorate for Policy Planning and Information
DQA	data quality audit
FETP	Field Epidemiology Training Program
GIS	geographic information system
Global Fund	Global Fund to Fight AIDS, Tuberculosis and Malaria
HIS	health information system
IDSR	Integrated Disease Surveillance and Response
M&E	monitoring and evaluation
MECAT	Monitoring and Evaluation Capacity Assessment Toolkit
MIS	Malaria Indicator Survey
MOHS	Ministry of Health and Sanitation
NHSSP	National Health Sector Strategic Plan
NMCP	National Malaria Control Programme
OD	organizational development
PMI	U.S. President's Malaria Initiative
RBM	Roll Back Malaria
SLMSP	Sierra Leone Malaria Strategic Plan
SME	surveillance, monitoring, and evaluation
SOP	standard operating procedure
TOR	terms of reference
TWG	technical working group
WHO	World Health Organization

EXECUTIVE SUMMARY

Background

Malaria is highly endemic in all areas of Sierra Leone. The country's National Malaria Control Programme (NMCP) is strategically placed within the Directorate of Disease Prevention and Control and has the mandate to plan and facilitate implementation, coordination, supervision, and monitoring of malaria control activities in the country. NMCP has undergone at least three strategic planning processes, which form the basis of the malaria strategic plans. NMCP is currently implementing the Sierra Leone Malaria Strategic Plan (SLMSP) 2016–2020, which was developed in 2015 following a review of the SLMSP 2011–2015. Monitoring and evaluation (M&E) is one of the strategic objectives in the current plan, which seeks to have at least 95 percent of health facilities report routinely on malaria program performance by 2020. Therefore, SLMSP 2016–2020 gives the NMCP the mandate to undertake M&E functions.

MEASURE Evaluation—a project funded by the United States Agency for International Development (USAID) and the U.S. President's Malaria Initiative (PMI)—conducted an assessment to understand and document the current capacity of the NMCP to perform its M&E functions and to identify priority interventions to strengthen M&E capacity. MEASURE Evaluation seeks to build sustainable M&E capacity among Sierra Leone's health workers at the national and district levels. The assessment was conducted for both the NMCP and the following districts: Bo, Koinadugu, Port Loko, and Pujehun.

Assessment Objectives

The overall objective of the assessment was to ascertain the current status of the M&E capacity of the NMCP and those four districts, to inform a plan to build their capacity for M&E. The assessment had the following specific objectives:

- To understand the current capacity of the malaria program to conduct M&E activities
- To assess the capabilities of individual staff members to carry out M&E functions
- To determine gaps in malaria M&E capacity
- To identify and prioritize interventions to strengthen M&E
- To develop a capacity-building plan

Method

The assessment focused on the NMCP as the organizational unit at the national level and select district health management team (DHMT) members performing malaria-related functions at the district level. The assessment consisted of a desk review of existing documentation and primary data collection through group assessment and individual assessment tools described in the Monitoring and Evaluation Capacity Assessment Toolkit (MECAT) (MEASURE Evaluation PIMA, 2017). MECAT assesses capacity across 12 components of an M&E system[1] and captures the capacity of individual staff to conduct M&E, as well as the technical and financial autonomy of the organization or unit in implementing M&E functions.

[1] These components are (1) organizational; (2) human capacity for M&E; (3) partnerships and governance; (4) organization's M&E plan; (5) annual costed M&E work plan; (6) advocacy, communication, and cultural behavior; (7) routine monitoring; (8) surveys and surveillance; (9) national and subnational databases; (10) supervision and auditing; (11) evaluation and research; and (12) data demand and use.

Key Findings

NMCP has well-established structures and tools for M&E that are of relatively good quality. At the NMCP, the assessed components achieved high scores, with the exception of human capacity for M&E and data demand and use, which both scored 5 out of the possible 10 points. Although the NMCP has good capacity for routine M&E, external technical assistance was essential to meet research and evaluation needs. Lower scores were observed under financial autonomy for most of the capacity areas. Components assessed at the district level received lower scores. At the district level, systems, structures, processes, and tools are not well established, with the exception of supervision and auditing and the annual M&E work plan, which is integrated in the annual health work plan. The assessment also revealed weak technical and financial capacities internally in the DHMTs, portraying high reliance on external support.

Key findings of the assessment are as follows:

- NMCP has a national malaria strategic plan with clear goals and objectives. The strategy and its accompanying M&E plan are aligned with the broader health sector strategy. National-level activities feed into the plans, but the linkage from the subnational-level activities is weak.
- M&E governance structures exist at the sector level through the Directorate for Policy Planning and Information, which is not malaria-specific. There are terms of reference for the health management information systems/M&E technical working group (TWG), but they require minor amendments to provide clarity, especially about membership. There are no M&E TWGs at the district level.
- At the NMCP, the M&E unit has adequate staff with the requisite qualifications and skills. Staffing in the M&E unit at the district level is inadequate. There are no formal guidelines on M&E staffing levels and qualifications for the national and district levels.
- There is no curriculum or standard national training guide for malaria M&E.
- NMCP has a communication strategy, but it has not been disseminated at the district level.
- The manual on data management procedure provides guidance on most M&E functions, but it is outdated and requires revisions to incorporate procedures for data capture. Staff at the district level are not aware of this document.
- There are improvements in integration of databases with the national health information system (HIS); reporting rates were as high as 97 percent. Data quality remains a gap due to stockouts of essential registers and summary tools, low reporting from private facilities, and inadequate capacity in data management and assessment of data quality.
- There are gaps in the collection of malaria-specific data from hospitals; an Excel-based hospital data tool has not been uploaded or programmed into the HMIS, which is run on District Health Information Software, version 2 (DHIS2) and is also referred to in Sierra Leone by the name DHIS2.
- A malaria-specific research agenda is in place, reflects the needs of the program, and was ratified by the operations research committee.
- The program, at national and district levels, does not have a data use plan and lacks an updated inventory of institutions carrying out malaria research and evaluations.

Recommendations

The assessment offers the following recommendations:

- Disseminate and sensitize lower levels on the use of the strategic documents in malaria programming.
- Conduct a review of the SLMSP 2016–2020 and the 2016–2020 M&E plan.
- Revise the data-management procedure manual, which is outdated, and include procedures for capturing data at the health facility level and overall M&E guidelines, among other updates.
- Develop a health-sector indicator reference manual that curates the full range of health sector priorities.
- The NMCP needs to focus on building the capacity of districts (and peripheral health units) to undertake M&E functions. This should include expanding the participation of district teams during review and development of key malaria strategic documents.
- DHMTs will benefit from a detailed partners' database for effective coordination and leveraging of resources at the district level.
- NMCP needs to advocate resources to meet the M&E budget targets.
- A curriculum or standard national training guide for malaria M&E is needed.
- Pursue interventions to address data quality, including developing the capacity of program staff to conduct data quality audits (DQAs) and address specific data quality improvements. In addition, the administrative and management functions of supervision may need to be split from the data quality assessment so that the administrative and management functions are addressed by supportive supervision.
- Stockouts of essential registers and summary tools suggest the need for proper quantification and forecasting and for distribution to facilities in a structured manner on a calendar basis (e.g., every two years).
- The Directorate for Policy Planning and Information should address the gaps identified in the DHIS2, including the need to update the system to capture key malaria data from the hospital level that are currently collected using Excel-based tools.
- Develop a data use plan, update the inventory of institutions carrying out malaria research and evaluations, and build capacity for competencies in data analysis and use at the district level, to support a more structured approach to evidence-based decision making.

INTRODUCTION

In 2017, PMI added Burkina Faso, Cameroon, Côte d'Ivoire, Niger, and Sierra Leone to its list of beneficiary countries, bringing the total to 24 countries in sub-Saharan Africa receiving PMI's support for malaria control. MEASURE Evaluation is PMI's malaria SM&E partner in Sierra Leone. Other partners are the Population Services International-led consortium Impact Malaria service delivery project for case management and prevention of malaria in pregnancy; the John Hopkins Breakthrough Action for advocacy, communication, and social mobilization; the Abt Associates VectorLinks for integrated vector management; and the Chemonics Global Health Supply Chain Program to address supply chain management issues.

PMI tasked the USAID-funded MEASURE Evaluation project to build sustainable M&E capacity among Sierra Leone health workers at the national and district levels. A sustainable and strengthened M&E system is expected to yield high-quality data for use in evidence-based decision making, improving the NMCP's effectiveness and the lives of the Sierra Leone people.

This report summarizes findings of the baseline assessment of the capacity for M&E of Sierra Leone's NMCP and four districts (Bo, Koinadugu, Port Loko, and Pujehun), which MEASURE Evaluation conducted from June 17–22, 2019.

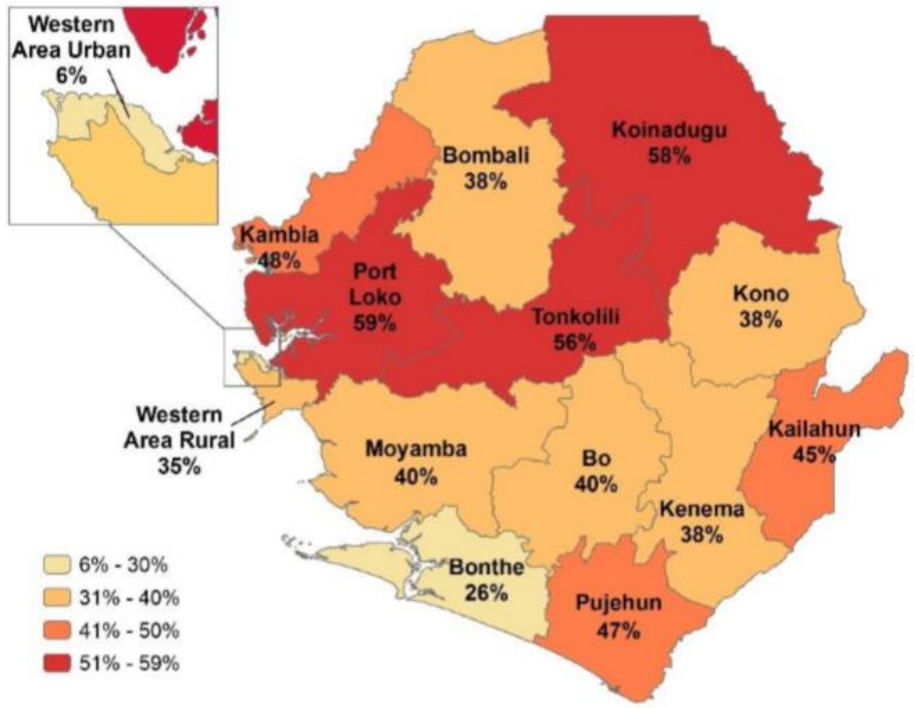
Country Context

Sierra Leone has an estimated population of 7.9 million (Statistics Sierra Leone, 2017) and is located on the west coast of Africa, bordered on the north and east by Guinea, on the south by Liberia, and on the west by the Atlantic Ocean. The country has a tropical climate, with temperatures ranging from 21 to 32^0C and a mean daily temperature of 25^0C. It has two main seasons: the wet season (May to October), with heavy rains in July and August, and the dry season (November to April). It has an average annual rainfall of approximately 320 mm. Relative humidity is high, ranging from 60 to 90 percent.

Malaria is highly endemic in all areas of Sierra Leone, ranging from mesoendemic to hyper/holoendemic. Malaria transmission occurs throughout the year, with two peaks: one that begins during the rainy season, in May, and the second toward the end of the rainy season, in October and November. The major parasite species are *Plasmodium falciparum* (>90%), *Plasmodium ovale*, and *Plasmodium malariae*.

Malaria is the most serious public health problem in Sierra Leone, with all the population at risk. It accounts for more than 40 percent of all outpatient morbidity. Every year, malaria prompts an estimated 2,240,000 outpatient visits; 1 million of these are by children under five years of age (NMCP, 2015). The most vulnerable groups are children under five years of age and pregnant women. Malaria is among the top 10 causes of death among children under five, accounting for 14 percent of the deaths (Statistics Sierra Leone & ICF International, 2014). In addition to the health burden, malaria is also considered a major impediment to socioeconomic development, leading to poverty (NMCP, 2015).

Figure 1. Prevalence of malaria in children, by districts



Source: Sierra Leone Malaria Indicator Survey 2016

Decentralization in 2008, including decentralization of health services, resulted in new roles, with the Ministry of Health and Sanitation (MOHS) taking the role of policy formulation, standard setting, quality assurance, resource mobilization, and capacity building. The districts' role is implementation of the health policies and provision of services.

