ASSESSING THE USE OF HMIS DATA FOR HEALTH SERVICES DELIVERY: A HEALTH MANAGER’S EXPERIENCE FROM ILALA MUNICIPAL COUNCIL
ASSESSING THE USE OF HMIS DATA FOR HEALTH SERVICES DELIVERY: A HEALTH MANAGER’S EXPERIENCE FROM ILALA MUNICIPAL COUNCIL

By

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An Evaluation Report Submitted to Mzumbe University for the Partial-fulfillment of the Requirement for the award of Masters of Science in Health Monitoring and Evaluation of Mzumbe University.
2015
CERTIFICATION

We, the undersigned, certify that we have read and hereby recommend for acceptance by the Mzumbe University, a research report entitled *Assessing the Use of HMIS Data for Health Services Delivery: A Health Manager’s Experience from Ilala Municipal council* in partial fulfillment of the requirements for award of a Master degree in Health Monitoring and Evaluation of Mzumbe University.

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DECLARATION

I, Humba, George, do hereby declare to the senate of Mzumbe University that this evaluation report is my own original work, and has NOT been and WILL NOT be submitted for a similar or any degree award in other university.

Signature _________________

Date: _________________
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DEDICATION

This evaluation report is dedicated to my late grandfather Norbert Tengi whose great role to influence success in my academic life has been fruitful. I also dedicate this evaluation report to my mother Lucia Tengi and my uncle Charles Tengi for their financial support during my school life at Mzumbe University. May Almighty God bless them all.
### ACRONYMS

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
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<tr>
<td>CHMT</td>
<td>Council Health Management Team</td>
</tr>
<tr>
<td>DMO</td>
<td>District Medical Officer</td>
</tr>
<tr>
<td>DHIS</td>
<td>District Health Information System</td>
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<tr>
<td>HMT</td>
<td>Health Management Team</td>
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<tr>
<td>HMIS</td>
<td>Health Management Information System(MTUHA)</td>
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<tr>
<td>HIS</td>
<td>Health Information System</td>
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<tr>
<td>IHIDCC</td>
<td>Ifakara Health Institute Development Centre</td>
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<tr>
<td>P4P</td>
<td>Pay for Performance</td>
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<tr>
<td>MOHSW</td>
<td>Ministry of Health and Social Welfare</td>
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<td>MU</td>
<td>Mzumbe University</td>
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<td>UCC</td>
<td>University of Dar es Salaam Computing Centre</td>
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ABSTRACT

BACKGROUND: In Tanzania the problem of weak health information system is highly recognized and Tanzania had undergone several efforts to improve Health Information System (HIS) and Health Management Information System (HMIS). In 2009 the MOHSHW initiated Monitoring and Evaluation Strengthening Initiatives (MESI) to the strengthen HMIS interventions in the country with focus the use of electronic information systems like DHIS2 to facilitate data collection, analysis, interpretation and use in the health sector. Therefore this study assessed the use of HMIS data and its impact on health services deliveries in Ilala Municipal.

METHOD: In this study, A Cross-sectional descriptive case study was used to assess the use of HMIS data in Ilala Municipal. An in-depth interview was carried out between March and May 2015 to 14 health managers from different levels of health facility government and private facilities as well as district level. Using Atlas ti, transcripts were loaded, coded and content analysis was made

RESULTS: The findings from the study showed an increased use of HMIS data in the Municipal. For example all Health Managers asserted that there is an increase of data use for planning, decision making, budgeting, and allocation of resources monitoring, and little for policy making. Despite the increase use of HMIS data; it was also found out that using data for strategic plan tend to be low in the Municipal with exception of district level, hospitals and few private health centres. Data for policy making in government facility is the responsibility of the relevant ministry where as in private sector, used data for internal policy development too. The use of computers systems, training and harmonization of indicators facilitated the increased use of HMIS data in the district. However lack of capacity to analyse, interpret and use data for both data produces and users was seen the main challenge in data utilization for decision making

CONCLUSION: The study found increased data utilization among health managers in the district and that health service has improved as a result of evidence based decision making and as well actions taken to improve the health services. Therefore suggest that; inculcating the information use culture; through capacity building among health workers is vital for substantial use of HMIS data in the health sector.
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CHAPTER ONE

1.0 INTRODUCTION

1.1 Background

For over a decade now a great effort has been made to improve Health Information System (HIS) world-wide and sub-Saharan Africa in particular. A lot of financial resources have been invested to collect population, facility and community based data. The introduction of Health Matrix Network which intends to strengthen HIS by making powerful at country is an example of the global efforts. It focuses on increasing the availability, quality, value and use of timely and accurate health information by facilitating mobilization of financial resources and designing of country own Health Information System (HMN, 2008). The ultimate goal of these efforts is geared toward use of collected data and or information to improve health services delivery (HMN, 2008 & MOHSW, 2009b). However various studies show that health information are not adequately used by stakeholders in making decision about health programs, service delivery and in informing policy.

In Tanzania the problem of weak health information system is highly recognized and Tanzania had undergone several efforts to improve HIS and Health Management Information System (HMIS). In particular, efforts to improve collection of Routine Health information, currently Health Management Information System was traced back in 1980s. By then 46 data collection system were used to collect health information. In late 1980s; deliberate efforts aimed at bringing together 46 parallel data collections system in the health sector were made by the Ministry of Health of Tanzania (MOHSW, 2009b). The 1st Edition of HMIS, in Kiswahili called "Mfumo wa Taarifa za Uendeshaji wa Huduma za Afya"(MTUHA) was officially published in 1993 having been piloted in Mbeya Rural and Mafinga District for dispensary and health centres. These modules were for dispensary and health centers only. The 2nd MTUHA edition was published in 1997 where by the hospital MTUHA module was added in the old MTUHA. By the end
of 1997 all facilities in Tanzania were implementing the MTUHA system except the (4) national referral and (5) zonal facilities (MOHSW, 2009). All these systems collected routine data but less data were used in decision making at facility level which implied that more opinion or experience based decision making was used in deciding about interventions and in forming policy.

Despite of being scaled up and used in all health facilities MTUHA faced challenges. It did not suffice the need for urgency data report in program like TB and HIV/AIDS, donor dependency, unfriendly data collection tools, lack of feedback, Poor integration to Comprehensive Council Health Plan and it was given less national priority as compared to medicine. This resulted into continuing of parallel system and less use of data in district and health facility hence its disintegration in 2004 with lack of fund being the main contributing factor (MOHSW, 2009b).

Not undermining the success of MTUHA; it was reported that after its disintegration in 2004. All Councils maintained data collection and reporting in un-coordinated way. Since then the government through the Ministry of Health and Social Welfare had been struggling to strengthen the HMIS. Finally in 2008 the efforts resulted into the establishment of the Monitoring and Evaluation Section as it was pointed out during the formulation of the Health Sector Strategic Plan III (2009 – 2015). In year 2009 the MOHSW initiated the HMIS Strengthening Initiatives which later was named as Monitoring and Evaluation Strengthening Initiatives (MESI). This made various changes in the system through various approaches. These approaches included documentation of the new HMIS initiatives (with clear vision, mission, objectives, agreed set of indicators, data collection tools, reporting mechanism, feedback, data dissemination and use), getting on board all HMIS funding partners, Implementing partners and HMIS Local and International Technical Assistants (TAs), Selection of appropriate technology among the cloud Information Communication Technology (ICT) as a result District Health Information System (DHIS2) was identified as ideal for Tanzania. (MOHSW, 2009)
The introduction of revised MTUHA books as data sources and DHIS2 software, a web based cloud Information Communication Technology forms crucial part of the new HMIS initiative for routine health data collection and uses. The system has been piloted in Pwani region and showed good performance result and later on has being scaled up to whole country (MOHSW, 2014). Beside under this HMIS initiative data quality in terms of completeness, accuracy and timeliness have been tied to pay for performance (P4P) a method that influence performance in collecting and reporting quality data timely which direct link with reporting indictors related to MGD 4&5 (MOHSW, 2013a).

