

**ASSESSMENT OF DATA USE OF THE DISTRICT HEALTH INFORMATION
SYSTEM (DHIS2): A CASE STUDY OF NAIROBI COUNTY**

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DECLARATION

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

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PATRICIAH WANJA GATHUA

This project has been submitted for examination with our approval as the University Supervisors:

Signature _____ Date _____

MR BEN JARABI

Signature _____ Date _____

DR WANJIRU GICHUHI

DEDICATION

This project is dedicated to my family.

Your support was highly appreciated.

To my friends Sam and Oketch.

May God bless you abundantly for your support.

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ABSTRACT

The study was carried out to determine whether DHIS2 data is used for decision making. The general objective of the study was to assess the level of data use from the District Health Information System in Nairobi County. The specific objectives for the study were to determine the level of data use from the District Health Information System at the Nairobi County and facility level. Data was collected at the County and facility level. At the County level, data was collected from the head of planning and the County health records information officer. At the facility level, data was collected from the facility in-charges and the health records information officers. Documents were also reviewed at the facility level to ascertain the level of data use. The documents that were reviewed were minutes of meetings. Data analysis was mainly descriptive arising from the proportion of responses indicating data use. Frequencies and percentages were obtained.

The study established that facilities and counties use DHIS2 data for programme improvement, reporting and accountability and sharing data with partners. Majority of the facilities that indicated data use are the higher level facilities. Only a few of level 3 facilities indicated that they use DHIS2 data due to lack of training and access rights. Majority of facilities indicated that they use DHIS2 data for sharing with partners. The use of DHIS2 data at the facility level can be attributed to training of health workers and the assignment of rights to the health workers.

The study recommended that training of health workers be intensified so that they can utilize DHIS2 data for decision making. More health workers should also be assigned access rights so that they can be able to access DHIS2. Provision of infrastructure (computers, internet) was also recommended as some facilities indicated that they didn't have the appropriate infrastructure.

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

PHIN (2011), defines a Health Information System as “any system that captures, stores, manages or communicates information associated with the health of individuals or the activities of organizations that work within the health sector. It integrates human resource management information systems, laboratory information systems, hospital patient administration systems, disease surveillance systems and district level routine information systems”.

Developing nations encounter a number of shortcomings that are health related and the health structures that tackle those shortcomings are grappling with inadequate assets and expertise. Health managers must, therefore, concentrate on intensifying the worth of rare assets and finding solutions to make health structures work proficiently. Having dependable facts on the operation of diverse sections of the health structure is the way out for planning, implementing and gauging health intercessions. Prosperous reinforcing of health structures will need significant, appropriate and precise facts on the operation of the health structure itself. The purpose of an information system for health is to provide that information (Vital Wave Consulting, 2009).

In 2000, South Africa adopted the District Health Information System as the formal information structure for health and it was for handling accumulated repetitive health service based data. In October 2012, the District Health Information System electronic tool, for capturing data daily at the level of the health facility, was effected to decrease the time of professionals expended on manual computations and human mistakes. Data for some features such as supervisor appointments, medicine stock-outs and clinical work burden continue to be captured monthly in facilities where health service data is captured daily. According to Wilson et al (2003), the data gathered are also accessible and utilized at provincial and national levels (Republic of South Africa, 2012).

The overall strategy leadership for the health section is through the Kenyan Government Vision 2030 and the Kenya Health Policy Framework (KHPF, 1994-2010). One of the main shortcomings in the health section acknowledged in the First Medium Term Plan of Vision 2030 is feeble information systems for health. Various flaws recognized in the existing information systems include absence of strategy and procedures, insufficient capabilities of information system for health staff, inadequate assimilation, numerous congruent data gathering structures and reduced harmonization (Republic of Kenya, 2009).

Kenya started a process of replacing the information system for health currently in use to swap it with the free and open-source, District Health Information Software (DHIS2) which is web-based in 2010. Afterwards, DHIS2 was approved and its deployment in all of the country's 8 regions (now the 47 counties in the decentralized structure of government) was concluded by December 2011. The DHIS2 system has been in use actively all over the nation. It has considerably enhanced the procedure for reporting of regular health information. This is a key landmark; nevertheless, DHIS2 in Kenya has not yet fully attained all its anticipated highlights given that the system is mostly being used for data entry by health records information officers (HRIOs), instead of health personnel at all levels of the health system for decision making (Karuri et al., 2014).

Karuri et al (2014), asserts that attempts to change this situation are ongoing, led by the Health Ministry with backing from various development and implementation associates. An in-depth comprehension of the factors that deter or boost the maximum use of DHIS2 in Kenya will be valuable in supplying health information technology (IT) executors and strategy makers with a foundation on which to introduce intercessions to increase approval and utilization of this and other such systems in the nation.

The objectives of DHIS2 are to: deliver complete data management results founded on data storage ideologies and a modular system that can simply be tailored to the diverse requirements of a management information system; support analysis at diverse levels of the organizational hierarchy; deliver tools for data entry that can be either in the form of

lists or tables that are standard, or can be tailored to replicate paper forms; deliver diverse types of tools for data authentication and enhancement of quality of data; and deliver one-click reports with charts and tables that are easy to use for preferred indicators or summation reports using the blueprint of the tools for data collection and flexible and dynamic data analysis in the analytics modules. In sub-Saharan Africa, Kenya was the first nation to use a completely online national Information System for Health. All districts and health facilities which have the appropriate technology are connecting to the DHIS2 national server using mobile internet.

The significance of utilizing health information for making decisions to get to more people with enhanced quality health services is growing globally. If organizations promote a culture of information, their competence in conducting health information system (HIS) tasks will improve. This will, in turn, result in confidence in carrying out HIS tasks. Lack of promotion of information culture has an adverse effect on the performance of HIS. Inadequate knowledge about the usefulness of data has been connected to lack of demand for quality statistics and utilization of information in most countries. Rules, processes, values and systems govern most organizations. They can back or deter staff's ability to use data in decision making (Aqil et al., 2009).

Many times, data is assembled in shelves, databases or in reports and they are not sufficiently used in advocacy, strategic planning, programme development and improvement and policy development. Quality data is not sufficient to ensure data use because information requirements of those who make decisions are often not assimilated in the data gathering efforts and data use has not been incorporated into decision making processes. Until plans and intercessions are developed geared towards improving the utilization of data from information systems, health structures will never fully be able to meet the needs of the communities they serve. To date, there is a lack of clear direction on how to comprehensively enhance decision making that is data-informed (Nutley and Reynolds, 2013).

Aqil et al (2009), asserts that inadequate utilization of information for evidence-based decision making and poor quality data are as a result of organizational and behavioral

obstacles that delay the successful utilization of information in addition to technical matters. According to Belay and Lippeveld (2013), utilization of information for scheduling and organization of health services is feeble. Limited human resources and finances are dedicated to HIS. Health service managers have minimum understanding of the benefit of information and no incentives to use it.

UNAIDS (2006), alludes that a functional monitoring and evaluation system has twelve components which are distributed within three concentric circles. The outer circle denotes the human resources, partnerships and planning. The middle circle looks at the procedures through which data are gathered, verified and transformed into valuable information. The heart of the diagram symbolizes the central function of the M&E system which is utilizing data to make decisions.

