Learning Brief

Improving Malaria Data Quality and Use in Côte d'Ivoire for Decision Making

USAID FROM THE AMERICAN PEOPLE
U.S. President's Malaria Initiative

PMI Measure Malaria

WHAT IS PMI MEASURE MALARIA (PMM) TECHNICAL SUPPORT?

PMI Measure Malaria (PMM) is funded through the United States Agency for International Development (USAID) and the U.S. President's Malaria Initiative (PMI). Its main objective is to support the strengthening of the Routine Health Information System (RHIS) and malaria surveillance, monitoring and evaluation (SME) in 20 USAID-supported health districts in Côte d'Ivoire.

Building on the lessons learned and successes of USAID's MEASURE Evaluation project in scaling up web-based health information models and approaches, the PMM project seeks to improve access to quality health information by strengthening the use of malaria and other health information contained in the District Health Information Software, version 2 (DHIS2) to enable health service managers, healthcare providers, and technical and financial partners to make evidence-based decisions.

STRENGTHENING MALARIA DATA COLLECTION AND QUALITY ASSESSMENT TOOLS AND APPROACHES

To increase trust in health data, PMM supported the National Malaria Control Program (PNLP) and the Directorate of Information Technology and Health Information (DIIS) in updating malaria data collection tools, defining indicators, and developing data quality assessment and review tools. These tools are the dashboards, the Malaria Routine Data Quality Assessment (MRDQA) tool, and the validation rules in DHIS2. PMM's data quality strengthening strategy is to build the skills of supervisors at all levels of the health system to:

- Develop and analyze dashboards in DHIS2 on a quarterly basis;
- Develop validation rules with linked indicators to detect inconsistencies in data accuracy;
- Use the MRDQA tool to assess the quality of inconsistent data at the health facility level and determine performance on accuracy, timeliness, completeness, and data management; and
- Develop and follow up on action plans to resolve issues identified during the MRDQA assessments.

The first step in the process is to conduct a data desk review to identify exaggerated trends and data inconsistencies. The second step is to conduct an MRDQA at facilities with inconsistent data. Thus, this approach allows for rational use of the very limited resources, as supervision will only occur in health facilities that have indicators with data quality problems.

Percentage of Sites in PMM-Supported Districts Where the Tools Have Been Implemented

85. 2% of health regions

86.7% of health districts

85.6% of health centers

66.7% of community sites

100% of referral hospitals

100% of private health facilities

Data source: Supervision report

STRENGTHEN THE SUSTAINABILITY OF ELECTRONIC HEALTH DATA REVIEW ACTIVITIES AT THE CENTRAL, REGIONAL, AND DISTRICT LEVELS

As part of the reinforcement of the norms and standards of the Ministry of Health, PMM supports the PNLP and the DIIS in utilizing monthly meetings at the central level and quarterly meetings at the district level that bring together all managers of the health facilities for the data desk review. During these quarterly meetings, participants use the DHIS2 malaria indicator dashboards to analyze and discuss trends in the delivery and management of health services at each health facility. For irregular trends, validation rule analysis is used to identify inconsistencies in the data. In the 20 districts covered by PMM, the use of dashboards and validation rules allowed:

- 100% of department heads and 100% of data managers to receive coaching to better understand the definitions of the data elements and malaria indicators.
- 100% of department heads and 100% of data managers to be trained and coached to analyze and interpret trends and identify data inconsistencies.
- 85% of health facilities to submit monthly reports to the districts on time.
- 75% of health districts to have 100% completeness of monthly reports from health facilities (Q3–2022).
- 100% of health districts to have 99% completeness of monthly reports from health facilities (Q4–2022).
- 65% of districts to have less than half of their health centers (ESPCs) with data inconsistencies (Q3–2022).

Data reviews with the use of dashboards and validation rules by these stakeholders allowed for regular review of the quality of health data through monthly meetings at the central level and quarterly meetings in the districts. Depending on their health information needs, all users were able to develop dashboards, analyze trends, identify problems, and make recommendations, as well as develop and monitor action plans.