So far reporting performance of routine data in Tanzania is good and the midterm health sector strategic Plan 2009-2015 review report of 2013; shows that DHIS2 have increased the reporting performance of health routine data and data uses at high level. However data use at the lower level of health facilities has remained to be low (MOHSW, 2013b). This call upon the need to find out reasons why, information are rarely used for decision making and informing policy making at lower level of health facilities.

1.2 Statement of the Problem

There various measures that Tanzania have undertaken to improve routine health data collection, these involves the MTUHA system that uses 12 books to collect data and the standalone DHIS system that was used from 1993 to 2004. In addition to that the government 2009 the MOHSW through Monitoring and Evaluation Strengthening Initiatives (M&E SI) came up with the DHIS2 the appropriate technology selected among the cloud Information Communication Technology (ICT) and which utilizes local experts was introduced. The new HMIS focuses on action oriented use of information for management at each level of the health services and by providing timely quality information to all stakeholders in Tanzania. So far the December 2013 DHIS 2 performance report shows that reporting level has been increased to all districts and at national level it is averaged to be 68% with only remaining 12% to reach the target of 80% (MoHSW, 2014).
In addition the HMIS/DHIS2 performance report recognizes the increased Uses of information at high level for planning and decision-making. Despite these efforts and positive changes in data quality and availability still data use for decision making in health setting at the lower level is minimal. Therefore this study intends to explore why health manager do not make uses of the HIMS data and identify other factors other than culture affecting the use of HMIS/DHIS 2 information for decision making and informing policy at the lower level.

1.3 Evaluation Questions

1.3.1 Principle Evaluation Question

What are the effects of HMIS Strengthening Initiative on data use for lower level health managers?

1.3.2 Specific questions

1. How does HMIS data used to improve health service deliveries?
2. What are the factors influencing data use from HMIS by health managers at lower level?

1.4 Evaluation Objectives

1.4.1 Goal: To assess the effects of HMIS strengthening initiative on data use for lower level health managers

1.4.2 Specific Objectives

1. To explore the extent of data use by health managers in improving health service deliveries in district health facilities.
2. To examine factors influencing use of the results analyzed from HMIS/DHIS data
1.5 Significance of the Evaluation

This study intends to provide information on how health managers have used DHIS2 data at their health facility to improve health services in Ilala Municipal. It highlighted challenges faced by health managers in using data and suggest measures to be undertaken by program implementers so that to address these challenges.

1.6 Description of the HMIS Program

HMIS Program is intended to improve and strengthen the HMIS and information usage at all levels of health delivery system in Tanzania. This on other attempt it contributes to overall strategy of improving HIS in this country and is linked to the Payment for Performance funding scheme (P4P) initiated by the Norway Tanzania Partnership Initiative (NTPI). In particular HMIS Program intends to:

- Ensure that the HMIS provides and disseminate quality essential indicators such as for monitoring the Millennium Development Goals – with a particular focus on MDG 4 & 5
- Improve and strengthen the HMIS and information usage at health facilities, districts, and regional and at the national levels.
- Strengthen the HMIS capacity of the MOHSW at all levels (national, regional, district and facility) and thereby ensure sustainability of the HMIS

1.6.1 Program Major Strategies

The approach to the HMIS strengthening process is flexible and participatory in nature, in the sense that essential data and indicator sets are developed and periodically reviewed with buy-in from health programs and other stakeholders. It is integrative where by coordinating and integrating data from different sources e.g. different health Programs and data of different type’s i.e. Electronic Patient records and statistical HMIS
data. However the whole process focuses on use of information to improve MDG monitoring.

Since the process is flexible and participatory; then strengthening activities were made according to specific criteria regarding data completeness, timeliness and quality, as well as analysis, dissemination and use of information. Such criteria were monitored and evaluated for each facility, district and region taking part in the program – as well as for the national level through the application of the Tool for Assessing Information Usage. All activities of the program were funded by government of Tanzania and largely by Global fund. However specific activities to strengthen HMIS have been highlighted in the program logical model

1.6.2 Program Logical Model

The logical model of the program is the conceptual framework that underlines the program’s major activities and their expected results. It therefore highlights the casual and effect relationship of the program (Gorgens, 2012)

In this logical model, specific activities to strengthen HMIS involves national roll-out of strengthened HMIS, conducting action research to develop and disseminate best practices in one region, revision of HMIS indictors and data sets, development of software and systems integration, and capacity development. These are activities that intend to improve utilization of HMIS data of which is the focus of this paper

The activities in this logical model will be undertaken if the Health Management Information System Input such as human resources, financial and physical resources are available, provided and being used efficiently. When activities have been undertaken, then output like, revised HMIS, health staff trained, and Adoption of DHIS2 will be attained.

However, when the outputs have been attained then outcome like increased availability of quality data and increased use of data for decision making will be realized and when the outcomes are released then with time the ultimate goal of the program which is
improve HMIS in Tanzania will be achieved as seen in Figure 1.6.2.1. With this program then, will lead to improve health system and later improve health outcome.
CHAPTER TWO

2.0 REVIEW OF RELATED LITERATURE

2.1 Introduction

This chapter is going to explore various studies related to health information use in the health sector. In particular the use of HMIS/DHIS2 data by health management at lower level shall be examined. So far there are various efforts that have been made to collect quality data to support health manager in planning and decision making on health services deliveries. However various studies have recognized improvement in availability of quality data but noted that the use of these data at lower level is still minimal. Specifically the chapter shall look on theoretical concept of health information system, Health management information system, data demand, quality availability of data, its uses and theoretical model of building leadership for data demand and uses.

2.2 Health Information System;

Refer to a system that collect, analyze, interpreted health information with the intention of using these information to improve health service deliveries. According to WHO Health Matrix Network (2004), HIS is “a system that integrates data collection, processing, reporting and use of the information necessary for improving health service effectiveness and efficiency through better management at all levels of health services” It is one of six health building block of the health system and involves collection of routine facility and community based data as well as population based data; the non routine. However this study confine to routine part of HIS, the Health Management Information System (HMIS).

2.2.1 Health Management Information System (HMIS)

It is the part of routine system of the HIS. The Routine Health information system is comprised demographic and disease surveillances and HMIS.
According to MHOSW (2013a) “HMIS is the system set-up specifically to collect, store, analyze and interpret health information and health-related information from health facilities”

The information collected help health services providers, health managers, and policy makers to plan make informed decision making regarding services provision.

In Tanzania, the 2009 HMIS strengthening initiative; formed the new currently scaled out HMIS, which is comprised of paper based MTUHA books and the Web based DHIS2 software. This system utilizes 12 MTUHA register books that are used to collect data from the facilities. These are filed by responsible person in each unit and collated and summarized by facility in charge and then monthly reports are submitted to district.

The district MTUHA focal person in Tanzania is primarily responsible for collation of all report and entering data into the DHIS2 system for all the health facilities in the district. However when data are entered into the DHIS2 can be easily accessed by the people with different access permission which limit or allow an individual to access data with a certain magnitude. Therefore the system makes it easier to report data at regional and national level. Furthermore permitted people through the system can analyze data and produce dashboard report for the relevant use. In contrast to the facility level where feedback comes from the districts through printed copies and through quarterly MTUHA review meeting, feedback from national level to the district are provided in form of electronic at DHIS2 Dashboard similarly from the district level to National level data are entered and processed through the web based software. (Mutale et al, 2013). This is as in figure 2.1.
With the New HMIS strengthening initiative reporting performance have improved in sense that the first quarter reporting level performance report of February 2014 shows that the average national reporting levels by type of HMIS - DHIS reporting forms between October - December 2013 was 68% and is expected to increase in the next quarter and the target is to reach 80% reporting performance level. This implies that the progress of data collection and reporting in the country is good and is increasing likely to hit the target soon. Despite this positive changes report from many studies shows that information from HIMS are not adequately used for evidence-based decision making in many developing countries.