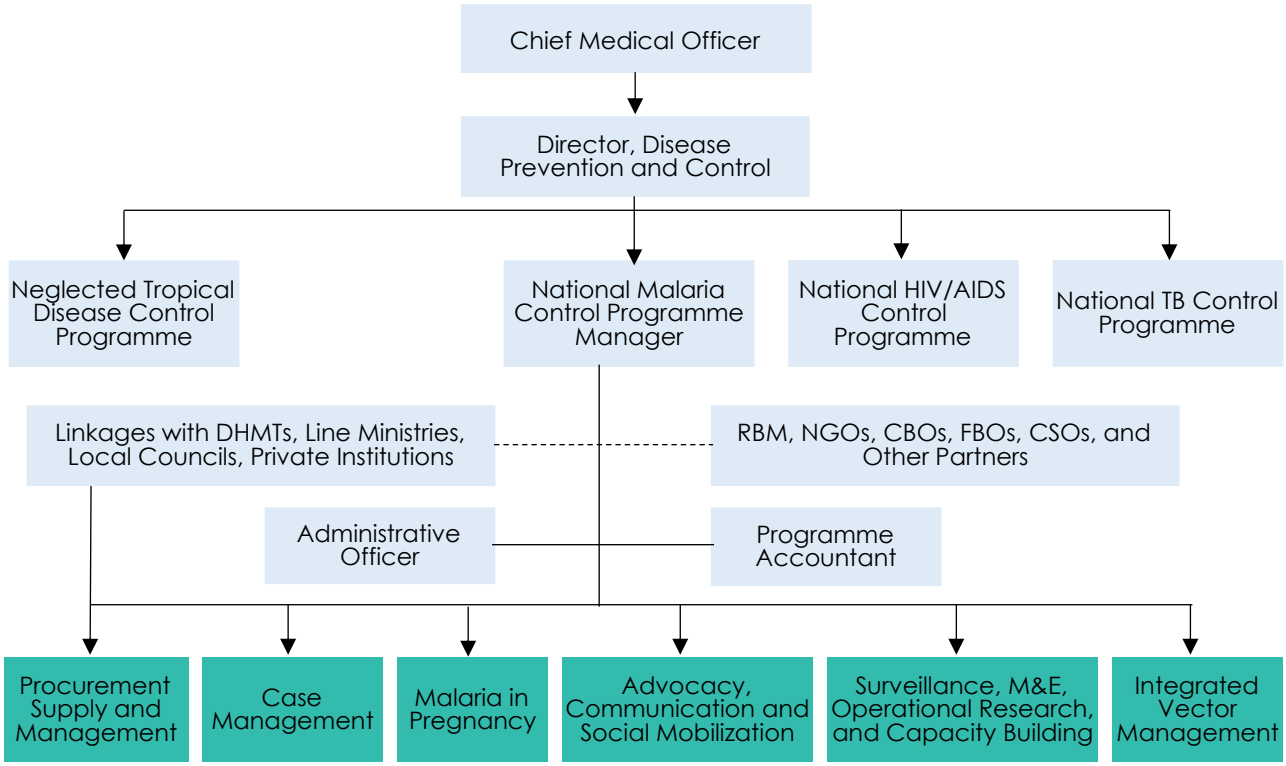
Institutional Framework for M&E at the NMCP

Sierra Leone's malaria prevention and control efforts are guided by the SLMSP 2016–2020, which is in line with the NHSSP 2017–2021 and the Health Sector Recovery Plan 2015–2020. Under the guiding principle of equity and equality, the NMCP moved from targeting malaria control interventions to universal coverage aimed at reducing malaria morbidity and mortality by at least 40 percent by 2020, compared with 2015 levels. M&E is one of the strategic objectives of the SLMSP, which seeks to have at least 95 percent of health facilities report routinely on malaria program performance by 2020. The SLMSP has an accompanying M&E plan that is aligned with the health sector's M&E plan and HIS strategy. A national malaria policy and guidelines for policy implementation are in place.

The NMCP is strategically placed within the Directorate of Disease Prevention and Control. The program's mandate is to plan and facilitate implementation, coordination, supervision, and monitoring of malaria control activities in the country (NMCP, 2015). In line with the Roll Back Malaria (RBM) initiative, the NMCP adopted the following seven intervention areas and strategies, as shown in Figure 2: (1) case management; (2) integrated vector management; (3) malaria in pregnancy; (4) procurement and supply chain management; (5) advocacy, communication, and social mobilization; (6) surveillance, M&E, operational research, and capacity building; and (7) program management (NMCP, 2015). The NMCP has a well-established national coordinating mechanism and a malaria TWG (with membership beyond the NMCP) that provides planning and implementation support for the program. The RBM taskforce

committee promotes partnership and oversees the coordination of implementing and development partners, in line with the "Three Ones" principles of a common action framework, a single coordinating authority, and one M&E framework to monitor collective efforts.[2]

Figure 2. NMCP structure



TB=tuberculosis, DHMT=district health management team, NGO=nongovernmental organization, CBO=community-based organization, FBO=faith-based organization, CSO=civil society organization

There are six of the eight staff under the surveillance, M&E, operational research, and capacity building area of work. These staff are tasked with supervising all malaria-related data collection activities in the country, reviewing data forms and reports, verifying data, and providing coaching and mentoring as part of supportive supervision. All districts have M&E focal points, disease surveillance officers, and malaria focal points.

None of the national household surveys conducted between 2005 and 2010 provided information on parasitemia. The 2013 Malaria Indicator Survey (MIS) was the first to include testing among children under five years of age; the 2016 MIS followed suit. Reporting tools for routine collection of malaria data are integrated in the sector's health management and information system through the DHIS2, which is overseen by the Directorate for Policy Planning and Information (DPPI). Relevant malaria indicators captured in the Integrated Disease Surveillance and Response (IDSR) system and the logistic management information system are currently being integrated in the DHIS2.

[2] Developed by donors and developing countries in 2004 to coordinate efforts to combat HIV, the "Three Ones" principles have also been applied to malaria and other diseases. See Joint United Nations Programme on HIV/AIDS (UNAIDS). (2004). "Three Ones": Key principles. Geneva, Switzerland: UNAIDS. Retrieved from http://data.unaids.org/UNA-docs/three-ones_keyprinciples_en.pdf.

Entomologic surveillance and therapeutic efficacy tests have been conducted consistently and provide information for policy formulation. Four regional hubs, consisting of six sentinel sites, provide annual information on vector composition, vector behavior, and susceptibility of vectors to insecticides (MOHS, 2015).

The NMCP uses the available malaria integrated supervisory checklist during quarterly supervision visits. The program prepares quarterly, semester, and annual reports that are shared with stakeholders during review and planning meetings. The reports, as well as feedback from supervisory visits, are also shared with DHMTs, facility in-charges, malaria focal persons, and health workers. Often this feedback is given through on-the-job training (MOHS, 2015). Other specific technical reports or findings from evaluation and research activities are shared with donors and in national, regional, and international forums, in addition to publications in relevant peer-reviewed journals.

The NMCP plans to develop malaria stratification maps to enhance evidence-based programs and earmarked support for building capacity in geographic information systems (GIS) (MOHS, 2015).

In the health sector, the MOHS identified the following areas during annual reviews as needing improvement:

- Coordination of M&E systems across programs at all levels
- Maintenance and retention of M&E staff at all levels
- Support for logistics and equipment (computers and accessories)
- Capacity building in data collection and reporting, including for the district M&E officers and malaria focal persons (data collection and management) through supportive supervision and training in data collection, reporting, and analysis
- Capacity building in GIS

Rationale for the Assessment

The DPPI and the World Health Organization (WHO) used MEASURE Evaluation's Monitoring and Evaluation Systems Strengthening Tool (MEASURE Evaluation, 2007) in 2011 to assess the NMCP's data collection, data reporting, and data management systems—a contractual requirement for a grant to the NMCP by the Global Fund to Fight AIDS, Tuberculosis and Malaria (Global Fund). The outcome of this assessment was a five-year (2011–2015) costed action plan aimed at strengthening the program's M&E system. In 2015, the NMCP conducted an organizational capacity assessment with support from the PMI-funded leadership, management, and governance capacity-building project. A follow-up project assessment was conducted in 2017 to assess progress in 10 capacity areas, including M&E, reporting, and knowledge management. The assessment was useful in highlighting the status of these areas and identifying those requiring improvement. However, another assessment was needed to comprehensively screen the M&E system for quality and autonomy and determine the M&E capacity of individual staff at the NMCP and also of staff who were implementing district-level malaria activities. MEASURE Evaluation's baseline assessment built on the previous findings to establish an objective reference point to track improvements in the NMCP's M&E system.

Objectives of the Assessment

The overall objective of the assessment was to ascertain the current status of M&E capacity of the NMCP and targeted districts, with the aim of developing a capacity-building plan. The assessment had the following specific objectives:

- To understand current capacity of the malaria program to conduct M&E activities
- To assess capabilities of individual staff members to carry out M&E functions
- To determine gaps in malaria M&E capacity
- To identify and prioritize interventions to strengthen M&E
- To develop a capacity-building plan

This report presents the assessment's findings and a capacity-strengthening plan.

METHODS

The MECAT provided the framework for this assessment. A workshop setting was used to collect data from a participatory group assessment to determine the NMCP's M&E capacity. The assessment focused on the NMCP as an organizational unit at the national level and DHMTs at the district level. Participants were drawn from the NMCP, DPPI, select hospitals, and national-level stakeholders. The stakeholders, identified through purposive selection in consultation with the NMCP, were the program manager, NMCP M&E personnel, malaria thematic focal points, hospital M&E officers, and representatives of ICAP, Catholic Relief Services, and Impact Malaria. Selection of the four target districts (Bo, Koinadugu, Port Loko, and Pujehun) was also purposive and considered areas in which other PMI interventions were taking place so as to leverage ongoing PMI and government investments. Participants at the district level were the district medical officer/district health sister, malaria focal persons, M&E officers, data operators, district surveillance officers, and district pharmacists. This made it possible to interview people with knowledge of the program's M&E responsibilities and the staff tasked with implementing malaria M&E functions.

All participants completed an Excel-based assessment of individual-level M&E competencies to inform staff capacity needs and allow setting of training priorities. These competencies were M&E leadership; data collection and management; evaluation, data analysis, dissemination, and use; and general management. Scoring was based on perceptions of an individual's competencies in these areas.

A desk review was conducted to provide context about the M&E system and the relevant background information. Information from the desk review also helped in framing questions for the group assessment. MECAT provided guidance on identifying initial M&E-related documents for the review. Other documents referenced or that came up during the group assessment or individual discussions with stakeholders were included in the desk review. Information from key informant interviews with select stakeholders conducted during the project's scoping visit was used to further gain perspective on M&E performance expectations and provide additional contextual qualitative information beyond the NMCP.

The Excel-based group assessment tool considered the 12 components of a functional M&E system,[3] which MECAT refers to as "capacity areas." Each capacity area was divided into elements within which capacity was measured across four dimensions: status, quality, technical autonomy, and financial autonomy. Table 1 shows the capacity areas and related elements assessed. Responses to questions corresponding to the four dimensions in each element were provided in a dropdown list that populated a numerical value upon selection. A consensus-building approach was used to arrive at a final score. These quantitative data were analyzed to compute the organizational capacity index and provide simple descriptive statistics used to summarize capacity areas from the group assessment and the competency-based self-assessment. The summaries were automatically populated in the tool dashboards, with one bar graph for each capacity area and each dimension, and a spider graph comparing the scores across the 12 capacity areas.

The assessment was conducted during workshops held for the NMCP on June 17–19, 2019, and for the DHMTs on June 20–22, 2019.

[3] The 12 components of M&E system strengthening are described at https://www.unaids.org/sites/default/files/sub_landing/files/2_MERG_Strengthening_Tool_12_Components_ME_System.pdf.