In a study by Lungo (2008) on the trustworthiness and usability of District Health Information Software in Tanzania, it was noted that at the district and facility levels, reporting structures were feeble, both in terms of comprehensiveness and aptness. The received data was deficient, incorrect, inconvenient, outdated and unconnected to priority errands and functions of local personnel that are in health and therefore not beneficial for health management decision making.

In another study carried out to determine data demand and utilization in the health division in Central and Eastern Kenya, it was found that stakeholders do not effectively use data for programmatic decision making and to inform policy. According to Ekirapa et al (2013), efforts to enhance monitoring and evaluation structures and other sources of data have improved over the past few decades to enhance tracking of Millenium Development Goals (MDGs) and react to performance-based disbursement of funds from donors. In spite of these enhancements, data is often not utilized effectively by stakeholders to inform plans and to inform programmatic making of decisions. This is because the data available is of poor quality, decision makers have inadequate skills to scrutinize, deduce and utilize data, inadequate institutional backing for data gathering and utilization, and inadequate access to data.

According to Ekirapa et al (2013), in the National Health Sector Strategic Plan (NHSSP) II, monitoring and evaluation of health programmes has been set as a key priority in Kenya. The Monitoring and Evaluation support structure which is primarily established on reports from the health management information system aspire to support health managers in formulating informed decisions and adding to evidence-informed scheduling and organization.

1.2 Problem Statement

The main rationale of an information system for health is to back up decision-making that is tactical and informed by delivering data of high quality which aids managers and health employees at all stages of the health system in scheduling and organizing the health system, scrutinizing disease trends, managing epidemics and supplying intermittent assessment towards approved targets (Republic of Kenya, 2009).

According to Nutley et al (2013), health programmes frequently fall short of effective utilization of information to inform decisions. Consequently, programmes are not as efficient as they can be at meeting the health requirements of the population they support.

Generally, the present information system for health supplies inadequate information for examining health targets and investing individuals and communities with appropriate and comprehensive information on health and health related intercessions (Republic of Kenya, 2009).

DHIS2 was initiated in all hospitals but not all of them were utilizing its analysis and presentation functions. The departmental heads in charge of data management in their departments had not received training on how to work with DHIS2. Not all senior managers had rights to access the District Health Information System. Majority of the hospital administrators were not aware of the broader health information requirements, they had not received training on how to work with DHIS2 and they didn't even have login details (Kihuba et al., 2014).

DHIS2 has been in use in the country since 2011. Despite the importance of DHIS2, no study has been done to evaluate the post-implementation of the system, particularly user perspective (Gathogo, 2014).

The study was conducted in Nairobi County because it has a wide variety of different levels of amenities which are accessible. The amenities are also well established.

1.3 Research Questions

The research questions for the study are:

1. What is the level of data use from the District Health Information System at the Nairobi County level?
2. What is the level of data use from the District Health Information System at the facility level in Nairobi County?

1.4 Study Objectives

The general objective of the study is to assess the level of data use from the District Health Information System in Nairobi County.

The specific objectives for the study are:

1. To determine the level of data use from the District Health Information System at the Nairobi County level.
2. To determine the level of data use from the District Health Information System at the facility level in Nairobi County.

1.5 Justification of the Study

A lot of resources go into the collection, analysis and dissemination of health information from the District Health Information System. It is, therefore, important to assess whether this information is put into use in policy and advocacy, programme design and improvement, programme operations and management. The DHIS2 has not been assessed

to establish whether data is utilized to inform decision making. This study therefore seeks to address this gap by assessing the utilization of data from DHIS2.

The results of the study will be useful to Nairobi County. The study will determine whether information from the DHIS2 is put into use. If not, the county can establish the reasons so that the information can be utilized. The study can also be replicated in other counties.

Nairobi County was selected since it has a wide variety of different levels of health facilities. The other reason is that time and resources are limited and the facilities are nearby to access.

1.6 Scope and Limitations of the Study

The study covered the data for the year 2015 in Nairobi County since the data was more current. Data from DHIS2 is already available and the study sought to determine if it was used in decision making.

The limitations of the study were that some facilities declined to have data collected from them. Some facilities did not have documentation to show that there has been data use. Document review at the county level was not possible as they specified that the information contained in the documents is confidential.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter looks at the literature related to data use of the District Health Information System. It looks at health information systems, review of DHIS, performance of DHIS2, the evolution of the use of evidence, uses of health information and importance of data use, and empirical evidence. The conceptualization of the study and operational arrangements are also covered in this section.

2.2 Health Information Systems

According to World Health Organization (2008), “a health information system provides the underpinnings for decision-making and has four key functions: data generation, compilation, analysis and synthesis, and communication and use. A health information system collects data from the health sector and other relevant sectors, analyses the data and ensures their overall quality, relevance and timeliness, and converts data into information for health-related decision making”.

2.3 Evolution of Use of Evidence

According to Clancy and Cronin (2005), health decisions have been supported by judgment and medical knowledge for centuries. Some developments in the recent past have intensified the undertaking of decision making that is evidence based. They are advances in communication and IT, growth of biomedical knowledge and advancement, growth of the evaluative medical knowledge and the increasing appreciation that decision making that is based on evidence offers a structure for tackling health care policy shortcomings.

Medical studies underwent explosive development. In the United States, more than 11,000 publicly funded trials were underway. This increased the ability to link decisions to evidence. The requirement for tools that health professionals, the sick and policy makers can utilize to go through the bewildering and sometimes contradictory assortment

of evidence was sharpened by the rapid growth of medical studies (Clancy and Cronin, 2005).

Maturation and growth of expertise and methods for carrying out and utilizing systematic reviews enhanced the trustworthiness of evidence for utilization in health care decisions. Transparent and consistent methods were built up for assessing evidence and producing the results of numerous studies. This brought about an extensive collection of dependable and independent sources that can be consulted to complement expert opinion (Clancy and Cronin, 2005).

The emergence of a revolution for Health Information Technology (HIT) made it probable to drive evidence to the position of care and to recognize where and why evidence and practice deviate. Reliable evidence addressed the dual imperative of improving quality and controlling costs (Clancy and Cronin, 2005).

A lot of consideration was concentrated on inquiries and precise requests that promoted the utilization of evidence in medical decision making in recent decades to minimize redundant or unsuitable practice disparities. Policy awareness in recognizing plans that can show an obvious association among health care inputs and outputs was sharpened by the existence of practice variations and unabated increases in health spending (Clancy and Cronin, 2005)

2.4 Uses of Health Information and Importance of Data Use

According to Salestine et al (2007), health information can be put into various uses. The first is policy and advocacy. Information obtained from health systems can be used to design new policies or amend existing ones. Advocacy activities can also be carried out using health information. Facilities can advocate for additional resources to fund new programmes that are initiated or to improve existing ones.

If there is a gap that is not being met, health information can be used to design a programme to fill that gap. Women and children are vulnerable groups. Programmes can be tailored to meet the needs of these vulnerable groups. The information can also be used to address training gaps, revise the training curriculum and procure drugs and supplies (Salestine et al., 2007).

Programme operations and management decisions is the other use of health information. The information can be used in planning for resource allocation. The information can also be used in determining the support that is needed to carry out programme activities, defining roles and responsibilities, improving infrastructure, expanding programme and hiring more staff are other uses of health information.

