

RHIS Profile: The Nigerian National Health Management Information System (NHMIS) became operational in 1999. However, due to the complexity of data collection tools and inaccuracy of collected data, the NHMIS was reformed in 2004. Routine malaria data are collected at all levels of the health system. NHMIS routine malaria data collection is primarily paper based until the level of the Local Government Area (LGA), at which the data are collated and entered into the District Health Information Software, version 2 (DHIS2), typically on a monthly basis. Weekly malaria data entry into the national Integrated Disease Surveillance and Response (IDSR) epidemic detection system is paper based, typically to the level of the health facility, and electronically from the LGA level to the state and national levels through the Disease Surveillance Notification Officer (DSNO). From there, the data are entered into an Excel/SORMAS/mSERS database. This document outlines the routine health information system reporting structures involved with malaria-specific reporting and the relationships between the various Ministry of Health departments involved.

	NHMIS	IDSR
	<p>Started: 1999 and reformed in 2004 Scale-up status: The NHMIS was first reviewed in 2006 and subsequently in 2010, 2013, and 2019.</p>	<p>Started: 1998 and assessment of implementation in 2001 Scale-up status: Reviewed three times, with the most recent in 2019. First review was in 2002. Second review was done twice in 2009 and 2010.</p>
<p>National</p>	<p>Reporting format/platform: DHIS2 Managed by: Department of Planning Research and Statistics Dissemination: Data reported through the NHMIS on malaria data elements are analyzed on a monthly basis, with feedback sent to reporting entities. Key tasks: Conduct data quality checks to identify illogical data to send feedback to reporting entities for immediate correction, analyze data to identify key findings that will inform program implementation, and share results of analysis with malaria stakeholders at national and state levels</p>	<p>Reporting format/platform: Electronic (SORMAS/mSERS) Managed by: Nigeria Centre for Disease Control (NCDC) Dissemination: Feedback is shared with LGAs, states, Ministries, departments, and agencies (MDAs), and other stakeholders weekly. Key tasks: Collate, review, analyze, interpret and share feedback with states, MDAs, partners, and other stakeholders on disease detection and trends for action</p>
<p>State</p> <ul style="list-style-type: none"> On average, 21 LGAs per state 	<p>Reporting format/platform: DHIS2 (web access) Managed by: State Health Management Information System (HMIS) Officer Reported to: Not applicable Reporting frequency: Not applicable Key tasks: Review data and perform quality control looking for obvious errors (e.g., order of magnitude increase in an LGA), carry out data quality assurance to LGA/Health facilities to provide on the job-mentoring on documentation practices and correct errors observed on the NHMIS tools and DHIS2</p>	<p>Reporting format/platform: Excel/electronically (SORMAS/mSERS) Managed by: State Ministry of Health (SMOH), Public Health Department (PHD) through Epidemiology unit Reported to: NCDC Reporting frequency: Weekly Key tasks: Collate and review reports from LGAs and convert paper data from LGAs into Excel/electronic format. All LGAs in Nigeria are expected to report electronically on SORMAS or mSERS to the state/national level (IDSR TGs 3rd edition, 2019).</p>
<p>Local Government Area</p> <ul style="list-style-type: none"> On average, 56 facilities per LGA 	<p>Reporting format/platform: DHIS2 Managed by: LGA Monitoring and Evaluation (M&E) Officer Reported to: HMIS (DHIS2) Reporting frequency: Monthly Key tasks: Review and update data as needed and enter data from paper reporting into DHIS2; provide on-the-job mentoring to reporting health facilities on data collection, collation, and reporting</p>	<p>Reporting format/platform: Paper/electronic Managed by: DSNO Reported to: SMOH/PHD/Epidemiology unit Reporting frequency: Weekly Key tasks: Collect and collate IDSR data from reporting sites/facilities at local and LGA levels. These data are then reported electronically through SORMAS/mSERS to the next level (IDSR TGs 3rd edition, 2019).</p>
<p>Facility Level</p> <ul style="list-style-type: none"> Approximately 40,412 facilities 	<p>Reporting format/platform: Paper Managed by: Physicians, clerks, and nurses Reported to: LGA M&E Officer Reporting frequency: Monthly Key tasks: Enter data generated at the health facility on a daily basis into the appropriate paper-based registers, which are then summarized into a monthly summary form at the end of the month</p> <p>Community Level Managed by: Proprietary patient medical providers (PPMVs)/community implementers Reported to: TBD—pilot study done in 2016; routine data generated by community oriented resource persons (CORPS) are reported to the supervising community health extension worker (CHEW). Reporting frequency: Monthly Key tasks: Provide malaria services to children under five at the community level and report data generated to the supervising health facility</p>	<p>Reporting format/platform: Paper Managed by: Physicians, clerks, nurses, healthcare workers (surveillance focal person) Reported to: DSNO Reporting frequency: Weekly Key tasks: Collect health data within the facility and its surrounding community and report to the LGA</p> <p>Community Level Managed by: Community Health Officer, CHEWs, and village health workers Reported to: Closest health facility/select sentinel site Reporting frequency: Weekly Key tasks: Collect community-based health information and data from the entire community population is under surveillance and report to health facility</p>

Table 1: Key Malaria Indicators by System

Indicate Y or N for each reporting element captured by the system.