Table 1. Capacity areas for the group assessment and main areas of focus

Capacity area		Elements (main focus of questions)
1	Organizational	• Leadership: Effective leadership for M&E in the organization • Human resources: Job descriptions for M&E staff, adequate number of skilled M&E staff, defined career path in M&E • Organizational culture: Organizational commitment to ensure M&E system performance • Organizational roles and functions: Well-defined organizational structure, including organization M&E unit; M&E units or M&E focal points in other public, private, and civil society organizations; written mandates for planning, coordinating, and managing the M&E system; well-defined M&E roles and responsibilities for key individuals and organizations at all levels • Organizational mechanisms: Routine mechanisms for M&E planning and management, for stakeholder coordination and consensus building, and for monitoring the performance of the M&E system; incentives for M&E system performance • Organizational performance: Key organizations achieve their annual work plan objectives for M&E
2	Human capacity for M&E	• Defined skill set for individuals and organizations at subnational and service-delivery levels • Work force development plan, including career paths for M&E • Costed human capacity-building plan • Standard curricula for organizational and technical capacity building • Local or regional training capacity, including links to training institutions • Supervision, in-service training, and mentoring
3	Partnership and governance	• M&E TWG • Mechanism to coordinate all stakeholders • Local leadership and capacity for stakeholder coordination • Routine communication channel to facilitate exchange of information among stakeholders
4	Organizational M&E plan	• Broad-based participation in developing the organizational M&E plan • Explicitly linked to the health sector or multisector strategic plan at the subnational and national levels, if applicable • M&E plan adheres to national technical standards • An M&E system assessment has been completed and recommendations for system strengthening have been addressed in a revised M&E plan
5	Annual costed health sector M&E work plan	• M&E work plan contains activities, responsible implementers, timeframe, activity costs, and identified funding • M&E work plan explicitly links to the annual work plans and government budgeting framework (Medium-Term Expenditure Framework) • Resources (human, physical, financial) committed to implement the M&E work plan • All relevant stakeholders endorsed the M&E work plan • M&E work plan updated annually based on performance monitoring
6	Advocacy, communication, and cultural behavior	• Communication strategy includes a specific M&E communication and advocacy plan • M&E explicitly referenced in the integrated development plans or multisector development plans • M&E champions among the organization's officials identified and actively endorse M&E actions

Capacity area		Elements (main focus of questions)
		• M&E advocacy activities implemented according to the M&E advocacy plan
7	Routine monitoring	• Data collection strategy explicitly linked to data use • Clearly defined data collection, transfer, and reporting mechanisms, including collaboration and coordination among stakeholders • Essential tools and equipment for data management (e.g., collection, transfer, storage, analysis) • Routine procedures for data transfer from different reporting levels
8	Surveys and surveillance	• Protocols for all surveys and surveillance based on international standards • Specified schedule for data collection linked to stakeholders' needs, including identification of resources for implementation • Inventory of surveys conducted • Well-functioning surveillance system
9	National and subnational databases	• Databases designed to respond to the decision making and reporting needs of different stakeholders • Linkages between different relevant databases to ensure data consistency and avoid duplication of effort • Well-defined and managed database to capture, verify, analyze, and present data from all levels and sectors
10	Supervision and auditing	• Guidelines for supervising routine data collection at facility- and community-based levels • Routine supervision visits, including data assessments and feedback to local staff • Periodic DQAs • Supervision reports and audit reports
11	Evaluation and research	• Inventory of completed and ongoing organization-specific evaluation and research studies • Inventory of local evaluation and research capacity, including major research institutions and their focus of work • Evaluation and research agenda • Guidance on evaluation and research standards and appropriate methods • Forums for dissemination and discussion of research and evaluation findings
12	Data demand and information use	• Organization's strategic plan and M&E plan include a data use plan • Analysis of organizational data needs and data users • A data use plan to guide evidence-based decision-making processes • Evidence of information use (e.g., data referenced in funding proposals and planning documents) • Interventions increase local demand for information and facilitate its use • M&E materials available that address different audiences and support data sharing and use

RESULTS

This section summarizes results from the group assessment, presents data from the individual competency-based assessments, and incorporates information gathered during the scoping visit held between May 14 and 25, 2018, in contextualizing findings of the M&E capacity assessment. A description of the overall scores of the capacity areas at the NMCP and DHMT levels is provided in Section 3.1, followed by an in-depth discussion of each capacity area in Section 3.2.

Findings from the MECAT Assessment

Figures 3a–3d show Sierra Leone's NMCP scores in the 12 capacity areas and by the four dimensions—status, quality, technical autonomy, and financial autonomy. Performance in relation to status and quality of systems, structures, processes, and tools was relatively good. High scores were achieved for the status dimension of all organizational features (capacity areas 1–6), except on human capacity for M&E (Figure 3a). Elements in the human capacity component that resulted in low scores were the lack of a validated national M&E training curriculum, the lack of a data demand and use capacity building plan, and the potential duplication of capacity-building activities within the NMCP. Under mechanisms for data collection and data management (capacity areas 7–11), routine monitoring, surveys and surveillance, and evaluation and research scored 60 percent and above; national and subnational databases was lowest, at 50 percent. Data demand and use, which is the primary purpose of an M&E system, scored 5 out of the possible 10 points.

Technical autonomy was excellent in the supervision and auditing component and average in all the other capacity areas (Figure 3c). Lower scores were observed under financial autonomy for most of the capacity areas (Figure 3d).

At the district level, systems, structures, processes, and tools were not well established, except for supervision and auditing and the annual M&E work plan, which is integrated in the annual health work plan (Figure 4a). Functionality of the M&E system at the district level was mainly below average, as depicted by the low scores in the overall quality dimension (Figure 4b). The assessment also revealed the weak technical and financial capacities internally within the DHMTs, portraying high reliance on external support (Figures 4c and 4d).

A detailed description of performance in each capacity area follows the figures below.

Figures 3a–3d. Overall scores of the capacity areas at NMCP

Figure 3a. Status of capacity areas at NMCP

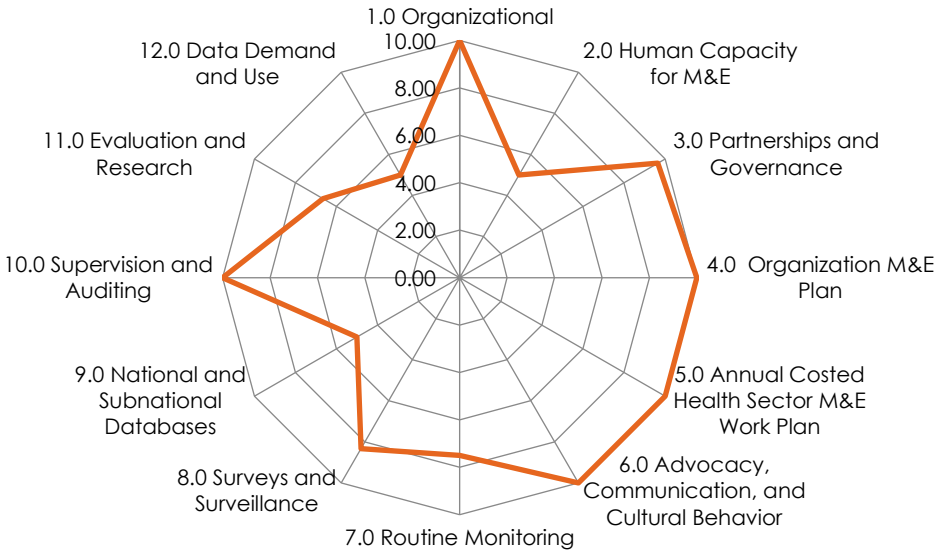


Figure 3b. Quality of capacity areas at NMCP

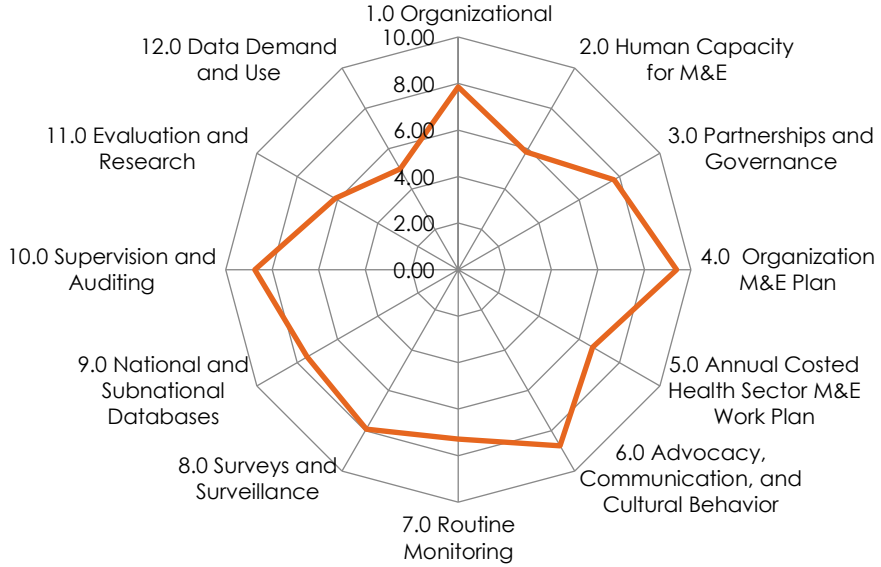


Figure 3c. Technical autonomy at NMCP

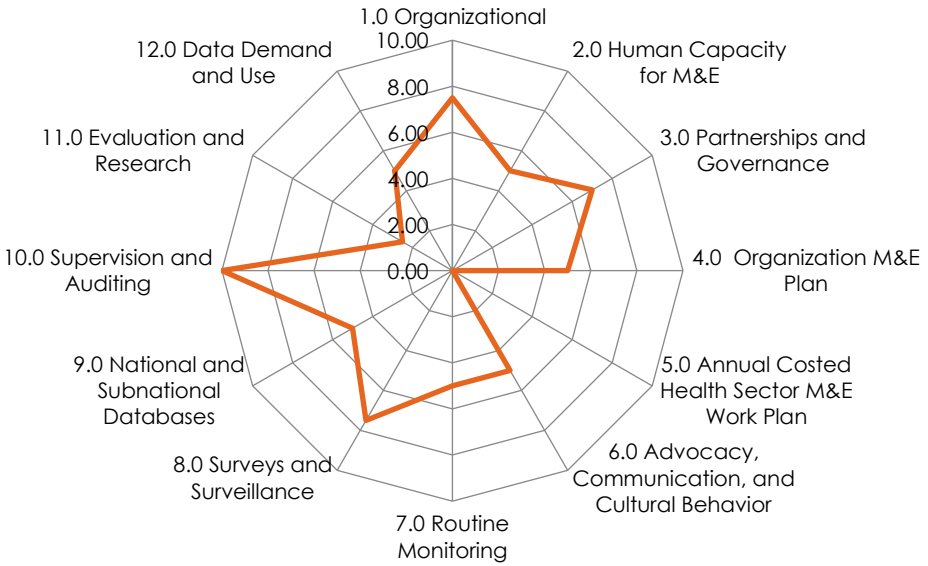
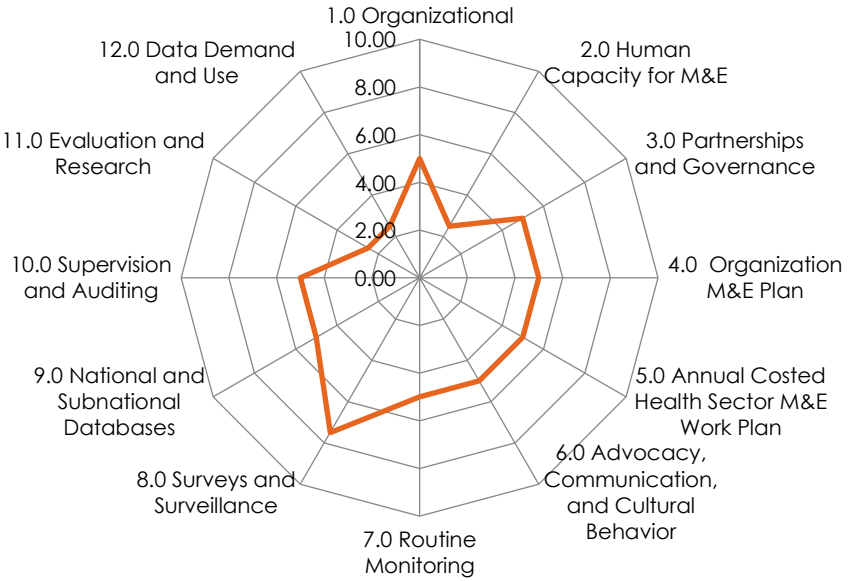


