Assessment of the Performance of Routine Health Information System Management in Mali (2018)

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Summary

The 2018 Performance of Routine Information System Management (PRISM) assessment in Mali measured changes in the status of the routine health information system (RHIS) in the years since the last evaluation, in 2013.

The 2018 assessment revealed significant progress in data use, data quality assurance, and evidence of data analysis at the district, regional, and central levels of the RHIS. However, the assessment also revealed weaknesses at the health facility (HF) level. Above all, data accuracy is a concern at that level—and only there —because that's where all data are entered now.

Other weaknesses that emerged from the 2018 assessment relate to difficulties in archiving the health management information system (HMIS) tools and reports, poor sharing of normative RHIS management documents, instability and frequent turnover of health personnel, and security challenges in the north and center of the country. These problems have seriously affected the performance of the sites surveyed, especially at the most peripheral level (i.e., community health centers, or CSCom), not only in terms of data quality but also in terms of data use.

The assessment's results showed that the promotion of a culture of information alone is not enough to change habits. Closer monitoring is necessary to strengthen staff's capacity to work with the tools available to them and willingness to use the tools on a regular basis.

The results showed that critical management functions exist but need to be strengthened, so that they better support the RHIS at all levels of the health pyramid: HF, district, region, and central. The 2018 assessment also pointed to the need to sustain the progress that Mali's RHIS has achieved.

Introduction

RHIS work in Mali by the United States Agency for International Development-funded MEASURE Evaluation project started in 2015, following an RHIS performance assessment that we conducted at the end of 2013. The results of the 2013 assessment led to the design of a MEASURE Evaluation program to reinforce Mali's local health information system (SLIS). Concomitantly, that program expanded to the hospital information system (SIH), but without first establishing a baseline, owing to lack of funding. The 2018 PRISM assessment evaluated progress in improving the SLIS—identifying key determinants of its performance—and established an SIH baseline.

We present here some results of the 2018 PRISM assessment of the local health Information system.

Methods

Study design: A cross sectional survey aiming to assess the performance of the RHIS and linking it to key determinants

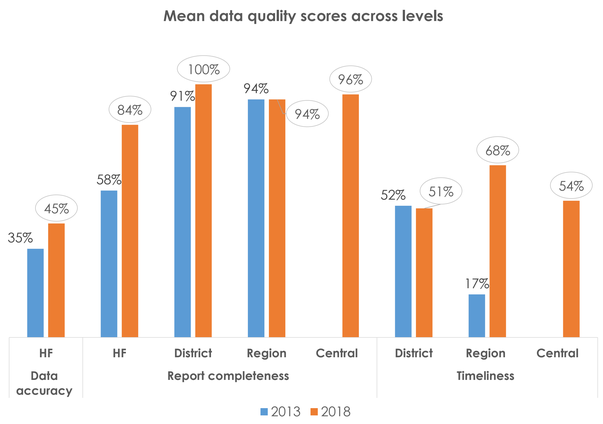
Targets: The 2018 survey targeted all levels of the health pyramid (HFs, districts, regions, and central-level RHIS offices) for the SLIS and hospitals and central level for the SIH using MEASURE Evaluation's PRISM tools, which had just been revised. The PRISM tools consist of six modules: the RHIS Overview Tool, the RHIS Performance Diagnostic Tool, the Electronic RHIS Functionality and Usability Assessment Tool, the Management Assessment Tool, the Facility/Office Checklist, and the Organizational and Behavioral Assessment Tool (OBAT). With two exceptions, all PRISM tools were used across the RHIS's four levels to collect quantitative and qualitative data. The "functionality" section of the Electronic RHIS Functionality and Usability Assessment Tool and the RHIS Overview Tool were administered only at the central level.

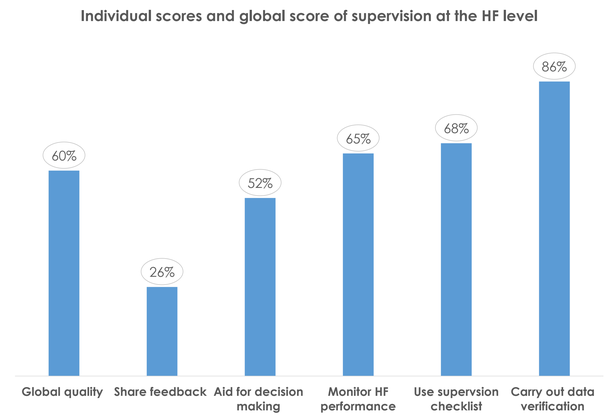
Sampling: The selection of sites for the SLIS was based on both convenient and random sampling to take into account the greater weight of such key sites as reference health centers in comparison with that of CSComs, as well as the greater weight of districts located in regional capitals in comparison with that of other districts within the same region. The overall sample size for the SLIS was 8 regions,14 districts, and 140 health facilities. For the SIH, the entire universe of hospitals (13) was selected, along with the central level (no intermediate levels for the SIH).