2.3 Data demand

The Ministry of Health and Social Welfare of Tanzania highlighted that the health sector reform that focused on decentralization has led the health system to be managed more
closely to the people it serves thus requiring manager to be responsible to the people they serve. With the need of accountability of managers at lower level and the decentralization has generated the need of new information. In addition to that the introduction of budget support; Implementation of local and international strategies, are other factors that influence demand for information (MoHSW, 2009b). Therefore this regular information demand required a reliable health information system where HMIS/DHIS2 came to be found suitable for this.

2.4 Data Quality and Availability

Quality data; is when data is reliable and accurately represents the measure it was intended to present. High levels of data quality are achieved when information is valid for the use to which it is applied and when decision makers have confidence in and rely upon the data. Data availability is when data does exist at the relevant time and ready to be used.

In many developing country including Tanzania data quality and availability has been a big problem in data use for health services delivery. The Ministry of Health of Tanzania recognized that sound information is rarely available in low income developing countries like Tanzania due to under-investment on HIS (MoHSW, 2009b). In particular is characterized by delay in data collection and reporting, incomplete and unreliable data as well as lack of feedback from district and next level to facilities (MoHSW 2009a).

In contrast to above studies there has been recognition on increase in data quality and availability in developing countries including Tanzania. The Routine Health Information Network (RHINO) workshop on Enhancing the Quality and Use of Routine Health Information in Developing Countries 2000, recognized improvements in the timeliness, quality, and presentation of information available to provide managerial support in many developing countries. However noted that data utilization is still low since quality and availability is not a guarantee for utilization of data for decision making. This implies
that health manager should not only ensure availability of quality data but also use these data for decision making

2.5 Data Use

Data use is an important aspect to measure any health information system. According to Karuri (2014)“ the success of a national HIS needs to be measured not only on the quality of data produced, but also on evidence of the continued use of data to improve health system performance, to respond to emergent threats, and to improve health”(p, 41)

In a study done by Wilms et al(2014) on an in-depth, exploratory assessment of the implementation of the National Health Information System at a district level hospital in Tanzania shows that MTUHA data were rare used by hospital management. Many of hospital management understood MTUHA as a tool for data collection and reporting at next level and not used as a management tool. The only tool used for planning was the hospital development plan which some time is influenced by donor through identifying indictors in programs that were funded. This is intended to provide feedback to donor.

In contrast to the above studies an action research through workshop on data use in Zanzibar came up with lesson that when managers increase use of existing data with time the quality of data is more likely to increase (Abouzahr et al, 2005). Therefore call health managers to try their best to use the quality available data.

2.6 The role of data use in strengthening health system

The health system is made of the six building blocks namely health work force, good governance and leadership, medical products vaccine and technology, financing information, and health services deliveries. The health Information block is concerned with correction and use of data to improve the remaining blocks.
Different data sources have different levels of importance to each health system building block. For example, human resources data sources are important to health workforce decision making, while commodities data sources are important in making decisions about logistics, and facility data sources are important for service delivery decision making (Nutley 2012).
Figure 2.2: Conceptual Framework of Data Use and the Role of Data Use to Improve Health Services Deliveries

Source: Adapted from Tara Nutley 2012
The assumption underpinning the successful utilization of HMIS data is that; data uses are associated with activities like assessing and improving the data use context, engaging data users and data producers, improving data quality; improving data availability, identifying information needs, building capacity in data use core competencies, strengthening the organization’s data demand and use infrastructure, monitoring and evaluating and communicating data demand and use successes. Although these activities were not real specified in the HMIS strengthening proposal but in one way or the other were incorporated in major activities. However, successful utilization of HMIS information is thought to bring about improvement in the health system, improved health services and eventually better health outcome.

Since the research focus on outcome evaluation therefore this evaluation will examine three potential areas of data utilization for successful informed decision making. This involves planning, program design or review and policy development

(i) Data use in successful design and program review

Is when data are used to design program or providing health services that meet the needs of the target population thus helping to provide need based health services. During implementation; health managers are required to use data to assess whether they are meeting the objectives and targets they set on delivering health services and whether they are doing what they said they would do. They also use data to decide on how best they can use their resources to improve program performance and health service delivery in particular.

(ii) Data use in successful planning(Strategic planning)

The contribution of data to planning is very crucial in the sense that when data are used to show the current situation and determine trends of various aspects over time; they facilitate future projection. In particular data are used in identifying objectives and targets setting, selection of good and cost efficiency strategies to achieve objectives as well as allocating resources.
(iii) Data use in advocacy and policy development

Is when data are used in identifying and quantifying underserved populations in order to demonstrate a priority of an issue over many others. In addition to that using data to demonstrate a public health burden and the need for new policies.
CHAPTER THREE

3.0 EVALUATION METHOD

3.1 Study Area

The study was conducted in Dar es Salaam, Ilala Municipal is in Eastern part of Tanzania. Ilala Municipal is bounded by Indian Ocean in east, Kinondoni to the north, Temeke Municipal in south, Mkuranga district in south east and Kisarawe district in west and south west. It has an area 210km$^2$ and total population of 1,220,611, with 595,928 being male and 624,683 being women with an average household size of 4 people (Census, 2012). The Municipal has 22 administrative wards with 13 hospitals (6 private 5 public 1 faith-based) facilities, 17 Health centres, and 145 dispensaries. Therefore using Ilala Municipal as a case was suitable due to presence of health managers at different levels of health services deliveries both in public and private health facilities.

3.2 Evaluation Period

This evaluation study took nine months starting from October 2014 to June 2015. The evaluation proposal was developed from October 2014 to January 2015. Data collection with slight analysis was carried out between March and April 2015. However the full swing in data analysis began in the mid April and then presenting finding and discussion started at the end of April to July. By July 2015, the final report of the evaluation was submitted.

3.3 Evaluation Approach

This study used a formative evaluation approach. Both Patton (2002) and Scriven (2003) describe formative evaluation as a study that intends to improve a program or to provide feedback to people who are trying to improve something. However Patton (2002) went
further describing that formative evaluation does not attempt to make generalization of finding beyond area where evaluation takes place. Therefore this study assessed the extent of HMIS data use by health managers in health facilities and provided recommendation to the program implementers on how to improve the program.

3.4 Evaluation Study Design

The study intended to understanding of the utilization of National HMIS data to improve Health service deliveries; a Health Managers experience from Ilala Municipal. The main objectives were to understand how HMIS data are they utilized, indicate any significant change in health services deliveries as well as challenges faced when using such data. Therefore the cross-sectional descriptive case study design was considered to be suitable for this study. Cross-sectional descriptive case study design is “an empirical inquiry that investigates a contemporary phenomenon within its real life context; when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used” (Yin, 2003). In evaluation, cases study design can be a powerful design to show the impact of the program has had to the individual or organization. They are often used to show progress and changes that have been experienced by an individual in particular program since cases done through interview and observation are able to offer a rich description of what changes individuals have experienced for themselves and others(Myers & Barners, 2005).

3.5 Focus of Evaluation and Dimensions

This evaluation studies focuses on inter mediate outcome assessment, the utilization of HMIS data by health managers for decision making in program review, and planning, advocacy and policy development or in decision making process. This outcome of increasing use of evidence was anticipated to come after Assessing and improving the data use context, engaging data users and data producers, improving data quality; improving data availability identifying information needs, building capacity in data use
core competencies, strengthening the organization’s data demand and use infrastructure and communicating data demand and use successes.

With increased use of HMIS data would then improve the national HIS which will further improve the health system and eventually improve health outcome.

3.6 Indicators/Variables

The conceptualization of independent and dependent variables is based on the causal and effect relationship. Since this study undertook outcome evaluation it was important to highlight the causal and effect relationship to determine what changes might have been influenced by. However the study used a case study design which is intended to determine the current state of using evidence in Ilala. Such design is not used to measure statistical significant of what caused what effect. Despite this it may give an insight on changes of utilization of evidence in the area based on people’s experience. Therefore based on the conceptual framework independent variables are HMIS strengthening interventions like assessing and improving the data use context, engaging data users and data producers, improving data quality; improving data availability, building capacity in data use core competencies, strengthening the organization’s data demand and use infrastructure. Dependent variable is improved health services deliveries. In addition there are other intermediate variables like improved HIS, technology, leadership and governance, and human resources.

