DECLARATION

This Thesis is my original work and has not been presented for a degree in any other University.

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DEDICATION

This thesis is dedicated to my beloved family for their immortal love, patience, understanding and support. They always spent their extra time and energy to correct me and listen to my mock presentations, enabling me to complete my studies. May God bless them for their unending motivation.
ACKNOWLEDGEMENTS

I must acknowledge several people and institutions that have contributed a great deal towards the production and accomplishment of this study. I sincerely appreciate Dr George Ochieng Otieno and Dr Stephen Mogere for their exceptional guidance, patience and support during the planning and execution of the study.

Special thanks to John Paul Mugambi for journeying with me through the process of data analysis, Evelin Kananu and Edina Kagwiria for editing the work and the presentations.

My thanks also go to the ministry of Education Science and Technology for granting me permission to carry out a research study and the medical superintendent and nurse in charge of Kitui district hospital. I also extend my appreciation to all the district public health nurses and district public health officers of Kitui County and the study participants at various health facilities in the County for their priceless time and cooperation, without their answers to questions; the study would not have been complete.

Special thanks go to my family who were supportive despite my absence and distraction, you were always my rock. Finally let me appreciate Kenyatta University academic staff in the School of public Health for their insightful inputs during the entire course and fellow students at Kenyatta University whose contribution were invaluable during the course of my study.
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OPERATIONAL DEFINITIONS OF KEY CONCEPTS AND TERMS

**Data:** These are facts and information collected in the raw form used to reason or make decisions

**Data utilization:** The extent to which the health care providers uses the collected data for decision making

**Routine data:** These are data that are routinely recorded without any specific research question in mind for example the births, deaths, immunization records and notifications of infectious diseases

**Decision making:** The process of selecting the logical choice or a course of action from the available options or alternatives. It is done to achieve a specific objective or to solve a specific problem.

**Health Facility:** A place that is built installed or established to serve patients and clients for a particular health purpose for example a hospital, clinic or a dispensary

**Health management information system:** An efficient collection, collation, analysis and evaluation strategy, dissemination and use of information about individual patients, population, resources used and health outcomes of intervention and the state and nature of systems through which the intervention are applied

**Indicators:** Specific and objectively verifiable measures of change or result brought about by an activity.

**Millennium development goals (MDGS):** Eight goals for international development agreed to by the UN General Assembly in 2000 and recognized around the world.
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<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
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<tr>
<td>CO</td>
<td>Clinical officer</td>
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<tr>
<td>Df</td>
<td>Degree of freedom</td>
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<td>DHMT</td>
<td>District Health Management Teams</td>
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<td>DHMIS</td>
<td>District Health Management Information Systems</td>
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<td>DHS</td>
<td>Demographic and Health Survey</td>
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<td>DR</td>
<td>Doctor</td>
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<td>FGD</td>
<td>Focus group discussion</td>
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<td>GOK</td>
<td>Government of Kenya</td>
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<td>HC</td>
<td>Health Centre</td>
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<td>HIS</td>
<td>Health Information System(s)</td>
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<td>KII</td>
<td>Key informant interviews</td>
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<td>MDGS</td>
<td>Millennium development goals</td>
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<tr>
<td>MOH</td>
<td>Ministry of Health</td>
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<tr>
<td>M&amp;E</td>
<td>Monitoring and Evaluation</td>
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<tr>
<td>MOMS</td>
<td>Ministry of Medical Services</td>
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<tr>
<td>MOPHS</td>
<td>Ministry of Public Health and Sanitation</td>
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<tr>
<td>NGO</td>
<td>Non-governmental organization</td>
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<td>SPSS</td>
<td>Statistical Package for Social Sciences</td>
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ABSTRACT

Effective management of today’s health systems depends on critical use of data and information for the effective policy-making, planning, monitoring of services and making decisions. Following the decentralization of health, the district health management information systems (DHMIS) was established to support the districts in utilizing the generated data for the decisions made in health facility. However, data use has been limited and faced with inadequacy hence vital health decisions often relying on political opportunism, donor demand and infrequently repeated national studies which are insensitive to changes occurring over shorter timescale. This study was designed to identify for determinants of utilization of the routine data for decision making by the health care providers in health facilities in Kitui County in Kenya. This was a descriptive cross sectional study that adopted quantitative and qualitative research paradigms. Purposive sampling was used to select the district hospital, being the only one serving the eleven districts in the county. Multi stage cluster sampling to sample the health facilities in the districts and simple random sampling to select the respondents in the health facilities. The 110 participants completed a self-administered questionnaire. Key informant interviews, focused group discussions, observation and analysis of documents in health facilities were also applied. Recordings were transcribed and key concepts identified. Questionnaire results were edited, coded, tabulated and analyzed using the SPSS 16. Chi-square test was applied to determine the relationship between independent and dependent variables. The results showed that among the respondents 70% were females and 40% males. Majority, 64% had diploma level of education. Nurses/ midwives were the majority, making up 81% of the workforce. Overall extent of data utilization was 66% not using data and 34% use the routine generated data. The following actors influence utilization of routine data: frequency of meetings held ($x^2=42.036$, df=1, p=0.001), data storage and analyzing methods ($x^2=30.582$, df=1, p=0.001), continuous professional training ($x^2=49.782$, df=1, p=0.0001). Organization of the district health system influenced routine data utilization through the frequency of support supervision ($x^2=30.000$, df=1, p=0.001), issues assessed during supervision ($x^2=49.164$, df=2, p=0.002) and feedback report from the supervisors ($x^2=5.236$, df=1, p=0.022). In conclusions the study demonstrates limited utilization of routine data to make decisions for health facility management and recommends the need for the government to build capacity for data utilization through on job training and strengthening the curriculum in health training institutions in data related areas. The ministry of health should standardize the parallel reporting levels and unify the reporting tools and finally ensure the districts have structured meetings, support supervision and feedback to the health care providers.
CHAPTER ONE: INTRODUCTION

1.1. Background information

Driven by the international health agenda that supports the United Nations Millennium Development Goals, efforts were underway across Africa to improve the health care and reduce barriers to service uptake (Murray, 2004). In the early 1970's, Kenya's Ministry of Health (MOH) recognized the need to establish the health information system (HIS) which is a system for the collection and processing of data from various sources, and using the information for policy making and management of health services (MOH, 2001). The HIS was made up of several data sources. Data collected focused on Ministry of health headquarters needs. The information generated was expected to assist in the formulation of health policies, setting of priorities and evaluation of health care programs. In the HIS the Health Management Information System (HMIS) was created followed by subsequent units of Vital Health Statistics Unit and Evaluation and Research Unit. HMIS was meant to support the management of health systems as they strived to maintain and improve health in the country by providing health related information support at all levels of the health system (MOH, 2009).

Over the past two decades, Kenya has struggled to restructure health system to provide services to its entire population. To improve the health sector performance, various reforms has been pursued such as decentralization as an indicator of progress towards the health goals (MOH, 2009). Decentralization is the transfer of decision making power and administrative responsibilities from the central government to the periphery. In decentralization decisions were expected to be made at lower administration levels and devolution of budgetary controls shifted to the periphery.
requiring the districts to provide local evidence as a basis for decisions. As pointed out by MOH, (2001) the local District Health Management Boards (DHMBs) and District Health Management Teams (DHMTs) gradually assumed responsibilities for the operation of the facilities under their jurisdiction through a single line grant, annual work plans, and procurement plans.

Decentralization policies were a response to the past failures and inadequacies of centralized bureaucracies to effectively provide health for all and redress the marginalization of rural communities (Brosio, 2000). The policy sought to enhance availability of comprehensive quality health and health related data and information for evidence-based decision making in the health sector on HIS. The District Health Management Information Systems (DHMISs) were established by the Kenya’s MOH to strengthen the routine information by putting data directly in the hands of decision makers at all levels of health system for strategic planning, setting priorities, program Monitoring and Evaluation, research, policy making and improving patient’s quality of care (MOH, 2009). But health information is much more than the collection of data. Value and relevance of data can only come when they are analyzed, transformed into meaningful information, and used (Adano, 2008). However at all levels of the health system; the district and sub district, there is little evidence to show how this data is utilized. MOH, (2009) points out that there is lack of guidelines and policy, inadequate capacities of HMIS staff, many parallel data collection system and poor coordination among others. There is a striking disconnect between the need for information and ability to respond to that need, this is because the health care did not make any improvement despite the decentralization of the health system. Hence there was the
need to assess the utilization of routine data for decision making in health facilities in Kenya.

1.2. Problem Statement

An unfortunate feature of health care systems in many parts of the world is that decisions are taken despite the absence of information use. One critical weakness across Africa is the current lack of capacity to effectively use data to monitor patterns of service use through time so that the impacts of changes in policy and service delivery can be evaluated. In practice, decision-making in health is all too often based on political opportunism, expediency or donor demand and at times on infrequently repeated national studies like demographic health survey (DHS) which are insensitive to changes occurring over shorter time scale (Gething, 2007). This has been a challenge in improving health sector performance.

The health data could be effective health assessments, health planning, detecting problems, defining priorities, identifying innovative solutions, and allocating resources for improved health outcomes (Sapirie, 2000). As pointed out by the National Coordinating Agency for Population and Development (2005), Kitui County is among the poorest in Kenya. Over 56% of population lives in absolute poverty. Achievements of many indicators in the county show low performance and the Life expectancy level is at 51 years which is below the national average. In this county the prevalent diseases are malaria, respiratory infections, diarrhea, skin diseases and eye infections. However the county lacks the necessary equipment’s, drugs and specialist personnel to manage and treat these common illnesses. In the health facilities the routine generated data is not used to detect drug stock outs and this leads to expensive drugs being
prescribed to patients who are forced to buy them outside the facility. Large amount of family resources is used for buying ineffective medication in shops and valuable time wasted due to facility revisits whereas the average distance that the people have to access to the nearest health facility is over 5 Km (National Coordinating Agency for Population and Development, 2005). All this contributes to inefficient and ineffective use of resources. Health data lack value unless it is used to inform decisions and resource allocation at all levels of the health system (AbouZahr & Boerma, 2005).