Figure 3d. Financial autonomy at NMCP



Figures 4a–4d. Overall scores of the capacity areas at the district level

Figure 4a. Status of capacity areas at the district level

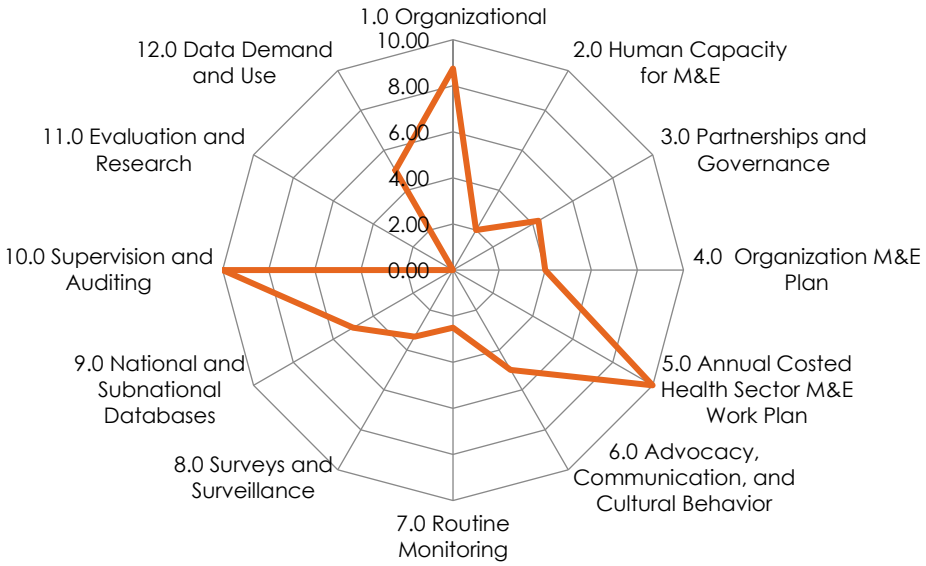


Figure 4b. Quality of capacity areas at the district level

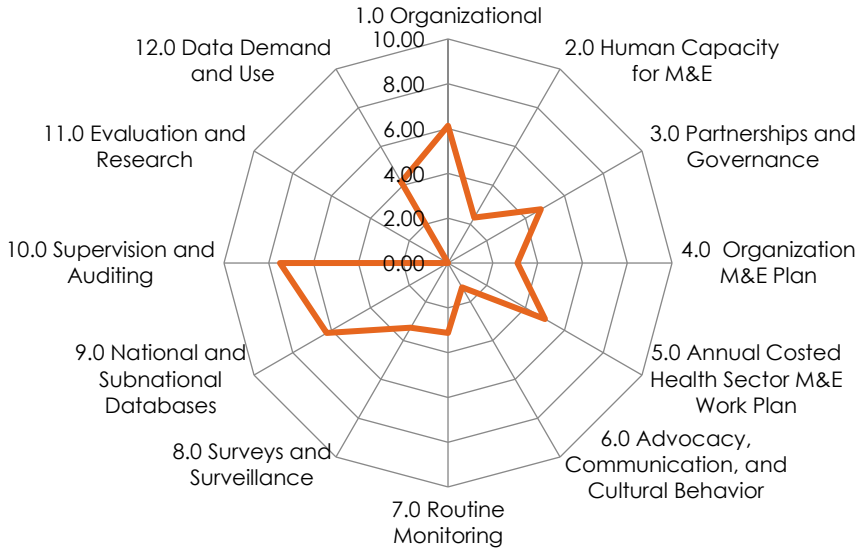


Figure 4c. Technical autonomy at the district level

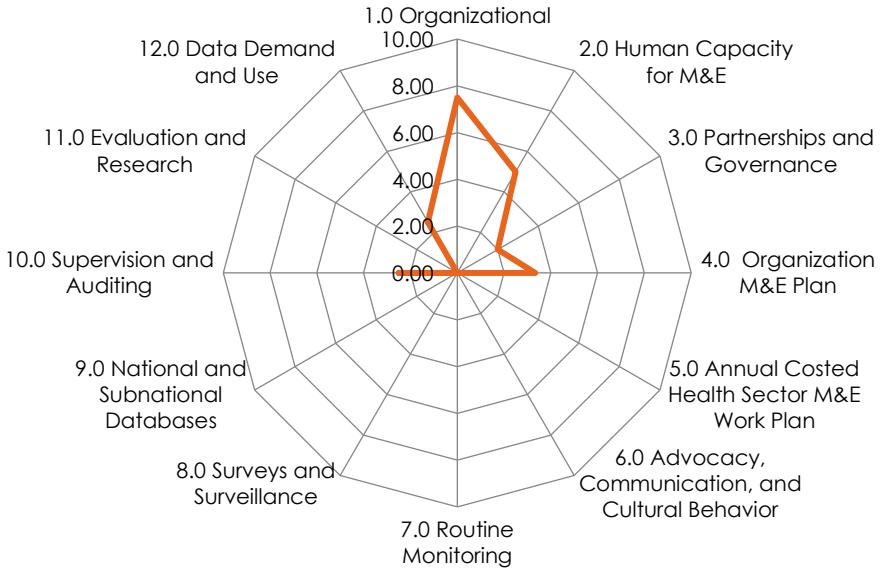
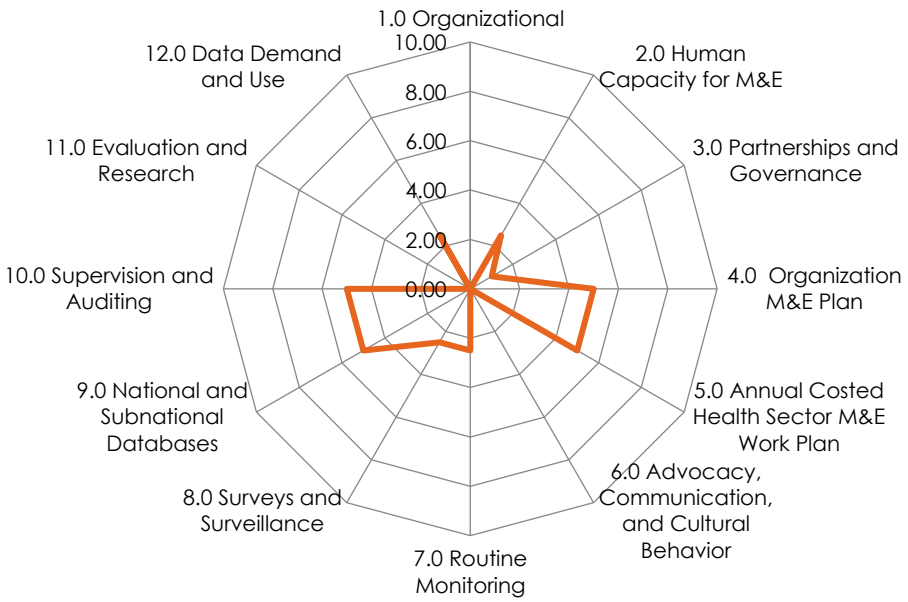


Figure 4d. Financial autonomy at the district level



Issues Arising in Each Capacity Area

Organizational Capacity for M&E

Health sector policy guidelines and standards existed, including the NHSSP 2017–2021, health sector M&E plan, health sector recovery plan 2015–2020, and HIS strategic plan 2017–2021. The NMCP had a malaria control strategic plan and its accompanying M&E plan 2016–2020 aligned to the guiding principles of the broader NHSSP. The plan was developed based on recommendations from the Malaria Programme Review in 2015 and the recognition of the impact of malaria interventions as outlined in the health sector recovery plan 2015–2020. DHMTs were using the national-level strategic documents. A midterm review of the SLMSP was planned for 2018, and an end-term review and evaluation was planned for 2020. In the meantime, the NMCP conducted a desk review in August 2019 and planned to follow up with field visits.

The NMCP's vision is "access to malaria control interventions for all," and the mission and strategic objectives were aligned with this vision. The mission statement and objectives were largely known by staff at the national level, but the values and ethics statements were not known. Gender equity was not explicitly stated in the program's values, although malaria prevention interventions and technical empowerment activities ensure that gender perspectives were addressed. At the district level, most of the respondents during the assessment were not able to state the mission statement and could not summarize the values and ethics statements.

The NMCP and DHMTs had M&E units mandated to execute M&E functions. Responsibilities of staff in the unit were clearly defined in job descriptions. At the national level, the unit employed a statistician, an epidemiologist, a clinician, an entomologist, and two M&E assistants. At the district level, there was no guideline on the standard number of staff and their qualifications. The four districts assessed had two staff (one M&E officer and one data operator) employed on contract through DPPI. In Bo District, the DHMT facilitated the recruitment of two additional staff (one M&E officer and one data operator). This number was not adequate both to coordinate the generation of information and evaluate impacts of implemented health interventions in all program areas as expected.

The NMCP M&E unit held monthly meetings that were documented, and minutes were circulated to unit members through e-mail. The meetings were held on government premises, with some logistical support from the Global Fund. At the district level, there was limited staff in the M&E unit to warrant regular meetings as a unit. With an exception of Bo District, which held monthly meetings, the staff met to prepare for review meetings on a quarterly basis in Koinadugu and on a biannual basis in Port Loko. The last meeting for Pujehun District was held in 2018. M&E-related meetings were infrequent at the district level and supported mainly by partners. Minutes of the meetings were not circulated but were reviewed and endorsed in subsequent meetings.

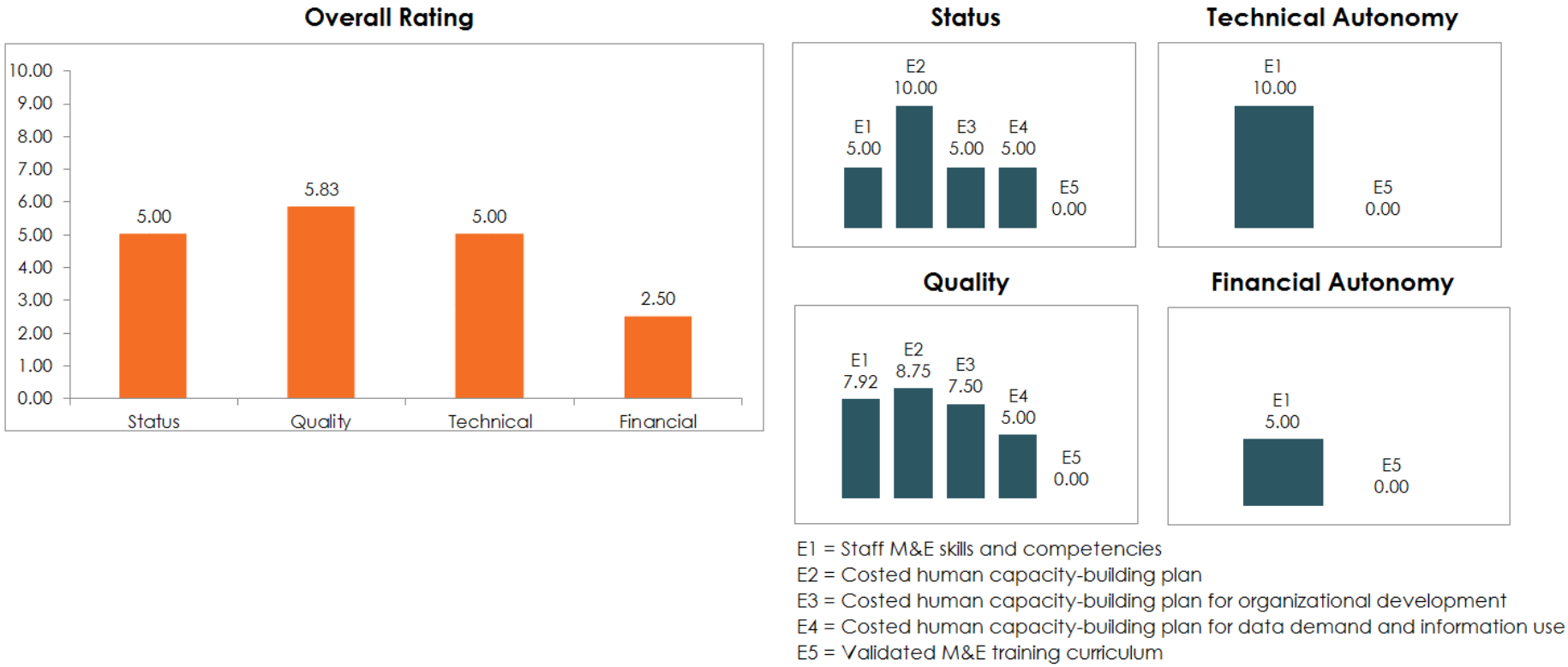
M&E staff were subjected to the government's performance contracting, with appraisals and goal setting done yearly. There were no specific mechanisms to routinely monitor performance of the M&E system and no formal incentives for good performance. However, the NMCP had strong leadership that was supportive of malaria M&E and encouraged all staff to be knowledgeable about M&E and to undertake M&E functions.

Human Capacity for M&E

Human capacity was assessed at the organizational level as part of the group assessment and at the individual level through the individual competency-based assessment. In addition to the team's appraisal of M&E skills and competencies, the group assessment looked at the existence of four key guidance documents: (1) a costed human capacity-building plan, (2) a costed human capacity-building plan for organizational development, (3) a costed human capacity-building plan for data demand and use, and (4) a validated M&E curriculum.

Figure 5 shows the NMCP's overall rating and scores for each human capacity element across the four dimensions (status, quality, technical autonomy, and financial autonomy). Sierra Leone lacked a validated M&E curriculum, and there was no standard training for health workers on M&E; training was mostly implemented through linkages with institutions such as Amref Health Africa. WHO worked with the School of Medicine at the University of Sierra Leone to develop a surveillance curriculum that will be based on the third generation of the WHO IDSR guidelines as a pilot in Sierra Leone and Tanzania. Capacity-building plans for organizational development and for data demand and use were embedded in the overall staff capacity-building plan and included in the program business plan. However, no assessment of data demand and information use (DDIU)-related gaps had been done, so MECAT was likely to capture the gaps, including in individual-level skills and competencies. In addition, there was no structured mechanism to coordinate capacity-building plans, leaving room for potential duplication, especially of partner-funded capacity-building activities.

