

Data Demand and Use in the Health Sector in Central and Eastern Kenya

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Abstract

Efforts to improve monitoring and evaluation (M&E) systems have been increasing however data is often not used effectively by stakeholders to inform policy and programmatic decision making. In Kenya, M&E of health programmes is based on reports from the routine health management information system (HMIS). Challenges with the development of the national HMIS has resulted in informed decision making that has been widely non-existent for effective planning and M&E. The objective of this study is to identify barriers to data use and provide recommendations for practices that will address constraints to data use and data demand for RH programmes. An assessment was done in 5 districts in Central and Eastern provinces among decision makers, health facility managers, health facility staff and health record information officers. 140 questionnaires will be analysed using STATA 12 and In Vivo softwares. Findings from this study will identify constraints to data use and inform health programmes on how data can be improved for monitoring reproductive health indicators.

1. Introduction

Efforts to improve monitoring and evaluation systems and other data sources have increased over the past few decades to improve tracking of Millenium Development Goals (MDGs) and respond to performance-based release of funds from donors. However in spite of these improvements data is often not used effectively by stakeholders to inform policy and to inform programmatic decision making [1]. In Kenya, monitoring and evaluation (M&E) of health programmes has been set as a key priority in the National Health Sector Strategic Plan (NHSSP) [2]. The M&E support system which is primarily based on reports from the routine health management information system aims to assist health managers in making informed decisions and contributing to evidence-informed planning and management.

The government and other stakeholders have embarked on initiatives to develop and improve a web based national health information system (DHIS2) that captures data from all health systems thus reducing the need for multiple parallel systems that are capturing data at community, district and national levels. The strengthening of the health information system will ultimately lead to building the foundation of the health system and informing decision making in each of the following areas that have been outlined in the WHO framework: health workforce, health services, health financing, governance and leadership, medical products, vaccines, and technologies and health information [1,3]. Challenges with the development of the national health management information system (HMIS) has resulted in minimal informed decision making at the national and sub-national levels data for effective planning, monitoring and evaluation. Data demand and use (DDU) challenges facing the health system include: lack of capacity of managers to use data for decision making at the subnational level; lack of trained M&E personnel to support data management and overview monthly reports; lack of training on data analysis, data interpretation and report writing; lack of regular supportive supervision visits to the health facilities to check on data quality leading to poor quality data; and lack of accountability, for example no penalties for poor reporting of maternal deaths [4,7].

Improving DDU is necessary to improve the effectiveness and sustainability of a health system. Health system performance is enhanced when data and information are used in making strategic and routine decisions. Improving data use requires that those who can use data understand how it can help them in making decisions. Data users must also have confidence in the quality and veracity of the data and the data must be in a format that can be interpreted.

It is useful to distinguish data users (or decision-makers), from data producers (usually M&E staff or researchers) since improved DDU requires interventions with both. It is also important to understand the context in which decisions are made and how this influences not only the demand for data and the use of information but also the collection and availability of data. The PRISM analytical framework of health information system performance identifies three main determinants of the use of health information: the technical aspects of data processes and tools, the behavior of individuals who produce and/or use data, and the system/organizational context that supports data collection, availability and use [5]. These can be used to identify opportunities for and constraints to effective (and strategic) data collection, analysis, availability, and

particularly use. Strategies to improve performance in this area can then be built along the same three parameters.

In an effort to strengthen M&E at the national level, MEASURE Evaluation has partnered with the Ministry of Health (MoH) to strengthen the capacity of specific MoH programs to improve the availability and use of health program information. The project has been tasked to address country-specific M&E strengthening needs including empowering institutions to improve availability, collection, analysis, presentation and demand of data that can be used for planning health programs. MEASURE Evaluation also works to expand and provide further support for government institutions and NGOs to build leaders in data demand and use. The Division of Reproductive Health (DRH) in the Ministry of Public Health and Sanitation has sought assistance from MEASURE Evaluation to strengthen performance monitoring, reporting, and linking of reproductive health and family planning data to decision making. The objective of this study is to identify barriers to data use at the national level and in two provinces (Central and Eastern) and to provide recommendations for practices that will address the barriers and constraints to data use and ultimately improve data demand for RH programmes.

