

Assessment of Technical factors for HMIS performance for Health Management Information System (HMIS) Performance in ElgeiyoMarakwet County, Kenya

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Abstract

Health Management Information Systems (HMIS) have been used by many countries using platforms adopted or own-designed. It's implemented by integrating all healthcare services and gives service providers the ability to collect, store and use health data. The System is able to provide information on all aspects of the organization from billing to patient care and beyond. Despite its significance, lack of specificity and clarity hamper systematic understanding, successful implementation, and evaluation of its functional factors. The study is aimed at assessing the functional factors for Health Management Information System (HMIS) performance in Elgeiyo-Marakwet County (EMC). The specific objective to: determine technical factors for HMIS performance in the County. Quantitative research method was used and data gathered through administration of questionnaires to 52 respondents across the county. Data was analyzed using Statistical Package for the Social Sciences (SPSS) computer software version 20.0. The study found that there is presence of technical factors which include presence of standard indicators, manuals, reporting forms and time, data presentation & analysis for HMIS. The study concludes that competency in HMIS tasks and availability of minimum package of information (MPI) for collection, collation, analysis, dissemination and use of health information in HMIS. The study recommends enhanced support for technical inputs for greater performance for HMIS and regular review in the county
Key words: HMIS, Kenya, ElgeiyoMarakwet County, Technical factors.

INTRODUCTION

The World Health Organization defines Health Management Information System (HMIS) as a system that integrates data collection, processing, reporting and use of the information necessary for improving health service effectiveness and efficiency through better management at all levels of health services⁽⁸⁾. In addition, health information systems were originally oriented only to collect information on disease and health services outputs; but in the contemporary era health information systems are referred to be part of the health system; and hold great importance in the planning and decision-making of health care delivery services. Health information systems generate information to inform health planners and decision –makers on what is happening at the health delivery facilities⁽⁹⁾.

Gladwin et al., says the introduction of a decentralized system has led to significant change, emphasized by the Ministry of Health (MOH), through the implementation of health management information systems (HMIS) which underscore the use of information at the point of collection. They stress that freedom and responsibilities are given to each point of care meaning that more skills are demanded of primary health care managers, concerning the data and information handling at all levels of a health care system on a global level⁽¹⁾.

The WHO alludes that National Health Management Information System (NHMIS) brings together data from the routine data collection systems as well as information from other sources such as community surveys, clinical studies, health systems research, census, and other periodic or population-based surveys.⁽⁸⁾ A comprehensive and integrated structure that collects, collates analyses, evaluates, stores, and disseminates health and health-related data and information for use by all stakeholders⁽⁵⁾.

According to Vital Wave Consulting Health Information System (HIS) is an integral part of the health system whose operational boundaries include all resources, organizations and actors that are involved in the regulation, financing and provision of actions whose primary intent is to protect, promote and improve health. They further stresses that Health Management Information System (HMIS) has an objective of generating information that improves health care management decisions at all levels of the health system⁽⁶⁾.

Perfect HMIS requires all health facilities to report promptly in all months, allowing a comprehensive quantification of treatment events through time and space across the health system. They however note that the reality of HMIS in Africa and elsewhere stands in marked contrast to this ideal because of lack of technical capabilities.⁽²⁾

Typically, many facilities never report, or report only intermittently, resulting in spatially and temporally incomplete national data. Following several decades of donor investment in HMIS across Africa, the incomplete nature of routine national reporting has shown little improvement. According to Kenya's Strategic Plan for Health Information Systems 2009 – 2014, the objectives of health management information system is to provide quality information that supports decision-making, aids in setting performance targets at

all levels of health service delivery, assist in assessing performance at all levels of the health sector, and encourage use of health information. Efforts to introduce health management information systems at local levels have not had any substantial and long-term impact in most developing countries.⁽³⁾

Kenya and other developing countries, the HMIS components of are weak hence lack of good quality data and inefficient utilization of resources. She further concludes that it leads to inadequate appreciation and use of available information in planning and management of health services which negates health information systems in Kenya. Since its establishment of HMIS in 1980 in Kenya, it has had several constraints, which have impeded its growth as a modern management information system tool: ineffective compliance of available health information policy and enforcement in reporting which is 60% in the country⁽³⁾. This makes the generated health data unrepresentative for management, planning and budgeting at all levels. There are also lack of adequate and clear guidelines and clear responsibilities of health workers at all levels; weak linkages and data storage, sharing and usage and inadequate feedback at all levels of healthcare delivery. The tools used to collect and manage health care information in Kenya revolve around pen, paper and human memory.

The use of such fallible tools to manage a sector as complex and critical as health care is a cause for concern in Kenya today, since availability of information is the primary driver of effective and timely interventions. In addition national health information systems are weak in regard to data quality, relevance, and their management, sharing and use for policy-making and decision-making.⁽⁴⁾ It is in this context that the current study was undertaken in ElgeiyoMarakwet County to assess the functional factors for health management information system performance in the context of health information deliverables such as organizational, technical and behavioral variables.

