Assessment of the Performance of Routine Health Information System Management in Côte d'Ivoire (2018)

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Summary

After two consecutive routine health information system (RHIS) performance assessments were conducted in Côte d'Ivoire in 2008 and 2012, the Ministry of Health and Public Hygiene (MSHP) implemented massive strengthening interventions. To evaluate their impact, a Performance of Routine Information System Management (PRISM) assessment was conducted in September 2018, using PRISM tools newly revised by the United States Agency for International Development- and United States President's Emergency Plan for AIDS Relief (PEPFAR)-funded MEASURE Evaluation project. It concerned 234 health facilities (HFs), 24 districts, 12 health regions, and the central level, represented by the Directorate for Information Technology and Health Data (DIIS).

Results for HFs show that data quality at that peripheral level remains low but has improved—along with management procedures—at higher levels (districts, regions, and central government). Likewise, data use is low at the HF level and average for districts and regions, and high at central level.

Given the 2018 PRISM findings, RHIS strengthening efforts should focus on the HF level—where data are initially produced and gathered—because the quality of those data heavily determines the overall quality of the MSHP's health data.

Introduction

As part of the monitoring and evaluation of health policies and programs, the health information system (HIS) must be able to produce good-quality information on time to monitor the evolution of diseases and facilitate evidence-based decision making for health. In 2008 and 2012, the MSHP—with MEASURE Evaluation's technical support—used the PRISM tools to assess RHIS performance.

Responding to recommendations from these evaluations, the MSHP—with MEASURE Evaluation's support and technical and financial assistance from PEPFAR partners—implemented several interventions to strengthen the overall RHIS.

To evaluate the effects since 2012 of these interventions in the health sector, the MSHP, through the DIIS and with technical assistance from MEASURE Evaluation and with PEPFAR financing, conducted a third assessment in 2018 using the PRISM tools, which had just been revised. The tools consist of six modules to be administered at the four levels of the health system.

We present here some results of the 2018 PRISM assessment concerning data quality and use at different levels of Côte d'Ivoire's health system.

Methods

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

Targets: The survey used the revised PRISM tools to target the four levels of the health pyramid (HFs, districts, regions, and central-level RHIS offices). 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 Facility/Office Checklist, the Management Assessment Tool, 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 was based on both convenient and random sampling, to take into account the greater weight of such key sites as regional and general hospitals in comparison with that of health centers, 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 encompassed 12 regions, 24 districts, and 235 HFs, including regional and general hospitals as well as urban and rural health centers. All but one inaccessible HF were successfully assessed.

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 addressed the institutions being 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 indicators selected for data accuracy checks.

