

PMI Measure Malaria

Malaria Information Index

Measurement Scale Definitions

Component	Scale level 1	Scale level 2	Scale level 3	Scale level 4	Scale level 5	Data sources
<i>Domain: Leadership and governance</i>						
Strategic planning	The NMCP is aware of the need to develop a malaria strategic plan that addresses SME or to update the existing one, but the process for planning is at an early stage. Planning is mostly focused on small or short-term projects.	The malaria strategic plan is current and developed by subject matter experts but is not vetted with all key stakeholders. The malaria strategic plan is developed by different bodies focusing on specific domains and may not include all relevant malaria SME activities.	The NMCP has an established malaria strategic planning process which involves key malaria SME stakeholders. Malaria strategic plans are current; address malaria SME; and include policies, guidelines, and appropriate technical and service delivery aspects.	The malaria strategic plan includes SME, is costed, and is aligned with the malaria M&E plan. A coordination group monitors implementation according to a set schedule and updates the malaria strategic plan for corrective action.	The NMCP maintains a continuous improvement planning process. Strategic planning for malaria is responsive to changing malaria needs/priorities or health information.	<ul style="list-style-type: none"> Strategic plans Malaria program review System assessments Notes from meetings where strategic planning is discussed (e.g., TWG meetings, data review meetings, etc.) Official communications about strategic planning
M&E plan	The NMCP is aware of the need to monitor and evaluate malaria activities to ensure alignment with the malaria strategic plan. Malaria evaluations are conducted on an ad hoc basis. Tools for M&E of malaria activities are not harmonized.	An ad hoc organizational structure is in place to monitor, evaluate, and measure results for major malaria activities. Processes to monitor, evaluate, and measure malaria HIS/SME activities are project-based or lack institutional support. There are efforts by the NMCP to coordinate and harmonize evaluation tools.	The malaria M&E plan includes defined and standardized processes and tools for evaluating malaria activities and a relevant governing authority is established. Data collected during evaluations are consistently used by the NMCP or coordination body to prioritize and align malaria activities.	The NMCP supports ongoing M&E to ensure alignment of malaria activities with the malaria strategy and desired impact on malaria service delivery. There is an established framework and an organizational structure for M&E of malaria activities' metrics/performance indicators. Malaria performance reports are shared with relevant HIS or malaria leadership groups.	The NMCP uses feedback from evaluation for continuous improvement of M&E systems, processes, and capabilities for alignment with the current malaria strategy and best practices. Ongoing impact analysis is based on evaluations to optimize resource allocation and project future investments.	<ul style="list-style-type: none"> M&E plans System assessments Notes from meetings where M&E is discussed (e.g., TWG meetings, data review meetings, etc.) Official communications about M&E
Malaria surveillance guidance	The NMCP is aware of the need for surveillance guidelines, but	The NMCP follows some malaria surveillance processes, but they	The NMCP has documented malaria surveillance processes and structures. Metrics	The NMCP systematically follows processes for malaria surveillance, as	The NMCP and stakeholders routinely review malaria surveillance	<ul style="list-style-type: none"> Malaria surveillance guidance documents Malaria surveillance system assessments

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	currently does not have any documented guidelines.	are not systematically documented.	for performance monitoring, quality improvement, and evaluation are integrated in the malaria M&E plan and are systematically used.	outlined in the national guidance.	processes and modify them to adapt to changing conditions.	<ul style="list-style-type: none"> Notes from meetings where malaria surveillance guidance is discussed (e.g., TWG meetings, data review meetings, etc.) Official communications about malaria surveillance guidance
Leadership and coordination	Where leadership exists, it is exercised within NMCP units at the local level. NMCP units manage malaria SME systems based on their independent needs; there is no central oversight or guidance. The malaria SME leadership and coordination body's functions are not clearly defined. Meetings occur infrequently or on an ad hoc basis.	There are efforts by the NMCP to formalize malaria SME leadership and coordination with a clearly defined scope of work and operational structure. A malaria SME leadership and coordination body provides oversight and coordinates management of malaria SME activities in selected cases or activities.	A national-level coordination group exists to oversee policies, scope of work, roles, and responsibilities for coordinating malaria SME activities centrally. This coordination group includes management and subject matter experts and meets at least annually to identify, prioritize, and coordinate malaria SME activities.	Coordinated national-level oversight is integrated into the malaria strategy as an institutional structure and facilitates the implementation of the malaria strategy. The group meets at least biannually, and there is an established process for sharing and reviewing malaria SME information with all malaria stakeholders.	There is ongoing review by the national-level coordination group of malaria SME activities, purpose, process, resources, team composition, and communications for continuous improvement to meet changing malaria strategies and/or malaria goals.	<ul style="list-style-type: none"> ToR Notes from meetings of coordinating mechanisms Official communications from or about coordinating mechanisms