1.3. Justification

The Work of John Snow in cholera epidemics was made possible by using registers (data) of births, deaths and address maintained in 1800s (Doyle, 2002). Kaen, (2006) points out that where resources are scarce, it’s more important that evidence informs decisions for wise use of limited resources. In 2010, workload by level of service delivery showed that level 2, 3 & 4, health facilities in the county had 460649 newly diagnosed patients and 271816 revisits from the common illnesses. According to Ministry of medical services and Ministry of Public health and sanitation, (2010) this number could have been less with good use of routine data generated or could have been reversed by spurring corrective actions.

Data collected is not used to gauge the community's health outcome and status and link it with health services and treatments. According to WHO (1998), the health care providers in various levels of the health system cannot identify problems and priority needs neither can they track progress and evaluate the impact of interventions hence increased running costs of health facilities due to recurrence of diseases, and inconsistence in patient’s management. Overall this has also led to an increased
workload on health care providers and data collectors (Mogere, 2010) hence a compromised quality of health care and limited ability to obtain the overall picture of the community health status and slow attaining of health goals.

MEASURE Evaluation, (2007) conducted a study on data use and barriers perceived to limited use in Kenya which showed and lack of organizational support to analyze, interpret, and utilize information. The data collected at the health facilities are sent to the higher levels in the health system and therefore the data collectors are not the final users therefore creating a disconnect.

Less than 7% of collected data is analyzed (MOMs & MOPHS, 2010), hence the ministry is swamped in data, not turned into information & knowledge to produce results. Despite significant human & financial resources invested in data collection, it’s not used to track progress and intervention impact hence high costs to patients, increased workload to health care providers and low performance on indicators. The study therefore sought to strengthen data utilization in the health facilities through understanding of unique strengths and weaknesses and providing innovative solutions for improvement of the data utilization for decision making in management and service provision.

1.4. Research questions

The study addressed the following research questions:

- What extent is the routine generated routine data used in decision making in the health facilities in Kitui County?
- What are the factors influencing utilization of generated routine data for decision making in health facilities in Kitui County?
• What is the influence of the organization of the district health system on utilization of generated routine data for decision making in Kitui County?

1.5. Hypotheses

The routine data generated in health facilities is not utilized for decision making by the health care providers.

1.6. Objectives of the study

1.6.1. Broad objective

The broad objective of the study was to identify determinants for utilization of generated routine data for decision making in health facilities in Kitui County.

1.6.2. Specific objectives

The general objective was achieved by addressing the following specific objectives:

• To examine the level of utilization of generated routine data in decision making in the health facilities in Kitui County.

• To establish the factors influencing utilization of generated routine data in health facilities in Kitui County.

• To identify the influence of the organization of district health system on utilization of generated routine data for decision making in Kitui County

1.7. Significance of the Study

The study established areas of the health information system, which needs to be strengthened and supported for routine data to be utilized in decision making in Health facilities. It also contributed to the knowledge and literature that would help to strengthen the data utilization in for decision making in Counties in Kenya. The study
made recommendations on the best ways to achieve the goals of decentralization in health information hence improve health services through data utilization for decision making.

1.8. Delimitation and Limitation

The study was conducted to only government health facilities in Kitui County. The private owned facilities and the faith based facilities were excluded. The study also did not focus on level one facility like the community health workers. This is because they are not under HMIS but they are under the community health management information system (CHMIS).

Given that the study is descriptive, the determinants may be temporal or do exist overtime. With the health workers shortages, the sample size was small due to the act the health care workers are very few at the facilities. However the FGD and the KII interview methods were employed to supplement for the small sample.

1.9. The Conceptual Framework

The conceptual framework was guided by the literature review. Utilization of generated routine data is influenced by individual extent of data utilization, factors influencing data utilization and organizational of the district health system. The influence is mediated by Capacity building, data collecting tools, guiding tools, coordination of health system, feedback and support supervision. This is summarized in the figure 1.1 below.
Figure 1.1 The conceptual framework.

Source: The conceptual framework was constructed from the literature review.
CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

The health system encompasses the personnel, institutions, commodities, information, financing and governance strategies that support the delivery of prevention and treatment services. It aims to respond to people’s needs and expectations by providing services in a fair and equitable manner. The health system has six policy levels where strategic information is made. The most basic and numerous facilities are the level 1 which are the community, the Dispensaries, sub-health centers, health centers and nursing homes, sub-district hospitals and district hospitals and the provincial hospitals. At the apex are the national, teaching and referral hospitals. The healthcare is composed of complex set of organizations hence creating an environment with stringent needs for data (Brosio, 2000). The data sources in the health information systems may be population-based and health facility based. The main population-based sources of data are census, household surveys and vital registration systems. The main health facility-related data sources are public health surveillance, health services data also sometimes known as health management information system or routine health information system (Gething, 2007).

The Kenya’s health services are implemented by various governmental and non-governmental organizations (NGOs) and are delivered through a hierarchical administrative system that coordinates multiple levels of service delivery (MOH Kenya, 2003). These are the Central Board of Health at the national level centers housed at the Ministry of Health headquarters, the provincial level incorporates the
Provincial Health Management Boards and Provincial Health Management Teams acting as intermediaries between the national and district levels. The district level comprises DHMT that concentrate on the delivery of health services and generate their own expenditure and budgetary plans within the provincial and national framework.

2.2 Data generation in health management information system

The USAID/Kenya, (2010), conducted an assessment of the status of the national Monitoring and Evaluation and HMIS and explains that routine service data is collected based on patient service records and reporting from various health facilities. The service delivery points complete the paper summary forms and submit them to the district levels on a monthly basis, which are then transmitted from the districts to the national levels through the file transfer protocol system (FTP). The overall reporting rate from the facilities to the district is just over 80%. A strong HIS is a key component of any health system. Its role is not just routine collection of health service data and dutiful conveyance of the same to higher levels, but to facilitate evidence based decision-making at all levels of the health pyramid and especially at the point of collection. The underlying rationale is improvement in health status of the population and it was especially designed to assist in the management and planning of health programs and delivery of care.

Data are input that the systems take to produce information. They are raw facts that describe persons, places, things or events that have occurred or are about to take place and they come in many forms like numbers, words and symbols. The three main types of routine data are demographic, health service and health status data. The information generated is intended to describe and support a wide range of health
system functions including service delivery, disease control, interventions planning, and management and performance trends in morbidity and service coverage (USAID et al, 2000).

2.3 **Extent of data utilization by health care providers**

Marie & Higgins (2001), points out that the routine health data, play a major role in facilitating integration between individual health and public health interventions. It is part and parcel of the local service delivery system and provides the only way to document routinely what occurs at the point of contact between health system and its clients. Recognition that the HIS in most developing countries is very weak, is not new but many countries including Kenya do not make it a priority instead they have worked around it by relying mostly on ad-hoc national surveys that are not very useful at sub-national levels. The USAID/Kenya, (2010) points out that data dissemination and use seems to be the most weak, especially for routine data collected by HMIS. This is because the FTP system lacks features to facilitate analysis and use of information for decision making.

At a Workshop, Campbell (2003) presenting on enhancing the quality and use of health information at the district level explained that of all institutional levels, it is at the district level and below that HIS may have its greatest utility and where the strength of individual staff and community members can truly be drawn upon and when numerators and denominators begin to have a human face. If well utilized the data in HMIS would have been a powerful tool for making health care delivery more effective and efficient. As pointed by Adano (2008), data-driven decision making means using the data gathered on a regular basis to inform planning, decision making,
and reporting activities. Using data to make decisions is a hallmark for continuous improvement in health system

2.4 Factors influencing data utilization in the Health System

HMIS supports the management of health systems as they strive to maintain and improve health in the country (MOH, 2001). It is one of the most important tools needed for the prevention and control of diseases because it gives information critical for planning, monitoring and evaluation of services. However one of the key challenges in the health sector identified in the existing information system includes lack of guidelines, inadequate capacities of HMIS staff, many parallel data collection system and poor integration and coordination among others. The MOH (2009) points out that, currently the data sources are often incomplete and fragmented and the challenge is to bring together or integrate all these diverse data sources into one seamless system.

Kaen, (2006) explains that health data is generated from many sources such as individuals, health facilities, disease surveillance sites, the community and geographical (spatial) areas or units. The USAID/Kenya, (2010) explains that due to the national systems capacity having weakness in many areas, many partners investing in stopgap measures established various parallel systems thus instead of strengthening it, the national system became more fragmented. The vertical programs often got their data from various facilities, typically with their own forms and transmission procedures. Not only did this increase the workload massively, but also none of the programs produced consistent data that can be used for decision making.
MOH (2003) pointed out that in the districts the data management is mostly paper based and manual in different parts of the country hence lack of coordination and maintenance of a uniform system in the public to monitor implemented health services. This has been largely attributed to lack of policy and legal framework to harmonize and enforce the data and information management at all levels. A study by Loevinsohn (1993) identified reasons why managers displayed little familiarity with the data they receive were lack of statistical skills and there was little institutional pressure to examine their data. The use of data in HMIS remains an elusive concept and skill, yet the path to using data in making decisions is not out of reach or difficult to implement.