The other use of health information is accountability to the population, implementers and donors. Health facilities receive funding from the government and donors. They have to account on how they spend the money. The facilities are also accountable to the population since they have to provide the services that they are supposed to (Salestine et al., 2007).

Data use offers clinical decision support. Having all the medical information about a patient available electronically significantly improves the way clinicians make decisions about their patients. They can see what is required to be done for a sick person and what has previously been done enabling them to make the right conclusion on the spot (Brimmer, 2013).

The other importance of data use is cutting down on fraud and abuse. Medical and financial records are available electronically. This offers insight into patient information and what physicians are doing for their patients. A significant amount of money is lost due to fraud in health care. Electronic records can help prevent this (Brimmer, 2013).

Data use leads to better care coordination. Patients' records are available electronically making them accessible across the country. Organizations can communicate with one another about a patient (Brimmer, 2013).

Improvement of patient wellness is the other importance of data use. Health care organizations can remind patients to maintain a healthy lifestyle. It can help keep track of a patient's position in regard to their lifestyle choices (Brimmer, 2013).

Brimmer (2013), alludes that cumulating data from diverse areas allows facilities to visualize the bigger picture. Storing data in a central location enables health care givers to see how their organizations are performing on a macro level.

2.5 Empirical Evidence

Policy: In a study on using information to reposition family planning in Kenya, information collected from the study was made available through major news outlets, both print and television. Final reports were printed for distribution and others were made publicly available on the National Coordinating Agency for Population and Development (NCAPD) website. A decision calendar tool was prepared during stakeholders meetings. The tool was to identify decisions to be made and information to support those decisions. Various achievements were realised. There was drafting of a National Reproductive Health Policy. The Ministry of Health/Division of Reproductive Health and the NCAPD used the decision calendar to revise the draft reproductive health policy. It incorporated Information, Education and Communication (IEC) activities (MEASURE Evaluation, 2008).

Advocacy: Baseline indicators were generated from secondary analysis of the 2003 KDHS data and used by the Ministry of Health as baseline for the 2005-2009 National Health Sector Strategic Plan. This included resource allocation for IEC efforts, support for family planning and inter-spousal communication regarding family planning. Evidence was used to argue for resource mobilization and new services. Information

from the secondary analyses was used by NCAPD to initiate public debate on stalling of family planning. This information appeared in newspapers throughout the country and in the World Population Day celebrations in coast province. It was also used to engage parliamentarians in a debate about using constituency development funds to start youth-friendly reproductive health centers in each constituency. Sensitization of politicians about the importance of family planning was the other use of the information. This led to the formation of a caucus on reproductive health by parliamentarians. Advocacy based on evidence influenced the Kenyan Government to allocate approximately 2.8 million US dollars for family planning supplies in the 2005-2006 budget line in addition to the support from donors (MEASURE Evaluation, 2008).

Programmes: According to MEASURE Evaluation (2008), a study on using GIS information to aim at health services in shanty areas in Bangladesh produced information that was highly accurate and detailed of maps of slum settlements. A database was produced describing exactly where the settlements were located. These materials were made available to the public through a web site that was designed. The Bangladesh Rural Advancement Committee (BRAC) used the maps to locate houses where women give birth in the shanty areas. They used the information to target growth of the urban poor health programme. The Bangladesh AIDS Programme used the information to strategize the impending site of counseling and treatment centers for most-at-risk populations (e.g. users of drugs, drivers of trucks, sex workers and pullers of rickshaws) who dwell in shanty areas. The USAID-funded NGO Service Delivery Programme used the maps to single out localities for its major and satellite clinics. Family Health International (FHI/Bangladesh) used the maps to trace its own intercession locations and regions of programme coverage for various programmes.

In an assessment that was carried out on the health information system in Zambia, it was found that dissemination and use of information was adequate with the exemption of policy and advocacy and resource allocation. Dissemination of information to potential users was poor and its usage in resource allocation was insufficient (Republic of Zambia, 2007).

In Malawi, another assessment was carried out on the health information system. It was found that the overall dissemination and utilization of health information and data was found to be adequate. A number of major gaps were identified by the assessment one of them being limited use of data for policy and advocacy (Health Metrics Network, 2009).

In another assessment of national health information system in Namibia, it was found that dissemination and use of data seemed to be generally inadequate. The systems lacked features to make possible analysis and utilization of information for decision making. The culture of generating, capturing and using information was severely underdeveloped at every level (Republic of Namibia, 2012).

2.6 Review of DHIS2

According to Karuri et al (2014), from 2008 until 2011, the File Transfer Protocol (FTP) acted as the official national health information system for Kenya. The Health Ministry started a procedure to obtain a database that is web-based that would accelerate processing of data at facility level at all stages, after acknowledging FTP system shortfalls and the steadfast need to reinforce organization of health information at all stages of service provision in the health system for Kenya. DHIS2 was found to meet the stated software requirements after considering many choices. In 2010, District Health Information System (DHIS2) implementation started in Kenya. After its successful tailoring to fit the Kenyan situation and the completion of the phase for pilot testing, from March to December 2011, DHIS2 was deployed in all the 8 regions in Kenya. In Kenya, DHIS2 is stored in a server that is centralized using the “cloud based computing infrastructure”. The users of DHIS2 can gain access to the database if they have internet connection for data entry and information utilization functions. It was not possible to capture data for each individual facility with the FTP system, but with DHIS2 data is captured for each individual facility and entered into the central server that is web-based.

2.7 Performance of DHIS2

A new era for enhancing health reporting was opened with the growth of health information systems that are web-based in the industrialized nations. The same

developments are slowly taking root in the third world countries. The web-based systems have made it possible to gather data that is more precise and efficient for forecasting and making decisions. The continued utilization of systems that are paper-based contributes to data that is of poor quality in terms of timeliness, dependability, accessibility and comprehensiveness of reporting compromising health service provision according to evidence. Adoption of DHIS2 resulted in enhanced relevance and comprehensiveness in reporting of regular outpatient, inpatient and health service utilization data at all levels (district and national) (Kiberu et al., 2014). DHIS2 has a number of characteristics that can assist in the work of increasing the quality of data; validation when entering data to ensure that data is obtained in the correct format and in the logical range, validation rules that are user defined built on mathematical associations among the data being obtained, outlier analysis functions, as well as reports on data coverage and comprehensiveness.

2.8 Conceptualization of the Study

Data from a variety of sources is key in evidence based decision making. Data from each source should be understandable, transparent, verifiable and consistent. Evidence based decision making allows accountability and promotes transparency. According to Foreit et al (2006), “Evidence-based decision making is enhanced by a sound demand for health information, the collection and analysis of health data, making information available to decision makers, and finally, from facilitating use of information to improve health system performance”.

According to MEASURE Evaluation (2013), monitoring and evaluation data can be used for programme improvement, reporting/accountability and sharing data with partners as outlined in Figure 1. Advocacy activities are carried out in order to improve policy and programmes and are geared towards acquisition of additional resources (human or financial). If a facility requires additional staff members or finances, advocacy activities can be undertaken. Policies are developed and/or revised resulting in programme improvement. Governments and donors spend a lot of money funding programmes. The programmes have to account on how they spend their money. Health information should

be shared with the key stakeholders including communities. Community members need to know the state of their health and stakeholders need to know the performance of health systems.