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<i>Domain: Workforce</i>						
Training	Training programs for malaria HIS/SME competencies are at the initial stages of development. The malaria HIS/SME training curriculum is not standardized. Trainings are conducted on an ad hoc basis, and they	The NMCP regards training as critical. Processes to identify relevant courses for different malaria HIS/SME staff cadres exist in limited settings. Malaria HIS/SME-related academic courses are available for specific	Training, academic curricula, and processes for developing training programs to build malaria HIS/SME skills and competencies nationally are standardized. Clear and measurable learning	Training plans are integrated into malaria HIS/SME implementation plans and the results are measurable. Training programs are conducted periodically at government-designated institutions to refresh existing	A designated authority uses regular feedback from systematic curriculum review, training, and piloting innovative ideas for continuous improvement. The training approach is proactive and	<ul style="list-style-type: none"> Curricula and training program materials Policy or procedural documents related to workforce development System assessments Capacity assessments

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	mostly focus on specific software or concepts related to malaria measurement.	malaria HIS/SME domains or activities.	outcomes are defined for training courses.	skills and impart new skills and are reviewed on a regular basis by a designated authority to ensure alignment with malaria HIS/SME needs and technology. There is sufficient infrastructure to support different modes of trainings, including distance learning.	student-centric, with reusable content driven by the implementation plans and revised to meet emerging malaria needs.	
<i>Domain: ICT infrastructure</i>						
Communication network: LAN and WAN	The country has no reliable network connection to support data systems.	An ICT infrastructure assessment has been conducted to determine LAN and WAN requirements for data systems. The country is using mainly unreliable wireless modems to connect to data system services.	The country has a national implementation plan in place to meet its LAN and WAN requirements. A national network maintenance plan exists to ensure high uptime, including procedures to recover from network failure. The country has started to implement a technical solution to ensure permanent connectivity to data system services.	All national offices, and at least 50% of the subnational offices, of the NMCP have a strong and reliable network connection to data system services. An HIS-dedicated ICT team is in place within the NMCP.	All or almost all (>75%) of the NMCP's national and subnational offices have a reliable and robust network connection. A NMCP team dedicated to support connectivity exists and has adequate financial, human, and technology resources.	<ul style="list-style-type: none"> • Service provision assessments • ICT infrastructure assessments
Hardware	The NMCP has limited/inadequate hardware (servers, user computers, printers, and supportive accessories) to support a national malaria HIS/SME system.	An ICT infrastructure assessment has been conducted to determine hardware requirements at the national and operational levels. Less than 50% of the national and operational-level offices have the required hardware.	50% or more of the national and operational-level offices have the required hardware, including back-up hardware.	75% of the national and operational-level offices have the required hardware. There is a back-up and recovery plan for the malaria HIS/SME system.	The hardware meets national and/or international specifications, and a long-term plan (five years or more) is in place that details how to keep hardware up to date.	<ul style="list-style-type: none"> • Service provision assessments • ICT infrastructure assessments