Indicators	System	
	NHMIS	IDSR
Number of suspected malaria cases		
Suspect/fever cases	Y	Y
Tested (diagnostically)	Y	Y
Diagnostically confirmed (positive)	Y	Y
Clinical/presumed/unconfirmed	Y	Y
Outpatient/inpatient	Y	Y
Uncomplicated/severe	Y	Y
Age categories (e.g., <5, 5+)/Sex disaggregation (M, F)	Y/N	Y/N
Pregnant women	Y	Y
Number of malaria deaths		
Age categories (e.g., <5, 5+)/Sex disaggregation (M, F)	Y/N	Y/N
Pregnant women	N	Y
Commodities (Availability or stockout/Consumption)		
RDT	Y	N
ACT (AL, ASAQ)	Y	N
Severe malaria treatment	Y	N
SP	Y	N
IPTP 1/2/3(+)	Y/Y/Y	N
LLINs through continuous distribution channels (Pregnant women attending ANC first visit and children under 1 fully immunized)	Y	N
Completeness of reporting	Y	Y

Data Quality Activities

Routine data quality reviews and audits: LGA, state, and national M&E staff review malaria DHIS2 data monthly. Obvious entry issues are addressed by the originating LGA M&E Officer. Quarterly state quality assurance meetings and additional LGA and health facility supportive supervision occurs when funding is available, although it is identified as a gap in most states. Completeness and timeliness remain a challenge in many states due to infrastructure issues (lack of fuel for electricity to run computers, faulty computers/No computers), the lack of trained staff, and a need for additional M&E Officers.

Review meetings: Ward- and LGA-level review meetings are held monthly. State- and national-level review meetings are held quarterly and biannually.

Supervision: Data use is a goal as part of supportive supervision at the state and LGA levels.

Monthly or quarterly malaria bulletin: The NHMIS produces monthly bulletins for all health data reported through the system, and the national malaria data repository (NMDR) produces quarterly bulletins specific to malaria indicators.

Data availability: Malaria data are available and can be accessed through the NHMIS to program staff and partners with login credentials. Malaria data are available and can be accessed through the NHMIS to program staff and partners with login credentials. In addition, to improve availability and accessibility of routine and non-routine malaria data warehoused in a single database for decision making, NMEP and partners developed the National Malaria Data Repository in 2019. This platform was built using the DHIS2 platform and it is interoperable with other databases for exchange of data. NMDR has thematic dashboards on Case Management, Data validation, morbidity and mortality, prevention, and surveillance whose information can be triangulated and used by program managers at National and sub-national levels to take programmatic decision. National level trainings have been conducted for NMEP and partner’s staff. Over 85% of Surveillance, Monitoring and Evaluation (SME) officers from the 36 states plus FCT were trained virtually during the National SME technical review meeting in 2020. In-person sub-national level trainings have been conducted in 17 states with login credentials provided.

Data use: The national malaria elimination program (NMEP) has dashboards updated routinely on the Nigeria DHIS2 website, although there is low health facility representation overall (considering private and public). Data use at the state and LGA levels is dependent on many factors—understanding benefits, infrastructure, and trained staff. Data are not thought to be used outside the state and national levels at this time.

Additional Context

Nigeria healthcare facilities are approximately 40% public and 60% private. By the end of 2014, all LGA M&E Officers had completed training on reporting in DHIS2. Nationally, >60% of public-funded healthcare facility data are reported in DHIS2 by LGA M&E Officers (state range 50–95%), with a goal of >80% of health facilities from all LGAs reporting routinely by 2020. States supported by the U.S. President’s Malaria Initiative (PMI) have better reporting performance, with ~78% of public health facilities reporting, compared to ~54% for non-PMI states. Some states, such as Zamfara, have reported nearly 95% of all public-funded healthcare facility data in DHIS2 (although this only represents ~38% of total health facilities in the state). Because of LGA autonomy, only LGA M&E Officers can enter or edit DHIS2 data. Corrections to data need to be routed through the originating LGA M&E Officer within three months, after which there is no way to modify or correct discrepancies. Future efforts will include reporting of private facility data and improving timeliness and completeness. [Note: Nigeria DHIS2 is able to disaggregate by facility type.]

The NMEP is aware of the limitations of having input from <50% of active health facilities and none from community care providers, village health workers, and PPMVs/drug vendors. There is also awareness that many secondary and tertiary health facilities do not report data to LGA M&E Officers due to hierarchical (hospital M&E hold higher position) and political reasons (catchment for hospitals beyond one LGA). Efforts are underway to collect data at these levels:

- NMEP hopes to work with DHPRS to finalize a standard data reporting tool (paper-based) for CHEWs working in primary health centers. However, getting state, LGA, and local buy-in, training, and use has yet to be formalized.
- Pilot projects are underway evaluating the benefit of PPMVs reporting sales of malaria medication (ACT and non-ACT). No standard reporting tool has been developed for a national effort, and no specific use has been decided for inclusion into NHMIS.
- The Nigerian Ministry of Health and the NMEP will continue to work with state and LGA officials to explore ways of encouraging secondary, tertiary, and private healthcare facilities to report on HMIS indicators (including malaria). However, the NMEP plans to renew subscription for the DHIS 2 staging server used for reporting malaria data/indicators by secondary and tertiary hospitals for 6 months and the data will be migrated to the National DHIS2 instance within this 6 months period to strengthen this.
- Plans for 2020 include additional training and supportive supervision to improve data quality at the LGA/facility level and encourage use.

The NCDC manages the IDSR and has worked with the NMEP and NHMIS to review the case definitions in the new IDSR TGs 3rd edition to reflect the reality. Data streams for IDSR also come from the community level and all health facilities, irrespective of their level or ownership. IDSR reporting is done on epi-week and cannot be summarized by calendar month to match the NHMIS.



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