3.7 Population and Sampling

3.7.1 Target and Source population

The findings are likely to be transferable to many health manager of different cadre in Tanzania at the district, regional or other health institutions where as the source population was the district which was implementing HMIS strengthening program, in Dar es Salaam region where health manager of different cadre were involved.
3.7.2 Study Population

The study employed a case study of Health Managers in Ilala Municipal which constituted three levels of Health workers participants both in private and public health facilities. These involve, District Medical officer, District HMIS focal person, Hospitals Health worker; Health centers Health workers and Dispensaries health worker.

3.7.3 Study Units and Sampling Unit

Study unit was Ilala Municipal as a single case with embedded units of individual health manager at different levels of health facilities such that as district as whole, hospital, health centres and dispensaries both in private and public facilities. Single Case with Embedded Units enables evaluators to look at sub-units that are situated within a larger case. It is powerful method to clarify the case since it allow evaluators to engage in rich analysis in such a way that analysis can be done within the subunits separately (within case analysis), between the different subunits (between case analysis), or across all of the subunits (cross-case analysis) (Baxter & Jack, 2008).

3.7.4 Sample Size and Sampling process

The total sample size used was 14 participants (Health managers) who were involved in in-depth interview stratified by their level of health facilities they worked in and in which purposive sampling was applied. Purposive sampling was preferred to select participants who had enough information to phenomenon under studies (Kombo, 2006). Generally two people were interviewed from each health facilities level (Dispensary, Health centers, and Hospitals) clarified as, two being from private and other two from public facilities. The DMO representative was interviewed as the overseer of all health facilities in the district and district HMIS focal person as data producer.
3.8 Development of Tools and Instruments

3.8.1 Data Collection Tools

In this study, qualitative data collection instruments were used to collect the necessary information. Specifically an in-depth Interview guideline for health manager was used to assess the use of HMIS data after the HMIS strengthening initiative based on individual experience of the health managers.

3.8.2 Data Collection Procedure

A total of fourteen health managers (twelve from different health facility level and two district overseers, DMO and MTUHA focal person) with experience of working before and after implementation HMIS strengthening program were interviewed. An in-depth interview for health managers was undertaken by the principal evaluator and audio-recorded.

3.9 Data Management and Analysis

The principal evaluator ensured all recorded audio file are given a unique identity and stored in folder. Audio file were transcribed and translated in English. All the translated word files were named and then stored in one folder. All folders were stored in a computer, external hard disk and in Google drive online storage device to ensure no data got lost. Using Atlasti, transcripts were loaded, coded and content analysis was made whereby results were compiled and reported.

3.9.1 Data Quality Control

The principal evaluator was the in charge to ensure that the collected qualitative data were complete by checking recording device before and after recording of which were done at field level. The evaluator also ensured that no information was missed out, misinterpreted or translated wrongly.
3.10 Ethical considerations

Ethical approval was obtained from Mzumbe University where as permission to conduct the study was obtained from the Executive Director of Ilala Municipal. All participants were informed about the purpose of the study and informed consent was obtained for interviews. Permission to record the interview was asked by the principal evaluator immediately after introduction. However protection of the study participants was ensured by maintaining ethical research integrity with emphasize to confidentiality.
4.1 Participants

A total of 14 health managers were interviewed in the study. Four health managers participated in an in-depth interview from each health facilities level (Dispensary, Health centers, and Hospitals) clarified as, two being from private and other two from public facilities. The District health management secretary was interviewed to represent the DMO while the district HMIS focal person was interviewed through telephone conversations.

4.2 General state of HMIS Data Utilization by Health managers

It was seen that HMIS data is been utilized by health managers although there is disparity on the extent of utilization between the government facilities and district health managers, but also government and private facilities. Commonly use of HMIS data pinpointed among participants; include data for budgeting, monitoring, planning and to some extent for policy making. The following account identified the use of HMIS data as commonly given by health managers in government facilities

The management uses HMIS data for budgeting of supply of medicine and medical facilities, allocation of human resources in relation to demand depending on information from HMIS (A Health Manager at Government Health Center, April 2015).

However in some private health facility, managers felt that HMIS data for them is for reporting to the government with no much significant to them. This was revealed in the interview when the health manager, explained this about data utilization. “To me is not very much significant, I only use for reporting to government because it is a requirement that all health facilities in Tanzania should collect HMIS data and report. (A Health Manager at Private Health Center, April 2015)
On the other hand, health managers from government hospital and District Health Management Team are more aware of effective use of HMIS data, as compared to private hospital management members. This was noted during the interview when health managers described this, “HMIS helps us to understand how many patients we serve, knowing the most prevailing diseases, shortage of doctors in relation to demand or patients attending at hospital as well as planning for medical supply budgets, and exactly knowing what kind of medicine are they needed most by patients” (A Health Manager at Government Hospital, 2015)

For modern health facilities, HMIS books are rarely used following the existence of parallel systems, especially the Electronic Medical Record System (EMRS). “Sometimes I use it to plan what…medicine can I store for the future for my patients ... depending on prevalent of diseases, adhering to the number and need of patients I get. In reality we use data from our electronic data base system that we have in the facility” (A Health Manager at Private Center, April 2015).

4.3 Specific Use HMIS Data by Health Managers in Ilala Municipal Council

The study also went further into exploring the specific uses of HMIS data in Ilala Municipal Council. Various themes emerged during the analysis. However the common specific themes that emerged in data utilization were , data use in program design or services planning and review, data use for strategic planning in most of hospitals both private and government and only to some big health centre both private and government. The last theme was data use for advocacy and policy making which was prevalent but less effective. These are further described below

4.3.1 Data Use in Program design, Service Planning and Review

It was seen that HMIS data is utilized by health managers with similar uses across all public facilities and some private facilities. To a large extent HMIS data is used for program planning, base of resources allocation, monitoring as a routine process and evaluation. During the interview with the Health managers from public health facilities,
the following account was provided regarding to the use of HMIS data for Program Planning

In annual plan of each department, is where expenditure is made in the sense that is where we make targets. Therefore in developing annual plan there is a part where you need to conduct situation analysis to assess the current situation of various services provision. In situation analysis there is no way that you can’t use HMIS information because it is where data showing base, progress, and targets are available. Example when it comes to malaria, where are we and where we want to be, we must use HMIS data or when it comes to giving privileges on vaccination, you have to select area where coverage is small. This can be shown by HMIS data. Another example is on top ten diseases. In order to know that, which diseases lead in the district you must use HMIS data. These are the one should show which type of diseases is mostly reported, diagnosed and treated. Then by ranking you come up with the most leading diseases. Now when it comes to allocation of resources, prioritization is based on the serious of the case and the burden. The higher the burden the more you need to allocate resources. (A District Health Manager, April 2015)

Describing the routine use of HMIS data, health managers revealed that HMIS data are used in monitoring of health services provision in the district, in the sense that through routine reporting; data are used to show whether a certain services is doing well or not. Hence it is easier for implementer to note and take action to improve services provision

On routine utilization, HMIS data enables to trace the provision of health services in various areas on quarterly bases, so that to improve service provision in case we are not doing well. Therefore, when preparing quarterly report and later on, preparing annual report, there is tracking of targets to show where we have reached. Example at the start of the New Year, in the annual plan, we may have planned to raise the coverage of vaccination in our district from 60% to 80% annually. Therefore after we have implemented the first quarter we must show the achievement of the first quarter from the base (60%) and in case there are problems; what are they? and if they are there, what are the way forward? that is how are you planning to address them in order to increase the vaccination coverage. (A District Health Manager, April 2015)
On the other hand a health manager, at private hospital, described clearly on how they use routine data at their hospital when she said this “Example I have been using data to assess the need, quality and monitor staff workload. Also I use data for monitoring of income and expenditure, as well as to identify and discuss different issues in provision of services and to make follow up of activities in order to make proper decision and more actions”

