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ADDIS ABABA UNIVERSITY
SCHOOL OF GRADUATE STUDIES
SCHOOL OF INFORMATION SCIENCE
AND
SCHOOL OF PUBLIC HEALTH

ASSESSEMENT OF THE HEALTH MANEGEMENT INFORMATION SYSTEM
(HMIS) IMPLEMENTATION STATUS IN PUBLIC HEALTH FACILITIES AND
INISITUITIONS IN AMHARA REGION THE CASE OF BAHIRDAR CITY
ADMINSTERATION

By

HELEN TESEMA

June, 2011

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A Thesis Submitted to the School of Graduate Studies of Addis Ababa University in
Partial Fulfillment of the Requirements for the Degree of Master of Science in Health
Informatics

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Declaration

I declare that the thesis is my original work and has not been presented for a degree in any other university.

Date

This thesis has been submitted for examination with my approval as university advisor.

Advisor

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Dedication

This the work is dedicated to my two sons; Dawit Abey and Kaleb Abey who didn't have their Mother's follow-up and care during my study.

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LIST OF ACRONYMS

AAU:	Addis Ababa University
AIDS:	Acquired Immuno Deficiency Syndrome
ANRHB:	Amhara National Regional Health Bureau
BPME:	Budget, Planning, Monitoring and Evaluation
BPR:	Business Process Re-engineering
CSA:	Central Statistics Authority
DHIS:	District Health Information System
Epinfo:	Epidemiological Information Software
FMOH:	Federal Ministry of Health
HEW:	Health Extension Worker
HIS:	Health Information System
HISP:	Health Information System Program
HMN:	Health Metrics Network
HMIS:	Health Management Information System
HP:	Health Post
HR:	Human Resources
HSDPIII:	Health Sector Development Program III
HSEP:	Health Service Extension Program
ICT:	Information and Communication Technology
MDGS:	Millennium Development Goals
M&E:	Monitoring and Evaluation
NSS:	National Sentinel Surveillance
PATHS:	Partnership for Transforming Health System
PASDEP:	Plan for Accelerated Development to End Poverty
PHC:	Primary Health Care
PHCU:	Primary Health Care Unit
POA:	Plane of Action
PRISM:	Performance of Routine Information System Management
RHBs:	Regional Health Bureaus
SWOT:	Strengths, Weaknesses, Opportunities, and Threats
WHO:	World Health Organization

ABSTRACT

Background: Health information systems are critical to improving health system effectiveness and monitor and evaluate performance. However, the utilization of HIS at facility level has been frequently reported to be poor.

Objective: To assess the magnitude and factors affecting Health Information System (HIS) use and data quality in public health facilities found in Bahir Dar City Administration..

Methods: a cross sectional, descriptive study was conducted in the health facilities found in Bahir Dar City Administration. A structured questionnaire was filled by 170 health professionals and in-depth interview with 14 for qualitative candidates a total of 184 health professionals and HIS focal persons were included in the study.

Result: Regarding the quantitative there were 170 respondents and among these 161(94.7 %) were health professionals. Majority of the respondents qualification were diploma nurses Only 53 (30.6%) respondents attended training on basic computer. only 37 (21.2%) budget assigned for HMIS activities. 78 (45.6%) of the respondents confirmed the use of information for decision making, only (18.3%) reported the existence of incentive that encourage information use, 73 (42.9%) were despicable that there is policy in the facilities for information use , 78 (47.5%) revealed that there have legislative and regulatory environment for data security These show that health facilities were found to perform poor in terms of basic inputs to HMIS; inadequate processes and insufficient outputs. The use of HMIS in the facilities is thus found to be very low because of lack of appropriate technology skilled human resource and coordination effort, although the institutions like regional health bureau and sub City office were performing relatively better.

Conclusion and Recommendations: it can be concluded that the information utilization level and data quality of HMIS in health facilities under study is far below the standard expectations. It is recommended from this study that a common understanding should be

reached between the facilities and the responsible organs so that facilities could know the use of the data they generate to local need rather than sending reports upwards.

Key words: Health information systems, Data collection; Decision making, data quality.

1. INTRODUCTION

1.1 BACKGROUND

Ethiopia is currently implementing Health Sector Development Program (HSDP). The ongoing HSDP IV (2010/11-2014/15) is aligned with and time frame of the wider National Development plan and makes the health chapter of the five year Plan for Accelerated Development to End Poverty (PASDEP), both geared towards achieving the Millennium Development Goals (MDGs) (1).

One of the major components of the HSDP is strengthening the health management information system (HMIS) of the country. HMIS represents a combination of health services based data source. The primary aim of HMIS is to support informed strategic decision-making by providing quality data that help managers and health workers plan and manage the health service system. There have been repeated efforts to reform the HMIS in Ethiopia. The FMOH, considering the crucial role that HMIS would play in the successful implementation of HSDP's strategic plan; has put HMIS as one among the eight components of the HSDP since HSDP I in 1997 (2).

According to WHO country health information system strengthening HMIS must start with a broad-based assessment of the system's own environment and organization, responsibilities, roles and relationships, of the technical challenges of specific data requirements. The health information system should be assessed in order to allow objective baseline and follow-up evaluation (3).

As a step towards developing long term plan of the national HIS, The six components such as: resource for health information, identification of core health indicators, data source and data collection methods, information management processes, information products and data dissemination and use, with which the assessment was conducted were;

(1) Context and resources for health information (2) Identification of core health

indicators. (3)Data sources and data collection methods (4) Information management processes, (5) Information products and (6) Data dissemination and use (4).

According to the assessment results, among the six major components, three were very weak. These were HIS resources, data management and dissemination and use rated as “not adequate”. Among the HIS resources, policy and planning, as well as HIS institutions, human resources and finance were rated inadequate, while HIS infrastructure is rated present but not adequate. Referring to dissemination and use of health information, analysis and use was found to be present but inadequate, while planning and priority setting was rated the least. On the other hand policy and advocacy, resource allocation and implementation and action were rated not adequate (4).

Based on those quite a number of reforms have been made by the FMOH to improve the situation both at the Federal and Regional levels. The reformed HMIS in Ethiopia was launched on June 8, 2007 with the goal of creating comprehensive and standardized national HMIS for evidence based planning and management of health services as well as decision making at all levels-community, health facility, woreda, regional and federal levels (5).

The new HMIS program focuses on information use, data quality, data burden, human resource, information communication technology (ICT) and financial resource. It is believed to improve health system efficiency and effectiveness through the following guiding principles: standardizing, recording and reporting forms, integration, simplification, human resource development and ICT application (5).

The process of strengthening HMIS will become a continuous cycle in which implementation is followed by evaluation and reprogramming. The monitoring and evaluation of the current HMIS will enable stakeholders to measure progress, document lessons learned and re-programme future iteration of the country health information system. Ultimately the desired results of the strengthening process are the improved

availability and greater use of quality health information. This paper describes the current implementation status of HMIS and presents a better approach to overcome the shortcomings of the new HMIS design and implementation efforts by proposing.

1.2 STATEMENT OF THE PROBLEM

The National Health Information System of Ethiopia focuses on the promotion and prevention of disease targeting on primary health care (PHC) services through provision of information for planning and managing the health care system (6). Health promotion and prevention of disease is facilitated with decentralized administration in which Woreda have the mandate to decide on their budget. Thus districts become the most appropriate level for top- down and bottom-up planning and coordinating stakeholder effort through improved health information system (6).

Although reliable and timely health information is the foundation of public health action, it is often unavailable due to under-investment in systems for data collection, analysis, dissemination and use. Consequently, decision-makers cannot identify problems and needs, track progress, evaluate the impact of interventions and make evidence-based decisions on health policy, programme design and resource allocation. The access and use of information by program managers and service providers help resolve bottlenecks and improve program implementation. This eventually leads to improvement in health service delivery and thereby improvement in the health status of the population.

Decision-makers at all levels of the health system need information that should be relevant, reliable and timely. Unfortunately, even when high-quality information is available this does not guarantee its appropriate use in the decision making process. The literature abounds with anecdotal accounts of the underutilization of information – a situation that has led to the conclusion that much of the material remains unprocessed, or, if processed, unanalyzed, or, if analyzed, not read, or, if read, not used or acted upon.

In Ethiopia the major problem that contribute to the previous(AS is HMIS) not serving its purpose and meet its objectives are lack of attention given to HMIS, shortage of resource and lack of strategic plan as well as lack of integration, absence of standards and guidelines inadequate staffing and poor ownership. It is also characterized by burdensome data collection and inadequate staff skill. The information flow is also fragmented and characterized by parallel reporting system with no integration among the various subsystems. This resulted in redundant and conflicting reports and poor quality of data in terms of accuracy and timelines, preventing information users from effective utilization of information for decision- making and research (6).

In order to alleviate the above mentioned problem a new HMIS is implemented. The three overarching principles that guided the design and implementation of the new HMIS (TO-BE) are the standardization, simplification and integration. How well are health information systems performing currently in Ethiopia? No sufficient researches are made in this area to assess the implementation status of the new HMIS; to know where we are now assessment should be done unless it is obviously difficult to give a straight forward answer for, aside from the continuous assessment reports delivered by the Ethiopian Ministry of Health. In addition, the assessments so far have been viewing HMIS from the point of report delivery rather than the capacity of the facilities to generate those reports or use the data for their own local decisions.

This study tries to assess the nature and problems related to the new HMIS implementation program in public Health facilities in Bahir Dar Administrative City of the Amhara Region. It also tries to asses the implementation process in terms of weakness and strength in data capturing, writing, design, maintaining data (information) quality, and encouraging information utilization for action; assesses the contribution of technical support to strengthen HMIS units at facilities.

1.3 RESEARCH QUESTIONS

This research is mainly aimed answer the question to what extent the HMIS implementation program is more successful. This study is especially designed to assess and give answers for the following research questions.

1. How data recording and reporting is working according to the new HMIS?
2. How the health data quality and utilization of information for action contribute for informed decision making process?
3. What are determinant factors for proper HMIS implementation?

1.4 SIGNIFICANCE OF THE STUDY

This study serves as starting point for the assessment of the current HMIS based on the situation in public facilities to identify the strength and weakness of the system. Furthermore, factors affecting the generation of quality data and utilization of information. The findings and recommendations of the study would contribute towards the ongoing efforts of developing better health management information system. Specifically, the findings of the study benefits facilities and institutions by helping them to identify their weakness in implementing the new HMIS and propose better ways that help them improve their information system. The FMOH and ANRHB would also be beneficiaries as it helps them to get quality information from the facilities.

1.5 The Scope of Study

This study focuses on the assessment of the new HMIS practice based on Health Matrix Network (HMN) and Performance of Routine Information Management (PRISM) framework that emphasize the production of quality data and the continuous use of information for action along with adequate human, material and financial resource. This study is therefore limited to assess the new HMIS implementation status only four health facilities

2. REVIEW OF LITERATURE

2.1 Introduction

There are various efforts invested to improve the health care services globally. Improving quality of health service for instance, is a major component of the millennium Development Goals (MDGs). Among the efforts made to an effective health care service, one is improving the HMIS of the facilities. Health information management system plays major role on making evidence-based decision for a better health of a nation (1).

2.2 Theoretical concepts of Health Management Information System

Health information system (HIS) is used to refer to the predominate concept of a formal and structured health information system set up to support and facilitate health management decision-making at different level of any health system. It is designed to carry both epidemiological information (health prevalence, incidence, mortality, and morbidity statistics) and administrative information (resource in put services utilization).

Effective and efficient HMIS would provide district health manager with the information required to make effective strategic decision that are the vehicle for district performance and sustainability in those decentralized health system. Planning and system management HIS resource includes the policy, legislative, regulatory, management and financial environment that must be in place; and the infrastructure and resources required to ensure a fully functional health information system (6).

The desired HMIS will meet two performance criteria

- Consistent production of quality data
- Continuous use of information

Goal

- **Comprehensive** and **standardized** national HMIS for evidence based planning and management of health services HMIS for

- **decision-making at all levels** - community level, health facility, woreda, regional and federal

Guiding principles of the new HMIS are:-

- Rationalize workflow at all levels
- Improve data quality & data burden

Standardization

- Standard data collection, reporting & guidelines

Integration

- Cross program reporting tools
- Integrated data channel

Simplification

- Report only data elements required by indicators (7)

In order to make information a real “resource” (input) to solve health problems at all levels of the health services system, it should fulfill the following characteristics or features:

- Standardized reporting and recording system at different levels,
- Define essential indicators, and
- Assure quality of information (data)

Standardized data collection tools: These tools capture medical, demographic, and financial transaction information on clients and patients. They may be registers, cards, or files retained at the facility; they may also be cards retained by the client or patient. Because these are the sources of HMIS data, they must include the data required for the HMIS indicators.

Standardized reporting instruments: Standardized reporting formats, including tally sheets, designed to collect the HMIS data from the client / patient records. Assurance of stationary supply and training are crucial for improving and maintaining data quality, and thereby meeting HMIS performance standards.

Standardized indicators: A shared set of cascaded indicators, appropriate for each level, to monitor sector-wide and program performance is an essential foundation for M&E, as stated in the HSDPIII Strategic Plan. The agreed indicators are the most important management tools for monitoring, review and evaluation purposes. Indicators are always directly linked to the objective setting of a programme. These indicators come from several different health information suppliers. The HMIS, which draws its data from routine service delivery and administrative records, cannot supply the data to calculate all indicators. For example, behavior and attitudes cannot be captured through the HMIS; they require a survey. Similarly, in a setting like Ethiopia, with a developing, but still relatively weak, vital events registration system, population-based mortality rates must be captured through surveys(8).

HMIS: “ An HMIS is an organized system of record keeping, reporting, processing analysis, use and feed back of information which is designed to provide different level of beneficiaries (clients, community, service providers, managers, planners and policy makers) with timely and relevant information necessary to formulate policy, plan, implement, monitor, supervise and evaluate health programmers”(8).

Quality of data: Justifies its precision to promote evidence based decision making. Low quality data thus, results in poor performance monitoring which results in irrelevant decision making. Thus there is a need to measure the quality of data generated. Data quality can be measured using the following attributes (9).