2.5 Organizational Factors Influencing Data Utilization

Marie & Higgins (2001) explains that while relevant and timely information allows managers to make accurate decisions, irrelevant information makes decision making difficult, adds to confusion, and affects the performance of the organization. Therefore it is crucial that managers are aware of the information they require, how to acquire it and to maximize the use in order to survive and prosper in today's information-intensive environment (Scott, 2005). The USAID/Kenya, (2010) noted that there is little allocation of resources for publications and dissemination of periodic reports, let alone investment in information generation, analysis and creation of knowledge management that would facilitate learning and sharing of experiences and best practices.

Elaine et al, (2007) also pointed out that decision making is the essence of management and is triangulation of 3 Components which is the decision makers, the
information they use and the decisions they make. The management activities depend on the quality of the decisions that are made and, concomitantly, the quality of the data used to make them. Campbell, (2003) explains that informed decisions can be contrasted with those that are politically driven or are based on intuition or experience. Without a good understanding of what is happening in the health system or health facility, it is impossible to develop strategies to influence the behavior or overall aims of health policy.

The WHO, (2008) argues that that investment in HMIS could reap multiple benefits, including: building the capacity to help decision makers to detect and control emerging and endemic health problems and monitor progress towards health goals. Strengthening the evidence base for effective health policies, permitting evaluation of scale-up efforts, and enabling innovation through research; and lastly improving governance, mobilizing new resources, and ensuring accountability in the way they are used. Information is a powerful tool to enable enhanced service delivery.

Aldano (2008) explains that one of the major misconceptions about effective use of data in decision-making is assuming that gather data and they will use it. However sufficient experience shows that it is not enough to make data available, the health sector leaders need a process in place for analyzing the information, getting it to the right decision-maker at the right time, and ensuring the power and resources to act on the data. WHO, (2008) explains that health facilities routinely gather great amounts of data, than they can use. They tend to be data rich but information poor and yet information is the crux of overall building blocks of health systems strengthening and
enabling health managers to utilize the data for better policy-making, planning, implementation, and monitoring and evaluation of health programs.

2.6 Summary

To sum up, a number of studies and documents have reviewed the gaps identified that contribute to the limited utilization of routine data such as very few health care providers having been trained in areas of data and information, lack of support supervision from the district supervisors either due to staff shortage, due to limited capacity of carrying out the supervision and due to lack of resources to do the supervisions. It has also been realized that largely there is lack of policies and legal framework enforce the data and information management and use at all levels.

The study makes recommendations to the Ministries of health and provides strategies to strengthen the utilization of the routing generated data in health facilities and enlighten the health care providers to appreciate the importance of using the data generated routinely for the decisions making.

2.7 Conclusion

Data use for decision making is a journey, not a destination. It is not a onetime solution or a standard tool to be applied at random. Rather, it is an ongoing knowledge-driven process that requires continuous collection, analysis and sharing of data, because that is the only way in which trends both positive and negative can be discovered and acted upon (Doyle, 2002). The failure to use data as evidence before making decisions hinders the health system’s ability to respond to priority needs throughout its many levels. And as pointed out in the MEASURE EVALUATION (2007), health data lack value if they are not used to inform decisions. Managers need
to use information not only for decision making and making sense of changes and developments in their external environment but also to generate new knowledge which can be applied to design new products and services, enhance existing offerings and improve institutional processes.
CHAPTER THREE: MATERIALS AND METHODS

3.1 Introduction

This chapter explains is to provide background information of the study areas, population and the scope of the study. The chapter further discusses the research design, sampling strategies, data collecting tools and finally the data analysis and presentation method.

3.2 Study design

This was a descriptive research whereby the desired data was based on a cross section of information collected from health care providers in Kitui County. It adopted both quantitative and qualitative research paradigms. Quantitative approach, using the self administered questionnaire was used for data collection on predetermined instrument that yielded statistical data. The employed qualitative approach included Key Informant interviews (KII), Focus group discussion (FGD) and observation. This was appropriate because the needed health information was collected from a cross section of units in various health facilities.

3.3 Study Variables

The independent variables in this study included, individual extent of data utilization such as age, education level, profession, number of patients seen and facility level. The second independent variable is the factors influencing data utilization such as complex reporting tools, guiding protocols and trainings. The third independent variable is the organizations of the district health system were
supervision, governance and information needs. The dependent variable was the utilization of data for decision making.

3.4 Study area

The study area was conducted in Kitui County. It is situated in the eastern part of Kenya, with a population of about 1,012,709 in 2009 census report and covers an area of 20,402 sq km (2 million acres). It has arid and semiarid climate with erratic and unreliable rainfall but a majority of the population are classified as farmers relying on different farm activities for survival. The county has 10 administrative districts which are Kitui Central, Kitui West, Kyuso, Katulani, Migwani, Mumoni, Kisasi, Matinyani, Nzabani and Mutito.

It is served by 1 Government of Kenya (GOK) level four hospital (district) situated in Kitui Central, 5 sub-district hospitals, 14 health centers and 85 government dispensaries all of which are unevenly distributed. The most sparsely covered areas are in the Eastern parts which are also hard to reach areas.

3.5 Study population

One definition of the health care workers is the clinical staff who have regular contact and provide close procedures to clients for long periods of time like the nurses, midwives, doctors and clinical officers. Information was collected from the four cadres of health care providers working in the GOK district hospital, Sub-district hospitals, health centers and the dispensaries. The study included the managers and the In-charges of the health units and health facilities. The total number of these health care providers in Kitui County is 225 in total.
3.6 Sampling Techniques and Sample Size

Purposive sampling was used to sample district hospital being the only one serving the ten districts. Multi stage cluster sampling was applied to sample the health facilities. This was done by first conducting a simple random sampling to select 6 districts in the county and from these blocks, 3 sub district hospitals, 6 health centers and 68 dispensaries were sampled. The respondents of the study in different health facilities and departments in the hospitals were selected through a simple random sampling. A sampling frame was developed by making listing all names from the staff register. The pieces of paper with the names were put in a box and mixed and then names drawn from the box. There was no replacing back.

The Sample Size is calculated using the Formula in the Kothari, (2004) called the Sloven’s formula. This is because the total number of Health care worker is less than 10000. (225<10000)

\[ n = \frac{N}{1 + Ne^2} \]

n=Desired Sample Size, 
N=Population Size=225  
e= Level of precision (error Margin) =0.05  

Sample Size was 110

Key Informant Interviews was conducted with eight focal opinion leaders who were purposively selected by virtue of their positions. These were two district health management team members, two district health records officer, one district public health officers, one district planning officer and two district health board or committee members. Two FGDs each with 9 and 10 participants respectively comprising of
nurses, clinical officers and midwives from Matinyani and Kitui central districts to elicit and clarify their knowledge, attitudes, and practices.

3.7 Inclusion and Exclusion Criteria

**Inclusion Criteria:** Health care providers working in the government health facilities willing to be interviewed and having worked for six months and above. Six months is the orientation period of any newly posted health care provider.

**Exclusion Criteria:** Health care providers working in the private or faith based organization or the Level 1 (Community). Those who have worked for less than six months or those not willing to be interviewed. All the other cadres of health care providers like radiographers, nutritionists and the rest.

3.8 Data Collection Method and Research Instruments

A thorough literature review and consultation with supervisors and contributions was incorporated before developing the research instruments. Data collection employed various methods: A self-administered questionnaire was used to the facility managers and department In-charges. Key Informant Interviews was conducted as face to face using an in-depth interview theme (available in the appendix). This helped to collect information from the experts. Individual discussions took approximately 40 minutes and each session was directly recorded. Focused group discussion was conducted using a focused group discussion guide (available in the appendix). The stimulating discussion generated new ideas and exploration of the unknown. Comprehensive desk review on the subject was also conducted including HIS policy, reports and operational manuals at the MOH and the health facilities. There was observation to establish the infrastructure in place, storage methods and ascertain how
data was utilized. Other materials that were used include Camcorder, voice recorder to record and tapes.

3.9 Pre-test

The researcher carried out a small scale trial run for all procedures planned for use in the main study. This was conducted in the neighboring Makueni County with 11 participants (10% of the sample size) to ensure that the questions elicited the information needed, checked the clarity, sequencing and wording of the questions and the feasibility and effectiveness of the technological devices, equipment and methods and time taken to administer the interview schedule. Appropriate adjustments were made and the tools refined. This was a practical training to the research assistants and was also used to extrapolate the logistical and financial estimates.

3.10 Validity and Reliability

Validity is the accuracy and meaningfulness of inferences based on research results (Mugenda & Mugenda, 1999). A pretest was undertaken and tools refined for precision, clarity and inclusiveness. The research assistants were identified and selected by the principle researcher based on academic qualification, relevant experience and knowledge of the local terrain. Ten successful candidates were trained in a daylong session and exposed to the study objectives, data collection instruments and methods and ethical aspects. The selection of respondents was randomly carried out.

Reliability is the consistency of the results. Random error was avoided by adequately coding the instrument and adhering to sampling techniques. The questions framed were in view of the study objectives. Attention was paid to triangulation of
multiple data sources. The researchers cross-checked the consistency of findings while
getting response from the respondents and the raw data was edited in the field. Each
day a de-briefing session was held to collate findings, identify, discuss and resolve the
challenges before the next day.

3.11 Data Analysis

The completed questionnaires were observed for compliance. Cleaning, editing,
coding, tabulation and interpretations were done. The results were analyzed using the
SPSS (ver.16, inc. Chicago,IL) statistical software. Frequencies were generated. In
health facilities, a compulsory eight categories of decisions are made by all health care
providers. All 110 respondents were scored on data use in each of the eight categories.
Use of data was captured as 1 and not using data was captured as 0. The highest
possible range of data use would have been 8 per every respondent. But for all
respondents in all categories the sorted mean was very low at 3.5 and the median were
4. A categorical data was formed ranking all those with 4 and above as using data and
all the respondents with 3 and below as not using data. This category was used for
cross tabulation and to test the associations of variables through the Chi-square. The
results were considered significant with P values of less than 0.05 at 95% confidence
interval.