Figure 1: Components for Data Use



Source: MEASURE Evaluation, 2013

2.9 Operational Arrangements

The study sought to determine if DHIS2 data is used towards contributing to the three components of programme improvement, reporting / accountability and sharing data with partners and if so to what level. For data use to occur, the facilities need to upload their data to DHIS2, they need to have access rights to DHIS2, and they need training on how to use DHIS2 (Kihuba et al., 2014).

2.9.1 Programme Improvement

The study sought to establish the number of times DHIS2 data has been used for advocacy activities and to design and/or revise policies. It also sought to find out whether DHIS2 data has been used to hire, deploy or build capacity of staff members. The study also determined whether DHIS2 data has been used to acquire medical equipment and supplies.

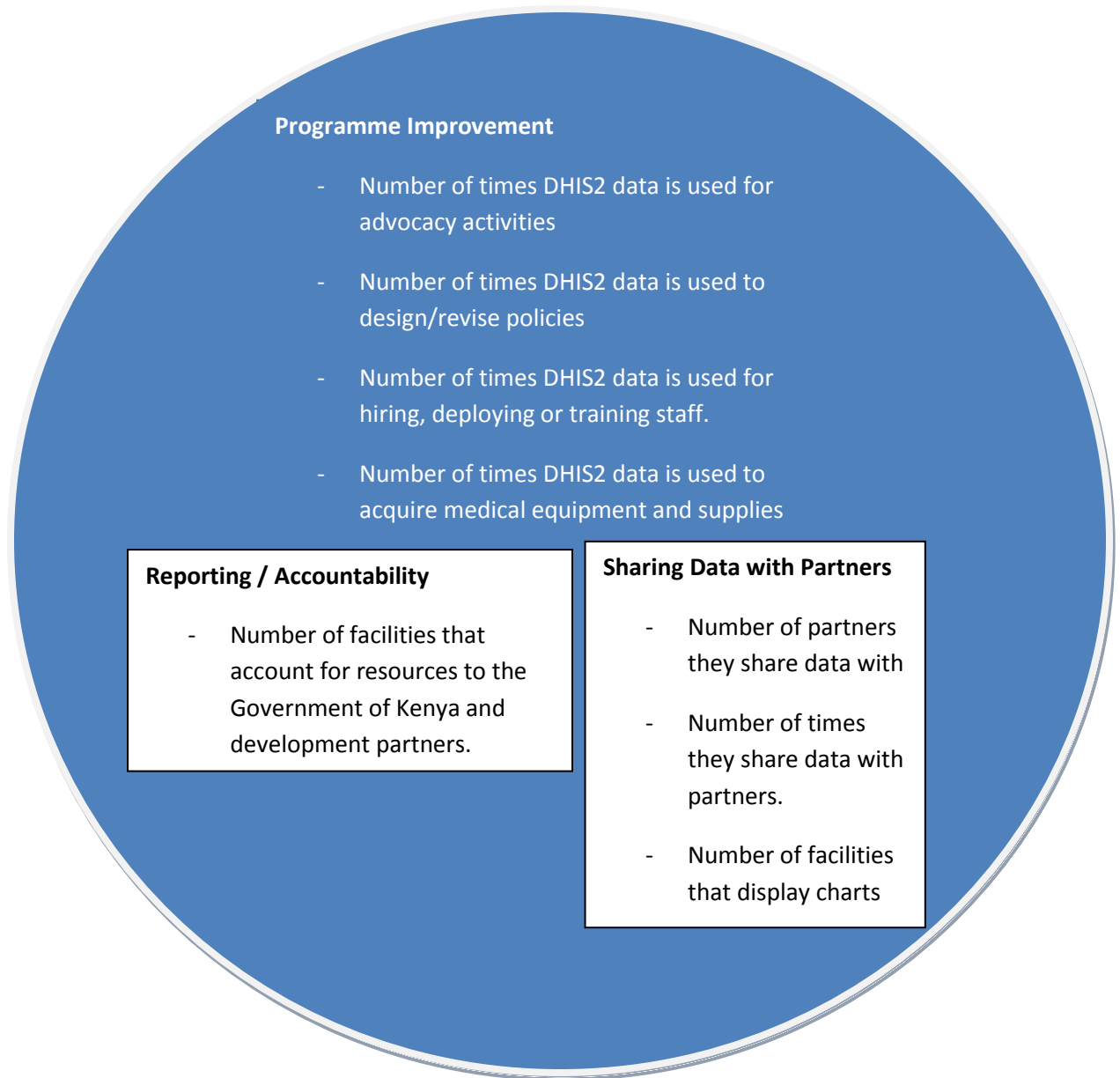
2.9.2 Reporting / Accountability

The study sought to ascertain if DHIS2 data is used to account for resources from the Kenyan Government and development associates. It was also determined if facilities account for their resources to the Kenyan Government and development associates.

2.9.3 Sharing Data with Partners

The study sought to establish the number of partners with which health facilities and the county share data and the number of times they have shared data with such partners. It also checked whether there were displays of charts on programme performance.

Figure 2: Operationalization of the Study



Source: Adopted from MEASURE Evaluation, 2013

2.10 Measurement of Variables

Table 2.1 below shows how the variables under programme improvement, reporting / accountability and sharing data with partners were measured.

Table 2.1: Description of Variables

Variable	Measurement
Prerequisites to Data Use	
Uploading data	Whether the facility uploads data to DHIS2.
Access rights	Whether the facility has rights to access DHIS2.
Staff training	Whether staff members have received training in using DHIS2.
Data Use at the County and Facility Level	
Programme Improvement	
Advocacy	The number of times DHIS2 data has been used for advocacy activities.
Policies	The number of times DHIS2 data has been used to design and/or revise policies.
Staffing	Whether DHIS2 data has been used in hiring, deploying and building capacity of staff members.
Equipment and supplies	Whether DHIS2 data has been used in procurement of equipment and supplies.
Reporting/Accountability	
Accountability	Whether DHIS2 data is used to account for resources from GoK and development partners.
Sharing data with partners	
Number of partners	The number of partners they share data with.
Number of times data is shared	The number of times they have shared data with partners.
Display of charts	If there is display of charts on programme performance.

2.11 Summary of Literature

There is evidence from the literature reviewed that there is an increase in the use of information systems for health in developed nations since they capture data that is precise and comprehensive. This has been facilitated by advances in Information Technology. The practice is taking root in third world nations. Limited use is made of the information contained in the information systems for health in the third world nations. The adoption of DHIS2 in Kenya increased opportunities for reporting of health data and that data from DHIS2 can be put into various uses namely programme improvement, accountability and reporting and sharing with partners.

Since the adoption of DHIS2, no assessment has been carried out to determine whether DHIS2 data is used for programme improvement, accountability and reporting and sharing with partners in Nairobi County necessitating this study. Evidence exists of other assessments that have been carried out in other African countries to determine whether data from the information systems for health is utilized in decision making.

CHAPTER THREE: METHODOLOGY

3.1 Introduction

This chapter looks at the study sites and target population, sampling procedures, data collection methods, variable description and data analysis.