4.3.2 Data Use in Successful Planning (Strategic Planning)

Data use in strategic planning was another dimension that this study was intended to investigate. It was found that strategic planning in government facilities is normally done at district level and hospital level while strategic planning in private facilities was noted to be implemented only in most of hospital and some few modern and well organized private health centres. During the interview with health managers the following note was given regarding the use HMIS data for strategic planning

In order to develop realistic strategic plan that will reflect the need of the population. It should be grounded in the data. And trustworthy data should come from reliable sources. And reliable source is HMIS data. This is to say that in situation analysis during strategic planning you will need to use HMIS data, collected over long time to show trend and pattern of various diseases and services provision. This will indicate various health problems and their magnitude or the extent of distribution of health services in the area. Now, when it comes to allocation of resources it is important to make prioritization because the problems are many and resources are scarce. Therefore we look on how big the faced health problems are and normally we allocate resources in relation to magnitude of the problem. Therefore it becomes more difficult to prioritize if you don’t have realistic data. (A District Health Manager, April 2015)

4.3.3 Data Use in Advocacy and Policy Development

In its simple definition policy implies general guide of action that has been developed as a result of daily practices or operation activities within the organization. From this study we found that most of the government facilities seam not to use data to develop their
own context specific policy. For them policy is to be formulated by the ministry of Health. This account was commonly given during the Interviews with government facility health managers

We rarely use data for policy development at district level, because data had to be aggregated and sent to the regional level and then national level. At the national level and under the Ministry of Health and Social welfare is where the policy can be made using national HMIS data but also other non routine data. This is to say that we only get involved in policy making forums or we make suggestion over the government on certain policy change (District Health manager, April 2015)

However, the above account is contrary to what was found in the private health facilities and especially hospitals and some health centres. For them apart from having and using the national guideline they have other guideline for management. This was noted during the interview when the health manager from a private hospital said this

it is true that the government provides all the guideline that are required in provision of clinical health services let say HIV care and treatment, PMTCT or TB but we develop and refine our own guideline related to client handling, human resources policy, operational and financial policies. All these guideline are developed in relation to what has been found from analysis and interpretation of available data

4.4 Effects of HMIS Data Utilization to Health Services Deliveries

When data are used, it is a common expectation that we would realize change to existing services. The effects of data use to health services deliveries have never been the easy task to account. This is because it has been difficult to describe link between data use and improvement of health service deliveries. However Nutley (2012) gave an insight that, only when trustworthy data are used as the bases of making choice among alternatives, on what to be implemented and what not, or what to be allocated resource and what not and what to go first before the other. When this is done properly and based on accurate data is when we can realize change in other health system blocks like, human resource, supply of medical product and medicine, and financing. These blocks when are properly handled will result to improvement of health services. In this study
both government and private health managers have observed change in health services deliveries when they gave the following account.

*Frankly speaking in few past years we relayed upon previous year plan to make plans for the next year. It was common practice that we were repeating more or less the same activity or the same budget in the plan. However our plans were not based on realistic assessment of the situations. The reason for this poor assessment is that, we did not manage to compile and analyse the paper based HMIS data properly for the whole year and be able to come with realistic issues. With this it was difficult to understand what we were doing was correct and is what was supposed to be done. But for now we make realist plans and right service provision because we get data from the DHIS2. Example we make sound plan for provision of services like vaccination based on sound evidence from HMIS thus improving provision of services in the district” (District Health Manager, April 2015)

On the other hand the private health managers seem to be more specific when describing, how data use can lead to the improvement of health services deliveries. In the interview the following description was noted

*To my understanding there is improvement when trustworthy data are used in planning, decision making and monitoring and evaluation of services in the hospitals. Example I have been using data to assess the need, quality and monitor staff workload to ensure proper allocation of human resources. Also through monitoring of income and expenditure data; we are able to make proper use of financial resources. Example allocating funds, for maintenance of building, equipment and medicine purchase in relation to the demand and available fund. Also as an administrator the use of data has enabled me to identify and discuss different issues in provision of services and to make follow up of activities in order to make proper decision and more actions to improve services provision. It is true that by doing this our services have improved* (Private Hospital Health manager, April 2015)

4.5 Factors Influencing Use of the Results Analyzed from HMIS data

The objective of this study also was to examine the factors that influenced the use of HMIS data in Ilala district. In this study we found most of the factors can be grouped into two categories namely positive and negative factors. The two categories are further described below.
4.5.1 Factors Supporting Utilization of HMIS Data

In this study, positive factor implies the things, activities, actions or conditions that facilitate utilization of HMIS information in health setting. It was recognized that, Alignment of HMIS indicators, Availability of Training, and the use of system such as DHIS2 and Electronic Medical Record System, were commonly emerged things that were said to support utilization of HMIS data in health settings.

4.5.1.1 Alignment of HMIS Indicators with the District Plan indicators

It is true that have government made amendment on the HMIS books in 2014 to align with the information need of stakeholders. This has facilitated use of data because all data that are required by health managers for planning and monitoring of services are captured, in this new HMIS Books. “MTUHA books have been amended and there improvement because most of data that were missing during planning are now captured. Hence makes it easier in planning when you have complete and accurate information from HMIS” (District health Manager, April 2015)

4.5.1.2 Availability of Training

Availability of training is another factor that was pointed out to facilitate data utilization. At least most of the health manager accepted that they once attended HMIS training. “I have attended HMIS training where we were taught about how to fill the new HMIS book. They also highlighted little on how we can analyse and use data” (Health Manager at Private Health centre, April, 2015). This implies that, trainings have been carried out although some of these trainings were concentrated on using the HMIS books for data collection and reporting, however less effective on analysis and use for the lower level health managers.

4.5.1.3 The use of DHIS2 and Electronic Medical Record System

It was found that there are two systems that are used in collection, storage and manipulation of data in health service provision in the area.
These are DHIS2 and Electronic Medical Record System (EMRS). The DHIS2 is widely known to health managers both in government and private facilities but seem to be effective at district level than facility level. The Electronic Medical Record System is now being used in some private facilities. It uses computer in recording patient records unlike DHIS which uses paper, the HMIS books in the facilities to record patient information. In this study the district Health manager recognized the use of the DHIS2 data when he said “But for now we make realist plans and right service provision because we get data from the DHIS2”

On the other hand, private facilities health managers used rarely HMIS paper based data and instead used more data from Electronic Medical Record System “Sometimes I use HMIS data to plan what... drug can I store for the future for my patients ... depending on prevalent of diseases, adhering to the number of patients I get. In reality we use data from our electronic data base system that we have in the facility”(A Health Manager at Private Center, April 2015)

This indicated that the two system provide health information and when are used effectively they all facilitate substantial use of data for health services deliveries.

4.5.2 Factors Affecting Use of HMIS Data (Challenges for HMIS Data Use)

Negative factors are another category that was found to influence data utilization in health setting. In fact they are things, activities, actions or conditions which impede effective utilization of HMIS information commonly called challenges. Such factors, which were commonly found across all level of health service delivery in the district are, questionable quality of information, shortage for human resources and data work load, inadequate training and lack of participation/stakeholder’s involvement.

4.5.2.1 Questionable Quality of Information

Although this study was not envisaged to assess the quality of information, but it has come to our attention that the quality of information provided in the government HMIS are not good.
This was noted from the participants when one of the health managers said this “I have noted that some patient information’s in the card are not related to information recorded in the register book. However the information provided in the tally book sometime does not match with data recorded in the register books”. This indicated that the quality of information recorded in registers is still questionable and that managers do not trust them hence unlikely to use them effectively for decision making related to different health service provision.

Contrary to above, It was reported that in government facilities, data from donor supported services and programs like RCH, PMTCT and tuberculosis are more reliable as noted from government hospital manager in the interview “to be honest if you look on data which are supported by donor like Malaria, RCH and PMTCT tuberculosis are very good as compared to data related to diabetes, diarrhea and respiratory diseases are not good.” This is because there is more investment in training, follow up and enough recourses including their focal persons.