- **Accuracy and validity** – of the original source data;
- **Reliability** – data are consistent and information generated is understandable;
- **Completeness** – all required data are present;
- **Legibility** – data are readable;
- **Currency and timeliness** – data are recorded at the time of observation;

- **Accessibility** – data are available to authorized persons when and where needed;
- **Meaning or usefulness** – information is pertinent and useful

2.3 The Health Sector Reform

The World Health Organization has defined health broadly and positively as state of complete physical, mental, social and physiological wellbeing; not merely the absence of infirmity and disease (10). This suggests that clear understanding of the concept and definition of health from societal perspective is important for the better management of health sector since health is viewed not simply as a problem of disease but of all factors contributing to lower the quality of life that the poor experience (11).

Domain of HIS

In terms of demand, the domains that the health information system should address include [12]:

- Health determinants (socioeconomic, environmental and behavioral factors) and the contextual and legal environments within which the health system operates;
- Inputs to the health system and related processes including policy and organization, health infrastructure, facilities and equipment, costs, human and financial resources and health information systems;
- The performance or outputs of the health system such as availability, quality and use of health information and services;

The global public health reform emphasis on social effort for the betterment of health system at large, this public health reform is characterized by the shift from curative to preventive care from individual and hospital care to community and public health care, from centralized to decentralization health care, from a specific project to comprehensive approaches pectoral approach. This reform intern has necessitated the restricting of

fragmented health information system into single comprehensive health management information system. The restricting of health information system has become an important trend on the entire developing world since the adoption of Primary Health Care as a global strategy for achieving 'health for all' (8).

The District health information system software is developed in 1998 and has been customized into national need in several countries and translated in to many languages, such as, Portuguese, Swahili, Spanish, Telugu, Russian, Mongolian, French, Chinese and Vietnamese. The main mission of HSDP has been maintained since DHSI has been expanded to many other countries in Africa and Asia and about 70% of HSDP activities are training for health workers and health managers since large scale training and support schemes in the use and management of health information consume 70-80% of the resource allocation to system development(12).

Ethiopia is implementing a 20-year plan with a rolling five year program called Health Sector Development Program (HSDP).Currently, HSDP IV (2010/11 – 2014/15GC) is in its second year of implementation where HMIS is one among the seven components of the HSDP. The health information system (HIS) of the country is structured hierarchically from the health facilities to the Federal Ministry level. HMIS is primarily carried out by the Ministry of Health but the Central Statistics Authority also plays an important role in conducting different activities related to HMIS like censuses, sample surveys of various types and registration of small scale vital events (1).

According to HSDP III, delivering health care services to the population is a complex attempt that is highly dependent on information for proper planning, implementation, monitoring and evaluation which requires functional HMIS. In Ethiopia, it has long been recognized that health information is rarely used for management decision-making. A number of data is collected from different health facilities and reported in a number of formats, which is in poor quality, incomplete and untimely. The major problem for this is

that, lack of awareness given to HMIS, shortage of resources (human, material and financial), and lack of strategic decision (1).

2.4 Assessment on HMIS in Developing Countries

To the extent this gap persists, Rwanda's national health information systems will be affected by decisions made by district-level actors and stakeholders. Districts may develop independent information management approaches. Some district health information management may become erratic or fall into disuse if they have little or no central guidance and support. Given that a core value for any national HMIS is to provide national-level information to help inform leaders as they make health policy and other decisions affecting the sector and the population's health outcomes, health systems strengthening in Rwanda requires at a minimum that districts coordinate their systems. Coordination requires resources, especially to align data standards, measurement methods, content, and technology; these issues constitute existing challenges in Rwanda today (13).

A report from Thailand noted that there are a number of constraints common in many developing countries in terms of data collection and transmission, data presentation and analysis and, use of HIS for decision making at different levels of the health system. These are said to be mainly due to inadequate training of staff in data presentation, analysis, and use, and lack of feedback mechanisms (14).

Another study from Malawi stated that the reasons for inadequate use or non-use of information are lack of accountability and leadership, resource constraints, lack of holistic/vision approach, lack of management skills and personality, punitive environment, lack of incentives, inadequate dissemination of information, organizational and behavior and absence of change strategies. It is added on this study that interventions to improve the HIS in the least developed countries, often donor driven, have often focused only on a specific subsystem, primarily (15).

The decentralization reforms and their Impact on Rwanda's HMIS assessment began in November 2005. At that time, processes for health data collection and transmission for the existing national health data system were in place and, in principle, understood by data collectors and compilers at health centers and district hospitals. Facility staff was responsible for initiating the SIS (simplification, integration, standardization) information flow by recording patient information on paper in registers maintained at the points of contact with patients. Heads of nursing, chiefs of services, and nurses collected or aggregated data from the registers on paper forms to compile periodic SIS (simplification, integration, standardization) reports (16).

In Nigeria there has been extensive progress made since 2003 in strengthening data handling processes and infrastructure and there is support from key role-players at all levels. Data is available for managers on a variety of issues and some health workers are getting feedback on coverage and quality of service delivery. The challenge is to roll-out the system nationally by strengthening information management through improving access to, and use of reliable information for the management of health programmes and services (17).

The study conducted on the HMIS in Tanzania indicated that, HMIS has successfully been rolled out across the entire country and health workers have been trained at all levels. In addition, computerization is complete and includes all of the regions. However, in spite of those substantial gains, the use of data generated through the system is insufficient to allow managers and policy makers to make informed decisions either at the district or national level. This is due in part to incompleteness of reporting, data inaccuracy, a lack of timeliness and combined with insufficient analysis. To date, considerable investment in HMIS in Tanzania has taken place. Urgent action is now required to ensure that the cumulative resource investment is not further jeopardized (12).

2.5 Evaluation Research on HMIS in Ethiopia

Assessment study on HMIS in Addis Ababa by Alganesh in 2005 showed that the existence of significant awareness on data generation and timing reporting, effective use of the adopted DHIS showing a good start to expand in the long run. The study recommended a short-term and long-term action that Addis Ababa Health Bureau should take. As a short-term task capacity building activities at sub city level is necessary to play pivotal role of gaping report generated at health center, to perform a Variety of analysis and reduce load on regional HMIS As long-term task, adequate ICT infrastructure, trained staff, computer skill, improved staff competence information utilization for decision making were underlined (18).

FMOH HMIS process re-engineering assessment report of 2006 showed that HMIS should focus on the performance of the system in terms of information use and data quality by advocating the need for fundamental rethinking and redesigning such as non value adding recording-reporting steps, low accuracy of data collected and reported, lack of reporting at all levels absence of standard and uniform formats and lack of skilled human resource (19).

The Ethiopia National Health Information System assessment report of 2007 also identified that HMIS as the major problems of the health sector. It is characterized by inadequate staff skill, burdensome and fragmented information flow and characterized by parallel report reporting system with no integration among the various sub-system. This resulted in redundant and conflicting reports and poor quality of data in terms of accuracy and timeliness, preventive information user from effective utilization of information for decision making and research In short, at most HIS does not deliver its most important product – quality information that supports monitoring and performance improvement. As a result, M&E is also weak, since it lacks the foundation of HMIS to supply reliable data.

The Ethiopia HMIS/M&E weaknesses manifest in several ways:

1. Incomplete institutionalization
2. Un standardized data collection tools
3. Un integrated reporting and data transmission
4. Weak information use (analysis and interpretation).
5. Limited resources for HMIS/M&E (21).

The study conducted by Azeb on factors affecting HIS use, the private and public facilities in Addis Ababa in 2009 revealed that the necessary input to MIS such as legislative and planning framework, unit, personnel, budget, equipments, training and coordination mechanisms among other sub components were not sufficiently allocated on the facilities in Addis Ababa. HIS process in these facilities focused on data collection and sending –report presentation (22).

Assessment on HMIS at public hospitals by Meseret in 2009 also pointed out that the processes of data collection; storage and dissemination on the supply side and provision of resource, regular supervision and feedback on the demand side were weak. Those resulted due to the organizational, technical and behavioral determinates. There was low commitment of decision making bodies in allocating resource (human, material, financial), developing human skill and infrastructure (22).

The study conducted by Tilahun on the assessment of new implementation status of HMIS in Addis Ababa Health Facilities in 2010 showed that a large number of respondents were participating in the manual base HMIS activities through a well designed data collection and reporting format, short period on job- training, absence of incentive, motivation and lack of management support lead to poor information use culture that limited mainly sending purpose. HMIS implementation suffered from ownership, follow-up, communication and leadership (23)

2.6 Frameworks of Evaluation for HMIS

The Health Metrics Network (HMN) is a global partnership that works to increase the availability and use of timely and trustworthy health information in developing countries and globally. This partnership supports the use of a common framework and guidelines for assessing, strengthening and monitoring health information systems, for better decision-making and contributes to the development of new knowledge related to health information systems (HIS) development and management (24).

HMN Framework is instituted on the premises that better health information means better decision making and therefore better health for all. HMN partners are working to improve health and save lives by strengthening and aligning investments in the development of country HIS in accordance with the broader global development agenda, including the Millennium Development Goals (24).

HMN Framework has also a direct key investment mechanism through grants targeting low and middle income countries with major needs for improving health information and decision making, strong government commitment for improving and changing the current process and practices, and where most supportive partners are in place. This global collaboration is designed to deliver long-lasting solutions to HIS development (2).

The HMN Framework has two parts. The normative portion (components and standards that are arrayed in the left hand column of the Framework) and an implementation portion (a roadmap - right column). The normative components describe the standards and assessment criteria relating to the inputs, processes, outputs, and outcomes of the health information system and comprise of six major domains: HIS resource, indicators, data source, data management, information products, dissemination and use. The implementation component outlines a roadmap for strengthening health information systems and includes, a tool to guide assessment of health information system, thus enabling countries to establish a baseline and monitor progress of health information system development (4).

This component of the framework describes the standards and assessment criteria linked to the inputs, processes, outputs and outcomes of the HIS and encompass six sub-components

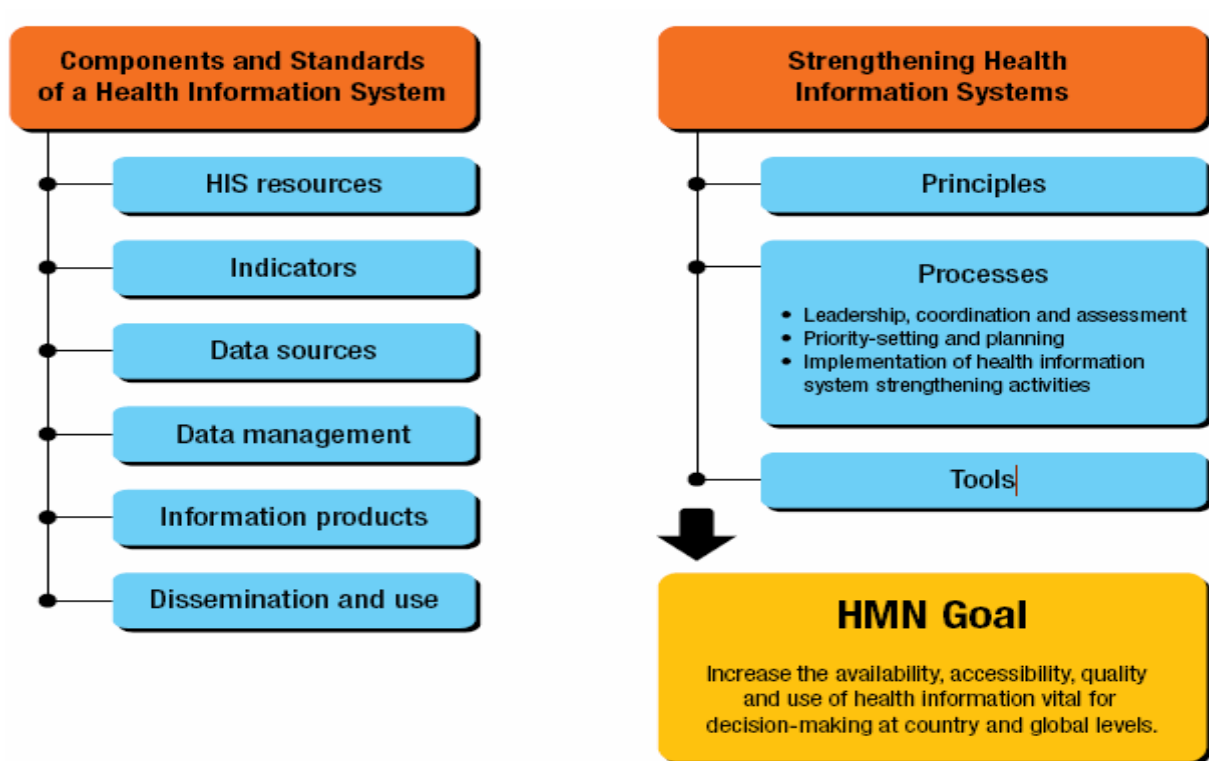


Figure1. Health Metric Network (HMN)

THE NORMATIVE COMPONENT OF HMNF

This component of the framework describes the standards and assessment criteria linked to the inputs, processes, outputs and outcomes of the HIS and encompass six sub-components

1. **Context and resources for health information.**

This includes the policy, legislative, regulatory, and financial environment that must be in place; and the infrastructure and resources required to guarantee a wholly functional health information system.

2. **Identification of core health indicators.**

This is about defining core health indicators covering the domains of health information, grouped in four main types: determinants of health, health system inputs and outputs, health system outcomes, and health status.

3. **Data sources and data collection methods.**

This section covers key data sources, standards for their use, their role in generating health information and potential linkages between them. The subsystems covered under the sources and methods are census, vital events monitoring, health facilities statistics, public health surveillance, population-based surveys and resource tracking including health infrastructure and human resources.

4. **Information management processes.** This component deals with optimal processes for collecting, sharing, and storing data, data flows and feedback loops.

5. **Information products.** This covers the criteria for assessing the quality of available data.

6. **Data dissemination and use.** This section is about norms for presenting, disseminating data and sharing information among stakeholders and creation of incentives for evidence-based decision making (25).

The Performance of Routine Information System Management (PRISM) framework

The Performance of Routine Information System Management (PRISM) framework is another framework that helps to measure the performance of health information system. It is a conceptual framework developed by MEASURE Evaluation and John Snow, Inc., which shows how the routine health information system operates (24).