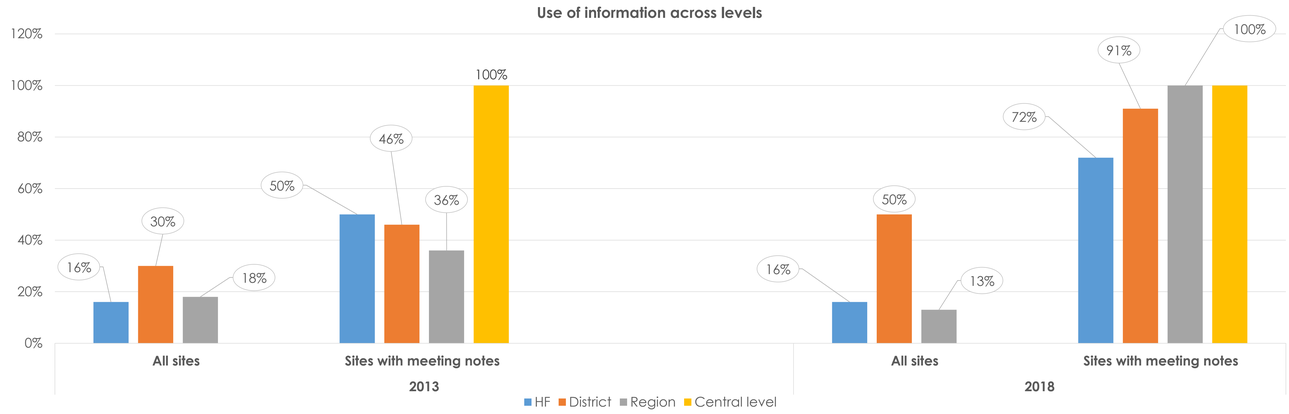
Data collection methods: Data were collected through desk reviews, observations, interviews, and data abstraction from primary data collection and reporting tools and RHIS databases. Questionnaires were addressed to the institutions surveyed, except for the two questionnaires aimed at individuals: the OBAT, which assesses staff opinions, knowledge, and competencies to perform specific RHIS tasks (calculating rates, developing trend graphs, and interpreting and using data), and the "Usability" section of the Electronic RHIS Functionality and Usability Assessment Tool, which evaluates staff's ability to perform tasks on the RHIS data management software. To check for trends in data quality, three periods were set and four (for the SLIS) or six (for the SIH) indicators were selected for data accuracy checks.

Data entry and analysis: The questionnaires for both the SLIS and SIH were configured using Microsoft Excel form definition files, transformed into XML files, and uploaded into the Open Data Kit (ODK) aggregate server. They were later downloaded into Android tablets using ODK collect. Entered data were transferred into the ODK server and later downloaded to generate CSV files for the respective modules. The CSV files were then analyzed separately with the PRISM Analysis Tool (PAT), based on the PRISM Analysis Guide developed by MEASURE Evaluation.

Results for the SLIS







Discussion and Conclusion

Data accuracy: This aspect was relevant only at the HF level, because the data collection and management system in its current design allows data entry only at the CSCom and referral health center (CSRef) levels. No data distortion is possible once data are in the system. The accuracy scores observed at the HF level clearly indicate that accuracy is very low despite the slight increase observed in average accuracy scores between 2013 and 2018 (35% versus 45%). Significant progress in that domain is needed. Lack of completeness of the source documents, weak archiving of reports and primary data sources (e.g., registers), lack of adherence to guidelines for proper recording of diagnoses, and data entry errors would explain the observed discrepancies between the source documents and the HF reports. These weaknesses should be addressed with diligence to improve the accuracy at the overall RHIS.

Report completeness: Report completeness between 2013 and 2018 increased at the HF level (58% to 84%) and the district level (91% to 100%) and remained stable at the regional level (94%). At the HF level, although there was a slight variation between the two surveys in their approaches to verifying completeness of the data elements, the scores for data element completeness ranged from 72% to 90%, for an average score of 84%. This score suggests a margin of growth of 16%, on average; attention is needed here to achieve higher completeness rates. The availability of reports at the HF level and the completeness of reports at the higher levels have steadily increased from the bottom to the top of the health pyramid.

Report timeliness: At the district level, timeliness is very low regardless of the method used, varying from 27% (paper-based reporting) to 51% (electronic system reporting). Timeliness has steadily increased from the district level (51%) to the regional (68%) and central (54%) levels.

Data use: Data use for decision making has evolved favorably from the HF level to the central level (for sites keeping meeting notes). An improvement in data use was observed from 2013 to 2018 at all levels of the health pyramid, even though the data use scores at the peripheral and regional levels are weaker than at the district and central levels for all surveyed sites. These findings point to the need for a system to document data review work by focusing on two aspects:

1. The need for a good archiving system and for the record-keeping of data review meeting minutes to allow for audits whenever necessary
2. The urgency of improving the quality of the minutes of data review meetings to report the points discussed more thoroughly

Conclusion: Support targeted at the peripheral/HF level clearly needs strengthening. By improving data quality and creating the conditions for sound data analysis and use, Mali can in turn improve its health decision making and service delivery.

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