Figure 5. Human capacity for M&E at the NMCP

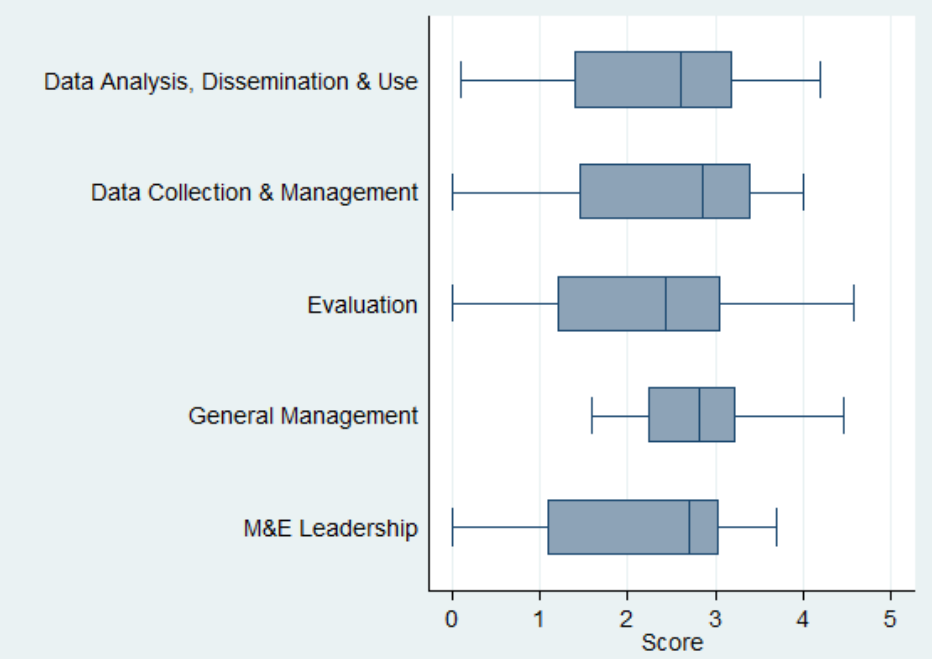


E1 = Staff M&E skills and competencies
E2 = Costed human capacity-building plan
E3 = Costed human capacity-building plan for organizational development
E4 = Costed human capacity-building plan for data demand and information use
E5 = Validated M&E training curriculum

At the NMCP, M&E skills and competencies were average, with high scores for qualifications of staff at the M&E unit and their ability to package data to support decision making. Six staff positions (a statistician, an epidemiologist, a clinician, an entomologist, and two M&E assistants) out of the expected eight in the M&E unit were filled. An M&E staff member was assigned to each thematic area in the program. In addition to M&E support for thematic area focal persons, the M&E staff provided mentorship in the review of indicators and general M&E during supportive supervision. Staff in the M&E unit were competent and provided mentorship to other program staff. Recent capacity-building activities were the Amref Health Africa training for 120 staff in M&E, including four staff from the NMCP; program training on data analysis for the MIS and malaria-specific data for four staff; and DHIS2 training for all NMCP staff. The United States Centers for Disease Control and Prevention (CDC) had also been supporting workforce skills by training frontline staff on basic epidemiology through a short course (103 health workers trained) and an intermediate course (11 health workers trained) as part of the field epidemiology training program.[4] Not all program staff were trained to carry out tasks related to the assessment of data quality, and additional skills were needed to perform advanced GIS data analytics.

The aggregate scores from the individual assessment corroborated the finding from the organizational tool. On a scale of 0–5, where 5 was expert, the overall score was 2.5, with high but skewed scores in data management and M&E leadership competence areas (Figure 6).

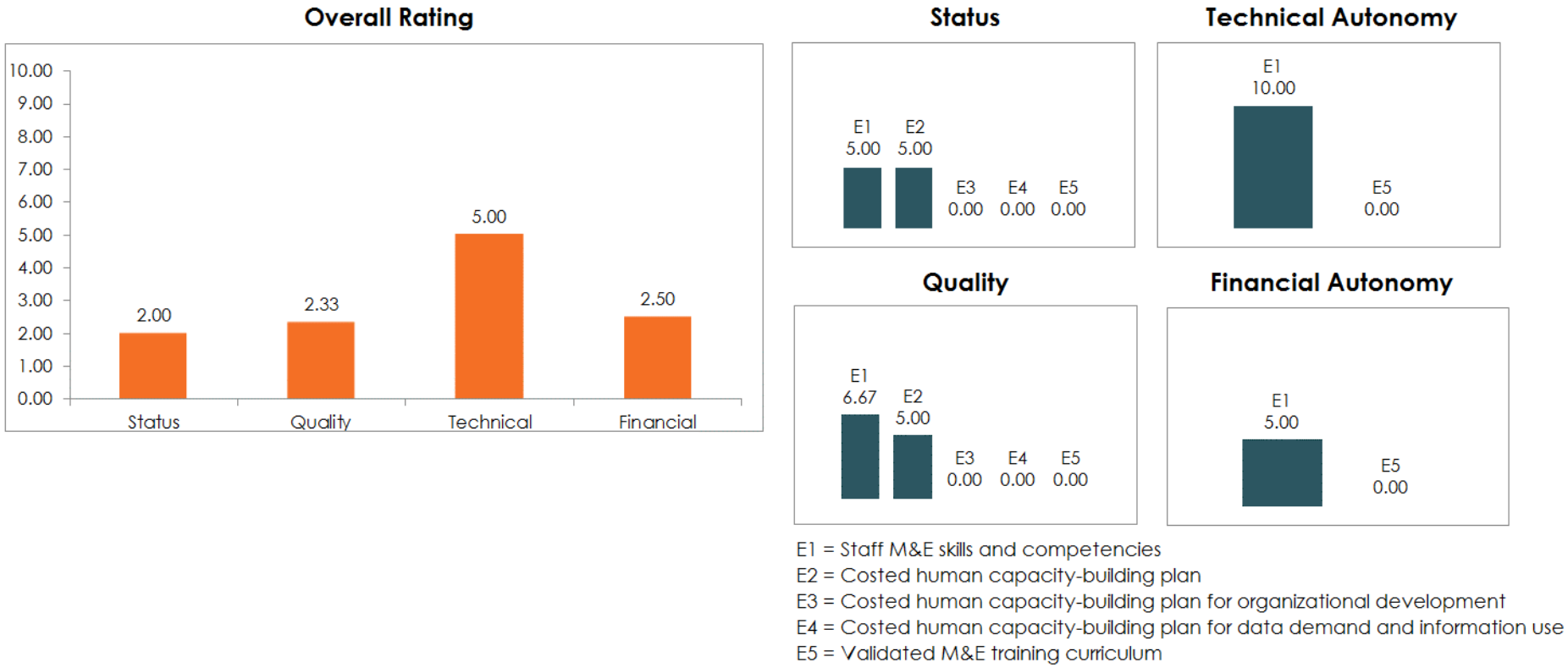
Figure 6. Overall individual M&E capacity at the NMCP (N=14)



At the district level, the overall capacity was lower, compared to that of the NMCP. M&E officers had adequate training on DHIS2 following training of trainers in each district, which a grant from the Global Fund had supported under a technical assistance contract with the University of Oslo (DPPI, MOHS, 2017). DHIS2 was the main platform for data analytics and graphics. Not all DHMT staff were appropriately trained in data quality assessment. In addition, capacity-building plans for organizational development and DDIU did not exist at the district level (Figure 7).

[4] MOHS Field Epidemiology and Laboratory Training Program 2019, as of June 2019

Figure 7. Human capacity for M&E at DHMTs



E1 = Staff M&E skills and competencies
E2 = Costed human capacity-building plan
E3 = Costed human capacity-building plan for organizational development
E4 = Costed human capacity-building plan for data demand and information use
E5 = Validated M&E training curriculum

Partnerships and Governance

SLMSP 2016–2020 gives the NMCP the mandate to undertake M&E functions and acknowledges good M&E performance. Midterm review of the document began with a desk review in 2018. The data management procedure manual defines roles and responsibilities related to M&E functions, but all staff were not familiar with the manual. The manual was marked for review by the M&E TWG, which also planned to develop job aids on the use of reporting tools at the health facility level.

The national MOHS M&E TWG was the governance structure that coordinated M&E activities in the sector. The TWG (under the leadership of the DPPI) had representation from implementing partners, United Nations organizations, the private sector, and health programs, including the NMCP M&E unit. Notably, not all health programs and departments were represented in the TWG meetings, but membership was not explicitly defined in the terms of reference. The TWG met monthly to provide guidance on coordination and harmonization of M&E and HIS activities in general. The meetings were documented using minutes that were shared within one week after the meeting date. The TWG did not address malaria-specific issues; NMCP M&E needs were addressed at the sector level. At the program level, the NMCP regularly held RMB stakeholders' taskforce meetings to discuss malaria-related issues. These meetings focused on all aspects of malaria programming and were not specific to malaria M&E. The NMCP used TWG meetings, in-charges meetings, and supportive supervision to communicate malaria M&E activities and decisions.

The NMCP had an updated inventory of stakeholders (not specific to M&E) that was developed with support from Catholic Relief Services through Focus 1000, a nongovernmental organization committed to making the best investment in the first 1,000 days of a child's life.[5]

The DHMTs used the national-level strategy, policies, and manuals. During the assessment, the data management procedure manual were not available at the district level. However, staff could list procedures and responsibilities related to M&E functions broadly from their knowledge of job descriptions and timelines for data submission. In the four districts assessed, there were no M&E TWGs at the DHMT level; instead, M&E taskforces and technical teams were formed during certain activities but met only until the completion of the activity. Only one district had an inventory of stakeholders that was updated regularly during stakeholders' meetings.

Organizational M&E Plan

The NMCP had an M&E plan to monitor implementation of malaria interventions and facilitate evaluation of the progress toward targets set for the SLMSP 2016–2020. Some indicators, however, were not in line with standard international indicator definitions, and some key activities were missing in the costed plan. The M&E plan reflected the good principles of the "Three Ones" previously mentioned here—one strategy, one coordination structure, and one M&E plan. The M&E plan provided information on indicators and their definitions. The NMCP had an annual work plan that covered all program thematic areas, including M&E. The work plan fed into the M&E plan and included both financial and programmatic targets. The financial aspect of the work plan was monitored by the accounts office and included critical data elements, such as requested funding received, to enable tracking of financial requisitions against programmatic activities. The total budget for the M&E activities planned for 2018 was not achieved. The work plans were shared with partners during progress review meetings.

[5] http://www.focus1000.org/index.php/about

Guidelines existed specifying when information needed to be received and distributed. Most data were received as per the stipulated timelines, except from hospitals, whose data were delayed because of inadequate skills in data capture and reporting.

At the district level, all DHMTs had an annual work plan, but those plans did not feed into the program M&E plan and the strategic plan. The teams assessed had not seen the program M&E plan and were not aware of the multisectoral M&E plan.

Annual Costed Health Sector M&E Work Plan

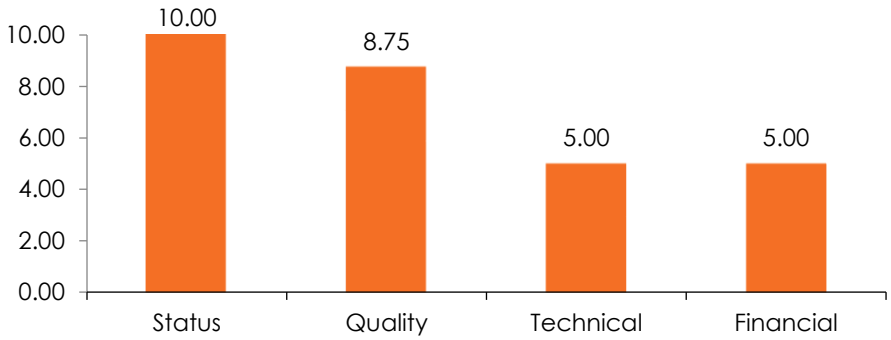
The NMCP developed costed M&E activities with identified sources of funding during annual planning meetings. This planning process was linked to the country's budgeting framework, and the work plan is shared with relevant stakeholders for endorsement. However, resources committed to implement the M&E work plan were not adequate, leading to gaps in supportive supervision and limited coverage of M&E activities.

At the district level, this was one of the best-performing capacity areas. M&E activities were costed and had clear timelines and sources of funding. As at the national level, resources committed to M&E activities were inadequate and delays on disbursement of funds were frequent.

Advocacy, Communication, and Cultural Behavior

The NMCP had strong leadership that was supportive of malaria M&E and encouraged all staff to be knowledgeable about M&E and to undertake M&E functions. The program had recently launched a communication strategy that guided the development and implementation of advocacy and communication activities. The strategy addressed all aspects of the program's activities across the thematic areas. At the time of the assessment, the strategy had not been distributed and disseminated to districts, but there were plans to share it in an upcoming data review meeting. The development and implementation of the communication strategy included some external support (Figure 8).