4.5.2.2 Shortage for Human Resources and Data Work Load

Another challenge noted in this evaluation study is the shortage of human resources in health facilities which causes strain on health worker in facilities due to high data work load. This was commonly noted among the health facility managers. Actually one of them was quoted

_In health facility especially lower level like health center and dispensaries there is shortage of health workers because you may come across one facility has two or three worker and the, HMIS report need, may range from 5 to 7 reports, beside other report like UTI and Malaria, maximum is about 24 report per month. Therefore HMIS involve many papers to fill such as each disease has its own paper to fill. However some information is not necessary in treatment of patient such as the name of the patients. This gives an extra work (Health Manager Private Health Center, April 2015)_
The interpretation of this piece is that, the service providers are overloaded with work, including many patients to attend as well many data to collect and report.

4.5.2.3 Inadequate Training

Inadequate training was another challenge noted from the interview with health managers in Ilala Municipal. This was obviously realized when one health manager from private health center said “Another challenge is that there is no regular training for HMIS especially in private facilities therefore sustainable training are needed whenever change in HMIS are made”

4.5.2.4 Lack of participation/stakeholder’s involvement

This was another concern noted from the interview with health managers. It is true that the government through the Ministry of Health and Social Welfare; spearheaded by M&E section, carried out amendment of HMIS books in 2014. However health managers from the private sector had different feeling about their involvement during the amended of MTUHA book. This was revealed in the interview when the health manager from a private center said this “the condition is not some how good because if you compare the past HMIS books and the recently revised books, the current one are harder to use because it did not involve stakeholder in its amendment”

The interpretation of this passage is that, when the Ministry of health, decided to align the indicator for HMIS book to capture relevant and useful data, and match with the district planning document; it did not involve stakeholders especially from private sector.

4.5.2.5 Lack of Capacity for the available MTUHA Focal Person

Inadequate capacity of MTUHA focal person to analyse, interpret and present data can not overlook in utilization of data. District Health managers noted that
There is one challenge that, we do not have good people to do data analysis. From my experience at the district the existing MTUHA focal person their initial jobs to coordinate HMIS was like mainly data entry. They have no capacity to do in-depth analysis and represent them in terms of graphs and interpretations. Therefore we are given raw data (District Health manager, April 2015)

This suggest that, there is low capacity for technical data producer in the district to analyse and interpret data and present them in simple form like in graphs and tables to make it user-friendly for health managers to use this information for decision making.

4.5.2.6 Negative Attitude about HMIS

This study found that health managers especially in private facilities felt that HMIS is of no importance to them rather than using it for reporting to the high level and to the government. This was reveled when health manager gave this account. "To me is not very much significant, I only use for reporting to government because it is a requirement that all health facilities in Tanzania should collect HMIS data and report." (A Health manager at private Health center)

Therefore it clearly suggest that some Health manager confine themselves to use HMIS for reporting to the high level and to the government only than using HMIS data for improving health service deliveries

4.5.2.7 Lack of feedback

The lack of feedback from high level as a challenge can’t be overlooked this has been seen when health manager at the lower level explained that “We don’t get back but we send information to the district, the district doesn’t send the information to us, I send the information every month at the end of the month” (Health manager at dispensary, April 2015).
4.6 Recommendations from Participants

Health manager recommended that

*It is important that the information provided in the patient card, recorded by the doctor and the information which goes to HMIS it should be the same. On the other hand the data recorded in the register book should match with the data in the tally book. This is when we will be able to trust the data and use it for decision making without any doubt* (Health manager in private hospital)

Sustainable training was another recommendation given by health manager that people capturing data should be given, as well as incentives “*Incentives should be provided to people who are collecting HMIS and sustainable training should be provided regularly and whenever change in HMIS are made* (Health manager in private Health centers)

Not only that but also few items which are important in HMIS book is to be included were recommended “*only necessary information of patients such how age, sex, diagnoses and medicine have to be filled in one book rather than jotting them down to another book*”.
CHAPTER FIVE

5.0 DISCUSSION OF THE EVALUATION FINDINGS

5.1 State of Data Utilization

It was generally found that health managers are, increasing using HMIS data in health facilities and at the district level. Data are being used in budgeting of supplies and services, reporting, identification of problems, monitoring and evolution of services. This concurs with Karuri et al (2014), that HMIS information is fundamental for monitoring, and evaluating of health interventions thus improving the delivery of health-care services and programs.

It was also seen that government hospital and district health managers were more aware of the utilization of HMIS data but make sub-optimal use of these data due to what came to be known as lack of buy in or incentive to use data. The unique reason given for lack of incentive was when the health managers propose budget estimates in relation to the demand, what was returned from the government was the under-resourced budget. Other reasons were similar to what Kagaruki et al (2013) and Mboera etal (2001) found to discourage data use. These included no ownership of data, inability to analyse, interpret and use data and lack of information use culture.

5.1.1 Data Use in Planning for Provision of Service, Program Planning and Review

The role of data in enabling informed healthcare decision making cannot be over-emphasized, for instance good quality routine (HMIS) data delivered in a complete and timely manner can be used in surveillance of diseases of public health importance to prevent or control outbreaks, as well to strategize on adequacy of service delivery under the various disease programs (Karuri 2014)

Result from this study shows that, HMIS data in health facilities are being used in budgeting of supplies and services, reporting, identification of problems, monitoring and evolution of services.
This was in line with Kagaruki et al (2013) most of data are used for reporting, community mobilization budgeting, planning and setting targets. It further concur with Mutal et all 2014 that in Tanzania, data was used for community problem-solving and planning, and incorporated into facility and district annual planning. However it was seen that there was variation in utilization of data in health facilities. Government facilities at the district are seen to use data less for decision making related to supplies and services. This aspect highly depends on the autonomy they have in making decision about administration issues. It holds true that some issues in the facilities or district have to be referred to, approved or decided by the higher level. This was supported by Mboera, (2013) who highlighted that, lack of some autonomy in making decisions related to administrative, financial and logistic issues are some of the reported barriers in utilizing HMIS in decision makings at the district levels. This was in contrast to private facilities where they seem to use more information because they have autonomy to decide what they want.

5.1.2 Data Use in Successful Planning (Strategic Planning)

Results from this study shows that, strategic planning in government facilities was normally done at district level and hospital levels. Mean while strategic planning in private facilities; was noted to be implemented only in most of hospital and some few modern and well organized private health centres. However in dispensaries and most health centers, short term, annual plan were noted to be implemented.

Drawing on account given from participants on data use for strategic planning; it was accepted that HMIS data was crucial for developing realistic strategic plan and HMIS is the reliable source for these data. In particular data in strategic planning is used during situation analysis to show the current situation for instance Identifying problems and their magnitude or the extent of distribution of health services in the area. In addition the results are in concurrency with Karuri (2014) that, HMIS data are used to show trend and pattern of various diseases and services provision thus facilitates in developing objectives, targets setting, and selection efficiency strategies to achieve objectives as well as proper allocation of resources.
Beyond this positive change, some participants indicated underutilization of HMIS data for planning and thus harmonization of HMIS indicators with planning document was needed to influence substantial use of the HMIS data in planning. However, it came to be known that harmonization was done but has not come to an end at the time of data collection for this study.

5.1.3 Data Use in Advocacy and Policy Development

Data as evidence is vital and should be instrumental in informing policy-making processes. The aim is to improve relevance, efficiency and effectiveness of policy reforms (Sagone, 2009). Given the importance of data in policy development, the study found little evidence on utilization of data for policy making at the district level. However the understanding of policy from government health facility and district managers was confined to national health policies ignoring the contextual, internal policies. It is true that policy has to be owned and spearhead by relevant ministry in its development and its implementation but does not jeopardize the chances of developing other internal management policies. This account was seen feasible in the private health facilities and especially hospitals and some health centres where health managers are using the existing national guideline but also have develop their own internal policy for management from best practices or available evidence.