PRISM uses three key factors to analyze routine health information systems (figure 2). These include behavioral, technical and organizational determinants. The behavioral determinants refer the knowledge/skills, attitudes, values and motivation of the people who collect and use the data. The technical determinants implies data collection forms, processes systems and methods while the organizational determinants involves information culture, structure, resources, and roles and responsibilities of key contributors at each level (4).

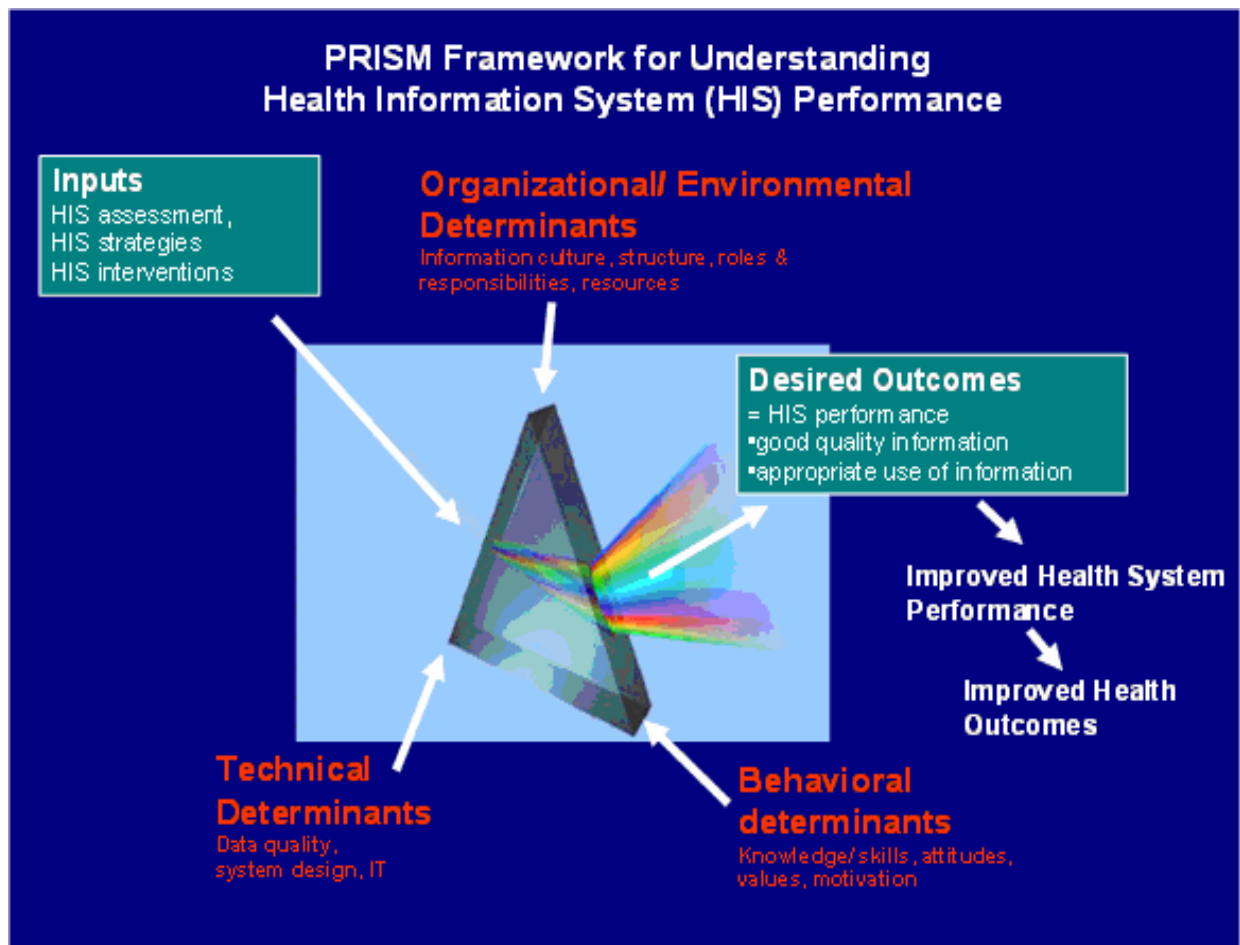


Figure -2: PRISM Framework: Source Adopted from WHO, 2008.

3. OBJECITVE

3.1 General Objective

The overall objective of this study was to assess the current health management information system (HMIS) implementation status in public health facilities

3.2 Specific Objectives

1. To assess the status of different inputs, processes, outputs of HIS
2. To identify the factors affecting use of HMIS information utilization in the facilities
3. To assess data quality in terms of representativeness, consistency and timeliness in the health management system.

4. METHODOLOGY

4.1 Study Area

The study was conducted in Bahir Dar City Administration; the capital City of the Amhara Regional State located about 565 KMs from Addis Ababa in North West direction. It is about 1801 meters above sea level. Based on the 2007 census results, Bahir Dar has a projected total population of 246,380 consisting of 118,262 men and 128,118 women in 2011. There are different types of facilities within these boundaries. The health facilities which are found in these boundaries are one government referral hospital, one private hospital, eight health centers, ten health posts, four government clinics, eight private clinics, eleven medium clinics, fifteen lower clinics, ten special medium clinics.

4.2 Study Design and period

A cross sectional study was carried out from April to May, 2011. Using pre designed questionnaire and observational checklist to collect both quantitative and qualitative data in public health facilities of Bahir Dar City Administration.

4.3 Source of population and Study subjects

The source of population One governmental hospital, the three health centers sub-city and regional health bureau were HMIS being implemented. The study subjects were health professionals, HMIS focal persons, managers and case teams of the facilities. The research was conducted on total population of 214, of which 170 samples were selected on health professionals and 30 samples were selected on paramedical workers, of these sample employees all of their duties were related to data capturing and processing for quantitative study and 14 candidates for qualitative study purposes.

Inclusion and Exclusions Criteria

- **Inclusion Criteria** - All health professionals trained with HMIS and directly involved in health care service delivery or manage patients or clients at four health facilities and HMIS focal persons who are working in four public facilities, Regional Health Bureau and sub-city where HMIS were being implemented.

- **Exclusion Criteria** - Health care providers or officers who do not satisfy the above criteria and who were not volunteers were excluded from the study.

Table 1. Number of Health Care Providers in Felege Hiwot Referral Hospital Bahir Dar City Administration, February, 2011.

Profession	Qualification	Number
Specialist	Doctor	2
General practitioners	Doctor	5
Health officers	BSC	6
Pharmacists	BSC & Diploma	12
Nurses	BSC & Diploma	52
Others	Certificate Diploma & BSC their duties related to data capturing	50
Total		130

Table 2. Number of Health Care providers in Health Centers, Bahir Dar City Administration, February, 2011.

Name of Health Center	Profession	Qualification	Number
Abay Health Center	Health Officer	BSC	2
	Pharmacist	BSC & Diploma	3
	Nurses	BSC & Diploma	16
	Others	BSC, Diploma & Certificate	5
Han Health Center	Health Officer	BSC	2
	Pharmacist	BSC & Diploma	2
	Nurses	BSC & Diploma	15
	Others	BSC, Diploma & Certificate	3
Bahir Dar Health Center	Health Officer	BSC	2
	Pharmacist	BSC & Diploma	2
	Nurses	BSC & Diploma	14
	Others	BSC, Diploma & Certificate	4
Total			70

4.4 Sample Size and Sampling Procedure.

All health professionals that were directly involved in health care service delivery from three health centers and one government hospital where new HMIS was being implemented were included in the study. As per the preliminary survey, the total study subjects in the study facilities were 200. Purposive sampling was used to select head of core process or case teams, HMIS focal persons or those Budget, planning, Monitoring and Evaluation (BPME) staff working on behalf, medical director, and head of district who were expected to use data for decision making and reporting were included in the study. The entire service departments in each health facility where the new HMIS is getting implemented were taken.

4.5 Quantitative Study

The facilities were chosen based on a purposive sampling, in this study, all health professionals who were working in four health facilities participated. Administrators of each health facility were requested to select the responsible personnel whose work was related to HIS activities. Accordingly, one of the following people were contacted:

- Managers of the facility (using the HIS for decision making purposes) or
- Nurses and physicians (whose duty involved data handling) or
- People from HIS/ statistics/ or other department responsible for HIS of the facility.

4.6 Qualitative Study

Health Bureau, sub-city and four health facilities in the study locality were covered and record rooms and HMIS team, their reporting system and experience of respondents on HMIS activities were observed systematically by using physical observation checklist and interview. An in depth interview was conducted with fourteen candidates which were four focal persons from Regional State of Health Bureau one HIS officer from sub City,

five case teams from the hospital and one medical director and three managers from three health centers.

4. 7 Data Collection Techniques

Three methods were employed. Quantitative data was collected through a data collection self administrated questionnaire then qualitative Method was used to further explore the result found from the quantitative using in depth interview with selected participants. Data collection methods used in the study were: and observation on card room and BPME sub core processor using check list as well as HMIS related activities and resources.

Questionnaire

The questionnaire included questions that help to assess current practice of HMIS by dividing in into five distinct sub topics, among which the last part of the questionnaire addressed the determinants of HMIS use for which close ended questions were used. The questionnaire was self administrated with reference to standard HMN and PRISM framework guideline for HIS. The questionnaire was pre tested prior to the actual study period and appropriate amendments were made.

One data collector was selected from Felege Hiwot Referral Hospital since his work was related to HMIS in the facility, the data collectors were responsible to distribute the questionnaire as well as help the subjects, fill the form. The data collectors were trained on how to help the subjects while filling the form and responsible for collecting back the questionnaires that were distributed.

In-depth Interview

In-depth interview is held after the questionnaire are collected and analyzed. The interviews were requested to give further exploration about the results obtained.

Challenges and prevailing situations of HIS in those facilities were addressed through the interview. The interviews are conducted face to face and are recorded and transcribed for the purpose of analysis. 14 interviews were conducted and saturation level was reached. It was preferred to conduct all the interviews by the principal investigator since the principal investigator was doing the qualitative analysis based on the interview, literatures, personal observation and judgments. A thematic analysis technique was used to analyze the interviews..

Observation

The researcher conducted systematic observation on data capturing and reporting format, document analysis, implementation progress report, minutes of important HMIS related meetings official letters, quarterly HMIS reports, visits of card rooms and BPME sub core processes checking for the structure, activities patterns of information flow .working environment, availability of equipment and indicators. A check list was used for recording of information obtained from the personal observation.

4.8 Study variables

Dependent (outcome) variables

- Implementation status of the new HMIS in terms of Data quality and information use

Independent variables

- Organizational factors: - i.e. information culture, structure, resource and roles and responsibilities.

- Behavioral factors:-i.e. knowledge/skills, attitudes, values motivation of the people who collect and use the data.
- Technical factors: - Implies data collection forms, processes systems and methods.

4.9 Operational Definitions

- **Implementation status:** Position of the coverage of the place. It answer the question”how much of the set plan has been implemented or come to be reality”.
- **Quality data:** represent what was intended or defined by their official source, are objective, unbiased and comply with known standards.
- **Data:** A collection of raw facts needed to transform in to information for decision-making
- **Information:** is processed data useful for decision making .Information system a is system that provides information support the decision-making at each level of an organization.
- **System:** A collection of components that work together to achieve a common objective.
- **Legislative and regulatory and planning framework concerning the use of HIS:** are the rules that are setout by the facility itself or adopted from some standard that govern the use of HIS in the facility in terms of data collection, processing, storage, retrieval, dissemination and use for other purposes
- **Health Management Information System (HMIS):** Is simply a process for collecting, processing, and disseminating information in a health system.
- **Indicators:** are variables that help to measure changes, directly or indirectly
- **Standardization:** Provision of uniform recording and reporting format, registered and tally sheet.
- **Data classification:** is the process of classifying the data collected according to any criteria such as age, sex, and so on. The classification can be different for different health facilities

- **Disseminating information:** disseminate information to the general public, NGOs, other relevant destinations, but not to sub city or federal health office in the form of a report, bulletin, or any kind of publication
- **Feedback:** The response to the reports they send, negative or positive.
- **Positive:** Sure certain and not in doubt.
- **Negative:** “no, “indicating “no,” or refusing or denying some thing.
- **Neutral response:** replay given to a question with out taking side.
- **Information use:** The collection facts (information) put in to action.
- **HMIS utilization:** use of information for different purpose (planning, decision making, to take action, to provide information) at all levels of health sector.

4.11. Data Analysis

The data from the questioner is entered in to SPSS version 16. The assessment of HMIS components has been described using tables, figures and frequencies.

Performance of Routine Information System Management (PRISM) framework help to measure the performance of health management information system PRISM tools are useful to get detail information on the strengths and weakness of the routine health management information system.

According to PRISM framework, factors influence the implementation statuses are classified in to technical, organizational and behavioral determinates The response to question on each set of determinates were categorized in to strongly agree, agree, neutral, disagree and strongly disagree. During the analysis, these type of categories choices were further regrouped and recoded into three categories dichotomized strongly agree and agree in to ‘agree’ as positive rating and strongly disagree and disagree in to ‘disagree’ as a negative rating .Neutral response is believed to be equidistance to the adjacent ratings in both directions and is ignored as a non response for this study purpose

Moreover, the possible factors that affect the use of HMIS were analyzed using binary logistic regression and all the factor were adjusted for possible confounding. The result from this analysis was taken as a hint to the interview and further analysis was done to explore the reason why these factors have existed and are influential. After the interviews are held, the results from the questionnaire added with the interview were compared and possible explanations concerning the issue at hand were discussed on the discussion part. Comparison was also made between the findings of this study and other related research works.

4.12 Data quality Management

Data quality was assured using different techniques.