MATERIALS AND METHODS

Study population: The study adopted a survey research design. Exploratory studies and descriptive survey designs was used to allow for the gathering of information, summarize, present and interpret it for the purpose of clarification.

The study population comprised the health facility managers, health facility staff (4 staff per facility) and health record information officer's in-charge of the facility. This was 52 persons from purposely-sampled health facilities who are key service providers and key administrative organs and technical competencies for health services in the county.

Data collection instruments

The data collection instruments used to collect data from the selected respondents was questionnaires. Selection of this tool was guided by the nature of data to be collected, time available and objectives of the study. The study therefore used primary data, which was also collected through self-administered questionnaires. The questionnaires consisted of closed ended questions designed to elicit specific responses for quantitative analysis. The questionnaires was administered through "drop and pick later" method.

The questionnaire utilized a five point Likert scale namely Strongly Agree (SA), Agree (A), Don't Know (DK), Disagreed (D) and Strongly Disagree (SD), which was assigned scores of between 1 and 5. This allowed the researcher to draw conclusions based on comparisons made from the responses. The researchers opted to use self-administered questionnaires to collect a lot of information over a very short period.

Data analysis.Each data was collected and checked for consistency and completeness with data obtained from questionnaires in order to eliminate misleading data which could arise from misrepresentation of questions in the questionnaires. Thereafter it was categorized, coded, and entered into a computer where it was analyzed automatically with the aid of the statistical package for social sciences (SPSS) version 20.0 and used descriptive statistics. The SPSS package was opted for, because it handles a large number of variables.

Ethical considerationThe researchers sought consent to do research on the selected health facilities from the county authority responsible for health in Elgeyo Marakwet County and the institutional ethical authority and the National Commission for Science, Innovation and Technology (NACOSTI). All the data acquired from any third party including the service providers were used for the sole purpose of research and only with their consent. In addition, the researcher observed a high level of privacy and confidentiality for any information accessed by him during the process of the research.

RESULTS

Demographic characteristics of the study participants: There were 44 respondents with most of them 23 (52.3%) were females as compared to their male counterparts 19 (43.2%).The findings showed that the mean age of the study was 38.8 ± 9.3 with a range of 37. The minimum age was 22 and maximum of 59 years. The findings indicate that majority 25 (56%) of the respondents recorded that

they had Diploma level of qualification, followed by Others, Higher National Diploma and Degree, that is, 11 (25%), 6 (13.6%) and 2 (4.5%).

The findings revealed that a higher number 14 (31.8%) of the respondents had worked in the facility for 10 years and above, followed by 1-5 years 13 (29.5%), less than 1 year 8 (18.2%) and 5-10 years 3 (6.8%). This therefore implied that a majority of the respondents had worked for long in the county, suggesting that they were vigilant in their work. As source of information, they form a good basis since one can get all the information they need from this very attentive and informed group.

Technical factors for hmis performance in Elgeiyo Marakwet County: The researcher sought to determine the technical factors for HMIS performance in Elgeiyo Marakwet County. The researcher did this by posing questions related to technical factors and HMIS performance. The findings are presented in the table 4.1

Table 1: Technical factors for HMIS performance

STATEMENTS		5	4	3	2	1	T	M
There is presence of standard indicators, manuals, reporting forms and time, data presentation & analysis for HMIS in the county.	F	14	28	1	1	0	44	4.25
	%	31.8%	63.6%	2.3%	2.3%	0.0%	100%	85%
There is documentation for analysis and inter-organization comparisons for HMIS in the county.	F	8	33	0	3	0	44	4.05
	%	18.2%	75.0%	0.0%	6.8%	0.0%	100%	81%
Presence of standard procedures (diagnosis, treatment and reporting systems) imbedded in HMIS in the county.	F	14	23	1	4	0	44	4.05
	%	31.8%	52.3%	4.5%	11.4%	0.0%	100%	81%
There is clearly defined and written guideline on training requirements, job description and career progression for the staffs in HMIS in the county	F	15	24	1	4	0	44	4.14
	%	34.1%	54.5%	2.3%	9.1%	0.0%	100%	82.8%
Presence of trained personnel accountable or responsible for the HMIS (identified medical, newly trained, upgraded, profession oriented etc.) in the county .	F	10	29	2	3	0	44	4.05
	%	22.7%	65.9%	4.55%	6.88%	0.0%	100%	81%
There is a documented training assessment needs plan geared towards improving the skills and knowledge for all staff collecting and reporting in HMIS in the county	F	7	28	3	6	0	44	3.82
	%	15.9%	63.6%	6.8%	13.6%	0.0%	100%	76.%
Available Technology used & available on daily basis: (manual, computer, diagnostic procedures) for HMIS in the county.	F	12	26	1	3	2	44	3.98
	%	27.3%	59.1%	2.3%	6.8%	4.5%	100%	79.6%
Personnel responsibilities for data entry & collection (professional specifically assigned) to use HMIS in the county are present.	F	10	28	1	4	1	44	3.95
	%	22.7%	63.3%	2.3%	9.1%	2.3%	100%	79%
Presence of indicators for various diseases including newly emerging disease & disability	F	11	28	2	3	0	44	4.07