2. Methods

The data used in this study were from 140 interviews done with key informants who included decision makers (14), health facility managers (59), health facility staff and health record information officers (35) and community health extension workers (CHEWs) (32) at the province and district levels. This entailed collecting data from provincial headquarters; district headquarters and health facilities by conducting interviews with Provincial Directors of Health, Public Health Nurses, RH Coordinators, Public Health Officers, Medical Superintendents and Data Clerks among other MoH staff using validated data demand and use tools that have been produced by MEASURE Evaluation [6]. Data collected included decisions that were made about policy, technical constraints to generating quality data, individual capacity to collect, analyse and report data, organizational constraints to promoting data use, barriers to information use and the quality of data. Data collection took place in Isiolo, Embu, Meru, Nyeri and Nyandarua districts in August 2012. Ethical clearance for the DDU assessment was obtained from Futures Group.

Trained field workers who had previous experience working in health programmes conducted interviews after obtaining informed consent with senior government officials, the most senior manager in the health facilities, selected health workers (including the CHEWs) and the health records information officers. In some case interviews were tape recorded for quality control. After data collection, completed questionnaires were manually edited to check for errors, completeness and inconsistencies before submission for data entry.

Qualitative data was analysed via a two-tiered process. Initially, first-level coding was carried out by reading the field notes and identifying key themes that emerged, such as existing skills and process for data use, existing data quality, existing capacity for DDU, existing compliance with data documentation then followed by conducting close and repeated readings of the field notes to identify patterns within the emerging themes. The themes and patterns generated through this process were subjected to repeated cross-checking and comparison with other field notes to ensure their empirical grounding.

Simple descriptive statistics (means, frequencies etc) will be used to analyze the quantitative data using STATA 12.0.

3. Results

Data Use in Decision Making

Among the respondents interviewed, 7 of the decision makers were from Central province and 7 were from Eastern province. Among the health facility managers, 24 were from Eastern province and 35 were from Central province. Among the data producers, 27 were from Central province and 8 were from Eastern province. Among the CHEWs, 20 were from Central province and 12 were from Eastern province.

Decision makers at the provincial level found that they had to make decisions of staffing, and resource allocation in the respective RH programs they managed. The majority of decision makers felt that they had the necessary skills to use data for decision making (71%). Only half of the decision makers had received training in HMIS and less than half had received training in project management. No major differences were observed between regions except that more

respondents in Central Kenya were trained in HMIS and M&E compared to those in Eastern Kenya. Key constraints experienced by data users were delays in reporting since they faced challenges with achieving 100% reporting and receiving timely reports. The primary decisions made by health facility managers were to influence budget preparation, inform medical supply and drug management, plan clinical service, making staffing decisions and promoting service improvement. More managers in Central used data for decision making compared to their counterparts in Eastern Kenya. The main barriers to data use faced by the managers were having incomplete data or cases where data was not produced or reported from the health facilities. Less than half of the managers mentioned poorly presented data as a barrier to data use. Health facility managers also faced challenges with the low technical capacity of staff who had little knowledge of data collection processes and use of tools thus resulting in the collection of poor quality of data. Over 60% of the health facility managers also reported that they provide feedback to their records team and it is addressed. Further they felt they had the necessary skills to make decisions using data. Data producers reported that almost half (43%) of the staff lack data analysis and interpretation skills. Half of them reported that there are perceived problems with completeness of information and approximately 60% reported that there is lack of equipment to manipulate data. The majority of data producers strongly agreed that supervisors promote a culture of data use.

Table 1. Data use and constraints mentioned by respondents

Training for Decision Makers (n=14)	Total (%)	CENTRAL	EASTERN
Feel they have the skills necessary to use data	71.4	50	50
Have received any formal training in HMIS	50.0	57.1	42.9
Have received any formal training in Data analysis	64.3	44.4	55.6
Have received any formal training in Project Management	28.9	50.0	50.0
Have received any formal training in M&E	64.3	55.6	44.4

Health facility managers			
Data Use to: (n=59)			
Influence budget preparation	81.4	58.3	41.7
Make staffing decisions	74.6	56.8	43.2
Inform medical supply and drug management	77.9	60.9	39.1
Plan clinical services	81.4	58.3	41.7
Promote service improvement	79.7	59.6	40.4
Barriers to data use			
Incomplete data	59.3	57.1	42.9
Data was not produced at all	33.9	60.0	40.0
Data was not presented well	33.9	60.0	40.0
Provided feedback to records team and feedback was addressed	62.7	48.7	51.4
Manager feels that they have the necessary skills to use data for decision making	62.7	62.2	37.8
Barriers to data use for Data Producers (n=35)			
Staff lack data analysis and interpretation skills	42.9	66.7	33.3
There are perceived problems with completeness of information	51.4	72.2	27.8
There are perceived problems with timeliness of information	40.0	64.3	35.7
There are data entry backlogs/ delays	40.0	64.3	35.7
There is lack of equipment to manipulate data	57.1	65.0	35.0
Perceptions about data use			
Strongly agree that decisions are based on cost considerations	57.1	70.0	30.0
Strongly agree that supervisors promote a culture of data use	71.4	92.0	8.0
Strongly agree that staff are appropriately trained to use data	51.4	72.2	27.8

Qualitative data from the study supported the findings described in Table 1 above. Most provincial level decision makers reported using data to improve the M&E reporting system. One of the HRIOs interviewed made a decision regarding improving completeness and timeliness of reporting from facilities. The officer came to a conclusion that some facilities do not report on time or provide incomplete data by using the information from the DHIS.

