

How Kenya Monitors Health Information System Performance

Findings from a Case Study

Background

A high-functioning health information system (HIS) provides high-quality data to be used for decision making at all levels of the health system. Governments in low- and middle-income countries and international donors agree that HIS strengthening activities increase the use of high-quality health data, leading to improved health service delivery and outcomes. However, few guidelines and tools exist to help these countries assess whether HIS strengthening activities improve HIS performance, specifically regarding data quality and data use. The Health Information Systems Strengthening Model (HISSM) of MEASURE Evaluation—a project funded by the United States Agency for International Development (USAID)—describes data quality and data use as two areas of HIS performance (MEASURE Evaluation, 2017).

In 2015, a team from MEASURE Evaluation conducted a case study in Kenya to understand how the Ministry of Health (MOH) and select national health programs are planning, implementing, and measuring processes to improve HIS data quality and data use. Although Kenya receives support to strengthen its HIS, few documents are publicly available that describe how the country monitors HIS performance. The purpose of the case study was to understand and document the policies and practices being undertaken in Kenya to measure the performance of the HIS. This case study focuses on the monitoring of HIS performance measurement—specifically, data quality and data use—in Kenya. Lessons learned were used to identify needs and develop tools to support HIS managers in assessing and monitoring HIS performance.

Approach

This case study used a mixed-methods approach that involved (1) reviewing documents, (2) interviewing key informants, and (3) extracting and mapping indicators.

(1) **Review documents.** The team reviewed country-specific and global literature to identify, compile, and characterize indicators



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used for measuring HIS strengthening. The team reviewed 23 country-specific guidelines, strategies, and monitoring and evaluation plans both from the national and county levels and 25 documents on monitoring the HIS at the global level. In addition to the country-specific strategies and guidelines, the team reviewed three HIS assessments: one conducted by the MOH with support from the Health Metrics Network, in 2008 (Health Metrics Network, 2008); another conducted by USAID/Kenya with the Global Health Technical Assistance Project, in 2010; and a data quality audit conducted by the MOH, in 2014, to study how the assessments were conducted, what elements of the HIS were assessed, and the gaps identified.

- (2) **Interview key informants.** The team interviewed 20 government and national health program organizations involved in implementing the HIS to understand the strengths, challenges, and opportunities for improving the HIS.
- (3) **Extract and map indicators.** The team identified, extracted, and categorized indicators from 11 country-specific documents and mapped them to the HISSM using Microsoft Excel. The team identified and extracted 160 unique indicators that

measured HIS performance from the country-specific documents into Microsoft Excel. These indicators were organized according to four components described in the HISSM: the enabling environment (the foundation for planning, implementing, and maintaining HIS), information generation (the operationalization of HIS), HIS performance measurement, and external factors (which can influence HIS positively or negatively).

Findings

The interviews and document review provided insights into how data quality and data use are planned, measured, and managed in Kenya. The main findings are described as follows.

Data Quality

At the national and county levels, written strategy guidelines and plans to improve the data quality of the HIS exist. At the national level, the Health Sector Monitoring and Evaluation Framework, developed by the MOH, and strategies and plans provided by HIV and AIDS, malaria, tuberculosis, and laboratory health program managers described guidelines for conducting periodic data quality assessments (MEASURE Evaluation, 2017; Ministry of Health, 2014b, 2014c, n.d.-a, n.d.-b; National Public Health Laboratory Services, 2012, 2015a, 2015b, n.d.-a). At the county level, the study team reviewed strategic plans from three counties (Bungoma, Kakamega, and Garissa) that contained standard operating procedures for data quality assessments. Garissa County’s strategic plan outlined further details on the data quality responsibilities of the county and subcounty health management teams (Garissa County Ministry of Health, n.d.).

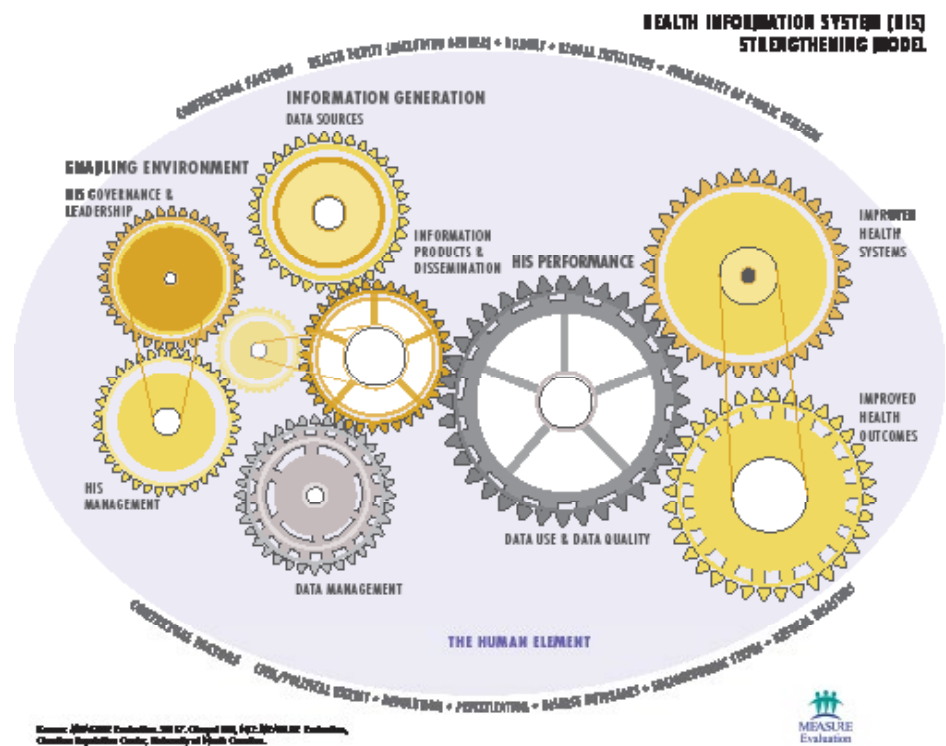
Data quality practices are implemented at the national and county levels. National health programs and units within the MOH described how they use data review meetings, which are conducted quarterly or annually, with counties and facilities to review data quality. The MOH and national health programs also described