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Operations and maintenance	Operations and maintenance services for electronic malaria HIS/SME systems by the NMCP at the central level are ad hoc or nonexistent.	Maintenance for network and hardware by the NMCP at the central level is a mix of reactive and evolving preventive procedures.	The NMCP at the central level is receiving technical support to build strong in-country capacity for computer technology maintenance. SOPs exist that detail protocols for routine network and hardware maintenance.	The NMCP at the central level has the capacity for strong in-country technical maintenance. Computer operations and maintenance services are part of the malaria strategic plan. A disaster recovery plan for digital malaria HIS/SME systems is in place, and it meets best practices.	The NMCP at the central level continuously reviews and adapts the operations and maintenance services plan to meet evolving malaria needs and technology. Regular simulations are undertaken to increase the ability of technology staff to respond to a disaster.	<ul style="list-style-type: none"> • SOPs for system maintenance • Notes from meetings where operations and maintenance are discussed (e.g., TWG meetings, etc.) • Official communications about operations and maintenance
<i>Domain: System standards and interoperability</i>						
Technical standards	No defined technical standards exist for use in the country's HIS data exchange. Applications are hosted by the providers without any control from the government or Ministry of Health.	The need for a coherent HIS ICT infrastructure architecture has been documented by an HIS ICT infrastructure assessment. The country has adopted or developed technical standards for health data exchange, messaging, and security, and they are in use in limited settings.	An interoperability lab exists for new partners to test technical standards or for onboarding new HIS subsystems, and a certification mechanism exists for new HIS subsystems to be integrated into the national HIS. Technical standards for health data exchange, messaging, and security are in use in most settings.	Technical standards for national data exchange have been published and disseminated in the country under the government's leadership. The interoperability service layer is orchestrating data exchange between existing HIS applications hosted by the integrated ICT infrastructure supporting the national HIS.	A routine review of standards and requirements compliance is conducted to ensure continuous integration of the various subsystems.	<ul style="list-style-type: none"> • Technical standards and supporting documentation • ICT infrastructure assessments • Meeting notes where technical standards are discussed (e.g., TWG meetings, etc.) • Official communications about technical standards
Data and exchange standards	No defined technical standards exist for use in the country's HIS data management and exchange, or they may exist only for specific diseases or HIS activities.	The country has adopted and/or developed standards for health data management and exchange, but standards may be localized to specific projects. There is an effort nationally	Standards for health data management and exchange are approved and monitored. An interoperability laboratory exists for new exchange partners to test or for onboarding, and a certification process exists.	The national data management and exchange standards are integrated into the national HIS and/or health plan. Exchange standards are tracked, monitored, and reviewed through a standardized process.	Electronic data transmission is the default method for moving data among systems, facilities, and information systems. Industry-based standards are followed.	<ul style="list-style-type: none"> • Data exchange standards and related documents • Meeting notes where data exchange is discussed (e.g., TWG meetings, etc.) • Official communications about data exchange

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		to standardize the process.				

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<i>Domain: Data quality and management</i>						
Data quality assurance, management, and quality control	Data quality reviews and audits are conducted on an ad hoc basis and are driven by specific data needs. A data quality assurance plan and national coordinating body to oversee data quality do not exist. Procedures for data management exist locally or for specific malaria HIS/SME system implementation. Data are collected and stored in an unstructured format. Each NMCP unit manages its data separately, and sharing is on ad hoc basis via fax, email, or printed copies.	Some electronic tools are used to facilitate data quality review and audit processes. The document setting forth the data quality assurance plan is available.	A regular schedule is defined for conducting data quality reviews and audits, which includes a remediation process to address identified issues. There is an established national coordinating body to oversee data quality, and it meets regularly. Procedures for data management are defined and implemented nationally.	Data reviews and audits are integrated into malaria plans and are conducted on a regular schedule using automated and manual processes to ensure defined levels of quality. Regular meetings of a national data quality governing body occur, and issues identified are addressed through an established remediation process, which includes documentation of changes made. Data and metrics on data quality assurance are shared with stakeholders.	There is continuous data quality review and auditing through automated and manual processes, to ensure defined levels of data quality. Metrics reported on data quality issues are used for continuous improvement. The data quality assurance plan is reviewed periodically by a national coordinating body and appropriate stakeholders, and the plan is revised to meet evolving data quality needs. Procedures for data management are reviewed and updated on a regular basis to ensure applicability and relevance.	<ul style="list-style-type: none"> Data quality assurance procedures and related documents Notes from meetings where data quality assurance is discussed (e.g., TWG meetings, data review meetings, etc.) Official communications about data quality assurance
Information/data availability	The data system design supports availability of data at the central level. There are no SOPs to ensure data availability.	The data system is designed and implemented to support longitudinal availability of malaria data (clinical, surveillance, M&E) in limited settings. The data are	The malaria HIS/SME system platform/application ensures data availability at all levels for decision support and M&E for authorized users.	The data system in use ensures reliable and appropriate access to data at all levels for authorized users. Changes in reporting requirements are accommodated with minimal disruptions to	The NMCP HIS/M&E units monitor data availability for continuous improvement and to meet emerging malaria needs.	<ul style="list-style-type: none"> Data management and availability procedures and related documents Notes from meetings where data management and availability are discussed (e.g., TWG

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		available for centrally mandated reporting, and SOPs cover multiple contingencies and are consistently followed.		data availability. The data system supports secondary use of data.		<p>meetings, data review meetings, etc.)</p> <ul style="list-style-type: none"> • Official communications about data management and availability • DHIS2