The qualitative data was triangulated with quantitative data to enhance validity and
reliability of findings. The semi-structured interviews and observation from the field
were analyzed by a qualitative content analysis and summarized to bring out major
features and interpretations outlined in the study objectives. All results were presented
in graphs, charts, tables and narratively.
3.12 Logistical and Ethical Considerations

The principal researcher oversaw the overall coordination of the exercise. The necessary clearance and approval were obtained from Kenyatta University (KU) and the ministry of science and technology in Kenya. Notification of the study was sent and confirmed to participants prior to the research. Institutional entry protocol was adhered to. Voluntary consent to participate was sought by explaining the benefits of the study, their rights and protection and the manner that the study would be conducted appropriate to them. A written informed consent (available in the appendix) was obtained from the participants in the study. Numbers were used instead of names. The researcher ensured that all meetings and focus group discussions are held in venues, dates and times convenient to the participants. All logistical preparations were catered for by the researcher.
CHAPTER FOUR: RESULTS, DATA ANALYSIS AND DISCUSSION

4.1 Introduction

The findings of this study are an outcome of the combination of qualitative and quantitative research instruments used in data collection. Respondents interviewed were health care providers of different professions including doctors, clinical officers, nurses and midwives.

4.2 General characteristics of the respondents

Out of the 110 interviewees, 70 (63%) were female and 40 (37%) were male. The table 4.1 shows that 44 (40%) respondents were between the ages of 20-29 years. This age group formed the highest number of participants and the lowest numbers were of ages 50 and above which formed 9 (8%). Majority 71(65%) of the respondents had a diploma in their profession and the majority 89 (81%) of the professionals were nurses and midwives.

As shown in the table 4.1, a high proportion of respondents 72 (66%) work at the dispensaries, with 22 (20%) working at the district hospital and sub district hospitals and only 16 (15%) at the health centers. Majority of the health facilities have been in existence for more than six years, 25 (23%) have existed for 4 to 6 years and only 14 (13%) were established in the last 1 to 3 years. In the health facilities, 28 (25%) review 1 to 20 patients daily, 2 (20%) see approximately 21-40 patients, with 47 (43%) seeing 41-60 patients and 13 (12%) seeing 61 and above patients daily. All health facilities offered antenatal clinic services and outpatient department services.
Table 4.1 Summary of the Background Characteristics

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Frequency(n=110)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>40</td>
<td>37</td>
</tr>
<tr>
<td>Female</td>
<td>70</td>
<td>63</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20-29</td>
<td>44</td>
<td>40</td>
</tr>
<tr>
<td>30-39</td>
<td>30</td>
<td>27</td>
</tr>
<tr>
<td>40-49</td>
<td>27</td>
<td>25</td>
</tr>
<tr>
<td>50 and Above</td>
<td>9</td>
<td>8</td>
</tr>
<tr>
<td><strong>Education Level</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diploma</td>
<td>71</td>
<td>64</td>
</tr>
<tr>
<td>Certificate</td>
<td>33</td>
<td>30</td>
</tr>
<tr>
<td>Degrees</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td><strong>Type of facility that the interviewees work in</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>District /sub district hospital</td>
<td>22</td>
<td>20</td>
</tr>
<tr>
<td>Health center</td>
<td>16</td>
<td>15</td>
</tr>
<tr>
<td>Dispensary</td>
<td>72</td>
<td>65</td>
</tr>
<tr>
<td><strong>Profession of the respondents</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nurse/Midwifes</td>
<td>89</td>
<td>81</td>
</tr>
<tr>
<td>Doctors/COs</td>
<td>21</td>
<td>19</td>
</tr>
<tr>
<td><strong>Number of Patients Seen Daily</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-20</td>
<td>28</td>
<td>25</td>
</tr>
<tr>
<td>21-40</td>
<td>22</td>
<td>20</td>
</tr>
<tr>
<td>41-60</td>
<td>47</td>
<td>43</td>
</tr>
<tr>
<td>61 and above</td>
<td>13</td>
<td>12</td>
</tr>
</tbody>
</table>

4.3 Level of data utilization for decision making among health care providers

4.3.1 Overall level of data use for decision making

Figure 4.1 shows the overall data use among the health care workers. Among the health care workers, 37(34 %) use data for decision making and 73(66%) do not use data for decision making. To categorize the extent of data use for
decision making all the 110 respondents were asked to show where data from each category was recorded and to briefly demonstrate how each category data was used and its performance compared to the previous year. For each category a score of 1 showed that data is utilized and 0 showed that data is not utilized. Overall median was calculated which was 4.0 was calculated. A categorical data was formed ranking all health care workers scoring 4 and above as using data and those scoring 3 and below as not using data.

![Pie chart showing data usage](image)

**Figure 4.1 Overall extent of data use for decision making**

### 4.3.2 Decision categories in health facilities

Figure 4.2 shows the level of data utilization on various tasks in the health facilities. The extent that the collected data is used to make decisions in various categories is 46% of the respondents use the data in day to day program management, 37% of the respondents use data for medical supply and drug management, 51% use data for formulating plans, 31% use data for reviewing financial statements, 35% for budget reallocations and 33% for human resources management and 40% use data for monitoring key objectives and
policy. Only in identification of emerging epidemics is data was used by many health care workers at 70%.

**Figure 4.2** Level of data use in several categories of decision

### 4.3.3 Demographic factors in data utilization

Table 4.2 shows the associations between the health care providers and the data utilization for decision making. There is a statistical significance between the profession, education and gender of the health care providers with utilizing data for the decisions made.
Table 4.2 Cross tabulation of demographic factors and data utilization

<table>
<thead>
<tr>
<th>Variable</th>
<th>Not utilizing data</th>
<th>Utilizing data</th>
<th>Total (%)</th>
<th>$x^2$ (df)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Profession</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drs/COs</td>
<td>14(13%)</td>
<td>7(6%)</td>
<td>21(19)</td>
<td>42.036(1)</td>
</tr>
<tr>
<td>Nurses/Midwives</td>
<td>63(57)</td>
<td>26(24%)</td>
<td>89(81)</td>
<td>P=0.001*</td>
</tr>
<tr>
<td><strong>Education Level</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Certificates</td>
<td>22(20%)</td>
<td>11(10%)</td>
<td>33(30%)</td>
<td>58.164(2)</td>
</tr>
<tr>
<td>Diploma</td>
<td>51(46%)</td>
<td>20(18)</td>
<td>71(64%)</td>
<td>P=0.002*</td>
</tr>
<tr>
<td>Degree/Masters</td>
<td>4(4%)</td>
<td>2(2%)</td>
<td>6(6%)</td>
<td></td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>27(25%)</td>
<td>13(12%)</td>
<td>40(37%)</td>
<td>7.259(2)</td>
</tr>
<tr>
<td>Female</td>
<td>50(46%)</td>
<td>20(17%)</td>
<td>70(63)</td>
<td>P=0.007*</td>
</tr>
<tr>
<td><strong>Years of Work</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-5 Yrs</td>
<td>36(33%)</td>
<td>15(13%)</td>
<td>51(46%)</td>
<td>0.703(2)</td>
</tr>
<tr>
<td>6-10Yrs</td>
<td>23(21%)</td>
<td>8(7%)</td>
<td>31(28%)</td>
<td>P=0.703</td>
</tr>
<tr>
<td>11 and Above</td>
<td>18(16%)</td>
<td>10(9%)</td>
<td>28(26%)</td>
<td></td>
</tr>
</tbody>
</table>

*Significant results

4.3.4 Health system factors and data utilization

Table 4.3 shows the association between the health system factors and the data utilization. There is a statistical significance between the levels of health facilities, years of existence and the approximate number of patients seen daily.

Table 4.3: Cross tabulation of health systems factors and data utilization

<table>
<thead>
<tr>
<th>Variable</th>
<th>Not utilizing data</th>
<th>Utilizing data</th>
<th>Total (%)</th>
<th>$x^2$ (df)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Level of H/ Facility</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dispensary</td>
<td>49(44%)</td>
<td>23(21%)</td>
<td>72(65%)</td>
<td>51.564(2)</td>
</tr>
<tr>
<td>Dist/Sub dist hosp</td>
<td>16(15%)</td>
<td>6(5%)</td>
<td>22(20%)</td>
<td>P=0.001*</td>
</tr>
<tr>
<td>Health centre</td>
<td>12(11%)</td>
<td>4(5%)</td>
<td>16(15%)</td>
<td></td>
</tr>
<tr>
<td><strong>Existence of Health facility</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>months-3yrs</td>
<td>12(11%)</td>
<td>2(2%)</td>
<td>14(13%)</td>
<td>49.873(2)</td>
</tr>
<tr>
<td>4-6yrs</td>
<td>15(14%)</td>
<td>10(9%)</td>
<td>25(23%)</td>
<td>P=0.001*</td>
</tr>
<tr>
<td>7 Yrs and above</td>
<td>50(45%)</td>
<td>21(19%)</td>
<td>71(64%)</td>
<td></td>
</tr>
</tbody>
</table>
Approximate Number of Patient seen daily

<table>
<thead>
<tr>
<th>Range</th>
<th>1-20</th>
<th>21-40</th>
<th>41-60</th>
<th>61 and above</th>
</tr>
</thead>
<tbody>
<tr>
<td>Count</td>
<td>22(20%)</td>
<td>15(14%)</td>
<td>29(26%)</td>
<td>11(10%)</td>
</tr>
<tr>
<td>(6%)</td>
<td>7(6%)</td>
<td>18(16%)</td>
<td>2(2%)</td>
<td>13(12%)</td>
</tr>
<tr>
<td>(28%)</td>
<td>22(20%)</td>
<td></td>
<td>47(42%)</td>
<td></td>
</tr>
<tr>
<td>P-value</td>
<td>22.582(3)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Significance</td>
<td>P=0.002*</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Significant results

4.4 Factors influencing utilization of generated routine data

4.4.1 Monthly report at the health facilities

Figure 4.3 shows the officers who fills the monthly report at the health facilities. In 91 (83%) of the facilities, the monthly reports are filled by the support staff and 19 (17%) filled by the health care workers.