3.2 Study Sites and Target Population

Nairobi County has 78 hospitals, 94 health centers, 116 dispensaries, 524 medical clinic/stand alone VCT sites, and 56 maternity/nursing homes. The study focused on a representative of facilities reporting to DHIS2. Data was collected from the county level and facility level. The target population was the management staff at the facility level and staff from the planning department at the County level. At the facility level, data was collected from the facility in- charges and the health records information officers. At the County level, data was collected from the head of planning and the County health records information officer.

3.3 Sampling Procedures

There are level 3, 4, 5 and 6 amenities in Nairobi County. Level 3 amenities are health centers, level 4 amenities are district referral hospitals, level 5 amenities are provincial referral hospitals and level 6 amenities are national referral hospitals. There are a total of 180 amenities in Nairobi County (from level 3, 4, 5 and 6). A total of forty facilities were selected from the different levels which is 22% of the 180 amenities. They were selected as follows; level 3 – 27 facilities, level 4 – 10 facilities, level 5 – 1 facility, level 6 – 2 facilities. All the higher level amenities that agreed to take part in the study were selected. More facilities were selected at the lower levels since the higher level facilities are few in Nairobi County. Across the different levels, facilities were selected using random sampling. This brought about the element of objectivity as any facility in Nairobi County could be selected.

3.4 Data Collection Methods

The study employed two methods to obtain the necessary data: document review and primary data collection.

Document review

Available documents relevant to use of M&E data at facility level were reviewed to ascertain the degree to which such data are utilized for various functions. Such documents included minutes of staff meetings and progress reports among others. At the facility level, minutes of meetings were reviewed in twenty facilities that participated in the study. In total forty documents were reviewed. No document review was carried out at the County level as they declined to have their documents reviewed. They specified that the information contained in the documents is confidential.

Primary data collection

A tool was developed that had three components namely, programme improvement, reporting and accountability, and sharing data with partners. The tool also contained a section on prerequisites to data use. These prerequisites to data use are uploading data, access rights and staff training. The study sought to establish whether facilities upload data to DHIS2. In order to use data, it has to be made available online since DHIS2 is an online database. This makes it accessible. The study also sought to establish whether facilities have access rights. These rights include rights to enter data and rights to view data. The access rights ensure that DHIS2 users are able to utilize the data. The other prerequisite to data use is staff training and the study sought to establish whether staff members have been trained on how to use DHIS2. Training of DHIS2 users ensures that they are equipped with the knowledge to enter and utilize the data contained in the database. The variables outlined in section 2.10 were incorporated into the questionnaire for key informants.

3.5 Variable Description

The following variables were measured by the study:

3.5.1 Programme improvement

The study sought to determine whether DHIS2 data is used to design / revise policies, for advocacy activities, staffing and acquisition of medical equipment and supplies. The study sought to determine whether policies are designed and/or revised at the County and facility level. Also, the study sought to establish whether there are any advocacy activities that take place at the facility and county level. Advocacy activities are carried out in order to fight for more resources. The study also sought to determine whether DHIS2 data is used in hiring, deploying and building the capacity of the staff members at the County and facility level. The study also sought to determine whether DHIS2 data is used to help in making decisions about acquisition of equipment and medical supplies. For the above variables, the respondents gave a yes / no response and a description of the policies they have designed / revised and the advocacy activities they have taken part in.

3.5.2 Reporting / accountability

The study sought to determine whether DHIS2 data is used to account for resources to the Kenyan Government and development associates. The County and facilities receive resources both financial and human from the Kenyan Government and development associates. The respondents specified whether they account for resources to the Kenyan Government and development associates. They also specified the type of DHIS2 data that is used to account for resources to the Kenyan Government and development associates.

3.5.3 Sharing data with partners

The study sought to determine the number of partners they share data with, the number of times they share data with partners and if there is display of charts on programme performance. The respondents at the facility and county level specified whom they share data with and the frequency of sharing data with the partners. The researcher also

checked whether there was display of charts at the facility and county level showing the performance of programs.

3.6 Data Analysis

Data analysis was mainly descriptive arising from the proportion of responses indicating data use by the various components in the tool. Frequencies and percentages were obtained to determine the number of facilities that upload data, that have access rights and that use DHIS2 for programme improvement, accountability/reporting and sharing data with partners.

CHAPTER FOUR: USE OF DATA FROM THE DHIS2

4.1 Introduction

This chapter presents the results of the assessment of data use of the District Health Information System 2 (DHIS2) in Nairobi County. It covers the coverage, distribution of the respondents by sex and facility level, distribution of respondents by age and qualification, uploading data to DHIS2, facilities with rights to access DHIS2, staff training on how to use DHIS2, use of DHIS2 for programme improvement, accountability / reporting, sharing with partners, document review, challenges in using DHIS2 data, areas of improvement in using DHIS2 data, and data use at the county level.

4.2 Coverage

This assessment targeted level 6, 5, 4 and 3 public and private facilities in Nairobi County. The number of facilities that participated in the study is summarized in Table 4.1 below. Out of the targeted 3 level 6 facilities, 2 participated accounting for 67%. Out of the 3 level 5 facilities, 1 participated accounting for 33%. The other level 5 facilities declined to have data collected from them. Out of the 30 level 4 facilities, 10 participated accounting for 33%. Out of the 144 level 3 facilities, 27 participated in the study accounting for 19%. The overall coverage was 22%.

Table 4.1: Number of Facilities Covered by Level

Level	Targeted	Sampled	Percentage
6	3	2	67
5	3	1	33
4	30	10	33
3	144	27	19
Total	180	40	22

4.3 Distribution of Respondents by Sex and Facility Level

In each of the 40 facilities that participated in the study, each officer-in-charge of a facility was interviewed. Similarly, 13 health records information officers (HRIOs) were drawn from level 6, 5 and 4 and subjected to an interview. Level 3 facilities do not have HRIOs. The results of their distribution are presented in Table 4.2 below.

Table 4.2: Number of Management Staff interviewed

Level	Facility-in-charge		HRIO		Total
	M	F	M	F	
6	2	-	2	-	4
5	1	-	-	1	2
4	5	5	8	2	20
3	22	5	-	-	27
Total	30	10	10	3	53

Out of the 40 facility-in-charges, 30 were male while 10 were female. On the other hand, out of the 13 HRIOs, 10 were male while 3 were female. A total of 40 male and 13 female respondents were interviewed.

4.4 Distribution of Respondents by Age and Qualification

The study sought to determine the age and qualification of the respondents. The results are summarized in Table 4.3 below. The highest number of respondents was in the age range 30–34 years (26 percent). The lowest number of respondents was in the age range of 45–49 years (9 percent).

Table 4.3: Distribution of Respondents by Age and Qualifications

Characteristic	Frequency	Percent
Age		
25 – 29	9	17
30 – 34	14	26
35 – 39	12	23
40 – 44	13	25
45 – 49	5	9
Qualifications		
Diploma	26	49
Higher Diploma	3	6
Degree	20	38
Masters	4	8

Majority of the respondents in the age range of 30-34 years were mainly health records information officers. Respondents in the age range 45-49 were mainly head of facilities. According to the study, facilities are headed by people who are advanced in age while records are managed by younger people. The study also sought to determine the qualifications of the respondents. Majority of the respondents were diploma holders (49%), followed by degree holders (38%). From the results, the more qualified respondents headed facilities, whereas diploma holders were mainly health records information officers.