(HIV, TB, Diabetic Mellitus or HPN etc.) in HMIS platform reported in the county.	%	25.0%	63.6%	4.5%	6.8%	0.0%	100%	81.4%
Presence of ICD, EICD, ICPM and DRGs with equal level of staffs' understanding in HMIS reporting and analysis system in the county.	F	12	25	5	2	0	44	4.07
	%	27.3%	56.8%	11.4%	4.5%	0.0%	100%	81.4%

Key: Frequency, Percentage: Percentage, 5: Strongly Agree, 4: Agree, 3: Do not know, 2: Disagree, 1: Strongly Disagree, T: Total, M: Mean

Findings indicated that majority of the respondents 85% said that there is presence of standard indicators, manuals, reporting forms and time, data presentation & analysis for HMIS in the county, while eighty two point eight percent of the respondents agreed that there is clearly defined and written guideline on training requirements, job description and career progression for the staffs in HMIS. This was followed by 81.4% of the respondents who said that the presence of ICD, EICD, ICPM and DRGs with equal level of staffs' understanding in HMIS reporting and analysis system and that the presence of indicators for various diseases including newly emerging disease & disability (HIV, TB, Diabetic Mellitus or HPN etc.) in HMIS platform reported in the county. In addition, eighty one percent of the respondents were in agreement that they is the presence of trained personnel accountable or responsible for the HMIS (identified medical, newly trained, upgraded, profession oriented etc.) in the facility, presence of standard procedures (diagnosis, treatment and reporting systems) imbedded in HMIS in the facility, and that there is documentation for analysis and inter-organization comparisons for HMIS in the county. Seventy nine point six percent of the respondents said that there is available technology usage on daily basis: (manual, computer, diagnostic procedures) for HMIS in the county. Seventy nine percent of the respondents said that personnel responsibilities for data entry & collection (professional specifically assigned) to use HMIS in the county are present. While 76.4% of the respondents agreed that there is a documented training assessment needs plan geared towards improving the skills and knowledge for all staff collecting and reporting in HMIS in the county. It is evident from the study that there is presence of standard indicators, manuals, reporting forms and time, data presentation & analysis for HMIS in the facility. This could be because standard indicators, manuals, reporting forms and data analysis and presentation forms a major part of the technical factors affecting performance of HMIS.

DISCUSSION

The study established that a majority of the respondents held there is the presence of technical factors for HMIS performance in the health facilities in the county. These include the presence of standard indicators, manuals, reporting forms, data presentation & analysis for HMIS in the county. In addition majority of the respondents hold the view that there is clearly defined and written guideline on training requirements, job description and career progression for the staffs in HMIS, and that there is the presence of trained personnel accountable or responsible for the HMIS (identified medical, newly trained, upgraded, profession oriented etc.) in the facilities.

This result is in agreement with Tsedeke et al (2014) who noted that the most effective way to assess the technical factors in HMIS is in monitoring the standard indicators, data analysis and presentation of information. In their study, they noted that the effectiveness of the HMIS in part depends on data reporting and feedback relationships as well as on trained and motivated staff at each level that properly carry out their data collection, reporting and use responsibilities..

Daudi and Mughwira (2006) are also in agreement with the study that data analysis and presentations of results, monitoring of the standard indicators and reporting feedback is an effective way to manage the technical factors affecting HMIS. In their study, they noted that Data collection and reporting forms are viewed as not adequately distributed to the whole county. Moreover, there is recognition that reporting forms are not properly filled and submitted, nor are data properly analyzed, fed back and utilized by the District Health Offices and health facilities for planning and managerial decision-making.

CONCLUSION AND RECOMMENDATIONS

In conclusion, the study established that majority of the respondents agrees that there is presence of standard indicators, manuals, reporting forms and time, data presentation & analysis for HMIS in the county. Majority of the respondents said that competency in HMIS tasks is highly appreciated and used in the county. Majority of the respondents said that there is the presence of documentation reports in the HMIS of private & NGOS in the facility. Majority of the respondents agreed that there is availability of minimum package of information (MPI) for collection, collation, analysis, dissemination and use of health information in HMIS. A majority of the respondents said that despite the fact that there are presence of technical factors contributing to the overall performance of health

management information system there is also a challenge of HMIS involving those factors affecting the ability to collect health data, value & use of information in HMIS in the county.

The study found out that there is a challenge of HMIS involving those factors affecting the ability to collect health data, value & use of information in HMIS in the county, therefore the county should enhance data collection and analysis of the information through the use of information communication technology. Enhanced support for technical inputs for greater performance for HMIS and regular review in the county. There is need for further study in sphere of health management information systems in the counties of Kenya.

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