- Training was given to the data collectors for two days about the content of the questionnaire and frequent supervision was done.
- Properly designed questionnaires and interview guideline were prepared, moreover pre test was done prior to final distribution and interview of the study and appropriate corrections were made.
- The qualitative data collection was checked conducted by principal investigator.
- The questionnaires were checked for missing values and inconsistency, completeness and legibility.
- The data entry and cleaning was made by principal investigator

4.13 Ethical consideration

The study was carried out after getting permission from the ethical clearance committee of Addis Ababa University, Medical Faculty through School of Public Health. Data were collected after getting written permission from Bahir Dar City Administration Health Bureau. Information sheet and written consent forms were delivered along with each questionnaire and all the subjects were asked if they are willing to participate in the study; and. informed verbal consent was obtained from all interviewed subjects.

Objective of the study were discussed with each participant and privacy was maintained during interview. All the interviews were transcribed with great care and questionnaires were also distributed for all 170 eligible respondents in such a way that the respondents were helped in case they faced difficult.

5. RESULT

5.1. Characteristics of the respondents

Two hundred questionnaires were distributed and one hundred eighty five were returned. Among returned questionnaires, fifteen were discarded because of inconsistent and missed values. Thus, the remaining one hundred seventy which gave the response rate of 90 % were used for analysis purpose of this study.

According to survey result, the respondents were 119 from Felege Hiwot Hospital (70%) and 51 from three health centers (30%). The majority, 161(94.7%), of the respondents were health professionals. Regarding the qualification of respondents who were working in different departments of health facilities and institutions ranges from diploma to specialized doctors, 146 (87.9%) were diploma and degree holders. Majority, 55(32.4%), of respondents were serving between 1 and 5years (Table 3).

Table – 3: Socio Demographic Characteristics of the Respondents and Health Facilities in Bahir Dar City Administration May 2011.

Source of participants (n=170)	Frequency	%
Hospital	119	70
Health centers	51	30
Position of respondent (n=170)		
Medical directors	2	1.2
Manager	1	0.6
Health professionals	161	94.7
HIS officers	4	2.4
Others	2	1.2
Respondent's qualification(n=166)		
BSC nurses	71	42.77
Diploma nurses	75	45.18
Health officers	12	7.23
Medical Doctors	3	1.81
Others degree diploma and certificate	5	3.01
		100
Respondent service year(n=170)		
Less than 1 year	13	7.6
Between 1 and 5 years	55	32.4
Between 5 to 10 years	28	16.5
10 and more than 10 years	48	28.2

5.2. HMIS input

All health professionals working in four health facilities were asked for the existence of legislative, regulatory and planning framework(HIS input) concerning the use of HIS, most 106(62.4%) of health workers reported that there is the framework in their facilities. Only 76(44.7%) respondents revealed that there is HIS office in their facility. Only 74(43.5%) respondents answered there is HIS personnel specifically assigned for HMIS activities. Only 36(21.2%) respond there is budget assigned for HMIS activities. All health providers responded that there is the necessary equipment in their facility. Only 52(30.6%) are reported to deliver basic computer trainings to their staffs and only 83(48.8%) of respondents attended HIS trainings, only 65(39.4%) of them reported to have coordination mechanisms among the other sub components of HIS

Concerning the availability of equipments for HIS activities, Majority of the respondents both in Hospital and Health Centers answered there was stationary materials like paper and pen but there was shortage of IT equipment like computer, internet or any kinds of network (Table 4).

Table- 4: HMIS Input in facilities' in Bahir Dar City Administration, in May 2011.

HMIS Inputs	Yes (%)	No (%)
Have legislatives, regularly and planning frame works concerning the use of HIS?	108(62.4)	62(36.5)
Unit (Office) is assigned to HIS	77(44.7)	93(54.1)
Personnel is assigned HIS	75(43.5)	95(54.7)
Budget is assigned to HIS activities	37(21.2)	133(77.1)
There are the necessary equipment	170(100.0)	0
There are trainings on basic computer	53(30.6)	117(67.6)
There are training on HIS	86(48.8)	84(49.4)
There are coordination mechanisms	68(39.4)	102(60)

5.3. HMIS processes

Of all the facilities, 131 (77.1%) respondents revealed that they collect health data on a daily activity of patient care, after each clinical visits majority of professionals 137 (80.6 %) were classifying and coding the collected data. Most, 104 (61.2%), of the respondents revealed that they were collecting socio economic and demographic data and only 27(15.9%) collected data about environmental and behavioral risks factors. Only 84(49.4%) respondents said that there is a rule for minimum period of maintenance and dispatch time concerning data. Of all the respondents, 110(64.7%) put their data at administrative level. 101 (59.4%) respondents replied that data were classified according to some criteria. 101(59.4%) respondents there were local quality control mechanisms in their facilities and only 77(45.3%) of respondents answered that there were supportive supervision and feedback mechanism by other organs (Table 5)

Table- 5: HMIS Processes of Facilities' in Bahir Dar City Administration in May 2011

HMIS process	Yes (%)	NO (%)
Collects health data on a daily bases	131(77.1%)	39(22.9)
Classify and code data after each visit	137(80.6)	31(18.2)
Collect Socioeconomic and demographic factors	104(61.2)	62(36.5)
Collect data about environmental and behavioral risk factors	27(15.9)	140 (82.4)
Rules for minimum period of maintenance and dispatch time	84(49.4)	82(48.2)
Data are put at administrative level	110(64.7)	58(34.1)
Data are classified according to some criteria	101(59.4)	67(39.4)
There are regular local quality controls by the facility itself	101(59.4%)	67 (39.4)
Supportive supervision and feedback mechanism by external bodies	77(45.3%)	91(44.7)

5.4 HMIS Outputs

As shown in table 6 respondents were asked whether their facility have the necessary outputs of HIS or not and the study used different variables. Hence, one variable is use of information for decision making to HIS office. Of all the facilities respondents, less than 45.6% (77) of them have confirmed the use of information for decision making. Among them 35.3% for future reference 42.4% to observe trends and 42.9% are to pass report data to health office. Regarding to the dissemination of data, almost all the facilities (four) use information to pass report data sub city/regional state of health bureau.

Regarding to incentive like money, training and recognition Out of 170 respondents 30(18.3%) respondents there is the existence of incentives that encourages information use. however 103(62.8%) respondents are claimed that that there is no incentive particularly in their facilities for information use.

On the subject of to the policy 70 (42.2%) respondents reported that there is policy in the facilities concerning for information use, Nevertheless, merely 30 (18.3%) respondents claimed that there is no incentive for information use.

Concerning to legislative and regulator environment for data security, 77(47.5%) respondents reveled that have legislative and regulatory environment about data security, about 72 (42.9%) respondents reported that their is legislative and regulator environment on retention and destruction of data,

In relation to data transfer 79(47.6%) respondents have legislative and regulatory for data transfer to external user. Concerning to data dissemination 76 (45.2%) despised that have mechanism to disseminate health information.

Table-6: HMIS Outputs in Facilities' in Bahir Dar City Administration. May, 2011

<i>HMIS Outputs</i>	<i>Yes (%)</i>	<i>No (%)</i>	<i>I do not Know</i>
Use information for decision making	78 (45.6)	110(64.7)	0
Use information for future reference	60 (35.3)	98(57.6)	0
Use information to observe trends on service delivery	72(42.4)	97 (57.1)	0
Use information to pass report data to health office	73 (42.9)	50 (30.1)	46(27.7)
There are policies concerning information use	73(42.9)	33 (20.4)	52(32.1)
Have legislative and regulatory environment about data security	78 (47.5)	103(62.8)	31(18.9)
Are there incentives for information use ?	32(18.3)	39(23.2)	57(33.9)
Have legislative and regulatory environment about retention and destruction of data	73(42.9)	32 (19.3)	55(33.1)
Have legislative and regulatory environment about transfer of data to external users	79(47.6)	34 (19.3)	56(33.1)
Have mechanism to disseminate health information	77 (45.2)	28 (16.7)	65(38.1)

5.5 Technical factors affecting information utilization.

54 (51.1%) of respondents agree with the existence of standard set of indicators in their facilities, most 58(65.2%) of respondents that disagree with the existence of trained staff

to fill formats, majority of respondents about 56 (66.7%) that disagree with skilled human resource assigned for HIS activities and great part of respondent also disagree with the existence of appropriate technology in their facilities to accomplished HMIS activities

65.7%, of respondents lacked appropriate technologies to utilize information. Those who agree with appropriate technology nearly three times more than those who did not.

[Adjusted OR: 2.76:95%CI :(1.16, 6.58)}, moreover, standard set of indicators, trained staff to fill formats and skilled human resources were the predetermine factors for information utilization, while, well design reporting and friendly formats were have no contribution for information utilization. (Table7).

Table-7: Possible determinants in Technical factors for information utilization in government health facilities found in Bahir Dar City Administration. May, 2011.

Determinants	HMIS Utilization		Crude OR With 95%CI	Adjusted OR With 95%CI
	Yes (%)	No (%)		
Standard set of indicators				
Agree	54(55.1)	44(44.9)	1.00	1.00
Disagree	420(32.3)	42(67.7)	2.58(1.33,5.01)	1.34(0.61,2.94)
Well designed reporting formats				
Agree	54(45.4)	65(54.6)	1.00	
Disagree	20(48.8)	21(51.2)	0.87(0.43,1.78)	
Trained staff to fill formats				
Agree	43(60.6)	28(39.4)	1.00	1.00
Disagree	31(34.8)	58(65.2)	2.87(1.51,5.48)	1.77(0.78,4.03)
Skilled human resource				
Agree	46(61.3)	29(38.7)	1.00	1.00
Disagree	28(33.3)	56(66.7)	3.17(1.66,6.07)	1.72(0.77,3.84)
Friendly format				
Agree	50(46.3)	58(53.7)	1.00	
Disagree	24(47.1)	27(52.9)	0.97(0.49,1.89)	
Appropriate technology				
Agree	38(69.1)	17(30.9)	1.00	1.00
Disagree	35(34.3)	67(65.7)	4.28(2.12,8.64)	2.76(1.16,6.58)

5.6 Enabling environmental/organizational and Behavioral factors affecting the information utilization

Environmental factors regarding about 53(64.6) respondents claimed that there were no coordination effort and leadership in their facilities, 54(62.1%) of respondents disagree with existence of strategies policy, motivation and other related factors

As can be see in table 8, majority 59.2%, 65.15%, 56.7% of respondents agreed about the existence of coordination effort and leadership, strategy and policy, and control of budget respectively is important for health information utilization. Moreover, 47% and 41% of

respondents agreed that motivation and promotion are important for information utilization.

Table8. Enabling environmental factors that affecting information utilization Bahir Dar public health facilities, 2011.

<i>Enabling factors</i>	<i>Information Utilization</i>		<i>Crude OR With 95%CI</i>	<i>Adjusted OR With 95%CI</i>
	<i>No (%)</i>	<i>Yes (%)</i>		
<i>Existence of coordination effort and leadership</i>				
Agree	45(59.2)	31(40.8)	1.00	1.00
Disagree	29(35.4)	53(64.6)	2.65(1.39,5.05)	1.89(0.69,5.25)
<i>Existence of strategy and policy</i>				
Agree	41(56.9)	31(43.1)	1.00	1.00
Disagree	33(37.9)	54(62.1)	2.16(1.15,4.09)	0.63(0.22, 1.81)
<i>Existence of organizational culture</i>				
Agree	38(56.7)	29(43.3)	1.00	1.00
Disagree	33(38.4)	53(61.6)	2.10(1.09,4.03)	0.99(0.45,2.18)
<i>Lack of motivation</i>				
Agree	47(47.0)	53(53.0)	1.00	1.00
Disagree	27(47.4)	30(52.6)	0.99(0.51,1.89)	
<i>Absence of follow up, coordination and cooperation</i>				
Agree	42(44.7)	52(55.3)	1.00	1.00
Disagree	32(50.8)	31(49.2)	0.78(0.41,1.48)	
<i>Lack of empowerment</i>				
Agree	39(41.1)	56(58.9)	1.00	1.00
Disagree	35(55.6)	28(44.4)	0.56(0.29,1.06)	
<i>Lack of confidence</i>				
Agree	40(42.6)	54(57.4)	1.00	
Disagree	34(53.1)	30(46.9)	0.65(0.35,1.24)	1.00
<i>Lack of promotion</i>				
Agree	41(42.3)	56(57.7)	1.00	
Disagree	33(54.1)	28(45.9)	1.61(0.85,3.07)	1.00

5.7. Identification of factors affecting data quality in HMIS

Technical determinates factors

Most 85(88.5%) of respondents agreed with the existence of standard set of indicators in their facility, majority 99(84.6%) of respondents also agreed with the existence regarding well designed reporting formats, and (80.0%) agreed with the existence of trained staff to fill formats, while about (81.0%) disagree with skilled human resource related to HMIS activities.

Most respondents, 88.5% and 84.6%, agreed on standard indicators and well designed reporting format for HMIS can affect positively data quality in public health facilities. These variable have significant association for data quality [Adjusted OR (CI: 95%) 2.72(1.01, 7.35) and 2.02(.77, 5.31) respectively] (Table 9).

Table-9: Possible technical determinants that affect Data quality in public health facilities found in Bahir Dar City Administration, in May 2011.

<i>Determinants</i>	<i>Data quality</i>		<i>Crude OR With 95%CI</i>	<i>Adjusted OR With 95%CI</i>
	<i>No (%)</i>	<i>Yes (%)</i>		
<i>Standard set of indicators</i> Agree Disagree	85(88.5) 39(62.9)	11(11.5) 23(37.1)	1.00 4.56(2.02,10.27)	1.00 2.72(1.01,7.35)
<i>Well designed reporting formats</i> Agree Disagree	99(84.6) 25(61.0)	18(15.4) 16(39.0)	1.00 3.52(1.58,7.86)	1.00 2.02(.77,5.31)
<i>Trained staff to fill formats</i> Agree Disagree	56(80.0) 68(77.3)	14(20.0) 20(22.7)	1.00 1.18(.55,2.54)	
<i>Skilled human resource</i> Agree Disagree	56(76.7) 68(81.0)	17(23.3) 16(19.0)	1.00 0.78(0.34,1.67)	
<i>Friendly format</i> Agree Disagree	93(75.0) 14(42.4)	31(25.0) 19(57.6)	1.00 4.07(1.83,9.07)	
<i>Appropriate technology</i> Agree Disagree	42(35.6) 12(30.8)	76(64.4) 27(69.2)	1.00 1.24(0.57,2.70)	

Organizational and behavioral factors affecting data quality

As the result depict in table 10 around 50% respondents agreed that existence of coordination and leadership, strategies and policy of HMIS, and organizational culture can affect data quality. Mean while, around 60% of respondents agreed on factors such as motivation, follow up, empowerment, confidence and promotion can contribute data quality.