5.2 Effects of HMIS Data Utilization to Health Services Deliveries

Through the use of trustworthy data for planning, budgeting decision making and monitoring and evaluation of services in the health facilities; manager have realized improvement in health serves. This has been possible through assessing the need, quality and monitoring services, products use and staff workload to ensure proper allocation of resources. However monitoring of income and expenditure data has enabled them to make proper use of financial resources in relation to what is demanded and what is to be supplied in terms of services, human resources technologies and Medical products. Therefore this justifies that sound information (HMIS) is the foundation of decision making across the six health building blocks (UG&CDC, 2011).
5.3 Factors Supporting Utilization of HMIS Data

5.3.1 Alignment of HMIS Indicators with the District Plan documents

The government has made amendment on the HMIS books in 2014 to align with the indicators needed by stakeholders. Result from this study shows that, management staff unlike the service provider, liked the changes that were made, because all data that are required in planning and monitoring of services are captured, in this new HMIS Books.

The essentials of matching the indictor with the district planning document can’t be over emphasized. For instance when the indicators are aligned with the district planning document, would subsequently increase data use given that managers have sufficient capacity to use data. That is why William et al (2014) called upon sharpening managerial aspects in facilities and alignment of the hospital planning document with HMIS indicators since it offer a place and capacity to use the available data.

However the review of HMIS indicators has implication to clinicians. It was said that a lot of item has been added during review and many report to fill which imposes data work load to clinician especially those who provide services at the same time capturing data. Therefore with increased work load may again lead to other impending factors like poor data thus affecting usability of data.

5.3.2 Capacity development/Availability of Training

Availabilit availability of training is another factor that was pointed out to facilitate data utilization. Trainings are very important in building capacity of individual to analyse interpreted and make use of information. It was proposed that in order to build a culture of information use; training of healthcare workers in data analysis and other data management skills is vital (Karuri 2014). In this study, it was found that, trainings have been carried out on DHIS 2 throughout the country and thus awareness and skill on how to analyze and use HMIS data is increasing among the health workers (MoHSW 2014). However it would increase tremendously and be more effective if these trainings were concentrated on analysis and using information than data collection and reporting which in most case are
aware off. This is because Manager’s feels that, have no sufficient capacity to use the DHIS2 data, since training are not enough or did not meet their expectations especially those related to analysis, presentation and use of HMIS data.

5.3.3 The use of DHIS2 and Electronic Medical Record System

It was found that there are two systems that are used concurrently in collection, storage and manipulation of data in health service provision in the area. These are DHIS2 and Electronic Medical Record System (EMRS). The DHIS2 is widely known to health managers both in government and private facilities but seem to be effective in government facilities and especially at district and hospital level than other facility level. The Electronic Medical Record System is now being used in some private facilities. It uses paperless in recording patient records unlike DHIS which uses paper, to record patient information in facilities.

It was seen that in private, modern facilities; health managers used rarely HMIS paper based data and instead use more data from Electronic Medical Record System. However all the two system are HMIS and they serve same purpose of providing routine data to Health managers and services providers, to track progress, Identify issues, decided and make changes to improve health services deliveries. The only different is that while the DHIS2 starts with paper, the other start with digital electronically interred data and entails diagnosis and laboratory report. This concur with Wilson (2000) and Kimaro et al (2005) that creative computerization of health management information system can lead to improved efficiencies in planning and delivery of health services, as well as in resource mobilization, data use for M&E and for decision making across the different levels of the health system hierarchy since they allow data to be analyzed at the point of data collection as well as at the subsequent levels. Therefore all together have facilitated use of data but the later is more user-friendly and most effective in clinical settings and where electricity is reliable.
5.4 Factors Affecting Use of HMIS Data (Challenges for HMIS Data Use)

There are several factors that were found to affect HMIS data use in health settings these include; Questionable Quality of Information, Shortage for Human Resources and Data Work Load, Inadequate Training, Low stakeholder’s involvement, Lack of Capacity for the available MTUHA Focal Person Lack of feedback.

5.4.1 Questionable Quality of Information

This study was not intended to assess the quality of information since it was once reported to have improved. However it has been found that poor quality of information exist. Like in many studies shortage for human resources and data work load, inadequate training, lack of participation/ stakeholder’s involvement, lack of capacity for the available staff have contributed to continued existence of poor quality of information recorded in registers hence unlikely to be used effectively for decision making related to different health service provision.

5.4.2 Shortage for Human Resources and Data Work Load

Another challenge noted in this evaluation study is the shortage of human resources in health facilities which causes strain on health worker in facilities due to high work load. When the service providers are overloaded with work, including many patients to attend and data work, the only thing that comes in their mind is to choose what comes first, whether to treat people or fill data into HMIS registers. However they are there for life serving. Hence life serving outweighs the other. Therefore it has been a common practice for the clinicians to give less importance on filling registers than treatment. Due to this, it is obviously no attention is given to details interred in HMIS registers. This has resulted into continued poor quality data and makes health manager not to trust the available data and thus not likely be used. Therefore despite the work load the doctor should strike a balance between treatment and information collection because all are important.
5.4.3 Inadequate Training

Inadequate training was another challenge noted from the interview with health managers in Ilala district. This implies that the available trainings have not sufficed the need of the health managers. Manager’s feels that, have no sufficient capacity to use the DHIS2, since available training to not reach them or does not meet their expectations especially those related to analysis, presentation and use of HMIS data. This is supported by Karuri (2014) that health workers have minimal skills and competencies in the area of data analysis and interpretation; lack of training on how to use health information for planning and other decision making. That is why Nyamtema(2010) proposed the incorporation of HMIS in the curricular for training health worker that were being carried out under PHSDP(2008 -2017) since would both improve knowledge, skills, culture and efficiency of HMIS and reduce the cost for on-the on-job training for health care providers.

5.4.4 Low Stakeholder’s Involvement

This was another concern noted from the interview with Health managers. It was seen that when the Ministry of health, decided to align the indicator for HMIS book to capture relevant and useful data in 2014, it was seen not to involve stakeholders especially from private sector since it was said that a lot of indicators were added. This imposed data work load to clinician especially those who provide services at the same time capturing data. With high work load again the data quality is jeopardized. On the other hand it was seen that the government did involved the stakeholders the only thing is the extent of these involvement since those who did not get the chance to participate are likely to indicate this.

5.4.5 Lack of Capacity for the available MTUHA Focal Person

Results from this study indicates there is low capacity for technical data producer in the district to analyse and interpret data and present them in simple form like in graphs and tables to make it user-friendly for health managers to use this information for decision making.
However many studies have reported that low capacity of MTUHA focal person is still a problem. The inability to analyze and interpret data has affected data use since health managers are not able to easily identify the issue arising from data, make appropriate decision and respond correctly and at the right time.

5.4.6 Negative Attitude about HMIS

This study found that health managers especially in private facilities felt that HMIS is of no importance to them rather than using it for reporting to the high level and to the government. This is in line with a study done by Wilms et al(2014) that many of hospital management understood MTUHA as a tool for data collection and reporting at next level and not used as a management tool. Therefore it clearly suggest that some Health manager understood and some confine themselves to use HMIS for reporting to the high level and to the government only than using HMIS data for improving health service deliveries.

5.4.7 Lack of feedback

The lack of feedback from high level as a challenge can’t be overlooked. Feedback from the high level are important to know how services are implemented and what is the progress and if possible providing recommendations on how to maintain or improve the situation (Karuri et al, 2014). Result from this study shows that, there were no regular feedbacks provided to the lower level facilities on how they are doing. These hold true that at the district they acknowledged to have received feedback through analysis and DHIS2 dash board report which allows people at the higher level to comment or give recommendation on how well are they doing in relation to data collection timelines and completeness. However the higher level managers seem not to recommend to district on how they can best make use of the data since the DHIS2 currently seem to emphasize on data accuracy, completeness and timelines. Given the state of feedback at the district then to the lower level is even hard because most of them can’t make analysis and interpreted from the DHIS2 dash board. In addition they hardly ever receive any feedback, and when such feedback is received it is mostly of the kind that is negative,
and long delayed (Lungo 2008) This affects the use of data and further implies that still people have low capacity to use the DHIS2 and that; trainings are either not adequate or not good enough to meet health workers expectations.