Figure 4.3 Staffs who fill the monthly report

4.4.2 Frequency of meetings to discuss reports

The results showed that most health care providers had bi annual or annual meetings 98(89%) and only 12(11%) had monthly meetings. This has statistical
significance with data utilization for decision making ($x^2 = 67.235; \text{df}=1; p=0.00; n=110$)

4.4.3 Presence of official records of meeting held

Figure 4.4 shows the presence of official records on meetings held. In 91 (83%) of the health facilities, there was presence of official records of the meetings held and 19 (17%) did not have any records maintained.

![Pie chart showing presence of official records of meetings maintained](image)

**Figure 4.4: Presence of official records of meetings maintained**

4.4.4 Topics discussed and recorded during meetings

Figure 4.5 shows the various topics discussed and recorded during the meetings. The figure shows that areas related to data are not so much discussed in meetings. 64% pointed out that there were no discussion carried out in management of routine data quality and 70% never discussed on findings of routine data.
Figure 4.5: Topics discussed and recorded during meetings.

4.4.5 Factors that decisions made are based upon

Figure 4.6 shows the extent to which some factors influence decisions made in the health system. Decisions are based on (87%) health needs, (74%) considering costs, (73%) NGOs or donors, and comparing data with strategic plans respectively. (69%) agreed that decisions are based on superior directives, (68%) evidence and facts, (54%) political interferences and (51%) on personal liking.
Figure 4.6: Factors that decision are based upon

4.4.6 Available data tools

Figure 4.7 shows the available data collecting tools. Among the available data collection tools, 92 (84%) of the health facilities had patients registers, 64 (58%) had stock cards and 50 (45%) had financial statements. There is a statistical significant between availability of patients register and data use (n=110; df=1; p=0.000; $x^2 = 49.782$). The presence of the available data collecting tools and the use were observe and tallied at the checklist.
4.4.7 Stock out of data collecting tools in the past 12 months

For the above data collection tools, only 33 (30%) have had a stock out in the past 12 months and 77 (70%) have not had stock out in the last 12 months.

4.4.8 How the collected data is stored and analyzed

Table 4.4 shows where the collected data is stored and analyzed after collection. Among all the health facilities, 84 (78%) analyze and store data manually in cabinets and shelves and only 26 (24%) are computerized. The presence and use of computers, cabinets and shelves was observed and indicated at the checklist.

Table 4.4: Cross tabulation of Storage/analyzing methods and data utilization

<table>
<thead>
<tr>
<th>Variable</th>
<th>Manual</th>
<th>Computerized</th>
<th>$\chi^2$ (df)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data storage and analyzing method</td>
<td>84(76%)</td>
<td>26(24)</td>
<td>30.582(1) P=0.001</td>
</tr>
</tbody>
</table>
4.4.9 Experience in computer usage

Figure 4.8 shows that the experience of health care workers in usage of computers. 88 (80%) of the respondents have low experience in computer use. 20 (18%) have medium experience and only 2 (2%) have high experience of computer usage.

![Pie chart showing experience in computer usage.

Figure 4.8: Experience in usage of computers

4.4.10 Frequency of computer use for certain tasks

Figure 4.9 show that 77 (70%) of the health care workers have never used computers for their tasks. 15 (14%) use computers less than once per week 15 (13%) use daily and 4 (3%) use once or more per week but not daily.
4.4.11 Difficulties faced by health care workers in using computers

Various difficulties are experienced by health care workers in computer use. The challenges that are faced by health care workers in computer use are 78 (71%) no access to computers, 18 (17%) do not have enough computers, 13 (12%) have no training in computers.

In the focused group discussion, one of the health care workers explained that “since I got employed, I have never seen a computer at my work place. We store our data in cabinets. So why would I even go to learn computer if I will not use that knowledge?”

One of the Key informants also pointed out that “In the Whole of Kitui County, the facilities with a computer are less than twenty. This has discouraged many health care providers from using computers. It has also made the work of data processing, analyzing and use to be very difficult.”
4.4.12 Health care worker continuous professional training in data areas

Table 4.5 shows the association between the training in data areas and data use for decision making. There is a statistical significance between having continuous professional training in data related areas and the use of data for decision making among health care providers.

Table 4.5: Cross tabulation of training in data areas and data utilization

<table>
<thead>
<tr>
<th>Continuous professional Development</th>
<th>Number not trained</th>
<th>%</th>
<th>Chi-square ($x^2$)</th>
<th>df</th>
<th>P values</th>
</tr>
</thead>
<tbody>
<tr>
<td>HMIS</td>
<td>85</td>
<td>77</td>
<td>32.727</td>
<td>1</td>
<td>0.000*</td>
</tr>
<tr>
<td>Survey</td>
<td>96</td>
<td>87</td>
<td>61.127</td>
<td>1</td>
<td>0.000*</td>
</tr>
<tr>
<td>Data Analysis</td>
<td>84</td>
<td>76</td>
<td>30.582</td>
<td>1</td>
<td>0.000*</td>
</tr>
<tr>
<td>Data Utilization</td>
<td>84</td>
<td>76</td>
<td>30.582</td>
<td>1</td>
<td>0.000*</td>
</tr>
<tr>
<td>Planning</td>
<td>92</td>
<td>84</td>
<td>49.782</td>
<td>1</td>
<td>0.000*</td>
</tr>
<tr>
<td>Computer Software</td>
<td>91</td>
<td>83</td>
<td>3.299</td>
<td>1</td>
<td>0.065</td>
</tr>
<tr>
<td>Other related data areas</td>
<td>89</td>
<td>81</td>
<td>0.810</td>
<td>1</td>
<td>0.0259</td>
</tr>
</tbody>
</table>

*significant result

Figure 4.10 shows the health care workers who have been trained on areas of data use. Less than 26% of the health care workers have received any training on areas related to data and data use.
Figure 4.10: Training of health care workers on data issues

4.4.13 Available guiding documents at the health facilities

Table 4.6 shows the association between the available guiding tools and the data utilization for decision making.

Table 4.6: Cross tabulation of available guiding tools and data utilization

<table>
<thead>
<tr>
<th>Guiding Tools</th>
<th>Available (n)</th>
<th>Not available (n)</th>
<th>Chi-square($x^2$) (df)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guidelines/recommendation for action</td>
<td>42(38%)</td>
<td>68(62%)</td>
<td>6.145(1) P=0.013*</td>
</tr>
<tr>
<td>Annual/Monthly planned targets from dist office</td>
<td>59(54%)</td>
<td>51(46%)</td>
<td>0.582(1) P=0.4446</td>
</tr>
<tr>
<td>District/National office newsletter</td>
<td>27(25%)</td>
<td>83(76%)</td>
<td>28.509(1) P=0.000*</td>
</tr>
<tr>
<td>Published Research</td>
<td>22(20%)</td>
<td>87(80%)</td>
<td>109.655(1) P=0.000*</td>
</tr>
<tr>
<td>Report showing success stories</td>
<td>17(15%)</td>
<td>93(85%)</td>
<td>52.509(1) P=0.000*</td>
</tr>
</tbody>
</table>

*significant results

Majority of the health facilities do not have the useful guiding documents. Only 42 (38%) of the facilities had guidelines and recommendations for actions and
59 (54%) had annual or monthly targets from the district office. 22 (20%) of the facilities had published researches and 17 (15%) had reports on success stories of information use. The availability of these documents has the statistical significance to data utilization for decision making. The presence of the guiding documents in the health facilities was observed and tallied at the checklist.

### 4.4.14 Usefulness of the documents

Figure 4.11 shows the opinion of respondent on the usefulness of various documents. Majority of the health care workers at various facilities felt that the documents are very useful. However 46 (42%) felt that the District or national newsletter was somewhat useful.

![Usefulness of the various documents to the health care workers](image)

**Figure 4.11:** Usefulness of the various documents to the health care workers.
4.4.15 Challenges experienced by health care workers in using data

Figure 4.12 shows the challenges ranked by the health care workers. The respondents ranked 11 issues seen as challenges in using the data for decision making. From the participants, 93% ranked duplication on the top of the list second was 82% ranking too much information asked, third was 73% which was workload and overworked staffs and fourth was 54% lack of technical skills. The issue with the fewest respondents was indicators being output oriented and had 16%.

During the focus group discussion one health care worker pointed out “The paper work is too much. You see the same information asked in one form is still asked in other forms like almost three other or more”. Another participant explained that “the forms we fill ask too many questions. Like the latest form introduced for one of the clinics have almost hundred questions. Some of the questions are irrelevant. You don’t see how it will help. It is just put there”. Forms filled were observed and tallied in the checklist. A number of forms asked similar information repeatedly.
4.5 Organization of the district health system influencing data utilization

4.5.1 Outside technical support to health facilities on data

Some health facilities receive technical support in data areas from NGOs. 46% of respondents said no outside technical support was given, 45% had NGO supporting on data production and 9% were not aware if there is any support or not. The NGOs mentioned were AMREF, ICAP, World Vision, Liverpool and Aphia Plus.