Various determinants including the existence of coordination effort and leadership use at facility level, Existence of strategy and policy, attitude of staff and management towards motivation, empowerment, confidence and promotion on HMIS were discovered from the data collected. Using binary logistic regression, existence of control of budget found to be affect the data quality of HMIS in strongest magnitude Based on the adjusted ratio 2.3 times compares to those with no control of budget with 95% CI(1.53,9.85) The confidence interval does not cross one which shows that the relationship is significant.

Table-10 Organizational and behavioral factors that affect Data quality in public health facilities found in Bahir Dar City Administration, 2011.

<i>Determinants</i>	<i>Data quality</i>		<i>Crude OR With 95%CI</i>	<i>Adjusted OR With 95%CI</i>
	<i>No (%)</i>	<i>Yes (%)</i>		
<i>Existence of coordination effort and leadership</i> Agree Disagree	67(54.0) 9(28.1)	57(46.0) 23(71.9)	1.00 3.0(1.287,7.01)	1.00 1.21(0.32,4.54)
<i>Existence of strategy and policy</i> Agree Disagree	63(50.8) 92(27.3)	61(49.2) 24(72.7)	1.00 2.75(1.19,6.4)	1.00 1.21(0.324,54)
<i>Existence of control of budget</i> Agree Disagree	39(31.7) 4(12.5)	84(68.3) 28(87.5)	1.00 3.25(1.07,9.91)	1.00 2.3(1.53,9.89)
<i>Existence of organizational culture</i> Agree Disagree	57(47.5) 9(29.0)	63(52.5) 22(71.0)	1.00 2.21(.94,5.2)	
<i>Lack of motivation</i> Agree Disagree	80(65.0) 17(53.1)	43(35.0) 15(46.9)	1.00 1.64(.747,3.61)	
<i>Absence of follow up, and cooperation</i> Agree Disagree	74(60.2) 18(56.2)	49(39.8) 14(43.8)	1.00 1.16(.535,2.58)	
<i>Lack of empowerment</i> Agree Disagree	78(63.4) 16(48.5)	45(36.6) 17(51.5)	1.00 1.84(.848,3.2)	
<i>Lack of confidence</i> Agree Disagree	80(64.5) 12(37.5)	44(35.5) 20(62.5)	1.00 3.0(1.36,6.78)	1.00 0.96(0.28,3.30)
<i>Lack of promotion</i> Agree Disagree	81(65.9) 14(42.4)	42(34.1) 19(57.6)	1.00 2.62(1.2,5.74)	1.00 2.08(0.63,6.87)

5.8 In-depth interview Qualitative Result

An in depth interview was conducted with 14 respondents 7 in hospital, 3 in health centers, 1 in sub city 3 from regional health bureau. The interviewed personnel were medical directors of hospital and health centers, manager of sub city, HMIS focal persons from the Regional Health Bureau. There were no HMIS personnel assigned in health centers and in the sub city.

On data collection and presentation

The respondents were asked to express their views about how the new HMIS is running in their facilities in terms of data collection and reporting. Most respondents said that this new system is very comfortable for staff and as well as for patient for easily access when need arises.

The interviewer asked about the common tools used for data collection. Interviewee HIS officer from Regional Health Bureau has said that” facility based (service report), From population (census) to calculate and eligible’s he also answer question for Do you organize, process and analyze data collection he said “yes we have guide line and we used it “he also mentioned that SIS (standardization integration and simplification) is good to formulate the indicators based on the produced data”

Other respondents from health center answered that The HMIS has usually been viewed as a way of sending reports to a higher level not use of information to decide actions to be taken to improve performance that thing make them discourage

Case team of one hospital said that” HMIS formats are unfriendly for all staff , because of long statement it too difficult to read as well as in case of standardization some important information are missed, and also there is no enough space in tally sheet to put the data we want to put that is a big challenge”

A medical director from one health center has said that “our health center is one of a pilot study w e are so comfortable on reporting format our staffs also vary familiar to fill the

format, but still we have shortage of ICT equipments in case of that reason our registration room is very crowded, but we use index card according to HMIS principle which makes that the data could be easily retrieve.”

Health worker skills and orientation

These new ways of using and presenting information will require health workers to acquire new skills and adopt new behaviors and attitudes towards their responsibilities. There was interest to know what common problems were faced during a day to day HMIS related activities. One of the respondents said “there is lack of knowledge about new HMIS I usually observe that some health workers face many problems when filling the format because of disorientation and lack of training. I think that make the data being inconsistent and also time wastage “

Other respondent tried to mention that” Even though skilled and trained workers are assigned for a moment they will leave due to high staff turnover rates

Organizational culture

The organizational culture itself needs to change its attitudes to support and strengthen this change in health worker behavior.

The following is part of what the interviewee from hospital said:

“ I don’t know why they collect the daily surveys.....may be they want to know what number of people come to the hospital.... and they may also want to know how much they earn....I don’t know. But I know something for sure, there has never been any compilation made on the data collected.....I have been the HIS officer for long and I have never witnessed any processing on the data so far.....it is just a habit of collection”

HMIS focal person in hospital said that” only collection and reporting of data in the sub City should not be a final goal of HMIS activities. There should be culture of information use both at facilities and office level for decision-making and planning purpose also.”

Management Knowledge regarding HMIS

It was frequently mentioned by the interviewees that responsible government bodies do not seem to care about the quality of HIS except for the reports send to then on regular bases. He said:

“...but how can they be sure about the reliability of the data. I mean look at any system, does it look like it will deliver correct and timely information? I admit that they come to our facility a couple of times and the purpose of the visit was to check the registration book, but they didn’t give us any feedback or support...”

Most of the interviewees emphasized that if HIS has to work, awareness arising must be made by responsible organs. An interviewee said:

“... just the way they are eager to take the reports from the facilities, they should be responsible to create awareness among the management as well as the other staffs. They should be able to create a common understanding among all the health facilities that the data collected are important to the facilities themselves as well as the country”

A medical director from one health center pointed out that “there is no responsible person for HMIS who can supervise our day to day HMIS activities this may contribution to be staff are irresponsible to fill format properly that makes the data lose its quality.

Another respondent said that” There is no more supervision from out side organ, some times supervisors come and observe the registration book, but it is not supportive rather to find out the error, they don’t have feedback mechanism “

Budget allocation and controlling

Most of the respondents answer for question is there budget assigned for HMIS related activities. They tried to mention that “We don’t know budget assigned or not, but our facility always suffered from budget to accomplish day to day activities. Another respondent also claimed that “our problem is uncountable before starting this new HMIS

program budget should be assigned properly other wise the program can not be sustainable.”

5.9 Observation qualitative results

During the observation, the following items were considered and observed; implementation progress report, data collection and reporting format, minutes of important HMIS related meetings, official letters, visits of card rooms and BPME core processes.

The data encoded, compiling tally sheets in Felege Hiwot Hospital was good but I observed the staff, that fill the formats were not competent, there was shortage of skilled human resource related to HMIS, the card room was ventilated and enough number of staff are assigned for card room. Regarding the availability of ICT equipment, only HIS Office has computer, printer, telephone, but it does not have internet network, their backup systems are manual.

One of the health centers known as Abay name called Abay Health Center is a pilot area for the new the HMIS and has standardized format, well trained skilled and experienced human resource related to HMIS activities, but does not have room for HMIS related activities the room is temporary container, no ICT equipment they are using paper-based for recording and backup.

The other two Health Centers Hane Bahir Dar health center and Bahir Dar health center do not have HIS office, skilled human resource, ICT equipments, but have only well designed recording repotting format

The Sub City office has also their own problems due to pooling system they suffer from materials shortage, they don't have HIS office. Their office is temporary found in side Bahir Dar Health Center; they have computer, printer, skilled human resource, software and manual backup system.

The Regional State Health Bureau has a good standard building, office and three HIS focal personnel, IT professionals, adequate budget allocation and controlling system

assigned for HMIS related activities, broadband internet access with excellent manual and software backup system.

In the observation process there were six computes, and one HIS officer in Felege Hiwot Hospital, but there was no quality assurance team and not internet access. In the Regional Health Bureau, there were more than ten computers, three HIS officer, internet and telephone access but as of Felege Hiwot Hospital HMIS of the Health Bureau didn't have data quality assurance team (table 11).

Table-11 ICT equipment and infrastructure in BPME sub core processes in Hospital, sub City health office and regional state of health bureau found in Bahir Dar City Administration, 2011.

	Computer	Printer	internet	Telephone	HIS officer	Data encoder	DQA team	Backup
Felege Hiwot Hospital	Six	Two	No	Yes	One	Two	NO	Yes
Sub City Health Office	Two	One	No	Yes	One	One	NO	Yes
Regional State of Health Bureau	More than ten	Five	Yes	Yes	Three		NO	Yes

*. *BPME-Budget, Planning, Monitoring, &Evaluation**DQA team Data Quality Assurance team***Backup of the last two year health data*

6.5 Qualitative Assessment Based on SWOT analysis

The qualitative assessment issues and activities presented in the following sections of this plan build on the strengths, take advantage of the opportunities, address the weaknesses, and defuse the threats in the following list of strengths, weaknesses, opportunities, and threats (SWOT).

The main strength is the desire for improved HMIS/M&E on the part of the ANRSHBs, facilities found in Bahir Dar City Administration, health workers, and development partners; the weakness related to this strength is a limited understanding of the level of effort. The related opportunity is to build on the desire for HMIS reform to mobilize resources and support, and the related threat is that unless expectations are well managed through continuous and transparent communication; unrealistic expectations will arise and cannot be met.

Strengths

- Recognition that weaknesses in HMIS exist that supports successful HSDP implementation
- Demonstrated institutional attempts to strengthen HMIS by ANRs, projects (NGO) Stated institutional will for improvement from FMOH, development partners, etc

Weaknesses:

- Limited definition and implementation of HMIS staffing standards, both for filling positions; few trained staff
- Limited standardization of recording and reporting definitions, forms, and procedures
- Unnecessarily high data burden, with duplicative and poor quality data.
- Limited implementation of evidence-based planning and monitoring procedures
- Limited consistency amongst health related information sources and limited collaboration amongst generators of health related information
- Limited use of technology

Opportunities

- Leverage and increase resources for HMIS reform, particularly from development partners
- Build on support from RHBs for institutionalizing change in woredas and facilities
- Partnership with other FMOH departments and organizations who are reengineering their operations

Threats

- Discouragement at time and effort required for true organizational change to evidence-based management can erode support for HMIS/M&E reform
- Poor follow-up and supportive supervision damages institutionalization of change
- Without firm leadership at highest federal and regional levels, there will be a tendency to again fragment into separate reporting channels by powerful program interests
- Donor dependency

6. DISCUSSION

The components of HMIS were assessed regarding their strength and weakness of the implementation status, investigate factors that possibly affecting implementation program and recommend possible solution for the effective implementation of new HMIS. This finding is discussed based on Performance of Routine Information System Management PRISM and HMN (Health Metric Network).

This study revealed that the majority of respondents (62.4%) said that necessary inputs such as legislatives, regularly planning frame works concerning the use of HIS are available, but, Unit (Office), Personnel specifically assigned for HIS, budget for HIS activities, necessary equipment trainings on basic computer, training on HIS, as well as coordination mechanisms were not sufficiently allocated in both facilities and Regional and sub-city offices.

In most facilities and health institutions, there was no budget allocated for the acquisition of human and material requirements necessary for success of the implementation. Sub City and Health Centers did not have HMIS focal persons this may create problem on collection, presentation and reporting of HMIS data, that could lead to poor decision-making process by managers and this result supported by FMOH HMIS business process re-engineering assessment report that there is lack of skilled human resource (19). This study also supported by another researcher to assessed factor affecting HIS use the private and public facilities in Addis Ababa also discovered that the necessary input to HIS were not sufficiently on the facilities in Addis Ababa (21). Similar assessment on HMIS at public hospitals also revealed the existence of low commitment of the decision making bodies in allocating human, material and financial resource (22). This implies that lack of understanding about the use of HIS for the facility as well as the health institutions itself.

According to this study out of 167 respondents 115 of them reported that there are no trained staffs on basic computer literacy. It indicate that majority of the facilities used manual reporting and recording system. The lack of understanding on computer literacy could also be from the absence of up to date trainings as have been described in the result section these leads things could have been difficult. In addition, the lack of coordination mechanisms has played its part for this challenge.

In this study almost every facility has been collecting health data on a daily activity of patient care. The case is also better in terms of coding, classifying and reporting the data. According to the interviews and the literatures, problem arises when it comes to use of the information. This might be due to two things:

1. The facilities collect the data thinking that it is a must to send the reports to the responsible upper level health offices. There will of course be a consequence on the facilities if they don't send it;
2. A culture of collection and reporting than a culture of using information (27)

Majority of the facilities do not collect population based data. This implies that it is difficult for the facilities to monitor their progress in their service coverage. Quality of data is questioned for there are no sufficient local quality controls. Besides, the absence of up to date quality assurance trainings has worsen the situation. The fact that the quality of data is poor at facility level implies that the national data will be put under question mark.

To be inline with health metric network important question regarding environmental risk was asked. But majority of respondents (82.4%) claimed that there is no environmental risk parameters this revealed that the registration formats are not full of informatics and it also missed the necessary background information about patients.

As with all aspects of health care, effective, continuously improving HMIS/M&E depends on ongoing supportive supervision but not regular follow up. According to the study facility has their own data quality assurance system by itself; whereas there is

neither supportive supervision nor quality assurance feedback mechanism from outside authorized offices.

The study have assessed for the presence of expected outputs of HIS, like policies for information use, decision making based on information, dissemination of results According to the study about 62.8% respondents said that there is no incentive for information use and it show also that there is no motivation mechanism to improve information culture outside and inside organizations to change this situation by concerned bodies. This might be due to lack of due attention by higher officials.