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<i>Domain: Data use</i>						
Data use plan	A data use plan documenting the purpose, types (e.g., bulletin, policy brief, technical report, etc.), target audience, and dissemination plan is not explicitly documented, does not exist, or has not yet been validated for official use by the NMCP.	A data use plan has been validated by the NMCP. It can be an independent document or included as part of another document. It includes a list of key products, intended purpose, target audience, and data dissemination strategies relevant to stakeholders at each level of the health system. It is not yet accessible to data users and producers at all levels of the health system.	Validated data use plan is disseminated and accessible to data users and producers at the national and subnational levels.	N/A	N/A	<ul style="list-style-type: none"> • Data use plan • Documents with data use components, including SME plans or national malaria strategic plans • Official correspondence about data use guidelines
Synthesis and dissemination of information products	Data producers and users may develop information products on an ad hoc basis, or not at all.	Data users at the national level develop information products. National-level information products are disseminated and made available to stakeholders in the public domain.	Data users at the national and subnational levels regularly develop information products. National and subnational information products are disseminated and made available to stakeholders in the public domain.	N/A	N/A	<ul style="list-style-type: none"> • Information products • National guidance on information products • Official correspondence about information products • Notes from meetings where data synthesis and communication guidance are discussed (e.g., TWG)

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						meetings, data review meetings, etc.)
Engagement of data users	Staff at the national and/or subnational levels engage in data review meetings on an ad hoc basis or not at all. Data review meeting guidance does not exist or has not yet been validated for official use by the NMCP.	National-level staff convene data review meetings at least four times a year. However, subnational data review meetings do not take place on a regular basis. Data review meeting guidance exists and has been validated by the NMCP.	National-level staff convene data review meetings four or more times a year, and subnational level staff convene meetings eight or more times a year. NMCP-validated data review meeting guidance is used at the national and subnational levels.	N/A	N/A	<ul style="list-style-type: none"> Data review guidance Data review meeting guidance documents Notes from meetings where data is reviewed at the national and/or subnational levels National Malaria Strategic Plan
Capacity for data use	No data use curriculum exists. Staff are not trained on data demand and use.	A data use curriculum with core competencies exists but has not yet been fully operationalized by the NMCP. Some staff have been trained on data use.	The data use curriculum is officially institutionalized by the NCMP and is used to train national and subnational level staff.	N/A	N/A	<ul style="list-style-type: none"> Data use curriculum Data use training reports
Identification of data needs	Directors, senior staff, and officers will occasionally request information before and during data review, planning, or program costing meetings, but there is no regular process in place to gather information about data needs from these audiences.	Directors and senior staff at the national level will regularly request information before or during data review, planning, or program costing meetings.	Directors, senior staff, and officers at the national and subnational levels will regularly request information before or during data review, planning, or program costing meetings. Additionally, directors and subnational medical officers use the HIS for day-to-day management activities.	N/A	N/A	<ul style="list-style-type: none"> Official correspondence on data requests Notes from meetings where data is reviewed, and/or program planning, and/or costing is discussed Capacity assessments
Outcomes						
Data quality: Timeliness	<60%	61-79%	>80%	N/A	N/A	<ul style="list-style-type: none"> DHIS2 System assessments
Data quality: Completeness (# of reports)	<60%	61-79%	>80%	N/A	N/A	<ul style="list-style-type: none"> DHIS2 System assessments

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received/# of reports expected)						
Data quality: Completeness (of data elements)	<60%	61-79%	>80%	N/A	N/A	<ul style="list-style-type: none"> • DHIS2 • System assessments
Data use results	Data quality, healthcare service utilization, malaria service coverage, and stockouts are discussed rarely or on an ad hoc basis during data review meetings at the national or subnational levels.	Data quality (including timeliness, completeness, and accuracy), healthcare service utilization, malaria service coverage, and/or stockouts are discussed and used to make decisions at the national level, but rarely or on an ad hoc basis at the subnational level.	Data quality (including timeliness, completeness, and accuracy), healthcare service utilization, malaria service coverage, and/or stockouts are regularly used to make decisions at the national and subnational levels. Follow-up actions take place based on decisions made during previous meetings.	N/A	N/A	<ul style="list-style-type: none"> • Data use guidelines • Data review meeting minutes and/or reports • Official communication between stakeholders • Data use questionnaire

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