During the focused group discussion, one of the health care workers pointed out that “the NGOs only support the data that they are interested in. If an NGO deals with HIV, it will only help and supervise that area. If it deals with VCT, it is also the same this is as long as they achieve their objectives. So there is no much difference. The problems still remain with all other data.
A Key informant pointed out that “To the best of my knowledge, we have no NGO in the area supporting the area of information and data”

4.5.2 Levels where the collected data is sent

Figure 4.13 show the various levels where the data generated is sent. The data is sent to the community by 53%, to the district office by 87% and to the ministry of health by 75%. The levels have significant influence on the use of generated routine data for decision making. The different levels impacts negatively on the use of generated routine data for decision making in health facilities.

Figure 4.13: Levels that receive data returns from health facilities

4.5.3 How often data is sent from the health facilities

Figure 4.14 shows the frequency of sending data to various levels. 48% send their returns to the community on monthly basis and 52% send irregularly. 85% send the data to the district office monthly and 15% irregularly. 71% send the data returns to the ministry of health on monthly basis and 29% irregularly.
Figure 4.14: How often the data is sent to various levels

4.5.4 Feedback to the facilities

Figure 4.15 shows how often the health facilities get their feedback from the community, the district office and the ministry of health. 48 (44%) of the health facilities do not get feedback from the community level, 37 (33%) of the health facilities get feedback from the district office irregularly and 35 (32%) get the feedback monthly. 34 (31%) of the health facilities get feedback from the ministry of health monthly and 31 (28%) get feedback irregularly.
4.5.5 Districts support supervision visit to health facilities

For the frequency of the district supervisors visits in the last three months, among the respondents, 60 (54%) said the visit had been made one time. To 23 (21%) had no visit done at all and 15 (14%) had been visited twice, 3 (3%) had three visits and only 9 (8%) had more than three visits from the supervisor. Visit from the district supervisor had significant statistical relationship with data utilization for decision making. (n=110; df=1; p=0.000; $x^2 = 30.000$)

One of the key informant interviewed pointed out that “At times it is impossible to make support supervision to all facilities as it is supposed to because of challenges like lack of transport. The health facilities in Kitui County are very far from each other and in most places there are no matatus
(public means of transport). If given a motorcycle, this would minimize these problems”

4.5.6 Topics assessed and discussed by the district HIS

The topics that were assessed and discussed during support supervision visit by the district supervisor officer were issues on data quality at 38 (34%), issues on performance of health facilities were discussed in 67 (61%) and only 5(5%) had a discussion on decision making based on routine data. There is statistical significance between issues assessed and discussed with the data utilization (n=110; df=2; p=0.002; $x^2 = 49.164$).

4.5.7 Report or feedback sent on supervisory visits

Figure 4.16 shows the frequency of reports and feedback sent to the health facilities after the supervisory visit by the district supervisor. Among the health facilities that had a supervisory visit, only 43 (39%) had received any feedback of the supervisory visits. However 67 (61%) of the respondents have never received feedback or reports on the visits made. The feedback or reports from the district supervisor has statistical significance to data use for decision making (n=110; df=1; p=0.022; $x^2 = 5.236$).
Figure 4.16 Report/feedback on supervisory visits at the health facilities

During the FGD, one of the participants pointed out that “feedback is lacking, once in a while the district supervisor comes and looks at the record books, but there is no feedback after that. Therefore I do not know if the work is good or not”.
4.6 DISCUSSION

4.6.1 Socio-demographic characteristics of the respondents

The mean age of the health care workers in health facilities is 35.5 year old. A majority of the respondents are aged between 20 to 29 years and the females were a majority making 63% of all health care workers and male being 37%. Majority of the respondents had a diploma in their profession 71 (64%). This results coincides with (WHO,2008) pointing out that within the health sector, in many countries women comprise over 75% of the workforce, making them indispensable as contributors to the delivery of health care services. However, in many countries, women still tend to be a minority among more highly trained professionals. In particular, the distribution of women by occupational category tends to be skewed in favor of nursing and midwifery personnel and poorly represented in other categories such as physicians, dentists, pharmacists and managers. A study by transparency international-Kenya (2011) had almost similar results in distribution of health care workers respondents. Participant’s ages ranged from 21 to 56 years, a median age was 50 years. 60% and 41.3% were aged below 40 and 30 years respectively. The majority of the health care providers (62.2%) were female and 41.5% were in the nursing cadres. However the study by transparency international-Kenya (2011) showed that there was no significant relationship between data use for decisions and the socio-demographic characteristics.

Similar to this study there are more dispensaries than hospitals and health centers. This is similar to Kenya service provision assessment (2004), which showed that the numbers of dispensaries in Kenya are six times more than hospitals. However majority of the dispensaries had a single nurse or one nurse and a supportive staff. In this study,
nearly half the dispensaries had less than 3 nursing staffs despite reviewing 41 to 60 patients daily.

4.6.2 Extent of data use for Decision Making among HCWs

Overall, there is limited utilization of data for decision making by health care providers in health facilities. Among the eight major decisions made by the health care providers, identification of emerging epidemics followed by formulating of plans is where data is mostly used. This coincide with a study by measure evaluation (2007) which identified those managers in health programs and health facilities reported that they used data to make decisions regarding clinical services. This is because the health care provider’s curriculum in the training institutions covers practical and theoretical measures to effectively identify emerging epidemics as a stop gap measure and as a component of primary health care and individual patient care. There is also little inclination towards management and planning techniques to achieve maximum results but inadequate training in human resource, financial, supply and budget dimensions.

This Study showed that there is an association between demographic factors and data utilization for decisions. It is influenced by demographic factors such as age, profession, and education level and level of health facility, years of existence and the volume of work. These results are similar to a study by Fitch (2009), on relationships between decision making and demographics which indicated that better decision making was done by those who had higher levels of education, had fewer years of service, and made higher salaries.
4.6.3 Factors influencing utilization of generated routine data

A number of factors influence utilization of generated routine data in health facilities in Kenya. One of the major problems is that, in data collection process, the people who fill the monthly report at the health facilities are the nursing officers but in most cases and most facilities, the support staffs are called in to assist in filling in the data as the nurses’ conduct the expected health care activities. This is due to the fact that there is a severe health care provider’s shortage that is expected to intensify as the need for health care grows. Compounding the problem is the fact that colleges and universities across the country are struggling to expand enrollment levels to meet the rising demand for nursing and medical care (MOH, 2003).

The study showed that the available data collection tools are patient’s registers, stock cards and financial statements. Patient’s registers were available in most of the health facilities but not all. The stock cards and financial statements were missing in most health facilities. According to WHO (1998), the patients registers are always available due to the fact that, they are information and documents kept in a systematic, scientific and easy ways that help to receive the required relevant data at the time of necessity with the objective of making easy availability to the name of patient, address, age, sex, occupation, disease, modes of diagnosis and recommendations made in course of undergoing treatment or to the doctor who is looking into the patient.

The study identified some technical constraint to data use for decision making. The data collected is stored and analyzed manually with only 24% of the health facilities having any computer. There was a limited amount of computer use at all levels of the health system. A study by measure evaluation (2007) had similar results which
showed that data was often compromised by being incomplete and inaccurate; therefore staff did not always rely on it for decision making. Lack of computers and frequent power failures reduced staff’s ability to access data and delayed the reporting process and completing multiple forms to satisfy different donor’s reporting requirements also contributed to a reporting backlog. Marie and Higgins (2001) pointed out that all too often the traditional manual system creates situation in which people answer questions negatively, it may be misplaced despite a tracking system and it may have illegible and sloppy entries. Use of Computers and other forms of information technology in health facilities are able to handle large volumes of data as well as monitor various activities in settings. Use of computers to collect and analyze data helps to identify changes and problems that could be occurring.

Another finding highlighted in the study is that the health care providers had limited training in areas of data. Training and re-training is a big issue, not just in Kenya but around the world. Medical schools do not teach about data technology and information. So, health care providers need on job training to enlighten them on data issues. Furthermore, a substantial proportion of respondents expressed the need for technical skills training. Similar results were identified in a study by measure evaluation (2007) whereby staff’s capacity to analyze, interpret and use data was limited. In addition, very few facilities had any trained health information officers filling and submitting the monthly reports.

Majority of the health facilities do not have guiding documents such as guidelines and recommendations for actions, annual and monthly targets from the district office, district or national newsletter, published researches and reports on success stories for
Sharing and dissemination of information is a crucial catalyst that enables visibility of results. Information is fundamental, because any quality improvement is dependent on the capacity to measure change in processes and outcomes. Health care workers having access to the information, changes what they do and it may be very valuable as decision support systems. The scope of the information domain includes the availability to health workers, the information about best practice (WHO, 2008).

Constraints to data use existing in many health facilities were ranked. Respondents in the study considered duplication; too much information asked and staff workload as the primary impediment to data utilization. Furthermore, a substantial proportion of respondents expressed the lack for technical skills. There are scattered sources of data collection tools in various health facilities. At the same the very many tools need to be filled up by the health care providers who have so many patients to review and in some health facilities they are less than two health care providers or a health care provider and a supportive staff.