how, in accord with their strategies and guidelines, they conduct periodic data quality assessments annually or semiannually using a sample (<5%) of facilities or counties.

In terms of measuring data quality, we found that 46 of the 160 unique extracted indicators measured data quality according to the HISSM. Most of these indicators measured reporting rates and timeliness, and some measured accuracy and completeness from health facilities and counties. For example, an indicator from the Health Sector Monitoring and Evaluation Framework measures the proportion of health facilities submitting timely, complete, and accurate information to the MOH using the national HIS (Ministry of Health, n.d.-a).

Data Use

The team did not find many strategies and guidelines that outlined data use. Only seven of the 23 documents mentioned data being reviewed, including the county strategic plans and national strategic plans for malaria and tuberculosis, leprosy, and lung disease (Bungoma County Ministry of Health, n.d.; County Government of Kakamega,



Source: MEASURE Evaluation. (2017). HIS Strengthening Model, Health Information Systems Strengthening Resource Center. Retrieved from <https://www.measureevaluation.org/his-strengthening-resource-center/his-strengthening-model>

n.d.; Garissa County Ministry of Health, n.d.; Ministry of Health, 2014a, 2014b, 2014c, n.d.-a). The Malaria M&E Plan was one of the few documents that outlined how data are collected, collated from specific data sources, and reported for data use (Ministry of Health, 2014b). The other country-specific documents described different data review meetings but lacked details on which data sources feed into specific reports and how often these reports are produced.

Data use is practiced by national health programs and units within the MOH when they use data at data review meetings to make service delivery decisions. For example, during the National AIDS Control Council's quarterly review meetings, the organization identifies regions that are not receiving adequate HIV prevention services, by reviewing data from several HIV and AIDS databases. In another example, the malaria control unit improves case management training after reviewing the quality-of-care data it receives from health facilities every six months.

In terms of measuring data use, we found one indicator of the 160 unique indicators that extracted measured outcomes for data use (proportion of malaria control unit staff using the Malaria Information Acquisition system—a knowledge management tool—for planning and budgeting) (Ministry of Health, 2014b), according to the HISSM. The other indicators measured inputs and activities that contribute to evidence-informed decision making and were mapped to the other HISSM areas: HIS management (n=14), HIS leadership and governance (n=1), and information products and dissemination (n=8).

Recommendations

Overall, Kenya has implemented policy and practices to strengthen and measure HIS performance. By setting policy, establishing guidelines and standards, implementing data quality and data use activities, and measuring HIS performance, the MOH can further strengthen and monitor HIS performance and improve HIS data quality and data use.

Recommendations to improve the measurement of HIS performance are as follows:

- **Data quality.** For example, although the county plans contained standard operating procedures for conducting data quality audits, counties have an opportunity to define the sample size of facilities and community sites, what data sources will be audited, and how often the audits will be conducted.
 - **Data use.** Counties can improve their data use guidelines within their M&E plans by specifying data sources and health indicators that will feed into specific reports, how often data will be included in reports and bulletins, and which reports will be reviewed at specific meetings. For example, the *Malaria M&E Plan* described how data are collected, collated from specific data sources, and reported for data use, and this could be better outlined in the other strategic and M&E plans.
- **Combine HIS performance indicators in a single document.** The study team found HIS performance indicators in multiple documents managed by specific health programs, instead of being available in a single document. There is an opportunity to combine or harmonize the indicators in one document, so that health and HIS managers have access to a complete list of HIS performance indicators across the sector.
- **Improve data quality and data use indicators to measure HIS performance.** The study team found 46 indicators that measured data quality outcomes and only one indicator measured a data use outcome, as defined in the HISSM. Most of the data quality indicators measured timeliness of report submission. Although one indicator was documented that measured data use, several indicators monitored input and output activities for data use, including data review meetings and dissemination of key reports. To improve the measurement of data quality, indicators can be incorporated in county and national M&E strategies that focus on completion and accuracy of specific data sources. To improve the measurement of data use, indicators can be incorporated in county and national M&E strategies that capture the use of specific data sources by health program managers to inform policy, program management, resource allocation, and additional health system decisions.
- **State more precisely how to carry out data quality and data use activities with the M&E plans of national and county and health programs.** Although there are written strategies to improve data quality and data use in the documents reviewed, the documents lacked details on carrying out data quality and data use activities.

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