Data entry and analysis: The questionnaires 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 to the ODK server and later downloaded to generate CSV files for the respective modules. The CSV files were then analyzed separately using the PRISM Analysis Tool (PAT), which is based on the PRISM Analysis Guide developed by MEASURE Evaluation.
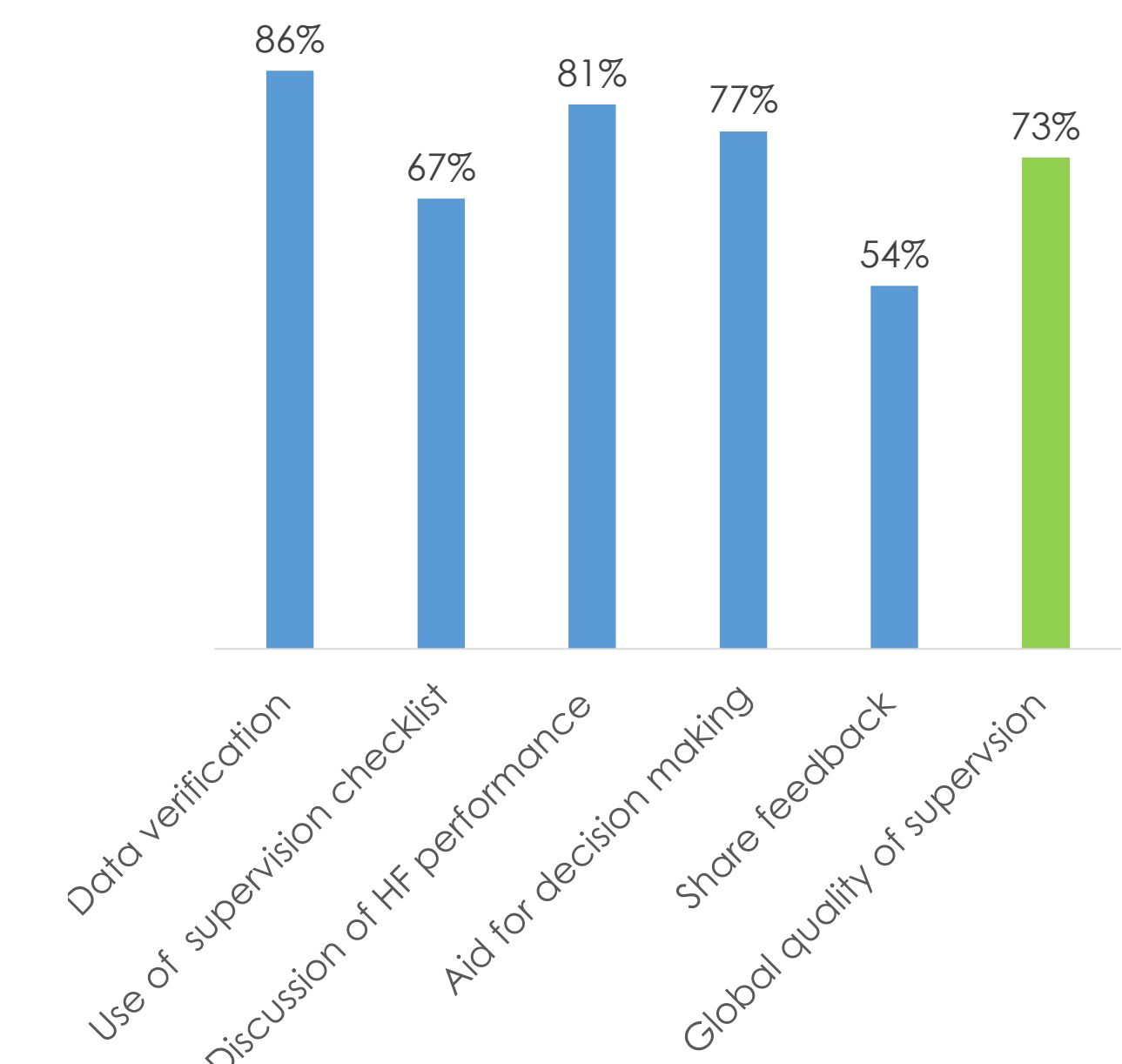
Results