The factors such as storage of the collected data, feedback to the health facilities, districts supervisors’ visit to health facilities, experience of medical staff in computer usage, outside technical support to health facilities on data, staffs’ skills to use data and information for decisions, availability of guiding documents at the health facilities, and how the information is processed, causes decline in the use of medical data in Kitui County. However a study by measure evaluation (2007) identified different challenges such as general lack of analysis and use skills, lack of performance based and culture and no incentives for data utilization.
4.6.4 Organization of the district health system

Most health care workers have meetings biannually or annually with a few having consistently on monthly basis. In the meetings, the topics discussed did not emphasis on data related topics like data quality and findings of routine data. This has a significant association with utilization of data for decision making. A study by Measure evaluation (2007) showed that efforts to share information across organizations and delays in releasing information limited the usefulness of the data.

The study shows that there are a number of levels where the health care providers are expected to send the collected data. However these levels where data is transmitted have poor coordination between themselves hence decreased use of the data and delivery of high quality services. At the same time there is inadequate feedback from the levels to the health care providers.

The district supervisor rarely visits the health facilities for support supervision and monitoring of activities. In fact 34% of the respondents have never had any visit. For the health facilities visited by the supervisor’s, there was minimal discussions or assessment on decision making based on routine data. Among the health facilities that had received a support supervision visit, feedback report was only given to 39% from the supervisors on issues assessed. All this factors have a significant association with data utilization for decision making. Support supervision is one of the vital support systems for effective, high quality health services, including using data to make decisions. Regular support supervision provides the guidance, encouragement, and resources needed to perform well. During the support supervision visit the supervisor should provide feedback so that corrective measures are implemented. Both positive
and negative feedback should be given so that the health care provider is aware of the performance immediately.
CHAPTER FIVE: CONCLUSION AND RECOMMENDATIONS

This chapter presents the conclusions drawn from the findings of the study generated by both quantitative and qualitative research instruments. In addition, recommendations, in terms of implications of these findings are presented. Areas for further research are also suggested.

5.1 Implications of Findings

Strong data utilization is a crucial element in planning and improving the quality of health services in Kenya. However significant barriers and weaknesses influence the Kenya’s health system. Many health providers did not appreciate the importance of utilizing the generated routine data for decision making. Some felt that this was a Ministry of Health issue, which implied that no person is answerable to any data which may be inaccurate, omitted and of poor quality. The health care providers are also handicapped due to lack of resources needed in data areas hence very little appreciation to areas related to data collection, analysis or utilization.

5.2 Conclusion

This study demonstrates limited utilization of routine data to make decisions for health facility management with 66% not using data and 34% using. Strategies and interventions done arbitrarily and not based on data. Things are done arbitrarily hence not many health care providers are keen about the results within the health facilities in Kitui County. Use of health data or information for decisions determines effectiveness in detecting problems, defining priorities, identifying innovative solutions, and allocating resources for improved health outcomes.
A number of factors influence the data utilization for decision making such as lack of capacity and skills to use the routine data for decision making is a major factor in health facilities. The health care providers cannot interpret data thereby impeding the ability to analyze, interpret and utilize the data. Continuous professional development in data related areas is very little with less than 26% of the health care providers having had any training in data related areas. Guiding documents are not available in over 62% of the health facilities and also lack of meetings to discuss data issues. Overall lack of computer literacy is a problem. The study showed that the computer is often seen as a privilege in the health system and for those using it was not to its full potential. Most data work is manually done. Also the use of supportive staff to fill the data compromises the quality and any problem or abnormal indicator may easily be missed out.

Health system organization influence the data use due to presence of challenges like duplication of work and too many indicators captured in tools by already overworked staffs. Data collection is done as a requirement of the government or partners with competing interests hence fragmentation and uncoordination from various levels. The health care providers dutifully convey the data losing the opportunity for informed decisions. There is with limited support supervision and feedback from the supervisors. With the work load in health facilities, the health care provider work as the information officer and implementer at the same time hence the value of data in improving service provision is not fully recognized and not prioritized.
5.3 Recommendations

In order to strengthen the utilization of routine generated data in health facilities, the national ministry of health and the county ministry of health should:

1. Ensure the resources to strengthen data utilization are developed and distributed to every facility in the county for example manuals, standard operating procedures, research results and equipment like computers.

2. Build capacity and skills of health care providers in routine data utilization through on job trainings for those already working and for sustainability, strengthening the curriculum by health training institutions through integrating data modules.

3. Standardize the parallel reporting levels and consolidate a unified data form or tool with relevant key indicators to be captured.

4. Set performance indicators that ensure structured support supervision, meetings and feedback on routine data utilization. This will promote the consistent data utilization for decision making.

5.4 Areas of Further Research

1. This being a descriptive cross- sectional study, there is a need for interventional longitudinal study to assess the use of data in the counties in Kenya.

2. A research to make a comparison between the rural health facilities and those in the urban areas.

3. A research to compare the data quality and data utilization should be conducted

4. A research to check the correlations of private facilities and government facilities on data issues.
References


Kaen, K., (2006). Evidence from systematic reviews to inform decision making regarding financing mechanisms that improve access to health services for poor people. Thailand: Alliance for Health Policy and Systems Research


APPENDICES

APPENDIX 1: CONSENT FORM

Hallo, my name is ………………. I am interviewing study participants on behalf of Eddah Kanini who is a Master of public health (Monitoring and Evaluation) student at Kenyatta University, Nairobi. The objective of this study is to help develop interventions for improving health information system and utilization of the routine generated data for decision making in health facilities. The information collected and used for purposes of this study shall be treated with utmost confidentiality by the researchers and will not be availed to any other person outside the purposes of this study. No names except initials where relevant, shall be on this form. Your participation is voluntary and you can choose to decline to answer any questions you are not comfortable with. We appreciate your assistance and co-operation in completing this study.

Thank you.

The Participant:

I agree to participate in the research study. The purpose and nature of the study has been explained to me. I am participating voluntarily. (Please tick one box below)

1. Yes, I agree to participate □

2. No, I do not agree to participate □

Signed……………………………………………… Date………………
APPENDIX 2: QUESTIONNAIRE

Code Number……………..

SECTION 1: BACKGROUND CHARACTERISTICS

1) Name of health unit …………………………..

2) Name of County ………………………………..

3) Location/ District……………………………..

4) Age of the person……………………………..

5) Sex……….. 1. Male 2.Female

6) Please circle the level of education that you hold (Circle all that apply)
   i. Certificate (Specify)
   ii. Diploma (Specify)
   iii. Degrees e.g. Undergraduate, Masters and PHD (Specify)

7) How long have you worked in the current health facility (in years; if less than one year then the number of months)

<table>
<thead>
<tr>
<th>NO</th>
<th>QUESTIONS AND FILTERS</th>
<th>CODING CATEGORY</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>What type of facility are you working in?</td>
<td>District/Sub district Hospital…1&lt;br&gt;Health Centre…………………..2&lt;br&gt;Dispensary…………………..3</td>
</tr>
<tr>
<td>9</td>
<td>How long has the facility existed?</td>
<td>Months-3 years…………………..1&lt;br&gt;4-6 years…………………..2&lt;br&gt;More than 6 years……………3</td>
</tr>
<tr>
<td>10</td>
<td>What is your profession?</td>
<td>Doctor or Clinical officer………..1&lt;br&gt;Nurse or Midwife……………….2</td>
</tr>
<tr>
<td>11</td>
<td>Approximately how many patients are seen daily in the health facility?</td>
<td>1-20 ……………………..1&lt;br&gt;21-40 ……………………………….2&lt;br&gt;41-60 ……………………………….3&lt;br&gt;61 and Above…………………..4</td>
</tr>
<tr>
<td>12</td>
<td>What services do you offer at the facility?</td>
<td>OPD, 1. YES 2. NO&lt;br&gt;ANC 1. YES 2. NO</td>
</tr>
<tr>
<td>Maternity Services</td>
<td>1. YES 2. NO</td>
<td></td>
</tr>
<tr>
<td>-------------------</td>
<td>-------------</td>
<td></td>
</tr>
<tr>
<td>Admissions</td>
<td>1. YES 2. NO</td>
<td></td>
</tr>
<tr>
<td>Family Planning</td>
<td>1. YES 2. NO</td>
<td></td>
</tr>
<tr>
<td>Dental Services</td>
<td>1. YES 2. NO</td>
<td></td>
</tr>
<tr>
<td>Lab. Services</td>
<td>1. YES 2. NO</td>
<td></td>
</tr>
<tr>
<td>Drugs Dispensing</td>
<td>1. YES 2. NO</td>
<td></td>
</tr>
</tbody>
</table>

**SECTION 2: LEVEL OF DATA UTILIZATION FOR DECISION MAKING**

<table>
<thead>
<tr>
<th>NO.</th>
<th>QUESTIONS AND FILTERS</th>
<th>CODING CATEGORIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>To what extent is the collected data used in making the decision in the following categories: Always use data…………1 Never use data…………0</td>
<td>Day-to-day program management…1 0 Medical supply &amp; drug management..1 0 Formulating plans……………………1 0 Review financial statement and Budget preparation…………………1 0 Deciding budget reallocation..1 0 Human resources management……1 0 Monitoring key objectives and policy…1 0 Identification of emerging epidemics..1 0</td>
</tr>
<tr>
<td>14</td>
<td>If yes, Please demonstrate how the collected data is used in each category</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Who fills the monthly reports/data</td>
<td>Medical officer………………1 Nursing/ Midwife………………..2 Clinical Officer………………….3 Health Information Officer……..4 Support Staff……………………5 Other (Specify)………………..6</td>
</tr>
</tbody>
</table>

**SECTION 3: FACTORS INFLUENCING DATA UTILIZATION**

<table>
<thead>
<tr>
<th>NO</th>
<th>QUESTIONS AND FILTERS</th>
<th>CODING CATEGORIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>How often do you have meetings for reviewing managerial or administrative matters?</td>
<td>Monthly……………………………1 Bi annual/ Annually…………………2</td>
</tr>
<tr>
<td>17</td>
<td>Is an official record of meetings maintained? (If yes please check the meeting records for the last three months)</td>
<td>Yes………………………………1 No……………………………2</td>
</tr>
<tr>
<td>18</td>
<td>What topics were discussed and recorded during the meeting?</td>
<td>1. Management of routine data like quality, reporting or timeliness 1. Yes 2. No 2. Findings of routine data like disease data, 1. Yes 2. No</td>
</tr>
</tbody>
</table>
19) Please be frank and choose your answers honestly. To what extent, do you agree with the following on a scale of 1-3? **In health system decisions are based on**

<table>
<thead>
<tr>
<th></th>
<th>Disagree=1</th>
<th>Neither disagree nor agree=4</th>
<th>Agree=6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal liking</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Superiors’ directives</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Evidence/facts</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Political interference</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Comparing data with strategic health objectives</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Health needs</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Considering costs</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>International NGOs/donor</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

20) Does this facility have the following data collection tools/ forms in use? *(Check for Presence of records).* If space not enough, please add an additional paper.