This study revealed the existence of legislative and regulatory issues. Out of 170 respondents only 47.5% respondents said that there are rules and regulations in the new HMIS about security, use, transfer, retention and destruction of medical health or information. This indicates that there is no strong legislative and regulation about HIMS in health facilities.

The facilities have also its own impact on not properly use of HMIS. If there were preset facility level policies and standards about use of information health workers should have guidelines to be evaluated on. The main output of HMIS is the use of information for decision making where less than 50% of the respondents have reported to do so which has a huge implication on the low performance of the system. As had been described on the literatures, different writers have agreed that if information is not used for decision-making, it has no value.(13). The collection of data which is proved to perform well in our context should have been used for decision- making. But in most of the cases in our situation the purpose of collection is to complete the reports.

The other objective of this research was to assess the determinant factors that affect the use of information and data quality in the health facilities found in Bahir Dar City Administration based on PRISM framework by considering technical, behavioral and environmental factors.

The creation of information as a resource is achieved better by utilization of the existing information. Information is currently considered a vital input to the economic, sociological and cultural development of human beings this in turn has resulted in paying more and more attention to its access and use (29)

According to the study majority of respondent agree that the existence of appropriate technology like computer, communication network access and other important equipments used for information and communication in the facilities that strongly affect utilization of information. Based on the analysis. the health sector industry communication infrastructure are considered as properly ICT can be applied in most HMIS activities such as data capturing, processing, analysis and information use and can bring many more advantage (22,30).

Next to absence of appropriate technology in technical point of view, poor coordination mechanism (political commitment) also has a contribution factor for information use. Lack of trained staff to fill a format is also another challenge in the facilities. According to this study skilled human resources related to HMIS and standard set of indicator also have their contributory effect on utilization of information. The shortage of trained man power in the study areas might be due to high turn over of trained staffs and low replacement rate of trained man power.

There was an effort to see the impact of behavioral factors on the HMIS implementation status. Most health workers (53%) agree that the new HMIS does not have of motivation mechanism that increases the use of data to access HMIS performance according to most respondents. Health workers believed that HMIS implementation lack ownership. Large number of health workers (55.3%) suggested the absence of follow up, coordinator, cooperation and communication in the implementation course of action. This study is supported by the study done in Addis Ababa (23).

Health care providers are not transformed into effective data collectors and information users, health workers are not empowered to take active participation and HMIS as part and parcel of their professional duty. According to 57.4% of the respondents, they lack confidence to participate and make decision for HMIS related activities. According to 57.7% of the respondents they believed that they lack promotion about information use and culture. Many studies show similar findings that the management of HMIs should be accompanied with follow up, coordination, cooperation and communication among responsible bodies.(21,22) Motivational mechanism that can create ownership among stakeholders empowering them to actively participate HIS decision making activities should be encouraged

PRISM frame work considered the technical determinants as nut and bolts of information that the system developer and implementer should focus the energy (5, 21 and 22).The majority of health workers agree with the necessity of standard indicators and well designed data collection and reporting formant.

The activity reports are not yet transformed into data analysis and information generation effort that can be used for health service management and the design of intervention at each health facility level. This ineffective implementation of HMIS needs to focus on building efforts (30). Many health workers (60.6%) believe that they were not well trained to properly fill out the format. HMIS focal persons and BPME officers are responsible for reporting data as well as analyzing, presenting and using information for supervision, monitoring and evaluation of service delivery. They need organized capacity building efforts since large scale training support schemes in the use of management of health information allocated to system development (25).

Observation and interview show that adequate ICT equipment and infrastructures for HMIS are needed. There is inadequate computer in health centers and sub cities covered by the study. Most of respondent (69.1%) assured that the new HMIS currently does not use appropriate information technology. ICT may improve the friendliness of some

reporting format that many respondents claim for its improvement. ICT can be applied in most HIS activities such as data capturing, processing, analysis and information use and can bring many more advantages (11,22,27,).

Environmental factors such as human, material and financial resources, roles and responsibilities of stakeholders, organizational structure, management support and enabling environmental factors are some organization factors that determine the implementation status of HMIS (2, 17, and 22).

7. Strength and Limitation of the Study

7.1 Strength

- All public facilities and institutions implementing HMIS found in Bahir Dar City Administration were included in the study.
- Both qualitative and quantitative data were collected so that an issue missed by one method could be picked by the other
- The study uses both HMR and PRISM framework in combination for assessment purpose..

7.2 Limitation

- The fact that the questionnaires are self administered may affect the validity of the responses
- Due to time and financial constrain the study area is limited around Bahir Dar City Administration. and thus compromising the representative of the study

8. CONCLUSION AND RECOMMENDATIONS

8.1. Conclusion

- The facilities have the necessary input material for HMIS activities such as legislatives and regulatory planning framework,
- There are no necessary inputs to HMIS activities such as unit, personnel, budget, equipments, trainings and coordination mechanisms in the facilities
- Data are collected , Classify and code after each visit,
- Socioeconomic and demographic factors are sufficiently done,
- The only information send to outside environment not used for decision making .
- No local quality control mechanisms as well as up to date quality assurance trainings.
- Lack of appropriate technology in the system,
- Lack of HIS manipulations skill human resource.
- Lack of incentives, feedback, technical support, low attitude of health workers, management commitment and awareness, centralized decision making, absence of information culture, and non participation of HMIS staffs in the planning process.
- The collected data by the facilities were strongly affected by standard set of indicators,
- There is existence control of budget and well designed reporting formats among the other components of determinate factors.
- There are no rules and regulation about security for use, transfer, retention and distraction of medical record, health data or information in the new HMIS.
- There is no back-up document of the last two years or for those to be retained at facility after reportable data information is sent to the next level.

8.2. Recommendation

Based on the conclusions, the following recommendation are forwarded for the success of new HMIS implementation progress in Bahir Dar City Administration

- HMIS implementation program in the facilities should have ownership, follow-up, coordination, cooperation and communication
- Health facilities must be assessed for having the appropriate inputs before they are forced to do HIS activities and a common understanding between the facility and the responsible organs should be reached before HIS is implemented
- The collection, compilation and data quality assurance processes of facilities must be taken in to account before they are requested to send reports;
- Health facilities must be given frequent trainings to use the data generated for decision making at facility level, and the use of HIS for their facility (local use) must be underlined in all the trainings;
- Supportive supervision and technical assistants should be delivered to monitor their progress towards HIS;
- Efforts have to be made to improve the culture of information and the attitude of staffs towards HIS in the facilities both at the regional as well as facility levels;
- Trainings and other briefings have to be given for the management of the facilities;
- Facilities should promote decentralized decision making and HIS workers and other professionals should participate in the planning process of their own facility;

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Annex 1
English questionnaire
Structured questionnaire for assessing the implementation status HMIS in facilities
and institutions of Bahir Dar administrative City of Amhara region
Subject information sheet

Greetings:

My name is _____ I am working with HELEN TESEMA who is currently a post graduate student in Addis Ababa University, Department of Health Informatics.

The objective of the study is to assess the implementation status of HMIS in facilities and institutions of Bahir Dar City Administration. One Hospital and three health centers are chosen to participate in the study. In each facility, all individuals whose works involve providing health activities (health professionals) are selected. And you are selected just because of your position.

Even though study is conducted for the partial fulfillment of master program in health informatics, it is believed to contribute much for the understanding of the current information utilization pattern and to identify the factors contributing to the existing situations. This in turn is hoped to give insight as to how to improve the HIS use in the facilities as well as others.

You will be asked to fill a questionnaire that will help in investigating the issues. Your co-operation is very helpful. Your name will not be written on the questionnaire and all the information you will provide will be kept strictly confidential. You will be facing no harm by participating and you are also not obliged to answer any question you don't wish to answer. To fill the questionnaire 25-30 minutes will be required. If you wish to comment feel free to use the contact address.

Consent Form

Considering the information you get from the general information sheet, we would be thankful if you spend sometime with us solving questions related to the issues. Are you comfortable to participate in this study?

- If yes, continue to next page
- If no, skip to other participant

Contact

Name: HELEN TESEMA
Tel: 251-912-55 15 09 E-mail: Helen_tesema@yahoo.com.

Part one: Background Information

No	Questions	Answer	Remark
101	Respondent number		
102	Address		
103	Type of health institution	Hospital Health Center	
103	Position of the respondent in the facility	Manager Health professional HIS offices If other specify	
105	Year of service	year	
106	Qualification		

Part two: Facility's HMIS Input

No	Question	Answer	Remark
201	Does your facility have legislatives, regulatory and planning frameworks concerning the use of HIS?	1. Yes 2. No 3. Don't Know	
202	Is there a unit (an office) assigned specifically to HIS?	1. Yes 2. No 3. Don't Know	
203	Does your facility have personnel specifically to HIS? (Note: the person could have other duties too)	1. Yes 2. No 3. Don't Know	
204	Does your facility assign budget for HIS activities?	1. Yes 2. No 3. Don't Know	
205	How do you rate the adequacy of budget for HIS?	1. Very Adequate 2. Adequate 3. Inadequate 4. Very Inadequate 5. Not sure	
206	Are there the necessary equipments for HIS in your facility?	1. Yes 2. No 3. Don't Know	
207	If yes for question number 205, which of the following equipment are assigned to HIS? (Multiple answers are possible).	1. Electricity 2. Telephone 3. Computer 4. Internet or any kind of network 5. Stationery (at least pen and paper) 6. If other, specify.....	
208	Are there trainings on basic computer literacy for the staff of your facility?	1. Yes 2. No 3. Don't Know	
209	Are there any kinds of trainings (in-service) on HIS activities for the staffs?	1. Yes 2. No 3. Don't Know	
210	If yes to question 209, how long has it been after the last training was given?	1. 0 -6 months 2. 6 months to one year 3. One year to one and half years 4. More than two years	
211	For how many of the staffs were the training given in the last 12 months?	1. For less than 25% of the staff 2. For less than 50% of the staff 3. For less than 75% of the staff 4. For all of the staff	
212	Are there any coordination mechanisms in your facility to facilitate use of HIS resources (human, material, financial.....)	1. Yes 2. No 3. Don't Know	

Part three: Facility's HMIS Processes

No	Question	Answer	Remark
301	Does your facility collect health data on a daily activity of patient care?	1. Yes 2. No 3. Don't Know	
302	Are records classified and coded just after each clinical visit?	1. Yes 2. No 3. Don't Know	
303	Do you think the data sources to be collected are overwhelming?	1. Yes 2. No 3. Don't Know	
304	Do the data collect cover socioeconomic (like household income...) and demographic (age, sex...) factors?	1. Yes 2. No 3. Don't Know	
305	Does your facility use population based data (census, survey.....) to use as a denominator?	1. Yes 2. No 3. Don't Know	
306	Which type of institution based data does your facility use? (multiple answers are possible) Service records (records of your facility as well as outside sources)]	1. Resource based 2. Service records 3. Individual records	
307	How do you rate the ease of accessibility (retrievably) of the records for the appropriate staffs?	1. Yes 2. No 3. Don't Know	
308	Are there clear procedures for distributing and reporting the data collected?	1. Very easy 2. Easy 3. Difficult 4. Very difficult 5. Not sure	
309	Are there rules for minimum period of maintenance and dispatch time for the records?	1. Yes 2. No 3. Don't Know	
310	Are the data put at administrative level?	1. Yes 2. No 3. Don't Know	
311	Are the data classified according to some criteria (like date, geographic location or title and/or national code?	1. Yes 2. No 3. Don't Know	
312	Are there regular local quality control and data checks by the facility itself?	1. Yes 2. No 3. Don't Know	
313	Are frequent feedbacks and supportive supervision given for data collectors and used from any concerned outside organs?	1. Yes 2. No 3. Don't Know	
314	If yes for question 314, how frequently do you get the feedback?	1. Every month 2. Every quarter of a year 3. Every half year 4. Every year 5. If other Specify....	

315	Do you agree that the data collected by your facility are timely?	1. Strongly Agree 2. Agree 3. Disagree 4. Strongly Disagree 5. Not sure	
316	Do you agree that the data collected by your facility are consistent?	1. Strongly Agree 2. Agree 3. Disagree 4. Strongly Disagree 5. Not sure	
317	Do you agree that the data collected by your facility are representative?	1. Strongly Agree 2. Agree 3. Disagree 4. Strongly Disagree 5. Not sure	

Part four: HMIS Facility's output

No	Question	Answer	Remark
401	Do you use the information you collected for decision making?	1. Yes 2. No 3. Don't Know	
402	For what other purposes do you use the information you collect? (multiple answers are possible)	1. For future reference 2. To observe trends on service delivery 3. To pass the data for subsidy health office 4. If other, specify.....	
403	Are the data produced easily accessible by all staffs when the need arises?	1. Yes 2. No 3. Don't Know	
404	Are there incentives for information use?	1. Yes 2. No 3. Don't Know	
405	If yes, specify what kind of incentive	1. Money 2. Training 3. Recognition 4. Other.....	
406	Are there policies in your facility for information use?	1. Yes 2. No 3. Don't Know	
407	Does your facility have legislatives and regulatory environment about data security?	1. Yes 2. No 3. Don't Know	
408	Does your facility have legislatives and regulatory environment about retention and destruction of data?	1. Yes 2. No 3. Don't Know	
409	Does your facility have legislatives and regulatory environment about transfer of data between the facility and external users of the records?	1. Yes 2. No 3. Don't Know	
410	Does your facility have any mechanism to disseminate health information to the outside the facilities aside from the reports send to the sub city health offices?	1. Yes 2. No 3. Don't Know	

Part five: possible Determinates Implementation status of HMIS for Technical Factors

No	Question	Answer	Remark
501	Do you agree that There is standardized set of indicator?	1. Strongly Agree 2. Agree 3. Disagree 4. Strongly Disagree 5. Not sure	
502	Do you agree that there is well designed data collection and reporting format?	1. Strongly Agree 2. Agree 3. Disagree 4. Strongly Disagree 5. Not sure	
503	Do you agree that There is trained staff able to fill out format?	1. Strongly Agree 2. Agree 3. Disagree 4. Strongly Disagree 5. Not sure	
504	Do you agree that There is skilled human resource?	1. Strongly Agree 2. Agree 3. Disagree 4. Strongly Disagree 5. Not sure	
505	Do you agree that There is friendly format for reporting result and Easy- to- Visualize?	1. Strongly Agree 2. Agree 3. Disagree 4. Strongly Disagree 5. Not sure	
506	Do you agree that There is use of appropriate technology for data analysis, transfer and presentation?	1. Strongly Agree 2. Agree 3. Disagree 4. Strongly Disagree 5. Not sure	