Percentage of HFs and districts meeting the set criteria for data accuracy (80%, 90%, and 95%), by key selected indicators
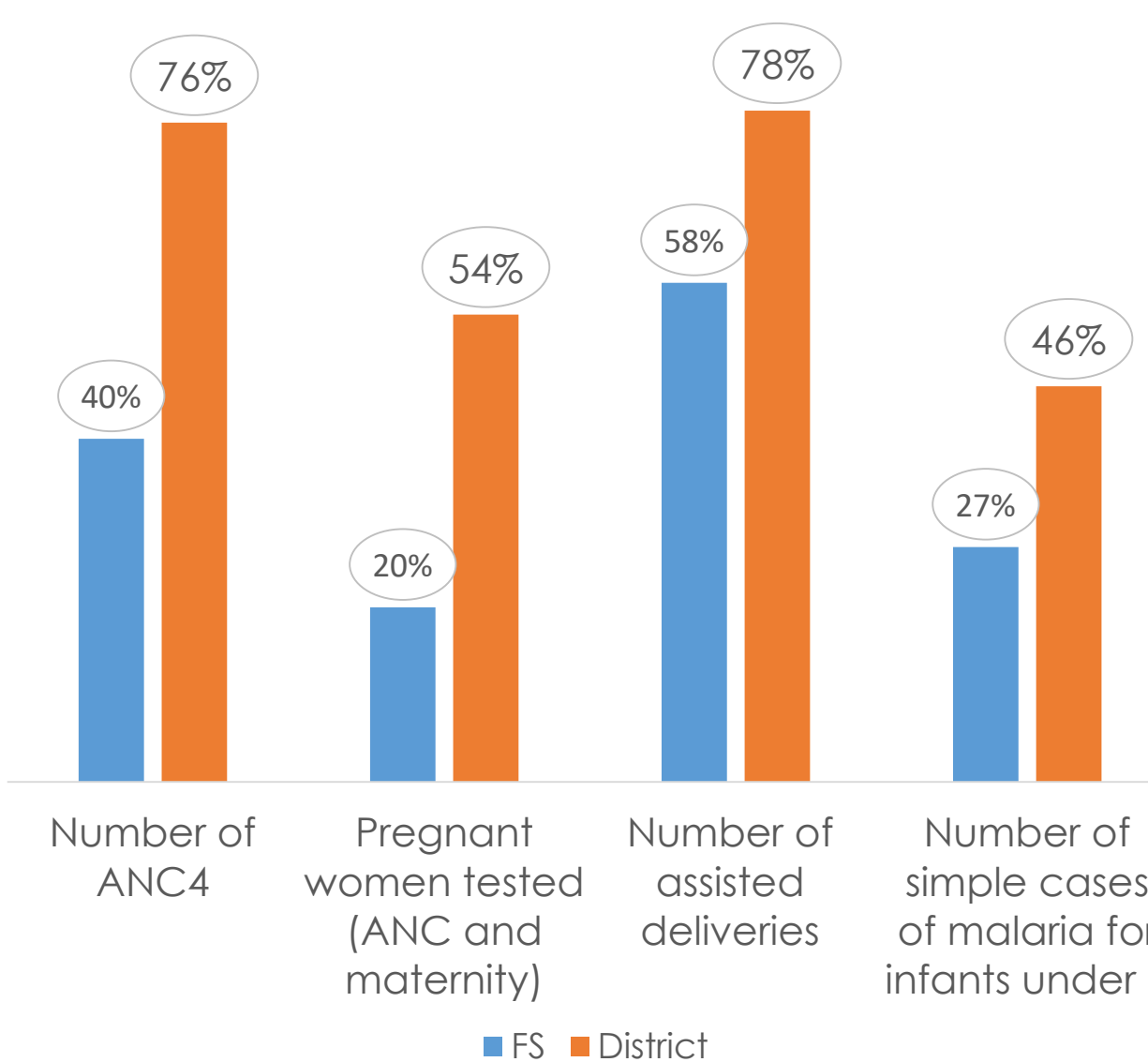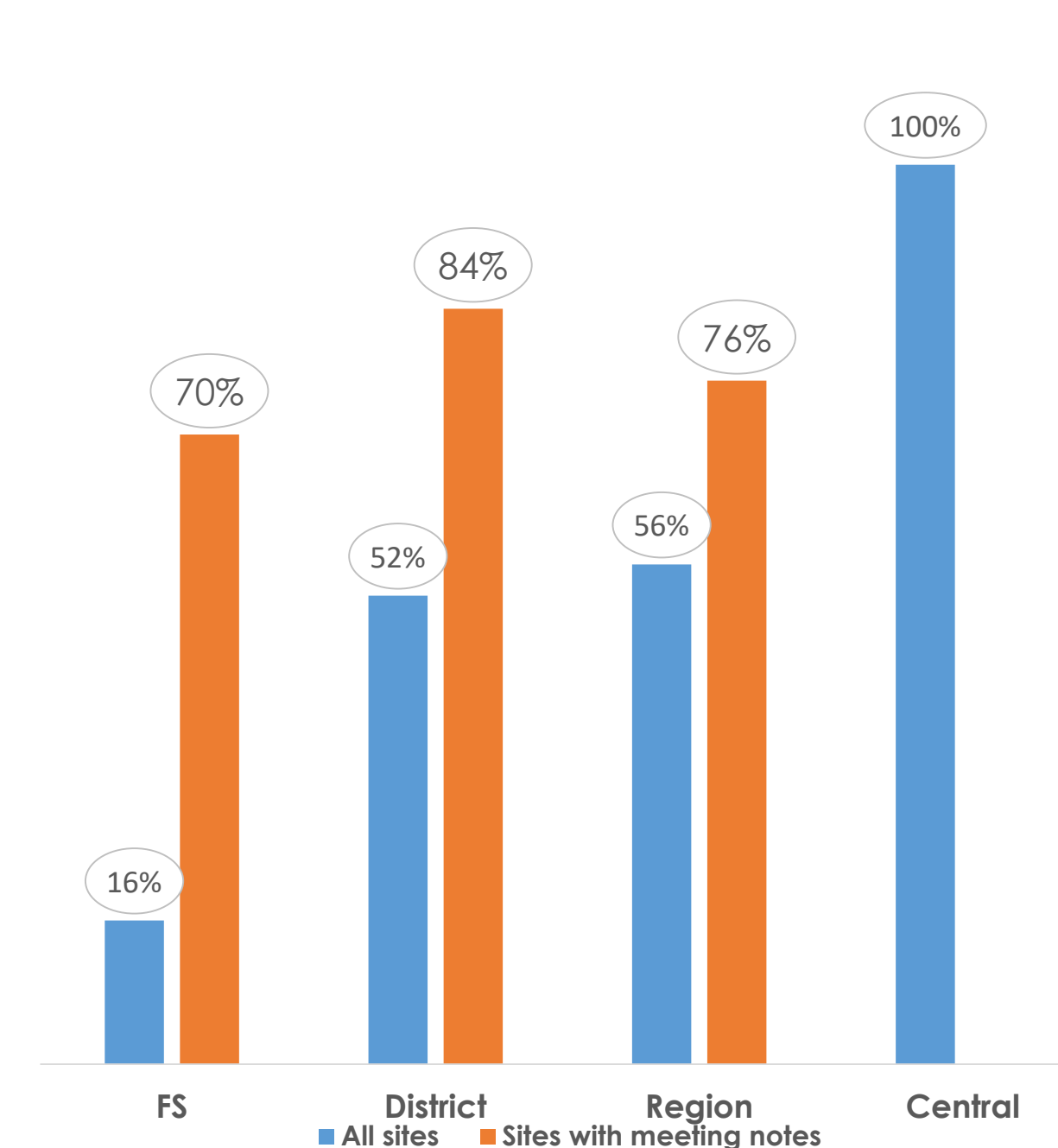