Further, most facility managers were making decisions related to budgeting, staffing, drug procurement and medical supply. Thus, a few facility managers reported using data in making a decision to directly purchase some of the commodities from pharmacies in order to avoid the expiring of drugs and to ensure drug availability:

“...we decided to be ordering drugs by ourselves since we use the pull system thus reduce on drug expiry. We had a sitting with DMOH and decided to be purchasing some of the commodities from pharmacies and pay them directly after getting our allocation since after we order it takes quite a long time to receive the order which can be well reflected from our data though in a hard copy.”

-Enrolled Nurse (Acting In charge) Central Kenya

Other examples of program decisions made by facility managers included establishing a referral system to increase the rate of facility-based deliveries and reduce delivery complications, addressing Family Planning staff attitudes towards long term FP methods to increase uptake of FP.

According to data producers, in most facilities, data are used during monthly meetings to make decisions on supply of commodities:

“...apart from reporting to MOH we use data locally for ordering drugs and other commodities.”

-Nurse Central Kenya

The interviews with data producers revealed that some of the facilities use data to make decisions on service delivery (to monitor progress, assess performance of the facility in meeting targets, plan actions), and staffing whereas others depend on people at the district level to make such decisions for them. Several data producers indicated that decisions are made by facility in-charges and they are not involved in this process.

Capacity for Data Use

Although the data producers strongly agree that their supervisors promote a culture of data use, they did not seem to be actively using data for decision making, considering that often times they reported submitting data to the district level and relying on people at district and provincial levels to make decisions.

The majority of decision makers stated that health information systems meet their need for information. The respondents use HMIS for various purposes: to analyze data over time, assess coverage, write reports, conduct research, provide feedback to health workers, make comparisons among facilities and districts, inform programming, and for monitoring and evaluation.

Several decision makers perceived their organizations as having the technical capacity to ensure access and availability of reliable data. They indicated DHIS as a source of such data; however, a few respondents expressed their concern with data reliability:

“(We) do not have adequate personnel i.e. HRIO especially in high volume sites like Mirangini. This inadequacy has caused workload to be heavy on one person. Also this workload affects quality of data (accuracy) and disparities occur.”

-HRIO, Nyandarua (Central Kenya)

“We are working on this now with a bit of issues: DHMS are supposed to make sure whether this data has been making sense but this has not been happening.”

-Provincial Director Medical Services (Eastern Kenya)

Decision makers indicated that their organizations support having the necessary information to make decisions by providing technical assistance to health records officers and workers involved in data collection. They mentioned provision of support by training the health records officers to provide high quality data, support supervision to ensure proper reporting, provision of feedback from the provincial level to improve data quality, as well as data analysis for health facility staff to explain the meaning of data and enable program officers (PHMT) to plan for activities to improve their performance. Additionally partnerships with organizations like MEASURE

Evaluation to train staff in information use, and include stakeholders to strengthen data use have been established.

Most of the facility managers felt that have the skills necessary to use data to make the kinds of decisions in which they are involved. They listed a wide range of skills that they use for decision making such as data collection and management, data interpretation and data use, data analysis, and data presentation skills. At the same time, skills to use data for decision making at the facility level were reported as lacking by some respondents:

“...after analyzing the data they (people at facilities) don’t use the data to make decisions which could have helped earlier.”

-DPHO (Eastern Province)

Constraints to data use

Poor quality data was reported by all decision makers as one of the major technical constraints for information use. Main issues with quality of data related to data accuracy, data completeness and timeliness:

“Quality of data is an issue ... our PDPHS is concerned with this issue. We cannot say data from facility is of quality. When we go to the facilities (for supervision) we have to go with the report to counter check with what is in the facilities. Sometimes accuracy and data completeness is the major issues as opposed to timeliness.”