For Organizational/environmental /systemic factor

No	Question	Answer	Remark
507	How do you rate your agreement existence of coordinated effort and leadership regarding the (political commitment)?	1. Strongly Agree 2. Agree 3. Disagree 4. Strongly Disagree 5. Not sure	
508	How do you rate your agreement pertaining to the existence of strategy and policy (clear roles and responsibilities related to decision- making	1. Strongly Agree 2. Agree 3. Disagree 4. Strongly Disagree 5. Not sure	
509	How do you rate your agreement concerning to the existence of control of budget and allocation?	1. Strongly Agree 2. Agree 3. Disagree 4. Strongly Disagree 5. Not sure	
510	How do you rate your agreement pertaining to the existence of organizational culture (acceptance or resistance)?	1. Strongly Agree 2. Agree 3. Disagree 4. Strongly Disagree 5. Not sure	

For Behavioral Factors

No	Question	Answer	Remark
511	How do you rate your agreement on lack of motivation mechanism when data collectors use it for assessing their performance?	1. Strongly Agree 2. Agree 3. Disagree 4. Strongly Disagree 5. Not sure	
512	How do you rate your agreement on absence of better follow up, coordination, cooperation and communication?	1. Strongly Agree 2. Agree 3. Disagree 4. Strongly Disagree 5. Not sure	
513	How do you rate your agreement on lack of empowerment of care providers (to take action based on data?	1. Strongly Agree 2. Agree 3. Disagree 4. Strongly Disagree 5. Not sure	
514	How do you rate your agreement on lack of confidence to make decision at HMIS related activities?	1. Strongly Agree 2. Agree 3. Disagree 4. Strongly Disagree 5. Not sure	
515	How do you rate your agreement on lack of promotion of culture of information	1. Strongly Agree 2. Agree 3. Disagree 4. Strongly Disagree 5. Not sure	

Annex 2

Interview guide Line

Part one HMIS Focal Person

1. Can you tell me how the current HMIS is running in your department/facility? In terms of data capturing, reporting and information use, do you use any facilitating documents/guide line standards? What are your resources of current HMIS data (facility base and population based)?
2. What common tools are used for data collection? Are they correctly and completely filled? Do you employ mechanism to control data quality?
3. Do you organize presses and analyze data collected to produce relevant, timely and quality information?
4. Do you have guide line/standards regarding information generation, use and reporting?
5. How do you see standardization, simplification and integration in data capturing, recording and reporting in the current HMIS?
6. How do you receive feedback/supervision on HMIS? From whom? In what interval?
7. To what extent does the senior leader in your organization support the HMIS performance improvement? Do you have the resource (people, Time, funds and technology) to carry out the processed leader allocated resource to HMIS process?
8. What are the existing challenges/problems in connection with the current HMIS implementation?
9. How can these situations be improved? (In terms of better attitude, skill and culture of the staff as well as the management support for HMIS related activities)

Thank you for taking the time to participate in this interview!!

Part Two (Medical Director of hospital/health center)

1. Can you tell me how the current HMIS is implemented in your department/facility?
2. How do you see the work of your HMIS unit to the standard (planning framework)? In terms of physical & technical-equipment (computer, office), logistics (e.g. forms) personal trained requirement, budget allocated, Reporting requirement (Time schedule, Aggregation guideline)
3. How do you see application of the principle of standardization, simplification and integration in data capturing, recording and reporting in the current HMIS?
4. Do you employ any mechanism for the maintenance of data quality?
5. Do you think the current HMIS include all reportable data elements for all of your institutional interest? Do you conduct survey to fill this gap? Do you regularly conduct performance monitoring and evaluation for better implementation of current HMIS?
6. How is the management committed to strength BPME sub core process (responsible unit for HMIS activities) allocating budget and prioritize HMIS as a core institutional activities?
7. What do you think the existing challenge/problem in connection with the successful implementation for the current HMIS program is?
8. How could these challenges be improved?

Thank you for taking the time to conduct this interview!!

Annex 3

Physical observation Checklist

Department/facility Department/facility_____

Format/sheet/registers used _____

Skill/Competence/experience/of the staff (by observing filled formats tally sheets, and registers, their legibility and Completeness of data

Room

Status_____

No of staff in HMIS

unit_____

Availability IT /Communication equipment (pc computer. Printer, telephone internet, network, etc) _____

Availability HMIS office_____

Backup system_____

Software used for data capturing, Reporting_____

Annex – 4
Translated Amharic Questionnaire

ስለ ጥናቱ መረጃና መጠየቅ!

መግቢያ

ስሜ.....ይባላል በአሁኑ ስዓት በአዲስ አበባ ዩኒቨርሲቲ የድህረ ምረቃ ተማሪ ከሆነችው ሐሌን ተሰማ ጋር አብራ እሰራለሁ።

የጥናቱ ዋና ዓላማ በአሁኑ ወቅት በባሕር ዳር ከተማ እየተከናወነ ያለው የጤና መረጃ አወቃቀርና ፍሰት በምን ደረጃ ላይ እንዳለ ማወቅ ነው። እርስዎም የዚህ ጥናት ተሳታፊ ይሁኑ ዘንድ ተመርጠዋል።

ምንም እንኳን ይህ ጥናት የተደረገው የድህረምረቃ ሂደቱን ለማሟላት ቢሆንም፣ ነገር ግን የጥናቱ ጥቅም ከዚህም በላይ እንደሆነ ይታመናል። ይህም አሁን ያለውን የመረጃ አጠቃቀም ሁኔታ ከማወቅ በዘለለ መንገድ በአሁኑ ስዓት እየገጠሙ ያሉ ሁኔታዎችን ይመለከታል። የችግሩንም ምክንያቱን ለማወቅ ይሞክራል። ይህም ደግሞ የመረጃ አወቃቀሩንና ስርዓት ወደተሻለ ሁኔታ እንደሚቀይር ይታመናል።

ይህ መጠይቅ ደግሞ ጥናቱን ለማከናወን ጠቃሚ ስለሆነ እንዲሞሉ በትህና ይጠየቃሉ። ስምዎም በመጠይቁ አይዛዩም የሚሰጡትን መልስ ደግሞ ሙሉ በሙሉ ሚስጥራዊነቱ ተጠብቆ ለጥናት ሂደት ብቻ የሚውሉ ናቸው። ስለዚህ በሂደቱ ላይ እንዳይከሰቱላቸው በነፃነት ይሙሉ ምንም ሊያስፈራዎት አይገባም።ከዚህ በላይ ደግሞ እርስዎ መሙላት የማይፈልጉትን ጥያቄ ቢኖር ለመሙላት አይገደዱም። ለጥያቄው ከ25-30 ደቂቃ በቂ ሲሆን ምንም አይነት አስተያየትና ጥያቄ ቢኖረዎት የተሰጠውን አደራሻ በመጠቀም ሊገናኙኝ ይችላሉ።

መተማመኛ ፊርማ

በጥናቱ ለመሳተፍ ፈቃደኛ ነዎት?

- 1) አዎን
- 2) አይ^aለሁም አመለካግለሁ!!

ለመሳተፍ ፍቃደኛ ሲሆኑ ወደሚቀጥለው ገጽ ይለፉ።

ፊርማ.....

አድራሻ ስም ሐሌን ተሰማ

ስልክ ቁጥር 251-912-15-55-09

ኢ.ሜ.ል Helen-tesema@yahoo.com

ክፍል አንድ፡-
ስለ ማኅበራዊ ሁኔታ የሚያመለክቱ ጥያቄዎች

ተ.ቁ	ጥያቄዎች	መልስ ሊሆኑ የሚችሉ ዝርዝሮች	አስተያየት
101	የጥያቄው መለያ ቁጥር		
102	የጤና ድርጅቱ ስም	ፈለገ ሕይወት ሆስፒታል ባህር ዳር ሀን ጤና ጣቢያ አባይ ጤና ጣቢያ	
103	የጤና ድርጅቱ አይነት	ሆስፒታል ጤና ጣቢያ	
104	የተጠያቂው የሥራ ድርሻ	የሆስፒታሉ ዳይሬክተር የሆስፒታሉ አስተዳደር የጤና ባለሙያ የጤና መረጃ ባለሙያ ከተሰጡት የተለየ	
105	የአገልግሎት ዘመን		

ክፍል ሁለት፡- የጤና ተቋሙ የጤና መረጃ ስርዓት ግብዓት፤

ተ.ቁ	ጥያቄዎች	መልስ ሊሆኑ የሚችሉ ዝርዝሮች	አስተያየት
201	እርስዎ በሚሰሩበት የጤና ድርጅት ውስጥ የጤና መረጃ ስርዓት በተመለከተ ሕግና ደንብ አለ?	1.አዎ 2. የለም 3. አላመቅም	
202	በሚሰሩበት የጤና ድርጅት ራሱን የቻለ የጤና መረጃ ስርዓት ክፍል አለ?	1.አዎ 2. የለም 3. አላመቅም	
203	በጤና ድርጅት የጤና መረጃ ስርዓት በተመለከተ ለዚህ ብቻ የተመደቡ ባለሙያዎች አሉ ወይስ በተጓዳኝ ክልላ ሥራ ጋር ነው የሚሰሩት?	1.አዎ 2. የለም 3. አላመቅም	
204	እርስዎ የሚሰሩበት የጤና ድርጅት ለዚህ ለጤና መረጃ ስርዓት በጀት መድሃኒት?	1.አዎ 2. የለም 3. አላመቅም	
205	ለ“204” መልስዎ ”አዎ“ ከሆነ በጀቱን እንዴት ያዩታል?	1. በጣም በቂ 2. በቂ 3. በቂ አይደለም 4.በጣም በቂ አይደለም 5. እርግጠኛ አይደለሁም	
206	ለዚህ የጤና መረጃ ስርዓት በቂ የመሣሪያ አቅርቦት አለ ብለው ያምናሉ?	1.አዎ 2. የለም 3. አላመቅም	
207	በጥያቄ ውስጥ “206” መልስዎ ”አዎ“ ከሆነ ምን አይነት መሣሪያ ተመድቧል (ከአንድ በላይ መምረጥ ይቻላል)	1 ኮምፒውተር. 2. ኢንተርኔት 3.የጽህፈት መሣሪያ (እስክርቢቶ ወረቀት)	
208	በጤና ድርጅትዎ በቂ የኮምፒውተር እውቀት ባለሙያው እንዲኖረው ሥልጠና ይሰጣል?	1.አዎ 2. የለም 3. አላመቅም	
209	የጤና መረጃ ስርዓትን በተመለከተ ለጤና ባለሙያው የሚሰጥ ሥልጠና አለ?	1.አዎ 2. የለም 3. አላመቅም	
210	ለጥያቄ ተራ ቁጥር 209 መልስዎ አዎን ከሆነ የመጨረሻው ሥልጠና የተሰጠው መቼ ነው?	1.ከ0-6 ወር 2.ከ6 ወር-1 ዓመት 3.ከ1 ዓመት-ተኩል 4 ከሁለት ተመት በፊት	
211	በዚህ ሥልጠና ምን ያህል ባለሙያዎች ሥልጠናውን ወስደዋል?	1. ከ 25% በታች 2. ከ 50% በታች 3. ከ 75% በታች 4. ሁሉም ባለሙያዎች	
212	በሚሰሩበት የጤና ድርጅት መረጃ ስርዓት ለማፋጠን የሚሰሩ ትግበራ አለ?(በሰው ኃይል፣ በቁሣቁስና በገንዘብ)	1.አዎ 2. የለም 3. አላመቅም	

ክፍል 3:- የጤና ድርጅቱ የጤና መረጃ ስርዓት ሂደት

ተ.ቁ	ጥያቄዎች	መልስ ሊሆን የሚችሉ ርዝሮች	አስተያየት
301	የሚሠሩበት የጤና ድርጅት በየዕለቱ ከሚታዩት ህመማን የጤና መረጃ በክትትል ይሰበሰባል?	1.አዎ 2. የለም 3. አላመቅም	
302	የሚሰበሰቡት የጤና መረጃዎች በየዕለቱ በተገቢ ሁኔታ መለያ ቁጥር ተስጥቷቸው ይከፋፈላሉ?	1.አዎ 2. የለም 3. አላመቅም	
303	የሚሰበሰበው የጤና መረጃ የተሟላ ነው ይላሉ?	1.አዎ 2. የለም 3. አላመቅም	
304	የጤና መረጃው ስለ ማጎበራዊ ሁኔታ የሚገልፁ ናቸው	1.አዎ 2. የለም 3. አላመቅም	
305	የጤና መረጃው የአካባቢ ሁኔታና የሥራዎችን ባህሪ ያካተተ ነው	1.አዎ 2. የለም 3. አላመቅም	
306	የጤና ድርጅትዎ የሕዝብ ቆጠራን ያማከለ መረጃ ይጠቀማል?	1.አዎ 2. የለም 3. አላመቅም	
307	የጤና ድርጅትዎ የሚጠቀመው ምንን መሠረት ያደረገ መረጃ ነው? (ከአንድ በላይ መምረጥ ይቻላል)	1.ሃብትን መሠረት ያደረገ 2.ግልጋሎትን መሠረት ያደረገ 3.የግለሰቦችን ማጎደር ያማከል	
308	ማጎደሩ ለባለሙያዎች ያለውን አቅርቦት እንዴት ይገመግሙታል?	1.በጣም ቀላል 2.ቀላል 3.አስቸጋሪ 4.በጣም አስቸጋሪ 5.እርግጠኛ አይደለሁም	
309	የመረጃ ስርጭትና አቅርቦት ምን ያህል ግልጽ ነው ብለው ያምናሉ	1.በጣም ቀላል 2.ቀላል 3.አስቸጋሪ 4.በጣም አስቸጋሪ 5.እርግጠኛ አይደለሁም	
310	በጤና ድርጅትዎ የጤና መረጃ አሰባሰቡ እንዲቀጥል እና ለውጤት እንዲያበቃ የሚያደርግ ደንብ አለው?	1.አዎ 2. የለም 3. አላመቅም	
311	የተሰበሰበው መረጃ በአስተዳደር ደረጃ ይቀመጣል?	1.አዎ 2. የለም 3. አላመቅም	
312	በድርጅትዎ የተሰበሰበው መረጃ በመልክክ ምድር አቀማመጥ፣ ርዕስ እና በብሄራዊ መለያ የተከፋፈለ ነው?	1.አዎ 2. የለም 3. አላመቅም	
313	የጤና ድርጅቱ በራሱ ያልተቋረጠ የጥራት መቆጣጠሪያና የመረጃ ስርዓት ያደርጋል።	1.አዎ 2. የለም 3. አላመቅም	
314	በሚሠሩበት የጤና ድርጅት ተከታታይነት ያለው አበረታች ክትትል ከሌላ ከሚመለከተው አካል ይደረጋል?	1.አዎ 2. የለም 3. አላመቅም	