Figure 8. Advocacy, communication, and cultural behavior at the NMCP



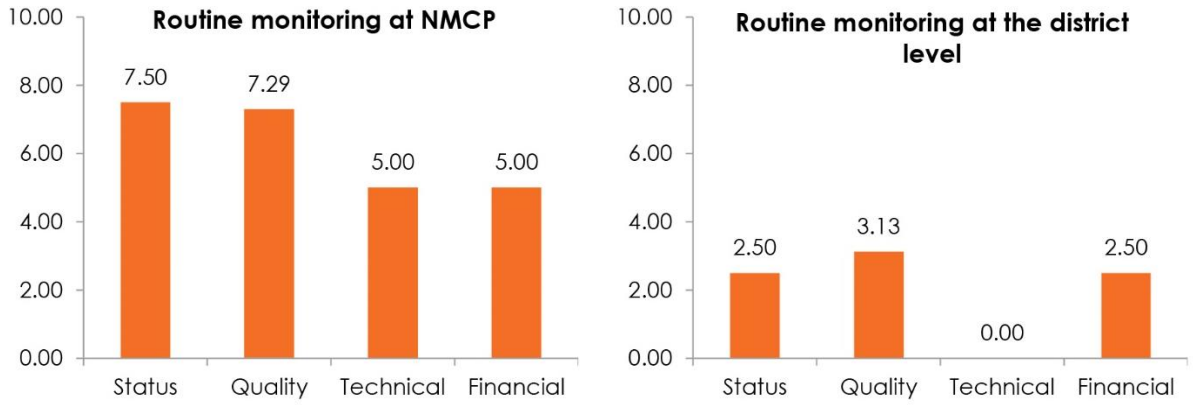
At the district level, M&E was not given preference, especially in funding at the implementation stage. There was weak advocacy and support for M&E from the leadership at the DHMT level. There were no M&E champions to actively recommend M&E actions; for example, DHIS2 reported and disaggregated data by gender, but there was no specific attention to gender in analysis and in the use of gender-sensitive data.

Routine Monitoring

The DPPI oversaw national reporting systems, including the provision of guidelines and tools. The data collection and collation processes at all levels were well defined. The NMCP relied on DHIS2, which provided data on service delivery statistics, morbidity, and commodity consumption. Investment in the provision of essential tools and equipment for data management was significant. Uninterrupted supply of registers and summary tools was still a challenge, however, and the tools were not available across all healthcare providers. Most private-sector facilities were not reporting in DHIS2. There were gaps in the existing national tools, especially at the hospital level; the NMCP had developed malaria-specific tools for this level, which required printing and uploading to DHIS2. Guidance on M&E functions (recording, collecting, collating, and reporting) was provided in the data management procedure manual that had been developed more than three years before this assessment. The guidelines were for the wider health sector and were not unique to the malaria program. A lot had changed in the past three years, and the manual needed to be revised to include procedures for data capture at the facility level, among other updates to address current needs and requirements.

At the district level, frequent stockouts of reporting tools were reported, leading local staff to recreate the forms, which did not always mirror the standard forms. Distribution of the tools was not informed by patient workload, suggesting the need for proper quantification and forecasting and distribution to facilities in a structured manner on a calendar basis. Internet connection was not always available, and there was a lack of backup procedures and equipment. Staff were not aware of the M&E guidelines, and the data management procedure manual had not been disseminated to the district level. Overall reporting rates in DHIS2 were quite high; however, not all health facilities in-country were reporting through the system. During data review meetings, quality issues with malaria data at the health facility level included discrepancies between the number of malaria patients in primary documents and the data reported in DHIS2. Notably, the assessment of human capacity for M&E showed that not all staff at the program and the district level had been trained to carry out tasks relating to data quality assessment. There was a need for capacity-building in DQAs and mentorship on data quality improvement during feedback and on-the-job sessions for supportive supervision. Capacity at the district level, compared to national level, was lacking (Figure 9). The assessment also revealed weak technical and financial capacities internally within the DHMTs, portraying high reliance on external support.

Figure 9. Capacity in routine monitoring at the NMCP and the district level



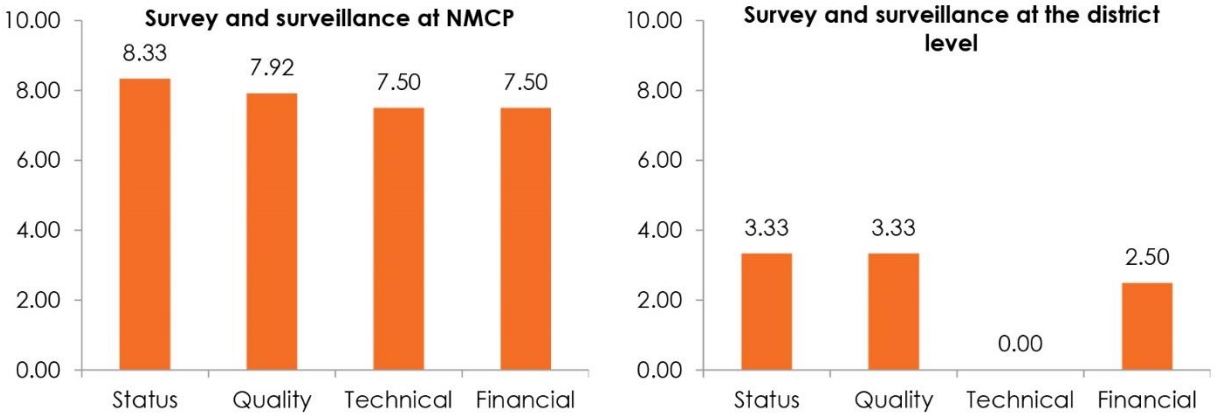
Surveys and Surveillance

An inventory of surveys and surveillance activities for the program partly existed. These were listed in the milestones for the NMCP during SLMSP development in 2015 and had been last updated in 2017. The program used annual work plans to track survey and surveillance activities. Routine surveys that address programmatic needs, such as Demographic and Health Surveys and MIS, were undertaken on a regular basis. A Demographic and Health Survey had been initially planned for 2018 but was conducted in 2019, and the next MIS was planned for 2020. These surveys had been included in the Global Fund grant application for funding. Other studies, such as malaria efficacy studies, were done in collaboration with the University of Sierra Leone, College of Medicine and Allied Health Sciences. A pilot evaluation of the implementation of intermittent prevention treatment in infants was undertaken in collaboration with ICAP at Columbia University Mailman School of Public Health. The UNICEF Multiple Indicator Cluster Survey 6 was conducted in 2017, and the Multiple Indicator Cluster Survey 2017 report had been finalized and published. The Service Availability and Readiness Assessment conducted in 2017 included a malaria module comprising a data quality review and a quality of care review with data collected from 138 facilities. The final report had also been published, and ICAP conducted a dissemination workshop.

Malaria epidemiologic surveillance was implemented under IDSR. Malaria is considered one of the priority diseases for weekly reporting in IDSR. Entomologic surveillance had started with PMI support in four districts: Bo, Bombali, Kono, and Western Rural.

None of the four districts in this assessment had an inventory of surveys and surveillance activities. Surveys were nationally funded activities and did not feature in district annual work plans. This may have an implication for human resource requirements during the implementation of the surveys. Survey reports were shared with the district teams, but protocols were not made available. A functioning surveillance system at the district level helps with detection, notification, and reporting of malaria cases. Some private facilities did not report in the IDSR. Functionality of the surveillance system was at different levels. For example, only Bo District compiled and used information from weekly surveillance bulletins. There was heavy reliance on external technical assistance (from WHO, CDC, eHealth Africa, Afrinet, Concern Worldwide, Care, and the Gesellschaft für Technische Zusammenarbeit) for the surveillance system at the district level (Figure 10).

Figure 10. Survey and surveillance by the NMCP and at the district level



National and Subnational Databases

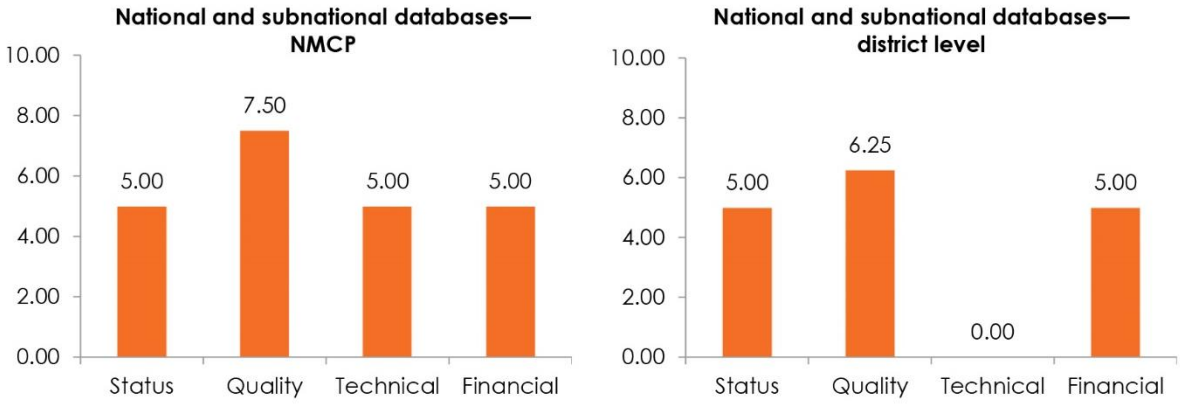
DHIS2 reflected the evolving needs of the sector, starting with malaria data in 2007 to a fully integrated system in 2018. A malaria database was initially developed as a parallel system. Since mid-2016, malaria reporting had been integrated in the overall national DHIS2 (full integration was realized in 2017). Completeness of reporting in DHIS2 was at 97 percent, with timeliness at above 80 percent. Reporting into DHIS2 by hospitals and private facilities was still a gap, with 33 of 55 private facilities currently reporting on malaria. Digitization of data entry for DHIS2 was supported by the United Kingdom's Department for International Development through Focus 1000 in all chiefdoms. The organization received funding through the Saving Lives project to improve the quality of data collection and reporting from health facilities and communities. The plan was to have all peripheral health units entering data electronically by the end of 2019.

IDSR data were reported into the DHIS2 platform. Rollout of electronic reporting (eIDSR) was currently done through eHealth Africa with support from WHO and CDC. Two districts had been covered with World Bank support, with the intention of learning from the pilot and scaling up to the rest of the country. The logistics management information system had been integrated into DHIS2. Gaps in the collection of malaria-specific data from hospitals had led to the development of an Excel-based hospital data tool that had not been uploaded or programmed into DHIS2.

There was limited use of International Classification of Diseases for cause-specific mortality data, and the availability, quality, and use of overall vital statistics data were still a challenge. With the structures in place and improvements in reporting rates, the NMCP would be in a position to address the quality of data in the system.

The national databases were used at the subnational level. The status and quality of the databases were similar at the NMCP and the district level (Figure 11). The district level did not develop the databases; to do so would require full technical support from the national level and other partners, such as the University of Oslo.

Figure 11. National and subnational databases for the NMCP and the district level



Supervision and Auditing

The malaria program had checklists and processes for regular supportive supervision and DQAs that were comprehensive in all malaria intervention areas. The Global Fund supported quarterly supervision visits with feedback provided during the visits, during monthly in-charges meetings, as part of debriefing of the activity at the NMCP, and as activity updates to the M&E TWG. At the hospital level, feedback was given only to the health management team, who were expected to share the feedback with health

workers. Inconsistencies in data reporting remained a challenge; notably, DQA reports did not clearly point out the data quality issues identified. This reflected the gap in staff capacity for data quality assessment. The DPPI was piloting a DQA tool based on the WHO electronic tool, and training on the tool at the national level was ongoing, although it was not specific to malaria. The program supervision checklist did not have a scoring mechanism; instead, reference was made to action plans when checking progress or improvements. The checklist had been developed in 2017 and needed to be updated to incorporate current intervention areas and scoring.

At the district level, the integrated supportive supervision and verification checklist was used. The tool integrated the data quality checklist and had a scoring mechanism, but it was not specific to malaria. The supportive supervision guidelines were developed with support from the Japan International Cooperation Agency and participation from the DPPI. The only challenge was coverage of the activities owing to funding constraints.

Evaluation and Research

The NMCP did not have an inventory of institutions that conducted malaria research but it had identified key stakeholders who were also participants in the operations research committee. Research updates were provided during stakeholders' meetings. A malaria-specific research agenda was in place, reflected the needs of the program, and had been ratified by the operations research committee. There was no forum to specifically disseminate malaria research findings; instead, dissemination happened in existing forums (TWGs, review meetings, national and international forums, and RBM stakeholders' meetings). External technical support was essential to meet the NMCP's research and evaluation needs.

At the district level, there was no inventory of research and evaluation; DHMTs did not undertake research but were cognizant of research activities conducted by research institutions in their settings. There was no malaria research agenda at this level, and the program agenda had not been disseminated to the DHMTs.

Data Demand and Use

Overall, the data demand and use capacity area was rated average. The program did not have a data use plan. The types of information products that the NMCP should produce were clear, but the audience for those products and their purpose was not obvious. This information should have been based on a linked set of policy documents, such as a communication plan linked to the strategy and in turn linked to the M&E plan and other plans that give life to the broad policy objectives of the program. Information products listed in the national strategy included quarterly and semester reports and bulletins, annual reports, survey and evaluation reports, and reports on feedback meetings with stakeholders. Malaria dashboards had been introduced in DHIS2.