5.5 Dissemination Plan for Evaluation Findings

The findings of this evaluation is crucial for the improvement of the Health System Strengthening Initiative to improve the use of health management information system and delivery of health services in the district, therefore the results will be communicated to M&E section which is responsible for managing the program, Districts Health Management Team (DHMT) and other implementing partners in Ilala District but also will be archived at Mzumbe university library. Full plan See Appendix III
CHAPTER SIX

6.0 CONCLUSIONS, AND RECOMMENDATIONS

6.1 Conclusion

The main purpose of this study was to assess the effects of HMIS strengthening initiative on data use for lower level health managers in Ilala district. This study found increased data utilization among health managers in the district and that health service has improved as a result of evidence based decision making and as well actions taken to improve the health services. This positive changes has been attributed by availability of training, good system like DHIS2 and EMRS and Alignment of HMIS Indicators with the District Plan indicators However poor quality of information, shortage for human resources and data work load, inadequate training and low stakeholder’s involvement are the factor that hinders effective utilization of data. These have been reported by many studies but still are partially addressed or unattended by the government.

6.2 Recommendations

More efforts should be made to build the capacity of data producers and data users on how to collect analyses present and use data for planning, monitoring and evaluation decision making and policy making thus inculcating information use culture. This can be achieved by conducting training that focus on basic objectives, data collection analysis data demand and use and sharing that knowledge within and among facility staff. Continuous education also helps people to understand how the system works better.

The government should try to come up with and implement good strategy to improve human resources for health since most of the facilities have shortage of health worker. Through this, it should think of employing people to help clinicians with the work of capturing data in facilities.
This will help to reduce the work load to clinicians who are strained by the big number of patients they have to attend. This will improve data collection and data quality.

Finally, when the people use data is when they realize how good or bad it is, so emphasize health managers to try their best to use the available data so that to improve data quality and then be able to make informed decisions.

6.3 Policy Implications

The study shows despite the increased HMIS data use in the district, it is still underutilized. It indicates that the health sector is now moving from opinion based toward evidence based decision making and policy making. It further pointed out the factors that if attended by the government it could fuel this movement. Therefore, does appeal more data use to be promoted from top level health manager in ministry to the lower level. This can be done by carrying out data use workshops (trainings) which will be engaging data uses and producers, enhancing transparent and accountability in the public sector decision making, and enhancing evidence based budget support in the ministry.

6.4 Study Limitations

Since the main focus of the evaluation is on the data utilization outcome of the program, so it was difficult to assess the whole cascade of the HMIS Strengthening initiative. Following the use of the case study and the in-depth interview, results may be highly applicable to the area where the study was conducted and thus limits generalization. This is due to data collection was made to few individuals and subjectivity nature of the study where both the participants and researcher are likely to influence the result. The later was handled by the evaluator through ensuring that no information was missed out, miss-interpreted or translated wrongly and by maintaining ethical research integrity.

Therefore this study has provided an in-depth understanding of how and the degree of HMIS data use by the lower level health Managers and indicated the change in health
services delivery that might have been influenced by evidence based decision making, planning and monitoring as noted by health managers themselves. However what has been learned from this particular case can be transferable to similar situations depends on the reader’s ability to determine and apply these findings to his own context.

6.5 Areas for Further Evaluation

We have seen increased use of HMIS data and improvement in health services delivery in Ilala district, however there is a need to do further assessment on data quality and evaluation of training that are carried out to promote quality data collection, analysis, interpretation, data demand and use in the area. In addition, conduct a comprehensive quantitative studies to assess factors for data use, the extent of utilization and the impact of data use for health services deliveries both in Ilala and other district.
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APPENDICES

APPENDIX I

EVALUATION PLAN

<table>
<thead>
<tr>
<th>SN</th>
<th>Activity</th>
<th>2014 Months</th>
<th>2015 Months</th>
<th>Responsible</th>
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<td></td>
<td></td>
<td>F</td>
<td>O</td>
<td>N</td>
</tr>
<tr>
<td>1</td>
<td>Evaluability Assessment</td>
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<td></td>
<td></td>
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<tr>
<td>2</td>
<td>Preparation, and development of proposal</td>
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<td></td>
<td></td>
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<tr>
<td>3</td>
<td>Securing ethical clearance from Mzumbe university</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Visiting study area</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Pre testing the interview guide</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Final amendment of interview guide</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Data collection</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Qualitative data analysis</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Report writing</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>10</td>
<td>Discuss the result of evaluation with main stakeholder reach agreement</td>
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<td></td>
<td></td>
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<tr>
<td>11</td>
<td>Final report submission</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Thesis defense</td>
<td></td>
<td></td>
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APPENDIX II

BUDGETS FOR THE EVALUATION

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<th>No</th>
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<th>Quantity</th>
<th>Unit price</th>
<th>No of Days</th>
<th>Total Price</th>
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<td>Personnel cost</td>
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<td>-</td>
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<td>5.</td>
<td>Transcribing and Translating</td>
<td>Per Interview</td>
<td>14</td>
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<td>6.</td>
<td>Tape recorder</td>
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<td>1</td>
<td>240,000</td>
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<td>7.</td>
<td>Communication (Mobile Card)</td>
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<td>5,000</td>
<td>12</td>
<td>120,000</td>
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<td>8.</td>
<td>Final dissemination workshop</td>
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<td>9.</td>
<td>Dissertation defence</td>
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<td>100,000</td>
<td>1</td>
<td>100,000</td>
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<tr>
<td></td>
<td><strong>Total cost</strong></td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td><strong>Contingency</strong></td>
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<tr>
<td></td>
<td><strong>Over all total cost</strong></td>
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<td></td>
<td></td>
<td></td>
<td><strong>3,045,000</strong></td>
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APPENDIX III

DISSEMINATION PLAN

Dissemination Plan is way and arrangement of how the evaluation findings will be shared and distributed.

Table 5.1: Dissemination Plan

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<tr>
<th>SN</th>
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<th>INFORMATION NEED</th>
<th>DISSEMINATION FORMAT</th>
<th>WAY OF COMMUNICATION</th>
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<td>Report</td>
<td>Report submission</td>
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<td>Program performance &amp; Effects</td>
<td>Report</td>
<td>Report submission</td>
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<tr>
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<td>UCC</td>
<td>Program performance</td>
<td>Published report</td>
<td>Website/journal link</td>
</tr>
<tr>
<td>4</td>
<td>IHIDCC</td>
<td>Program performance</td>
<td>Published report</td>
<td>Website/journal link</td>
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<td>CHMT</td>
<td>Program Results</td>
<td>Report</td>
<td>Report submission/Meeting</td>
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</tbody>
</table>
APPENDIX IV

In-depth interview Guide

Establishing rapport:

Greetings! nice to meet you, My name is .................., a master student from Mzumbe University, I am currently doing my research on Utilization of HMIS Data for Health Services Delivery in Ilala District Facilities and I am glad that you are part of it. This study is a requirement for completion of my master degree and that can be fulfilled by the information that you will provide. The information you provide will be confidential thus won’t be revealed except for this purpose only. I kindly ask you to participate in this conversation. I value your contributions towards success of the study and there is no right or wrong answers except the truth that comes from you. Our interview may take about 20 - 30 minutes. Can we start now?

Interviewing

1. Please I would like to know on what you understand by District health information system (DHIS)
2. Based on your experience, opinion how would you describe the use of data before the implementation of MTUHA programs in your facility
   a. **Probe:** What information did you use in planning, program review before MTUHA? How?
3. And what is it now?/Based on your experience, opinion how would you describe the use of HMIS data after the implementation of MTUHA programs in your facility
4. What can you say about the change in provision of services after using data from HIMS
Probe: what and how the change happened.
What are the changes related to human resources, medical supply, governance, finance and technologies?
Probe: If no changers give your opinion why you think the change did not happen
5. Can you explain what would be the factors affecting data uses in your area