4.5 Uploading Data to DHIS2

The study enquired whether the facilities upload data to DHIS2. The results are shown in Table 4.4 below. The study established that all level 6 and 5 facilities upload data to DHIS2. For level 4 facilities, 80 percent upload data directly to DHIS2 and 26 percent of level 3 facilities upload data directly to DHIS2. The facilities that do not upload data directly to DHIS2 submit their data to the sub-county health records information officer.

Table 4.4: Distribution of Facilities Uploading Data to DHIS2

Levels	Sampled	Uploading	Percent
6	2	2	100
5	1	1	100
4	10	8	80
3	27	7	26
Total	40	18	45

4.6 Facilities with Rights to Access DHIS2

In order to be able to use data from DHIS2, facilities need to have access rights. These include rights to enter data and rights to view data. The facility-in-charges and the health records information officers (HRIO) are supposed to have these access rights. These rights are assigned by the sub-County health records information officers and they are given to those with responsibilities of uploading and viewing data. The facility-in-charges and the health records information officers were interviewed. Overall, the findings reveal that about half (53%) of the facilities sampled had rights to access DHIS2. All level 6 and 5 facilities had rights to access DHIS2. On the other hand, 80 percent of level 4 facilities had rights to access DHIS2 and 37 percent of level 3 facilities had rights to access DHIS2. The findings are presented in Table 4.5 below. The study further established that the higher the facility level, the more the likelihood of having rights of access. Three level 3 facilities have access rights but they don't upload data due to lack of training.

Table 4.5: Facilities with Access Rights to DHIS2

Level	Sampled	Access rights	Percent
6	2	2	100
5	1	1	100
4	10	8	80
3	27	10	37
Total	40	21	53

4.7 Staff Training on how to Use DHIS2

At the facility level, staff members are trained on how to use DHIS2. Staff members who are usually trained are the facility in-charges and the records staff. Table 4.6 below summarizes the results of those trained. The study shows that 53 percent of facility-in-charges had been trained on how to use DHIS2 while 77 percent of health records information officers had also been trained on how to use DHIS2. Majority of health records information officers had received training as compared to the facility-in-charges.

Table 4.6: Distribution of Staff trained on DHIS2

Cadre	Number	Total	Percent
Facility-in-Charge	21	40	53
HRIO	10	13	77
Total	31	53	59

4.8 Use of DHIS2

All the facilities both public and private in the County are required to use DHIS2. The findings of the study are presented in Table 4.7 below. The study established that all level 6, 5 and 4 facilities use DHIS2. Similarly, 60 percent level 3 facilities use DHIS2. During interviews, 2 respondents reported lack of computers, 1 respondent reported lack of internet while 4 respondents cited lack of training as the reasons why they did not use DHIS2. When asked of their recommendations, 7 respondents cited the need for training, 5 respondents cited the need for computers, while 3 reported that internet should be provided.

Table 4.7: Facilities using DHIS2

Level	Access rights	Using	Percent
6	2	2	100
5	1	1	100
4	8	8	100
3	10	6	60
Total	21	17	81

4.9 Data use at the health facility level

DHIS2 data can be put into various uses such as programme improvement, accountability and reporting, and sharing data with partners.

4.9.1 Programme Improvement

The study results (Table 4.8) show that a number of facilities use DHIS2 data for programme improvement. For the level 6 facilities, 100 percent, 100 percent level 5, 70 percent level 4 and 22 percent level 3 facilities use DHIS2 data for programme improvement. From the results, all the higher level facilities use DHIS2 data for programme improvement. A private facility indicated that it came up with a policy to open the hospital for 24 hours due to the high number of patients. For advocacy activities, four facilities indicated that they have used DHIS2 data to lobby for more staff. As far as acquisition of medical equipment and supplies is concerned, nine facilities indicated that they have used DHIS2 data to acquire the medical equipment and supplies.

Table 4.8: Distribution of Facilities using DHIS2 Data for Programme Improvement

Facility level	Frequency	Total	Percentage
6	2	2	100
5	1	1	100
4	7	10	70
3	6	27	22
Total	16	40	40

4.9.2 Accountability / Reporting

The assessment shows that a number of facilities use DHIS2 data for accountability / reporting. The results are shown in Table 4.9 below. From the results, 100 percent of level 6, 100 percent of level 5, 50 percent of level 4 and 19 percent of level 3 facilities use DHIS2 data for accountability / reporting. From the results, all the higher level facilities use DHIS2 data for accountability / reporting.

Table 4.9: Distribution of facilities using DHIS2 Data for Accountability / Reporting

Facility level	Frequency	Total	Percentage
6	2	2	100
5	1	1	100
4	5	10	50
3	5	27	19
Total	13	40	33

Facilities, both private and public, receive resources from the Kenyan Government and development associates. They have to account on how they use the resources they receive. These resources are human and/or financial. The human resources are staff members and the financial resources are funds. The facilities receive vaccines so they have to show how many people have been vaccinated and how many children have been immunized against the various diseases. Data on vaccination and immunization from DHIS2 is usually presented to the donors. Facilities also receive family planning resources. They are required to show the donors and the Government of Kenya how many people are using the family planning methods. Family planning data is available in DHIS2 and is presented to the donors. HIV/AIDs data is also used to account for resources. The facilities are required to show how many people have been counseled, tested, how many are HIV positive and how many are HIV negative. They also have to show how many couples were tested and out of the couples tested how many are

discordant and how many are concordant. They are also required to show how many patients are on HIV treatment. HIV/AIDs data as well is available in DHIS2 and it is presented to the donors.

4.9.3 Sharing with Partners

The results of the assessment also show that the various facilities use DHIS2 data for sharing with partners. The information flows from the facility-in-charges to the stakeholders. The results are shown in Table 4.10 below. For level 6 facilities 100 percent, 100 percent level 5, 80 percent level 4 and 59 percent of level 3 facilities share data with partners. All the higher level facilities share data with partners. Majority of facilities (68%) use DHIS2 data for sharing with partners. The study sought to determine the number of partners the facilities share data with within the past year. The study results show that 28 facilities had shared data with 1-5 partners and 9 facilities indicated that they had shared data with over 6 partners.

Table 4.10: Distribution of facilities using DHIS2 data for sharing with partners

Facility level	Frequency	Total	Percent
6	2	2	100
5	1	1	100
4	8	10	80
3	16	27	59
Total	27	40	68

In all the facilities that were visited, it was observed that there is no display of charts to show programme performance. At the county level, there was also no display of charts showing programme performance.

4.9.4 Programme improvement and accountability

The results of the study (Table 4.11) show that 100 percent of level 6 facilities, 100 percent of level 5 facilities, 50 percent of level 4 facilities and 15 percent of level 3 facilities use DHIS2 data for both programme improvement and accountability. From the results, all the higher level facilities use DHIS2 data for programme improvement and accountability.

Table 4.11: Distribution of facilities using DHIS2 data for programme improvement and accountability

Facility level	Frequency	Total	Percent
6	2	2	100
5	1	1	100
4	5	10	50
3	4	27	15
Total	12	40	30

4.9.5 Programme improvement and sharing

The results of the study (Table 4.12) show that 100 percent of level 6 facilities, 100 percent of level 5 facilities, 80 percent of level 4 facilities and 22 percent of level 3 facilities use DHIS2 data for programme improvement and sharing. All the higher level facilities use DHIS2 data for programme improvement and sharing.