Information was disseminated during review meetings at the national level and in-charges meetings at the subnational level. Examples of data use for decision making were given, such as the change from chloroquine to artemisinin combination therapy in 2004 and the scale-up of intermittent preventive treatment for infants.

No specific guideline for data analysis and presentation existed. Data demand and use was one of the key weakness areas at the district level. There was no data use plan at this level and no guidance on data analysis and presentation. Data had been used to guide communication messages on timely access of services and to inform distribution of nets.

DISCUSSION

This section highlights the areas that, if targeted for intervention, can have the greatest impact on improving the NMCP and, in turn, the MOHS.

Organizational Features and Human Resources for M&E

Sierra Leone has a fairly strong health system with critical structures established as part of the post-Ebola response. The current malaria strategy was developed during that period and aligns with the health sector recovery plan 2015–2020. Strong partnership and governance structures, driven by the Ebola emergency and the reporting needs of the Global Fund grant, have been established along the wider surveillance agenda. In addition, investment in health system strengthening has increased, with funding from partners such as the Global Fund, World Bank, UK Aid, and the CDC.

This assessment shows that the NMCP is a beneficiary of the strengthened surveillance (including HIS) and partnerships. An organizational capacity assessment in 2017 also determined that the program has significant capacity in the areas of governance, organizational planning, and resource mobilization (NMCP, 2019).

The program relies on broad-based consultations through the RBM taskforce committee and a solid partnership that supported securing the Global Fund Round 10 grant (NMCP, 2015). In addition, the NMCP has strong leadership that supports malaria M&E. It is not surprising that the NMCP scored high in organizational structure, partnership, and governance.

Overall, the MOHS at the national level provides a leadership role with the mandate to develop and implement policies and strategic plans, set standards and ensure quality, mobilize resources for the sector, develop capacity, provide nationally coordinated services such as HIS, and monitor and evaluate overall sector performance. The district level, however, relies heavily on systems, structures, and tools from the national level. As at the national level, districts were expected to establish or strengthen a multisectoral partnership taskforce to be chaired by the district medical officer. Inadequate staff in M&E units, insufficient M&E leadership, and limited guidance from the national level are the overarching gaps in M&E capacity at the district level. Strengthening capacity at the district level will be crucial to ensuring effective implementation and coordination of malaria prevention and control efforts.

Mechanisms for Data Collection, Management, and Analysis

The NMCP relies heavily on routine systems for its M&E data needs. As part of the post-Ebola response, investment in routine surveillance has been significant. DHIS2 reflects the evolving needs of the sector, starting with malaria data in 2007 to a fully integrated system in 2018. The system has enhanced the sector's capability to generate and harness health information for use. Completeness of reporting in DHIS2 is 97 percent, with timeliness at above 80 percent.

With improvements in reporting rates, the focus will be to address the quality of data in the well-established systems. The 2013 Malaria Programme Review identified irregular and uncoordinated supervision and conduct of M&E activities at the district level. This M&E assessment has revealed the weak capacities at the district level and the need to disseminate policies, strategies, and guidelines. In addition, poor documentation and quality of data at the facility level have been linked to the lack of reporting tools and low skills among health information personnel. Strengthening capacity in DQAs is included in SLMSP 2016–2020 under Strategy 4.1. Formation of a data quality subgroup of the M&E

TWG is an indication of the health ministry's commitment to increase confidence in data and enhance evidence-based decision making.

Data Demand and Use

Dissemination is one form of distributing information to end users in electronic or paper formats. For strategic documents and guidelines, effective interaction with the users is essential in promoting better use or implementation of the documents. At the district level, most of the participants in the assessment were unaware of existing documents, although they may have been shared through e-mail or in review meetings. This and the absence of a data use plan speaks to the lack of a systematic approach to data demand and use within the program.

RECOMMENDATIONS

This section summarizes key recommendations from the assessment and then presents more detailed recommendations by capacity area. See the appendix for action plans highlighting gaps and specific actions to be taken, with clear timelines and responsible entities, for both the NMCP and the district level.

Overarching Recommendations

- The NMCP has a strategy, with its accompanying M&E plan, that is aligned with the broad health sector strategic plan. Other strategic documents and guidelines exist, including the communication strategy, data management procedure manual, and malaria research agenda. These documents have not been well disseminated, and most of the DHMTs were unaware of their existence. There is a need to disseminate and sensitize lower levels on the use of these documents in malaria programming.
- The SLMSP 2016–2020 and M&E plan are due for midterm review. The data management procedure manual is also outdated and needs to be revised to include procedures for capturing data at health facilities. Overall M&E guidelines also need to be updated.
- A health sector indicator reference manual that curates the full range of health sector priorities needs to be developed.
- There is weaker technical capacity at the district level, with overreliance on technical assistance from the national level and external stakeholders. The NMCP needs to focus on building the capacity of districts (and peripheral health units) to undertake M&E functions. This should include expanding the participation of DHMTs during review and development of key strategic documents.
- DHMTs will benefit from a detailed partners' database for effective coordination and leveraging of resources at the district level.
- The NMCP needs to advocate resources to meet the M&E budget targets.
- A curriculum or standard national training guide for malaria M&E is needed.
- The DPPI should address the gaps identified in DHIS2, including the need to update the system to capture key malaria data from the hospital level.
- There is a need for interventions to address data quality, including capacity development for program staff to conduct DQAs and address specific data quality improvements. In addition, the administrative and management functions of supervision may need to be split from the data quality assessment.
- Stockouts of essential registers and summary tools suggest the need for proper quantification and forecasting, as well as distribution to facilities in a structured manner on a calendar basis (e.g., every two years).
- Developing a data use plan, updating the inventory of institutions carrying out malaria research and evaluations, and building the capacity of competencies in data analysis and use at the district level will result in a more structured approach to evidence-based decision making.

Recommendations organized by capacity area in the MECAT follow.

Organizational Capacity

Recommended actions for organizational capacity for M&E are as follows:

- The NMCP needs to review the SLMSP (midterm review is long overdue) and align the strategy period with NHSSP 2017–2021.
- The NMCP needs to ensure that program values include attention to gender equity.
- The NMCP needs to expand participation by the DHMTs during development and review of strategic documents.
- The NMCP needs to plan a comprehensive dissemination (beyond printing and sharing) of the revised SLMSP to all levels.
- The NMCP and DHMTs need to display prominently the vision, mission, values, and ethic statements as pin-ups on notice boards and roll-up banners, and in strategic and technical documents, including in PowerPoint presentations.
- The DPPI needs to provide guidance on staffing levels for the M&E unit at district level.
- The DPPI needs to secure funding for additional qualified staff in the M&E unit and to support M&E meetings at the district level.

Human Capacity for M&E

Recommended actions to improve human capacity for M&E are as follows:

- Conduct mentorship for all program staff in assessment of data quality.
- Carry out training in advanced GIS data analytics for NMCP staff.
- Build capacity for the districts to undertake more malaria M&E tasks.
- Update the NMCP's human capacity-building plan to include organizational development and DDIU-related gaps.
- Update the NMCP's training database to include training needs and existing capacity in DDIU.
- Develop a training database at the district level to enable coordinated and focused human capacity-building for M&E.
- Develop a national M&E training curriculum.

Partnerships and Governance

Recommended actions for partnerships and governance are as follows:

- The DPPI needs to share and disseminate a revised data management procedure manual to all levels, including hospitals.
- The national M&E TWG needs to review the membership section of the terms of reference.
- DHMTs need to establish an M&E TWG with clear terms of reference.
- The NMCP and the DHMTs need to develop and update the inventory of their M&E stakeholders. M&E Plans

Recommended actions for the M&E plans of the NMCP and the DHMTs are as follows:

- The NMCP and the DHMTs need to advocate resources to meet M&E budget targets.
- The NMCP needs to disseminate guidelines and mentor hospital staff on data capture and reporting.
- Expand participation by the DHMTs during the development and review of strategic documents.
- The NMCP needs to disseminate M&E plans to the district level.

Annual Costed Health Sector M&E Work Plan

The recommended action for the annual costed health sector M&E work plan by the NMCP, DPPI, and districts is as follows:

- Secure funding to finance implementation of M&E activities at national and district levels.

Advocacy, Communication, and Cultural Behavior

Recommended actions to improve advocacy, communication, and cultural behavior at the NMCP are as follows:

- Incorporate gender in analysis and reporting.
- Disseminate the malaria-specific communication strategy to the district level.

Routine Monitoring

Recommended actions to improve routine monitoring are as follows:

- Develop policy and law to enforce reporting by all providers (public and private).
- Hold regular consultative meetings with private sector care providers to reinforce and sustain reporting through DHIS2.
- Print and upload malaria-specific hospital tools into DHIS2.
- Review, update, and disseminate the data management procedure manual.
- Monitor the availability of tools at all levels and allow distribution of the tools to be structured and informed by use and patient load.
- Implement and monitor the use of standard operating procedures, including backup at the district level.
- Train, mentor, and coach staff in data management (including data quality assurance).
- Increase the availability of Internet connectivity at all levels.

Surveys and Surveillance

Recommended actions to improve surveys and surveillance are as follows:

- Develop and regularly update an inventory of surveys and surveillance activities at the NMCP and district levels.
- DHMTs need to establish a repository of protocols for surveys.

- The DHMTs need to develop surveillance bulletins in all districts and use the data to monitor the functionality of the surveillance system and build staff capacity in surveillance.
- The MOHS needs to increase training of district staff in surveillance.
- The MOHS needs to develop a plan to enhance surveillance among private-sector care providers.

National and Subnational Databases

Recommended actions for the DPPI to address identified gaps in national and subnational databases are as follows:

- Develop a list of all health facilities and identify those not reporting in DHIS2.
- Update DHIS2 to include malaria-specific data captured in Excel-based hospital tools.
- Train district-level staff in data management, including database design.

Supervision and Auditing

Recommended actions for the NMCP and RBM partners to address identified gaps in supervision and auditing are as follows:

- Review and update the program supportive supervision guidelines and checklists.
- Increase participation of DHMTs in the development and review of guidelines and checklists.

Evaluation and Research

Recommended actions to improve evaluation and research are as follows:

- The NMCP needs to review the available list of research institutions and transform it into a comprehensive database of research and evaluation.
- The NMCP needs to disseminate the malaria research agenda to districts.
- The DHMTs need to develop databases and inventories of institutions undertaking research and evaluation in the districts.
- The DHMTs need to establish a malaria research agenda that will guide research for programming.

Data Demand and Use

Recommended actions by the NMCP to improve data demand and use are as follows:

- Develop a data use plan both for the NMCP and districts.
- Develop a guideline for data analysis and presentation and include gender analysis in the guideline.

CONCLUSION

This assessment has helped to quantify gaps in M&E capacity at the NMCP and the district level using the 12 components of a functional M&E system. M&E structures and processes are well established at the NMCP, and there is good capacity overall for some aspects of M&E but room for improvement in other areas, such as human capacity for M&E and data demand and use. Although the NMCP has good capacity for routine M&E, external technical assistance has been essential to meet its research and evaluation needs.

Lack of technical and financial autonomy raises questions of program sustainability. Review of the malaria M&E plan and finalization of documents such as the HIS strategy will afford an opportunity for advocating and costing malaria needs and coordinating efforts at the sector level.

The program will benefit from the implementation of action plans and follow-up assessments to measure improvements in the capacity areas.