-PHRIO Central Kenya

Some of the decision makers reported experiencing problems with data disparity while using multiple sources of information or statistics for issues of importance to them. Thus, one of the respondents mentioned discrepancy in data on home delivery received from CHEWs and data received from DPHN. Another respondent indicated DHIS data not reflecting data from hard copies:

“...big challenge i.e. disparities in reporting hard data does not agree with what is loading in DHIS”

- Provincial Director Medical Services, Eastern Province

According to decision makers, maternal mortality data tends to be underreported by facilities because of fear of punishment:

“(facilities) refuse to report (on) maternal mortality; they under report on death (because they are) afraid of the repercussions.” Provincial Director PHS Eastern Province

The introduction of new data collection tools and changes in the annual work plans were mentioned as factors that make data less reliable:

“When a new tool is introduced and people are not conversant with it they leave it blank or record wrongly e.g. the new tool MOH 731 on HIV/AIDS. Planning for annual workplans keep on changing and people use it wrongly because of the changes.”

-Provincial RH Coordinator Central Province

To improve data quality, decision makers reported making follow ups with people providing data, especially when there is a lack of or contradicting information. Also, they conduct trainings and monthly meetings to provide feedback and emphasize the importance of data quality:

“...when we realized that data was incomplete is when we decided to train them again; we have monthly meetings to emphasize on data accuracy (from the RCO, the nurses and all the in charge)”

-Provincial RH Coordinator Eastern Province

Several individual constraints for data use were listed by respondents: lack of technical skills, lack of staff motivation, lack of knowledge of the benefit to using data for policy change and program management. Among technical skills, computer skills as well as data collection skills were especially lacking.

Organisational constraints to data use were noted by respondents when they indicated inadequacy of reporting tools as one of the organizational constraints for data use and expressed a desire to have harmonized tools:

“MOH 515 is confusing... Frequent change of versions of MOH 514 and MOH 515 keeps confusing CHWs and CHEWs.” -HRIO, Central Province

The study also highlighted that decisions related to policy, planning and advocacy typically follow an established process for formalization and approval. As a result, lower level health facility managers or staff cannot make decisions without prior consent from their superiors.

4. Discussion

The findings from this study have identified several actions that are needed to address constraints to data use and the strengthening of data used to monitor reproductive health indicators. The findings reveal that M&E of RH indicators and linkages with the referral system should be strengthened to feed into the DHIS- the government portal for health data. Further, health stakeholders need to create awareness on the need for increased demand for data at all levels in the health system.

In general, it was clear that there is a big gap in the Data Demand and Data Use (DDU) but it is showing great improvements. Health personnel across the spectrum are showing great interest in the DHIS data. With increased capacity building in data demand and use of information for decision making there is high likelihood that data use will increase.

Variations per province were seen with respect to more decision makers in Central Kenya being trained in M&E and HMIS which may also reflect on the capacity of the province to manage data and submit completed reports to the central level on time. A higher number of respondents also reported on barriers to data use compared to the counterparts from Eastern Kenya and this may have been as a result of leadership at the provincial offices and at the health facilities that promotes a culture of strengthening data.

In order to feed into the national HIS policy [8], the following recommendations have been derived from the study findings:

(i) to eliminate paper-based data collection in facilities and to make the HMIS electronic; (ii) to train and re-train staff on using HMIS to produce information and using this information in decision making; (iii) to urgently address data use constraints such as staff shortage, inadequacy of staff, lack of delegation for managerial staff to make decisions and heavy workloads among data producers; (iv) to improve quality of data (i.e., accuracy, completeness, timeliness); (v) to provide internet access and improve connectivity in the areas with internet connection; (vi) to

provide all facilities with computers and other equipment and supplies such as stationery, printers, and fax machines; and (vii) to make efforts at the organizational level to improve motivation and appreciation for data use at all levels of the health system including data producers.

5. Conclusion

The study findings indicate that the majority of the interviewed decision makers and facility managers use data in decision making. However, data producers are rarely taking part in the process of making decisions; very often they rely on upper levels of health system to make decisions. This low involvement in the decision making process by data producers may lead to low motivation to provide high quality data and, consequently, may contribute to low quality of data submitted to the districts health information system. Concerns about sharing information were likely to lead to misinterpretation of information, especially by the media, data manipulation and using the information against the person who provided the information.

Concerns about data quality, i.e. data accuracy, completeness and timeliness, were expressed by all three groups of respondents and cut across the two provinces. The results also highlighted that poor data quality often led to discrepancies in the available information and resulted in an inability to make decisions or led to delays in decision making. The delays were caused by the necessity for the decision makers to verify data, find errors and remove them.

In terms of the capacity to use data for decision making, most respondents believed that their organizations already have such capabilities and they need technical and financial support to strengthen capacity for their staff.

6. References

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