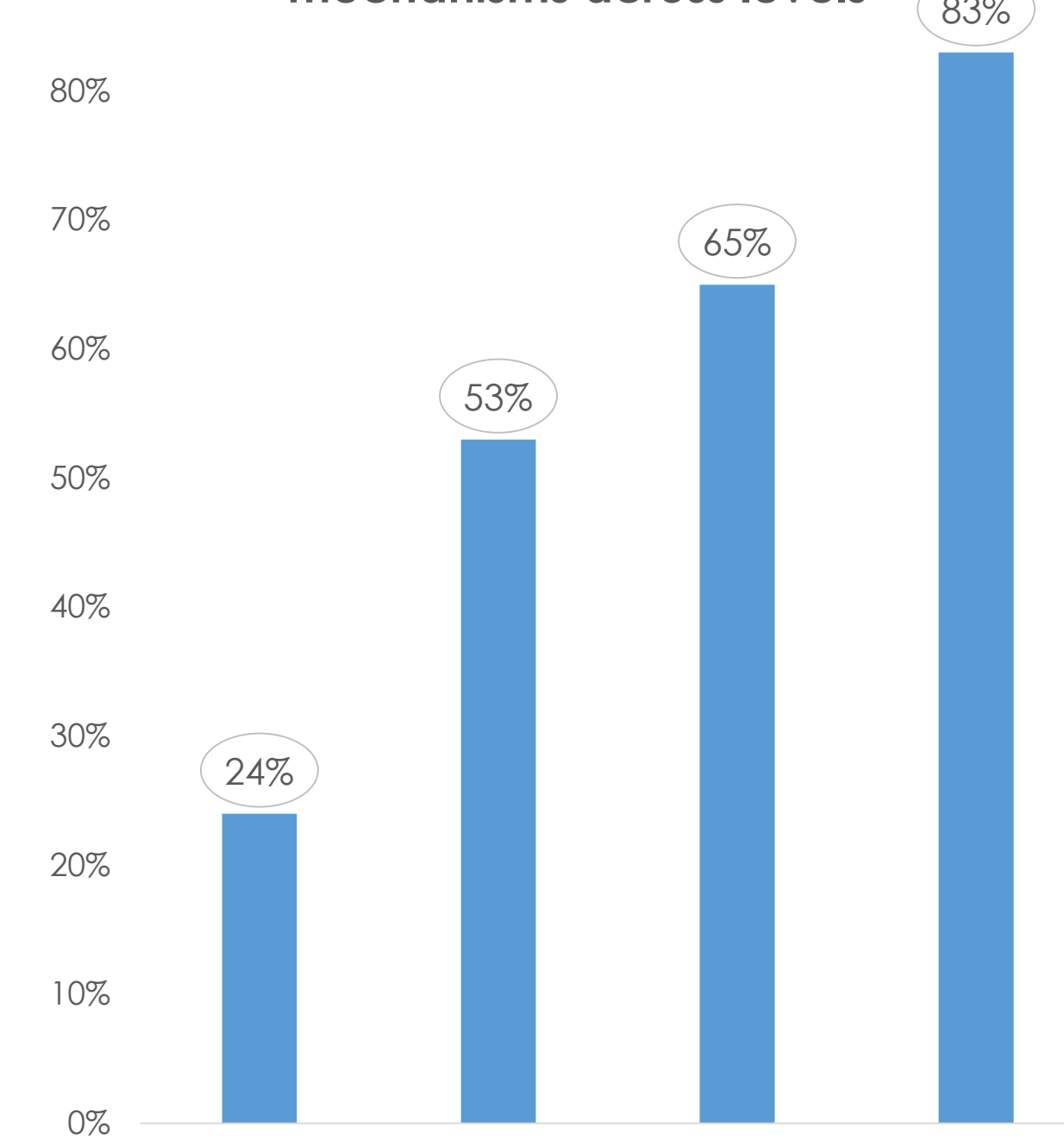
Completeness of source documents at the HF level
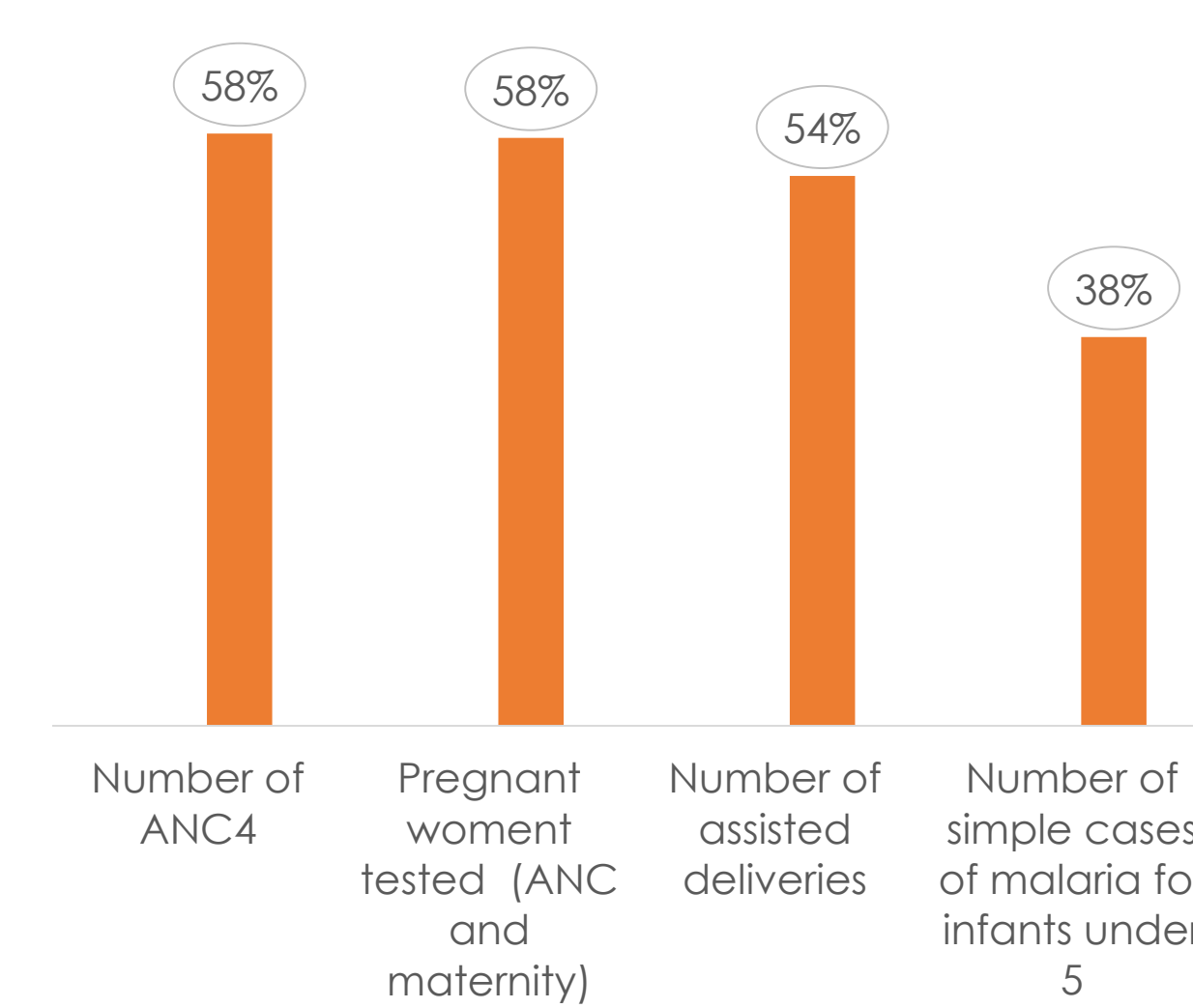