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APPENDIX. ACTION PLANS FOR THE BASELINE ASSESSMENT

A1. Action Plan for the National Malaria Control Programme

File available at: https://www.dropbox.com/s/4n3iosdli0bvmgt/MECAT%20Group%20Assesment%20Tool_FINAL_TL-17-05A_NMCP.xlsm?dl=0

Capacity area	Identified weaknesses or gaps	Action to be taken	Timelines	Responsibility
1—Organizational	1. Staff were unable to summarize the program's values and ethics statements. 2. Values do not explicitly include attention to gender equity. 3. There are no routine mechanisms for monitoring performance of the M&E system and for incentives for M&E performance. 4. Staffing gap of 2 (M&E assistants) in the M&E unit.	1. Print and display prominently the program's values in notice boards, roll-up banners, presentations during meetings, posters, etc. 2. Address gender equity in the program's values during review of MSP 2016–2020. 3. Put in place mechanisms for routine monitoring performance of the M&E system and for incentives for M&E performance. 4. Secure funding for additional qualified staff in M&E unit.	1. Immediately 2. By June 2020 3. By June 2020 4. By January 2020	1. NMCP SBCC 2. NMCP—Program Manager 3. DPPI 4. NMCP and DPPI
2—Human Capacity for M&E	1. Not all staff are appropriately trained to carry out tasks relating to assessment of data quality. 2. Additional skills needed for M&E unit staff to perform advanced GIS data analytics. 3. There is potential for duplication of OD and DDIU capacity-building plan and activities. 4. Not all gaps in DDIU-related skills and competencies are incorporated into program's capacity-building plan. 5. No validated M&E training curriculum.	1. Provide mentorship for all program staff in assessment of data quality. 2. Provide training in advanced GIS data analytics for M&E unit staff. 3. Update and embed DDIU and OD capacity-building plans in existing human capacity-building plans. 4. Update training database to include training needs and existing capacity in DDIU. 5. Develop national M&E training curriculum.	1. Continuous 2. By June 2020 3. Quarter 1 in 2020 5. Quarter 3	1. NMCP M&E unit and DPPI 2. NMCP 3. NMCP 4. DPPI and NMCP

Capacity area	Identified weaknesses or gaps	Action to be taken	Timelines	Responsibility
3—Partnerships and Governance	1. Delayed midterm review of MSP 2016–2020 and M&E Plan 2016–2020. 2. MOHS data management procedure manual is outdated. 3. The data management procedure manual not known by program staff. 4. TOR for M&E TWG unclear about membership. 5. Inadequate commitment from stakeholders in program's M&E activities and performance.	1. Review the MSP and M&E Plan 2016–2020 as planned. 2. M&E TWG to review the data management procedure manual. 3. Share and disseminate the revised data management procedure manual to all levels, including hospitals. 4. M&E TWG to review membership section of the TOR. 5. Advocate commitment from stakeholders in M&E activities and performance.	1. 2020 2. By December 2019 3. Quarter 1 in 2010 4; Next TWG meeting in July 2019 5. Continuous	1. NMCP 2. DPPI 3. DPPI and NMCP 4. DPPI 5. NMCP SBCC
4—Organization M&E Plan	1. Total budget for last year's M&E planned activities was not achieved. 2. Delayed submission of reports by hospitals because of inadequate skills in data capture and reporting.	1. Advocate resources to meet M&E budget targets. 2. Disseminate guidelines and mentor hospital staff on data capture.	1. Continuous 2. Continuous	1. NMCP SBCC 2. NMCP M&E unit and DPPI
5—Annual Costed Health Sector M&E Plan	1. Committed resources inadequate to implement the M&E work plan, leading to gaps in supportive supervision and coverage of M&E activities.	1. Advocate more funding for M&E activities.	1. Continuous	1. NMCP SBCC
6—Advocacy, Communication, and Cultural Behavior	1. No specific attention to gender in analysis, reporting, and use of data.	1. Incorporate gender in analysis and reporting.	1. Quarter 3 2019 and continuous	1. NMCP M&E unit
7—Routine Monitoring	1. Lack of reporting by private-sector care providers. 2. Hospital tools not linked to DHIS2. 3. MOHS data management manual that serves as the M&E guideline is outdated.	1a. Develop policy and law to enforce reporting by all providers (private and public). 1b. Hold consultative meetings with private-sector care providers. 2. Print and upload hospital tools into DHIS2. 3. Review the data management manual.	1a. By December 2020 1b. Immediately and continuously 2. Immediately 3. By December 2019	1a. DPPI 1b. DPPI and NMCP 2. DPPI 3. DPPI

Capacity area	Identified weaknesses or gaps	Action to be taken	Timelines	Responsibility
8—Surveys and Surveillance	1. Lack of an inventory of surveys and surveillance activities that can be used to track progress. 2. Surveillance system does not include all sectors (e.g., nonreporting by private healthcare providers).	1. Develop and regularly update the inventory of surveys and surveillance activities. 2. Scale up malaria surveillance.	1. Immediately and continuously 2. Immediately and continuously	1. NMCP 2. NMCP M&E unit
9—National and Subnational Databases	1. Some facilities, especially in the private sector, are not reporting through DHIS2. 2. Some revisions to tools are not captured in DHIS2 (e.g., NMCP uses Excel-based database to capture hospital data).	1. Develop list of all health facilities and identify proportion not reporting through DHIS2. 2. Update DHIS2.	1. Quarter 3 2. By June 2020	1. DPPI 2. DPPI
10—Supervision and Auditing	1. No tailored scoring mechanism in supportive supervision tools.	1. Review and update the supportive supervision guidelines and tools.	1. By June 2020	1. NMCP
11—Evaluation and Research	1. Inventory of research and evaluation is not comprehensive.	1. Review available list and transform it into a comprehensive inventory of research and evaluation.	1. By June 2020	1. NMCP
12—Data Demand and Use	1. Lack of a program data use plan. 2. No specific guidelines for data analysis and presentation.	1. Develop a data use plan. 2. Develop a guideline for data analysis and presentation and include gender analysis and reporting as an element in the guideline.	1. By June 2020 2. Quarter 4	1. NMCP M&E unit 2. NMCP M&E unit

Key: DDIU=data demand and information use, DPPI=Directorate for Policy Planning and Information, GIS=geographic information system, M&E=monitoring and evaluation, MOHS=Ministry of Health and Sanitation, MSP=Malaria Strategic Plan, NMCP=National Malaria Control Programme, OD=organizational development, SBCC=social and behavior change communication, TOR=terms of reference, TWG=technical working group

A2. Action Plan for District Health Management Teams

File available at: https://www.dropbox.com/s/5k8d8nxc5l3o8l4/MECAT%20Group%20Assesment%20Tool_FINAL_TL-17-05A_DHMTs.xlsm?dl=0

Capacity area	Identified weaknesses or gaps	Action to be taken	Timelines	Responsibility
1—Organizational	1. Limited knowledge of the malaria program mission statement and objectives and values and ethics statements. 2. Values do not explicitly include attention to gender equity. 3. MSP 2016–2020 was shared but not adequately disseminated to DHMTs to enable alignment and application of values by staff. 4. Inadequate number of staff in M&E unit (1 M&E officer and 1 data operator per district for all program areas). 5. M&E unit/M&E-related meetings at DHMT infrequent (happen quarterly). 6. There are no routine mechanisms for monitoring performance of the M&E system and for incentives for M&E performance. 7. M&E unit/M&E-related meetings at DHMT are supported mainly by partners.	1. Print and display prominently the mission statement and values in notice boards, presentations during meetings, posters, etc. 2. Address gender equity in the program's values during review of MSP 2016–2020. 3. Disseminate the revised malaria strategic plan. 4. Secure funding for additional qualified staff in M&E units. 5. Hold M&E unit meetings on a monthly basis. 6. Put in place mechanisms for routine monitoring performance of the M&E system and for incentives for M&E performance. 7. Secure funding to support M&E unit meetings at DHMT level.	1. Quarter 3 2. By June 2020 3. Immediately after review of MSP 2016-2020 4. Quarter 1 in 2020 5. Quarter 3 6. By June 2020 7. By Jan 2020	1. DHMTs 2. NMCP 3. NMCP 4. DPPI 5. M&E focal person 6. DPPI 7. DHMTs
2—Human Capacity for M&E	1. Not all staff are appropriately trained to carry out tasks relating to assessment of data quality. 2. No mechanisms to coordinate M&E human capacity-building plan. 3. No costed organizational development and DDIU capacity-building plans. 4. No validated M&E training curriculum.	1. Train staff in assessment of data quality. 2. Develop training database. 3. Embed DDIU and organizational development capacity-building plans in existing human capacity-building plans. 4. Develop national M&E training curriculum.	1. Quarter 3 2. Quarter 3 3. Quarter 1 in 2020 4. Quarter 3	1. DPPI and partners 2. DHMTs 3. DHMTs/HR at district level 4. DPPI/NMCP

Capacity area	Identified weaknesses or gaps	Action to be taken	Timelines	Responsibility
3—Partnerships and Governance	1. Strategy to acknowledge M&E performance unavailable at district level. 2. Data management manual unavailable at district level. 3. No M&E TWG. 4. Not all districts have inventory of M&E stakeholders.	1–2. Disseminate strategies, manuals, and SOPs to district level. 1–2. Increase participation by DHMTs in development or review of key strategic documents. 3. Establish M&E TWG with clear TOR at district level. 4. Develop or update inventory of M&E stakeholders.	1. Quarter 3 2. Continuous 3. Quarter 3 4. Quarter 3/ annually	1. DPPI 2. DPPI/NMCP 3. DHMT/M&E focal person 4. Social mobilization focal person in DHMT
4—Organization M&E Plan	1. Staff at district level are unfamiliar with the multisectoral and malaria M&E plan.	1. Disseminate M&E plans to district level. 2. Increase participation by DHMTs in development or review of M&E plans. 3. Link M&E activities to multisectoral and malaria M&E plans.	1. Quarter 3 2. Continuous 3. By January 2020/continuous	1. DPPI/NMCP 2. DPPI/NMCP 3. DHMTs/M&E focal person
5—Annual Costed Health Sector M&E Plan	1. Inadequate resources to implement M&E work plan.	1. Secure funding to finance implementation of M&E activities.	1. By June 2020/ continuous	1. DPPI and DHMTs
6—Advocacy, Communication, and Cultural Behavior	1. Staff unfamiliar with the malaria-specific communication strategy. 2. No attention to gender in analysis, reporting, and use of data.	1. Disseminate the malaria-specific communication strategy to district level. 2. Incorporate gender in analysis and reporting.	1. Immediately 2. Quarter 3/ continuous	1. NMCP 2. M&E focal person
7—Routine Monitoring	1. No M&E guidelines—SOPs at national level have not been disseminated to districts. 2. Frequent shortage of reporting tools. 3. Inconsistency between DHIS2 and hard-copy reporting tools. 4. Overreliance on external technical assistance to develop reporting tools.	1. Review and disseminate the data management manual. 2. Monitor availability of tools at all levels and allow distribution of tools to be informed by use/patient load. 3. Align DHIS2 and reporting tools. 4. Train/mentor/coach staff on how to develop reporting tools (as part of data management training/ continuous mentorship). 5. Increase availability of Internet connectivity.	1. Quarter 3 2. Monthly/ continuous 3. Quarter 3 4. By June 2020 5. Quarter 4	1. DPPI 2. M&E focal person/ DPPI 3. DPPI 4. DPPI 5. DPPI

Capacity area	Identified weaknesses or gaps	Action to be taken	Timelines	Responsibility
8—Surveys and Surveillance	1. No inventory of surveys and surveillance activities. Activities are documented in annual work plans. 2. No repository of protocols for surveys and surveillance. 3. Overreliance on external technical assistance in surveillance system. 4. Weak private-sector involvement in surveillance.	1. Establish inventory of surveys and surveillance activities. 2. Create document repository of protocols for surveys and surveillance activities. 3a. Develop surveillance bulletins in all districts to monitor functionality of surveillance system and build staff capacity in surveillance. 3b. Increase training of district staff in surveillance (FELTP, malaria, and other diseases surveillance). 4. Develop a plan to enhance surveillance among private-sector care providers.	1. Quarter 3 2. Quarter 4 3a. Quarter 4 3b. By January 2020/continuous 4. Quarter 4	1. M&E focal person/ M&E TWG 2. M&E focal person/ M&E TWG 3. M&E focal person 4. DPPI/NMCP 5. DHMTs
9—National and Subnational Databases	1. Overreliance on external technical assistance in design of databases. 2. DHIS2 not up to date—missing some peripheral health units and especially private-sector care providers. 3. Hospital malaria data not linked to DHIS2.	1. Train staff in data management, including design of databases. 2. Develop list of all facilities (public and private) and include in DHIS2. 3. Link hospital data to DHIS2.	1. Quarter 4 2. Quarter 3/ continuous 3. Quarter 3	1. DPPI/NMCP 2. DPPI/DHMTs—M&E focal person 3. DPPI
10—Supervision and Auditing	1. Overreliance on external technical assistance in development of supervision guidelines and tools.	1. Increase participation by DHMTs in development and review of supervision guidelines.	1. Continuous	1. DPPI/NMCP/DHMTs
11—Evaluation and Research	1. No inventory/register/database of research and evaluation at district level. 2. No district-specific malaria agenda. 3. No forums for dissemination and discussion of research findings at district level.	1. Develop databases of institutions undertaking malaria research and evaluation in the districts. 2a. Disseminate the national malaria research agenda. 2b. Establish a district malaria research agenda. 3. Systematically integrate dissemination of research findings in existing dissemination forums.	1. Quarter 4 2a. Immediately 2b. By June 2020 3. Immediately	1. M&E focal person/M&E TWG 2a. NMCP 2b. M&E focal person/M&E TWG 3. DHMTs/M&E focal person

Capacity area	Identified weaknesses or gaps	Action to be taken	Timelines	Responsibility
12—Data Demand and Use	1. No district data use plan. 2. DHIS2 guidelines for data analysis do not include data presentation.	1. Develop data use plan. 2. Review guidelines in data analysis to encompass data presentation.	1. Quarter 3 2. Quarter 4	1. DHMTs/M&E focal person 2. DPPI/NMCP

Key: DDIU=data demand and information use, DHMT=district health management team, DPPI=Directorate for Policy Planning and Information, FETP=Field Epidemiology Training Program, HR=human resources, M&E=monitoring and evaluation, MSP=Malaria Strategic Plan, NMCP=National Malaria Control Programme, SOP=standard operating procedure, TOR=terms of reference, TWG=technical working group

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