315	ለጥያቄ ተራ ቁጥር 314 መልስዎ አዎ ከሆነ ክትትሉ በየ ስንት ጊዜው ይደረጋል?	1.በየወሩ 2.በየ ሩብ ዓመት 3.በየ 6 ወሩ 4.በየ ዓመቱ 5.ሌላም ካለ ይግለጹ	
316	በሚሠሩበት የጤና ድርጅት የመረጃ መስብሰብ ሂደቱ ወቅታዊ ነው ብለው ይስማማሉ?	1.እስማማለሁ 2.በጣም እስማማለሁ 3.አልስማማም 4.በጣም አልስማማም 5.እርግጠኛ አይደለሁም	
317	ለሚሠሩበት የጤና ድርጅት የመረጃ ማሰባሰብ ሂደቱ ወጥ የሆነ ነው ብለው ይስማማሉ?	1.እስማማለሁ 2.በጣም እስማማለሁ 3.አልስማማም 4.በጣም አልስማማም 5.እርግጠኛ አይደለሁም	
318	በሚሠሩበት የጤና ድርጅት የተሰበሰበው መረጃ ሌላውን ይወክላል ብለው ይስማማሉ?	1.እስማማለሁ 2.በጣም እስማማለሁ 3.አልስማማም 4.በጣም አልስማማም 5.እርግጠኛ አይደለሁም	

ክፍል 4 የድርጅቱን የጤና መረጃ ስርዓት ውጤት

ተ.ቁ	ጥያቄዎች	መልስ ሊሆኑ የሚችሉ አማራጮች	አስተያየት
401	የተሰበሰበው መረጃ ለውሳኔ ይውላል?	1.አዎ 2. የለም 3. አላመቅም	
402	የተሰበሰበው መረጃ ለሌላ ለምን ዓላማ ይውላል?	1.ለተጨማሪ ምንጭ 2.በአገልግሎት አሰጣጥ ላይ ያለውን የአሰራር ልምድ ለመመልከት 3.ለሚቀጥለው የበላይ የቢሮ ለማስተላለፍ 4.ሌላ ካለ ይግለጹ	
403	መረጃው ባለሙያው በፈለገው ስዓት ለማግኘት የተመቸ ነው	1.አዎ 2. የለም 3. አላመቅም	
404	መረጃውን ለመጠቀም የሚያበረታታ ሁኔታ አለ?	1.አዎ 2. የለም 3. አላመቅም	
405	ለጥያቄ ተራ ቁጥር 404 መልስዎ አዎ ከሆነ ምን ዓይነት ማበረታቻ አለ?	1.ገንዘብ 2.ሥልጠና 3.እውቀት 4.ሌላ	
406	የተሰበሰበውን መረጃ ለመጠቀም የወጣ ፖሊሲ አለ?	1.አዎ 2. የለም 3. አላመቅም	
407	በሚሠሩበት የጤና ድርጅት ውስጥ የመረጃውን ሚስጥራዊነት ለመጠበቅ የወጣ ሕግና ደንብ አለ?	1.አዎ 2. የለም 3. አላመቅም	
408	በሚሠሩበት የጤና ድርጅት ውስጥ መረጃን ለራሱ ለድርጅቱና ከድርጅቱ ውጭ ለሆኑ መ/ቤቶች ለማስተላለፍ የወጣ ሕግና ደንብ አለ?	1.አዎ 2. የለም 3. አላመቅም	
409	የሚሠሩበት የጤና ድርጅት የጤና መረጃን ለሌላ አካልም ሆነ ከተማ አስተዳደር ጤና ቢሮ የሚሰጥበት መንገድ አለው?	1.አዎ 2. የለም 3. አላመቅም	

ክፍል:- 5
ለጤና መረጃ ፍሰት አስተዋፅኦ የሚያደርጉ

ተ.ቁ	ጥያቄዎች	መልስ ሊሆኑ የሚችሉ ዝርዝሮች	አስተያየት
501	ለሚሠሩበት የጤና ድርጅት ወጥ የሆኑ የተሰበሰቡ አመለካከት አለብለው ይስማማሉ?	1. በጣም እስማማለሁ 2. እስማማለሁ 3. አልስማማም 4. በጣም አልስማማም 5. እርግጠኛ አይደለሁም	
502	በሚሠሩበት የጤና ድርጅት ጥሩ ሆኖ የተዘጋጀ የመረጃ መሰብሰቢያ እና የማስተላለፊያ ቅጽ አለብለው ይስማማሉ?	1. በጣም እስማማለሁ 2. እስማማለሁ 3. አልስማማም 4. በጣም አልስማማም 5. እርግጠኛ አይደለሁም	
503	የጤና መረጃ ቅጹን ለመሙላት የሚችሉ የሰለጠኑ ባለሙያዎች በመስሪያቤትዎ አሉብለው ይስማማሉ?	1. በጣም እስማማለሁ 2. እስማማለሁ 3. አልስማማም 4. በጣም አልስማማም 5. እርግጠኛ አይደለሁም	
504	የጤና መረጃ የሚሰበሰቡ ባለሙያዎች ብቃት አላቸውብለው ይስማማሉ?	1. በጣም እስማማለሁ 2. እስማማለሁ 3. በጣም አልስማማም 4. አልስማማም 5. እርግጠኛ አይደለሁም	
505	የጤና መረጃ ቅጹን ባለሙያዎች በቀላሉ ሊረዱት የሚችሉት ዓይነት ነው ብለው ይስማማሉ?	1. በጣም እስማማለሁ 2. እስማማለሁ 3. በጣም አልስማማም 4. አልስማማም 5. እርግጠኛ አይደለሁም	
506	ለማገናዘብ፣ ለማስተላለፍ እና ለማቅረብ ምቹ የሆነ ቴክኖሎጂ አለብለው ይስማማሉ?	1. በጣም እስማማለሁ 2. እስማማለሁ 3. በጣም አልስማማም 4. አልስማማም 5. እርግጠኛ አይደለሁም	
507	ይህን የጤና መረጃ ስርዓቱን ለመተግበር የሚያስችል ጥሩ አመራርና ቅንጅት አለብለው ይስማማሉ?	1. በጣም እስማማለሁ 2. እስማማለሁ 3. በጣም አልስማማም 4. አልስማማም 5. እርግጠኛ አይደለሁም	
508	ያለው መረጃ ከውሣኔ ጋር ለማዛመድ ግልጽ የሆነ ሚናና ኃላፊነት አለብለው ይምናሉ?	1. በጣም እስማማለሁ 2. እስማማለሁ 3. በጣም አልስማማም 4. አልስማማም 5. እርግጠኛ አይደለሁም	

509	በሚሠሩበት የጤና ድርጅት ለጤና መረጃ ስርዓት በቂ የሆነ በጀትን የሚመደብና የሚቁጣጠር አካል አለ ብለው ይስማማሉ?	1. በጣም እስማማለሁ 2. እስማማለሁ 3. በጣም አልስማማም 4. አልስማማም 5. እርግጠኛ አይደለሁም	
510	በጤና ድርጅቱ ያለውን የጤና መረጃ ስርዓቱን ለመቀበልና ላለመቀበል የራሱ የሆነ ድርጅታዊ ባሕል አለው ብለው ይስማማማ?	1 በጣም እስማማለሁ 2. እስማማለሁ 3. በጣም አልስማማም 4. አልስማማም 5. እርግጠኛ አይደለሁም	

Annex 2

የቃለ መልልስ ቅጽ

ክፍል አንድ :- የጤና መረጃ ስርዓት ባለሙያዎች /አራት ስዎች/

1. የጤና መረጃ ስርዓቱ ለመ/ቤቱም ላይ እንዴት እየሄደ እንደሆነ ቢገልጹልን? ከመረጃ አካላት አቀራረብ እና የመረጃ አጠቃቀም ጋር አያይዘው ቢመልሱ:: ስርዓቱን ለማከናወንና ለማካሄድ ሠነዶች ወይም መመሪያዎችን ይጠቅማሉ?
2. አሁን ባለው የጤና መረጃ ስርዓት ምን ግብዓት አለው?(ጤና ተቋም ወይም ህዝብን መሠረት ያደረገ)
3. መረጃውን ለመሰብሰብ የሚጠቀሙባቸው መሣሪያዎች ምንድን ናቸው? መረጃው ጥራቱን የተጠበቀ እንዲሆን እየተገበረ ያለ ሥርዓት አለ ወይ?
4. ጥራት ያለውን ጊዜውን የጠበቀ መረጃ ለማግኘት የመረጃ አሰባሰብና የማገናከብ ሥራ ይሠራል? መረጃን ለማግኘት ለመጠቀምና ለማቅረብ አቅጣጫን የሚያሳይ ደንብ ወይም መመሪያዎች አሉ?
5. መረጃ በመሰብሰብ ላይ ባለው የመረጃ ስርዓት መሠረት በቀላልና በተቀናጀ እንዲሁም በረቀቀ መንገድ የማቅረብ ሁኔታ እንዴት ይመለከቱታል?
6. የጤና መረጃ ስርዓቱን እንዴት ይፈፀማል (በተግባር ላይ ይውላል?) በምን ያህል ጊዜ ክፍተት?
7. በመ/ቤት ውስጥ የበላይ አካላት የጤና መረጃ ስርዓት በመደገፍና በማሳደግ ሂደት ውስጥ ያላቸው ጥረት ተሳትፎ እስከምን ድረስ ነው?
8. በአሁኑ ስዓት የጤና መረጃ ስርዓቱን በመተግበር ሂደት ላይ እንቅፋት የሆኑ ችግሮች ምንድን ናቸው?
9. እንዴትስ ሊሻሻሉ ይችላሉ? (ከብቃት ከአካሄድ እና ከበላይ አካል ድጋፍ አንፃር)

መጠየቁን ለመሞላት ስለ ሰጡን ጊዜ እጅግ አብዝቼ አመሰግናለሁ!!

ክፍል ሁለት :- (የሆስፒታል ዳይሬክተር)

1. በጤና ድርጅትዎ ላይ የጤና መረጃ ስርዓቱ እንዴት እየተፈፀመ እንዳለ ሊነግሩኝ ይችላሉ ?
2. የጤና መረጃ ስርዓት ስራ ከተጠበቀው አንፃር እንዴት ያዩታል? (ከቁሳቁስ ማማላት ከኮምፒውተር ክፍል፣ ቢሮ) ብቃት ካለው የሰው ኃይል ፍላጎት የበጀት አመዳደብ የመረጃ አቀራረብ ስርዓት (ከጊዜ፣ ከመመሪያው አንፃር)
3. ለረቀቀና በቀላል መንገድ መረጃን የመስጠትና የማቅረብ ሁኔታን ባለው የጤና መረጃ ስርዓት አንፃር እንዴት ያዩታል?
4. ጥራት ያለውን መረጃ ለማግኘት እየተገበረ ያለ እንቅስቃሴ አለ?
5. በአሁኑ ሰዓት ያለው የጤና መረጃ ስርዓት ማስተላለፊያ መሰረታዊ ነገሮች የተቋሙን ፍላጎት ያማከሉ ናቸው ብለው ያምናሉ? የሚታዩ ክፍተቶች ለመሙላት የተደረገ ጥረት አለ? አሁን ያለው የጤና መረጃ ስርዓት በተሻለ ሁኔታ ለመተግበር የሚረዱ ተከታታይነት ያላቸው የአቅም ምዘናና ቁጥጥር ይካሄዳል?
6. የበጀት እቅድ ምዘና እና ቁጥጥር ለማጠናከር አስተዳደሩ ያሳየው ተነሳሽነት ምን ያህል ነው? (ለጤና መረጃ ስርዓት በጀት በመበጀትና ቅድሚያ በመስጠት)
7. ከጤና መረጃ ስርዓት ጋር በተያያዘ የሚታዩ ችግሮች ምን ምን ናቸው ?
8. እነዚህ ችግሮችን ለማሻሻል ምን መደረግ አለበት?

ይህን ጥያቄ ለመመለስ ስለተባበሩኝ አመሠግናለሁ//

Annex 3

የአካላዊ እይታ ቼክ ሊስት

ክፍል ወይም ተቋም	
ቅጽ ወይም ወረቀት ወይም መመዝገቢያ	
ቅጹን ለመሙላት የባለሙያዎች ብቃት፣ ተወዳዳሪነትና ልምድ.....	
ሊነበብ የሚችል እና የተሟላ መረጃ.....	
የክፍሉ ሁኔታ.....	
በጤና መረጃ ስርዓት ውስጥ ያሉ የባለሙያዎች ብዛት.....	
የኢንፎርሜሽን ኮሙኒኬሽን ቴክኖሎጂ አገለግሎት ሰጪ ቁሳቁሶች መሟላት (የህትመት መሣሪያ)	
የስልክ፣ የኢንተርኔት፣ የኔትወርክና ወ.ዘ.ተ/.....	
የጤና መረጃ ስርዓት አለ.....	
መረጃዎችን እንዳይጠፉ የሚደረጉ ዘዴዎች.....	
መረጃን ለማስተላለፍና ለመያዝ የሚጠቅሙ ሶፍትዌሮች.....	

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