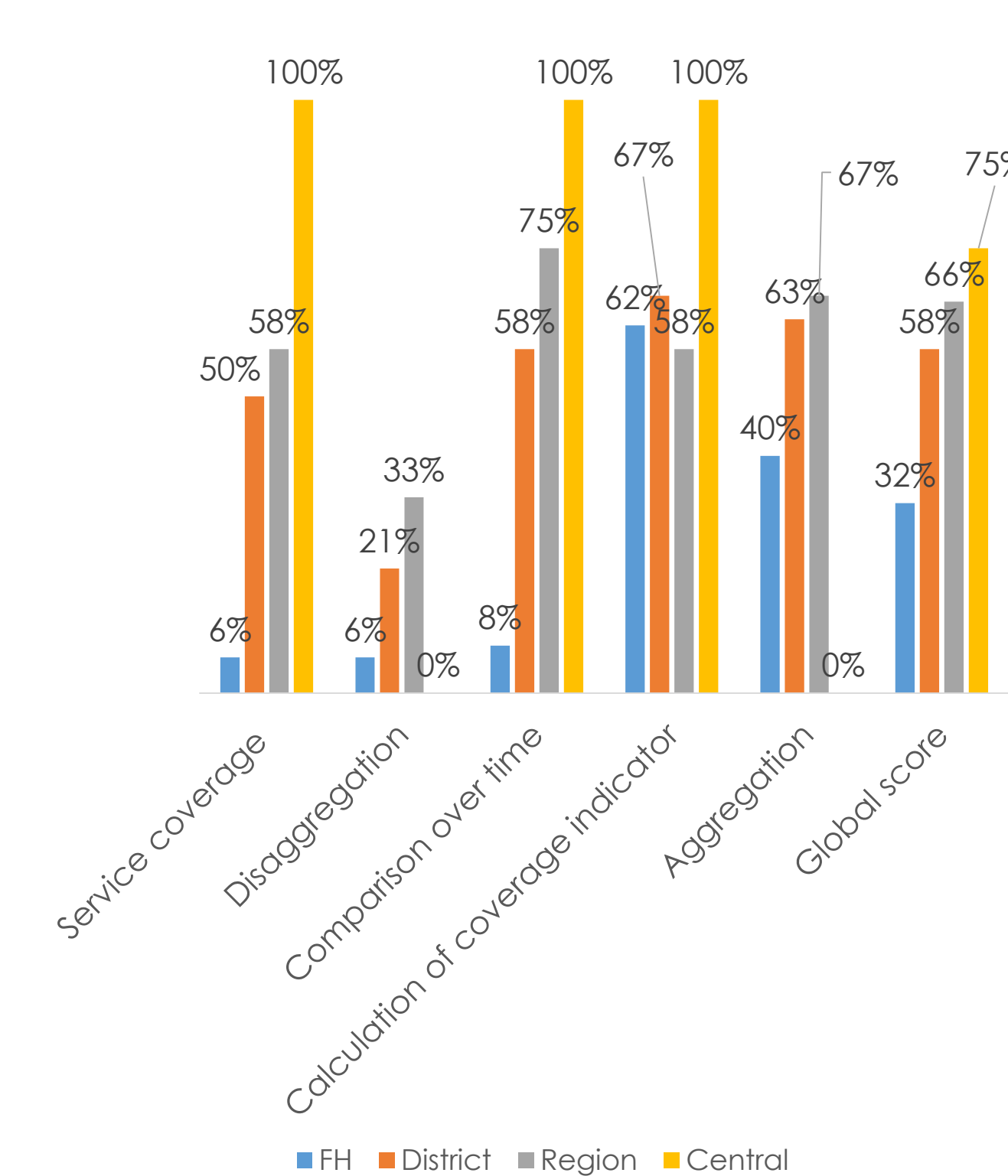Individual scores and global score of the quality of supervision