Table 4.12: Distribution of facilities using DHIS2 data for programme improvement and sharing

Facility level	Frequency	Total	Percent
6	2	2	100
5	1	1	100
4	8	10	80
3	6	27	22
Total	17	40	43

4.9.6 Accountability and sharing

The study sought to determine the number of facilities that use DHIS2 data for accountability and sharing. The results are shown in Table 4.13 below. The results show that 100 percent of level 6, 100 percent of level 5, 50 percent of level 4 and 19 percent of level 3 facilities use DHIS2 data for accountability and sharing. From the results, all the higher level facilities use DHIS2 data for accountability and sharing.

Table 4.13: Distribution of facilities using DHIS2 data for accountability and sharing

Facility level	Frequency	Total	Percent
6	2	2	100
5	1	1	100
4	5	10	50
3	5	27	19
Total	13	40	33

4.9.7 Programme improvement, reporting/accountability and sharing with partners

The study sought to establish the number of facilities that use DHIS2 data for programme improvement, accountability and sharing with partners. The results are shown in Table 4.14 below. The results show that 100 percent of level 6, 100 percent of level 5, 40 percent of level 4 and 15 percent of level 3 facilities use DHIS2 data for programme improvement, accountability and sharing with partners. From the results, all the higher level facilities use DHIS2 data for programme improvement, accountability and sharing with partners.

Table 4.14: Distribution of facilities using DHIS2 data for programme improvement, accountability and sharing with partners.

Facility level	Frequency	Total	Percent
6	2	2	100
5	1	1	100
4	4	10	40
3	4	27	15
Total	11	40	28

4.10 Document Review at the Facility Level

The documents that were reviewed at the facility level are minutes of meetings. A total of forty documents were reviewed from the twenty facilities that were visited. It was found that staff meetings are held where data was discussed in 20 of the 40 facilities that were visited. Some decisions that were made based on data from DHIS2 were to reduce maternity fees in one private facility so that more pregnant women could visit the facilities.

A decision was also made to increase the malaria drugs at the pharmacy during the malaria season in nine facilities. DHIS2 data showed an increase in the number of

malaria patients and this information was passed on to the hospital administrator in one facility so that more malaria drugs could be acquired.

Another decision that was made was to advocate for doctors from the government so as to reduce operational costs. One private facility was incurring many costs in paying the doctors salaries. DHIS2 data showed increased operational costs hence the decision to advocate for doctors from the government so that the government can pay their salaries.

4.11 Challenges in Using DHIS2 Data

The study identified various challenges experienced in using DHIS2 data. Lack of training in DHIS2 was identified by 12 respondents. However, efforts were underway to train more health workers so that they can use DHIS2 for decision making according to the County health records information officer.

“We are required to report using DHIS2 but we have not received training.”

Facility in -Charge, Kamiti Health Centre

Inadequate computers were identified by 6 respondents. Some facilities lacked adequate computers. Poor internet connectivity was identified by 2 respondents. DHIS2 is an online database and therefore internet connectivity is essential.

“Sometimes we don’t have internet connection so we can’t enter or view data.”

HRIO, Saint Francis Community Hospital.

Change of tools without consultation was identified by 1 respondent as a challenge. There are many tools that are used in DHIS2 to capture data. Changing them without informing the staff members concerned can be an issue for the staff that handle records.

“The tools are changed without informing us making our work difficult.” HRIO,

Mathari Hospital

Lack of skills in data analysis and interpretation was identified by 2 respondents. In order to be used in decision making, data has to be analyzed and interpreted. 3 respondents indicated that sometimes the system is not operational and therefore data can’t be entered and viewed. It was indicated by 1 respondent that the system does not generate some of the reports namely morbidity data for under 5 and over 5. Lack of electricity was

identified by 1 respondent. Without electricity computers can't function and as a result data can't be entered or viewed. Lack of computer skills was identified by 2 respondents. Without computer skills, staff can't operate the computer system making it difficult to work with DHIS2.

4.12 Areas of Improvement in Using DHIS2 Data

The study identified areas that require improvement in using DHIS2. Training of staff members in using DHIS2 was identified by 23 respondents. Internet availability was identified by 2 respondents. Automation of service delivery points was identified by 1 respondent as a way of improving use of DHIS2 data. This would ensure that the data capture is complete and accurate.

“Data capture points need to be automated so that the data captured is complete and accurate. There is a feeling among staff members that facilities are there to treat the sick not to keep records.” Facility in-charge, Mathari Hospital.

Employing more staff was identified by 3 respondents.

“We need a HRIO to handle DHIS2 data.” Facility in-charge, Kamiti Health Centre.

It was noted by 3 respondents that there is a need to improve the website. The need to provide computers was noted by 2 respondents so that health workers can have access to DHIS2. Two staff members felt that there was need for them to be assigned access rights so that they could use the system to make decisions.

“I was trained recently but I haven't been given access rights.” Facility in-charge, Kariobangi South Health Centre.

Three respondents cited the need for motivation of employees so as to use the system. The system was always online and would be of no use unless it was utilized. DHIS2 was meant to be used by health workers at all levels of the health system. In some quarters, it was felt by some respondents that the software should be upgraded regularly.

4.13 Data use at the county level

Data was collected from the county level by interviewing the head of planning and the County health records information officer. The study found that staff members had been trained on how to use DHIS2. The staff members who had received training on how to use DHIS2 are the head of planning, the County health records information officer and the deputy health records information officer.

4.13.1 Programme Improvement

The planning department uses DHIS2 data to improve programmes. The department used DHIS2 data to design/revise policies. The policies included the county health policy, medium term expenditure framework, monitoring and evaluation plan and strategic plans. The department used DHIS2 data to hire, deploy, build the capacity of the staff and to acquire medical equipment and supplies. The department further used DHIS2 data for advocacy activities. The department has taken part in various advocacy activities to increase financing, increase stakeholder participation and improve indicators. DHIS2 data is used in meetings to arrive at decisions.

4.13.2 Accountability

DHIS2 data was used to account for resources to the Government of Kenya and development partners. Maternity services in public facilities are free of charge and the County receives funding for costs of maternity services provided. The County also receives funds for acquisition of drugs. They have to account to the Government of Kenya and the development partners how they spend the money. Workload data was also used by the County to account for human resources. The workload reports showed the amount of work and it was compared with the available employees. This informed their decisions to hire, deploy and build the capacity of the employees at the facility level.

4.13.3 Sharing with Partners

The department shared data with partners such as USAID, UKAID, AMREF, UNICEF and WHO. The data was shared many times and it was about the performance of various programmes.

4.13.4 Challenges in using DHIS2

Challenges such as loss of data during migration, inadequate air time for connectivity, staff shortage (HRIO), incomplete data, low quality data and non-compliance by some private facilities were experienced while using DHIS2 data.

4.13.5 Areas that require improvement

The areas that required improvement in using DHIS2 data included training of staff in private facilities. The County health records information officer needed to be assigned more rights like the rights to add and remove data sets and the right to move facilities. One HRIO reported that she did not have some rights and needed to contact the Ministry of Health in order to carry out some activities.