Strengthen Access and Use of Malaria Data at the Health Center Level with Dashboard and Performance Score Mobile Applications

Despite the efforts of partners such as MEASURE Evaluation to improve health information management, health centers that collect and report health data on paper-based management tools still do not have access to health information in DHIS2. With the insufficient availability of computers, Internet connection, and uninterrupted electricity, PMM and the PNLP are taking advantage of the availability of mobile phones and tablets and Internet coverage in the health centers to develop mobile dashboards and malaria performance scores linked to DHIS2. These applications (apps) have been initially implemented in 20 first-contact health facilities (ESPCs) since March 2022 and in 16 additional ESPCs in October 2022.

The initial phase of implementing these mobile malaria apps allows for ESPCs to view and analyze their data in real-time and develop action plans to address identified problems. Thus, through the use of the mobile apps between March and September 2022, 53% of the ESPCs noted an increase in performance in distributing long lasting insecticide-treated nets (LLINs) to children ages 12-59 months, from an average baseline of 21% to 100%; 100% of the ESPCs had an average increase of 23% to 100% in distributing LLINs among pregnant women.

The evaluation of the use of these apps in health facilities shows that access to malaria information has improved malaria prevention coverage with LLINs. This access has also allowed for sensitization activities to convince more people to sleep under mosquito nets to reduce or eliminate malaria cases.

A district-level supervisor stated, "With the mobile apps, we give the ESPC the opportunity to access their metrics and quickly detect low performance at a glance and the metrics that are driving that under performance so we can address them."

One regional supervisor stated, "An application that facilitates visualization of site performance making it easy to review data."

According to a partner from the Ministry of Health: "This is a robust application of transparency in the dissemination of data to the producing institutions."

A health facility manager stated, "They have allowed us to have access to our information in real-time, to assess our trends and to take corrective actions which were almost impossible before if we did not refer to the health district."

Regional and District Management Team Perceptions of SME and MRDQA Training

When asked about their role in using the SME and MRDQA tools, one district management team member replied, “It’s important to have all these tools, facilitate their implementation, use them to coach service providers, and monitor their performance after identifying potential sources of errors in reporting.”

The team member also emphasized the contribution of these tools to the evaluation and monitoring of malaria data and services, by saying, “These tools facilitate monitoring and evaluation activities to increase performance in data quality and service delivery.”

HC Users’ Perceptions of Malaria Mobile Applications

A healthcare worker noted that, “The approach allowed the existence of an interpretation and decision support tool that is available in all health facilities.”

From left: Supervision of the use of mobile dashboard and scorecard apps at Grand Bassam; middle: Data quality assessment in Grand Bassam; from right: Supervision of the use of mobile dashboard and scorecard at Larabia health center. Photos courtesy of PMI Measure Malaria.

RESULTS OBSERVED WITH THE USE OF MOBILE TOOLS AND APPLICATIONS IN HEALTH CENTERS

Evaluations of the use of mobile tools and apps show that the health centers (HCs) are tracking the implementation of their action plans and the trends and performance scores of malaria services. Thus, the progress made includes:
:

100% of HCs

with increases in distributed LLINs

100% of CSBs

with increases in performing rapid diagnostic tests (RDTs) on fever cases

Monthly reviews of data from the HCs, with the participation of community leaders and community health workers, allowed for the analysis of trends in prevention, treatment, and impact indicators of malaria services, as well as the development and monitoring of action plans. Among the recommendations based on the mobile app data, awareness raising for the promotion and use of malaria preventive methods was implemented by community health workers. Service providers were also much more compliant with malaria management standards by applying RDTs systematically to all cases of fever at the health center.

Opportunities, Challenges, and Prospects for the Use of Data Quality Assessment Tools and Mobile Applications for Decision Making at the Health Center Level

The use of quarterly district meetings and monthly health center meetings provide sustainable platforms for data review, analysis, and use. The PLNP adopts the tools developed by PMM as standards for data evaluation and use. For the use of mobile apps in all HCs, it is essential to have tablets and Internet coverage. Thus, the PLNP Global Fund recipient plans to purchase tablets and provide Internet access to all health centers for the use of these mobile malaria dashboard and scorecard applications.

Training facility health managers on the use of mobile malaria apps. Photo courtesy of PMI Measure Malaria.

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