Use of information across levels

Existence of quality assurance mechanisms across levels

Existence of evidence of data analysis practices

Discussion and Conclusion

Data quality at the HF level is low (25%). Completeness in filling out source documents is average overall at the HF level (51%) and low for the malaria indicator (38%). This is the result of faulty archiving of the consultation records and failure to follow the instructions for registering cases, especially for doctors. The timeliness of monthly reporting by HFs to the district has improved significantly, from 50% (2012 PRISM) to 85% (2018 PRISM).

At the district level, the performance of the RHIS in relation to data quality is good (56% for accuracy, 98% for completeness, and 85% for timeliness). In addition, 81% of HFs received at least one district supervision in the three months preceding the survey, and the global quality of supervision is 73% on a scale of 0% to 100%.

Systematic data quality verification methods are almost nonexistent at the HF level (10%) and identification of problems and problem-solving skills are low at all levels—progressively decreasing from the central level down to lower levels. This negative gradient is observed in terms of other data management skills from the higher level to the more peripheral level.

The score of use of RHIS data (on a scale from 0% to 100%) is a concern at the HF level (16% for all HFs assessed versus 70% for HFs that keep data review meeting notes). Districts perform better: 52% for all districts assessed versus 84% for districts that keep data review meeting notes. Regions perform better, too: 56% for all regional data offices assessed versus 76% for regional offices that keep data review meeting notes. Data use reaches 100% at the central level.

To improve data quality and use, the MSHP should focus on the HF level while establishing a system to track and improve the quality of data review meeting notes.