4.14 Document review at the County level

No documents were reviewed at the County level as they specified that the information contained in the documents is confidential.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

This chapter presents the summary of the assessment, the conclusion and the recommendations to programmes and for future research.

5.1 Summary

The study was carried out to assess the use of data from DHIS2 at the Nairobi County and facility level. The general objective of the study was to assess the level of data use from DHIS2 and the specific objectives of the study were to determine the level of data use from DHIS2 at the Nairobi County and facility level.

Key informant interviews were conducted at the facility and County levels. At the facility level, the facility-in-charges and the health records information officers were interviewed. Forty facility-in-charges and thirteen health records information officers were interviewed. At the County level, the head of planning department and the county health records information officer were interviewed.

The results of the study showed that all level 6 and 5 facilities upload data directly to DHIS2. For level 4 facilities 80 percent of the facilities upload data directly to DHIS2 and 26 percent of level 3 facilities upload data directly to DHIS2. The study also established whether facilities have rights to access DHIS2. All level 6 and 5 facilities had rights to access DHIS2. On the other hand, 80 percent of level 4 facilities and 37 percent of level 3 facilities had rights to access DHIS2. The study findings also revealed that 53 percent of facility-in-charges had received training on how to use DHIS2 and 77 percent of health records information officers have also received training.

The main aim of the study was to determine whether the facilities and Nairobi County uses data from DHIS2. All level 6, 5 and 4 facilities use DHIS2. On the other, hand 60

percent of level 3 facilities use DHIS2. The study also sought to find out the proportion of facilities using DHIS2 data for programme improvement, accountability and sharing with partners. For the level 6 facilities, 2 use data for programme improvement, 2 for accountability and 2 for sharing with partners. For the level 5 facilities, 1 uses data for programme improvement, 1 for accountability and 1 for sharing with partners. For the level 4 facilities, 7 use data for programme improvement, 5 for accountability and 8 for sharing with partners. For the level 3 facilities, 6 use data for programme improvement, 5 for accountability and sixteen for sharing with partners.

5.2 Conclusion

In conclusion, the study findings show that there is use of data from DHIS2. This can be attributed to the training of health workers on how to use DHIS2. Initially, only the records staff received training in use of DHIS2. Training of health workers ensures that they can use the DHIS2 data for decision making. More health workers are also being assigned rights to access DHIS2. This also increases the use of DHIS2 data for decision making. However, more needs to be done with level 3 facilities in terms of training and assignment of access rights. Majority of them indicated that they don't use DHIS2 data because they haven't been trained, they don't have access rights and they lack the necessary infrastructure. The results of the study can be useful to other Counties in Kenya. By training more health workers in the other Counties, they can utilize DHIS2 data for decision making. Assigning them access rights would ensure that they have access to DHIS2. The other Counties can display charts showing program performance both at the County and facility level. This would ensure that the stakeholders have access to information on the performance of programs.

5.3 Recommendations

The study results show that all the higher level amenities utilize DHIS2 data for decision making. However, majority of level 3 facilities don't utilize DHIS2 data for decision making due to lack of training, access rights and infrastructure. More needs to be done

especially with the level 3 facilities so that they can utilize DHIS2 data for programme improvement, accountability / reporting and sharing with partners.

5.3.1 Programmatic Recommendations

In view of the above findings, there is need for health workers to be trained so that they can utilize DHIS2 data in decision making. Some health workers indicated that they haven't been trained on how to use DHIS2.

There is need for health facilities to be assigned rights to enter and view data. Some facilities especially the level 3 facilities indicated that they don't have rights to enter and view data. Without these rights, they can't be able to utilize the data for decision making.

Some facilities especially the level 3 facilities indicated that they don't have adequate computers, they lack internet access and electricity. Therefore, there is a need for the facilities to be provided with adequate computers, internet access or modems and electricity. This will ensure that they are able to access DHIS2 and as a result utilize the data in decision making.

5.3.2 Future Research

Areas for future research have been identified from the data of this assessment. At the County level, an issue was raised on the completeness of the data stored in the DHIS2 database. A study can be carried out to determine the quality of data contained in DHIS2.

A functional monitoring and evaluation system has twelve components which are organized in 3 rings. This assessment looked at the inner most ring which is data use. The other rings namely human resources, partnerships and planning, mechanisms through which data are collected, verified and transformed can also be looked at.

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APPENDICES

Appendix 1: Questionnaire

USE OF INFORMATION FACILITY/COUNTY ASSESSMENT FORM

Good Morning / Afternoon.

I am Patriciah Wanja Gathua and I am a student from the University of Nairobi. I am undertaking a study on the use of data from DHIS2 in Nairobi County for policy, advocacy and programme improvement. This exercise will be targeting the management staff both at facility and county level. The aim of the study is to promote data use from the DHIS2 for decision making at all levels of the health system.

Your participation in this interview is voluntary but very important. The responses that you give will be confidential. We will see to it that any declaration or remarks you make will not be linked to your organization or to you as an individual.

Are you willing to participate?

YES ____

NO ____ (stop interview)

Date:	Facility Name:
Start time:	Facility Level:
End time:	Title of Respondent:
Name of Assessor:	Number of Years in this position:
	Age:
	Cadre:
	Qualifications:
	Gender:

A. Use of DHIS2 data

1. Does your facility upload data directly to DHIS2?
 Yes No
2. Does your facility have rights to access DHIS2?
 Yes No
3. If yes to question 2, which rights?
 Enter data
 View data
4. Have the staff members been trained on how to use DHIS2?
 Yes No
5. Does the facility use DHIS2?
 Yes No
6. If no to question 5, what are the reasons for not using DHIS2?
7. What needs to be done to effect data use?
8. What does the facility use DHIS2 for?
 Programme improvement
 Accountability
 Sharing data

B. Programme Improvement

9. (i) Does the facility use DHIS2 data to design and/or revise policies?

Yes

No

ii) What policies have you designed and/or revised?

iii) How many times have you used DHIS2 data to design and/or revise policies in the past year?

10. (i) Does the facility use DHIS2 data for advocacy activities?

Yes

No

(ii) What advocacy activities has the facility taken part in?

(ii) How many times has the facility used DHIS2 data for advocacy activities in the past year?

11. Has DHIS2 data been used to hire staff?

Yes

No

12. Has DHIS2 data been used to deploy staff?

Yes

No

13. Has DHIS2 data been used to build the capacity of the staff?

Yes

No

14. Has DHIS2 data been used to acquire medical equipment and supplies?

Yes

No

15. Does the facility use DHIS2 data during frequent meetings to arrive at decisions?

Yes

No

C. Reporting and Accountability

16. What type of DHIS2 data is used to account for resources to Government of Kenya?

17. What type of DHIS2 data is used to account for resources to development partners?

D. Sharing data with partners

18. Does the facility share data with partners?

Yes

No

19. If no to question 18, why doesn't the facility share data with partners?

20. How many partners has the facility shared data within the past year?

21. How many times has the facility shared data with partners in the past year?

E. Challenges in using DHIS2 data

22. What specific challenges have you experienced among your staff in using DHIS2 data?

23. Suggest any 2 key areas that require improvement in using DHIS2 data?