<table>
<thead>
<tr>
<th>Data collection tool/ forms</th>
<th>Comment on tool. Is the form in use, enough space to record data?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patients register or record?</td>
<td>1. YES 2. NO</td>
</tr>
<tr>
<td>Stock Cards?</td>
<td>1. YES 2. NO</td>
</tr>
<tr>
<td>Financial Statements?</td>
<td>1. YES 2. NO</td>
</tr>
<tr>
<td>Others <em>(please specify)</em></td>
<td></td>
</tr>
</tbody>
</table>

21 Have you run out of these forms in the past 12 months? 1. Yes 2. No

22 How is the collected data analyzed and stored (Please show the exact way used) 1. Manually 2. Computerized

23 What is your experience in usage of the computers? 1. Low 2. Medium 3. High

24 How frequently do you use a computer for certain tasks at work? 1. Daily 2. Once or more per week but NOT daily 3. Less than once per week
What difficulties do you face in using Computers?

<table>
<thead>
<tr>
<th>No</th>
<th>Question</th>
<th>Coding Categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>What difficulties do you face in using Computers?</td>
<td>No access to computers……1 No enough computers……2 No training in computer……3 Others (Specify) ……………4</td>
</tr>
<tr>
<td>26</td>
<td>Have you received any continuous professional training in the following areas?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>A. HMIS 1. Yes 2. No</td>
<td>If yes, Duration (in weeks/months or years)</td>
</tr>
<tr>
<td></td>
<td>B. Survey 1. Yes 2. No</td>
<td></td>
</tr>
<tr>
<td></td>
<td>C. Data analysis 1. Yes 2. No</td>
<td></td>
</tr>
<tr>
<td></td>
<td>D. Data utilization 1. Yes 2. No</td>
<td></td>
</tr>
<tr>
<td></td>
<td>E. Planning 1. Yes 2. No</td>
<td></td>
</tr>
<tr>
<td></td>
<td>F. Computer software’s 1. Yes 2. No</td>
<td></td>
</tr>
<tr>
<td></td>
<td>G. Other data related areas (specify) 1. Yes 2. No</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Please rate their usefulness to you as: 1= not useful, 2=somewhat useful, 3 = very useful</td>
<td>Rate 1, 2, 3 1, 2, 3 1, 2, 3 1, 2, 3 1, 2, 3</td>
</tr>
<tr>
<td>28</td>
<td>What specific challenges have you experienced among your staff when it comes to using data? Please rank them in order of severity-1,2,3 etc</td>
<td>i) Technical skills: poorly trained in data ii) Motivation/ No feedback to initiate corrective measures iii) Time: A lot of time taken in reporting iv) Work load: Overworked staffs V) Lack of Incentives Vi) Lack of knowledge of benefit</td>
</tr>
<tr>
<td>NO</td>
<td>QUESTIONS AND FILTERS</td>
<td>CODING CATEGORIES</td>
</tr>
<tr>
<td>----</td>
<td>--------------------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>30</td>
<td>Do you send data returns to the following? Community level 1. YES 2. NO District Hospital 1. YES 2. NO Ministry of Health 1. YES 2. NO</td>
<td>If yes how often? 1. Monthly 2. Irregularly 1. Monthly 2. Irregularly 1. Monthly 2. Irregularly</td>
</tr>
<tr>
<td>31</td>
<td>How often does the facility get feedback on performance from the: Community Level District Office Ministry of Health</td>
<td>Monthly Irregularly</td>
</tr>
<tr>
<td>32</td>
<td>How many times did the district supervisor visit your health facility during the last six months?</td>
<td>0 times 1 time 2 times 3 times 4 More than 3 times</td>
</tr>
<tr>
<td>33</td>
<td>What did the supervisor assess and discuss during the visit?</td>
<td>1. Data quality 2. Performance of health facility based on routine HIS 3. Making decisions based on Routine HIS 4. Others (Specify)</td>
</tr>
<tr>
<td>34</td>
<td>Did the supervisor send a report/feedback on the supervisory visits?</td>
<td>1. Yes 2. No</td>
</tr>
</tbody>
</table>
APPENDIX 3: GUIDE TOOL FOR KEY INFORMANTS

Date of the interview…………………………

Time…………………………………………

Profession…………………………………….

Introduction:

I’m [Names] from Kenyatta University. I am conducting a study on determinants of utilization of routine data for decision making in health facilities in Kitui County. To improve health system there is need for better use of health data generated. An important first step in this effort is to better understand the extent of use and the challenges faced by the users. To do that, I am conducting interviews with key officers in the health sector particularly the Kitui County. Your knowledge will be very valuable. The interview will only take 45 to 60 minutes.

The key informant survey will yield the following information:

1. Identify the importance of Health data use for decision making
2. What is the current Perceptions of the routine generated data in health facilities among the health care providers
3. Identify Gaps in the Current routine data generated in health facilities
4. Identify challenges that may influence the data utilization for the decision making.
5. Identify the Process for addressing the Issues emerging as the challenges and obstacles of using data for decision making among the health care providers.
APPENDIX 4: FOCUS GROUP DISCUSSION

1. How is data collected at the health facilities in the Kitui County?
2. What problems are encountered in data collecting, processing, interpretation and use?
3. What would you say is the cause of these problems?
4. What suggestions do you have to minimize these problems?
5. How do you currently use the records or data collected?
6. In your opinion, how else can data are utilized?
7. What information is received from the community, health centers, district hospital and the ministry of Health?
8. What information is sent to the community, health centers and the ministry of Health?
9. How is feedback given to the health care providers on data generation and data use?
10. How is support supervision carried out to facilities health care providers on data issues?
11. How can utilization of data among health care providers be improved?
12. What other sources of data are available and how can they be tapped?
APPENDIX 5: OBSERVATION GUIDE

1) Is there a data office

2) Assess the available data collecting tools

3) When were the tools updated last?

4) What storage facilities are in place? Cabinets or shelves

5) How and who compiles and records

6) Is there an operational HMIS computer

7) Presence of Guiding documents in the facility

8) Are there records of meeting? When was the last meeting held?

9) The type of data collecting tools and if filled and tallied in the last month
APPENDIX 6: MAP OF KITUI COUNTY
APPENDIX 7: APPROVAL OF RESEARCH PROPOSAL

KENYATTA UNIVERSITY
GRADUATE SCHOOL

E-mail: kubps@yahoo.com
dean-graduate@ku.ac.ke
Website: www.ku.ac.ke

P.O. Box 43844, 00100
NAIROBI, KENYA
Tel. 810901 Ext. 57530

Internal Memo

FROM: Dean, Graduate School

TO: Ms. Eddah Kanini Karijo
C/o Community Health Department

DATE: 16th May, 2012

REF: F57/PT/13418/09

SUBJECT: APPROVAL OF RESEARCH PROPOSAL

This is to inform you that the Graduate School Board at its meeting of 30th April 2012 approved your M.P.H. Thesis Research Proposal entitled, “Assessment of Utilization of Routine Data for Decision Making in Health Facilities in Kitui County in Kenya.”

You may now proceed with your Data Collection.

Thank you.

JOSEPHINE K. NJAGI
FOR: DEAN, GRADUATE SCHOOL

Chairman, Community Health Dept.

Supervisors:
1. Dr. George O. Otieno
   C/o Health Management and Informatics Dept. - KU

2. Dr. Stephen Mogere
   C/o Health Management and Informatics Dept. - KU

JKN/fwk
APPENDIX 8: RESEARCH AUTHORIZATION

KENYATTA UNIVERSITY
GRADUATE SCHOOL

E-mail: kubps@yahoo.com
dean-graduate@ku.ac.ke
Website: www.ku.ac.ke

P.O. Box 43844, 00100
NAIROBI, KENYA
Tel. 8710901 Ext. 57530

Our Ref: F57/PT/13418/09
Date: 16th May 2012

The Permanent Secretary,
Ministry of Higher Education, Science & Technology,
P.O. Box 30040,
NAIROBI

Dear Sir/Madam,

RE: RESEARCH AUTHORIZATION
MS. EDDAH KANINI KARIJO - REG. NO. F57/PT/13418/09

I write to introduce Ms. Eddah Kanini Karijo who is a Postgraduate Student of this University. She is registered for an M.P.H. degree programme in the Department of Health Management and Informatics in the School of Public Health.

Ms. Karijo intends to conduct research for a thesis entitled, “Assessment of Utilization of Routine Data for Decision Making in Health Facilities in Kitui County in Kenya.”

Any assistance given will be highly appreciated.

Yours faithfully,

MRS. LUCY N. MBAABU
FOR: DEAN, GRADUATE SCHOOL

LNK/fwk