

**Assessment of Utilization of Health Information at  
Woreda Level in East Wollega Zone, Oromia  
Regional State, West Ethiopia**

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## Abstract

**Background:** *Health Information System in low income countries at all level has an important role to support Ministries of Health and other government agencies for informed decision making at all level. However, its utilization is a challenging task currently confronted by countries throughout the developing world in general and Ethiopia in particular .Moreover, there is no adequate information/research on the utilization of Health Information for decision making in East Wollega zone.*

**Objective:** *The main objective of this study was to assess the utilization of health information at Woreda /district level in East Wollega Zone.*

**Methods:** *A cross-sectional study design with quantitative and qualitative methods was conducted in nine randomly selected woredas in east Wollega zone from March 1 to April 15, 2011. A total of 306 persons in charge of different units or departments were interviewed using pre-tested structured questionnaire. Nine WorHO head and 18 HCs case managers were also interviewed using interview guide.*

**Result:** *The majority (197, 64.4%) of respondents were males; 109(35.6%) were females; 226(73.9%) of them were diploma level; 197(64.4%) had average monthly salary of 1233-2249 EB, majority 220(71.9%) had  $\leq 5$  years of service experience. All of the respondent 100% had training on HMIS, only 36 (11.8%) had in service training. Based on the criteria about 140(45.8%) were not utilized HIS, 202 (66.0%) of them utilize HIS to prepare plan of action (for short term decision). The significant factors affecting utilization of Health Information on multiple logistic regression analysis were feed back from respective supervisor [AOR=14.5(6.9-30.3)], types of the decision [AOR= 3.9(1.9-7.8)] and, type of the organization [AOR= 3.5(1.5-8.1)]. The proportion quarterly completeness & timeliness of report were 86% and 89% respectively however data accuracy were not 100% maintained as per guideline. Furthermore in about 45.8% and 57.8% of the all units/department had the required registers and forms respectively*

**Conclusion:** *The utilization rate of Health Information at Woreda level in east Wollega zone was found to be very low and training on HMIS was not adequate to implement the new system in line with HMIS standard. Efforts should be made by the Zonal health department to strengthen supportive supervision at all levels and ensure availability of standard reporting formats& registers and enhance staff in-service training and capacity building programs so as to maximize the utilization of Health Information.*

**Key words:** *Utilization, health information system, Woreda, East Wollega Zone.*

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## **Acronyms**

<b>ESHE</b>	Essential Services of Health for Ethiopia
<b>FMOH</b>	Federal Ministry of Health
<b>HC</b>	Health Center
<b>HIS</b>	Health Information System
<b>HMIS</b>	Health Management Information System
<b>HSDP</b>	Health Sector Development Program
<b>M&amp;E</b>	Monitoring and Evaluation
<b>MDG</b>	Millennium Development Goals
<b>OPD</b>	Out Patient Department
<b>PASDEP</b>	Plan for Accelerated and Sustained Development to End Poverty
<b>PHCU</b>	Primary Health Care Units
<b>SPM</b>	Strategic Planning and Management
<b>WHO</b>	World Health Organization
<b>WorHO</b>	Woreda Health Office



## **Chapter One: Introduction**

### **1.1. Background**

Health Information System which interchangeably called as Health Management Information System is a system that integrates health data collection, processing, reporting, and use of the information necessary for improving health service delivery, effectiveness and developing efficiencies in the reporting systems [1]. It also defined as “a set of components and procedures organized with the objective of generating information which will improve health care management decisions at all levels of the health system”. It provides information necessary for all actors involved in healthcare at all levels, from Primary Health Care Units (PHCU) to Ministry of Health, policy-makers and donors and for health staff to do their jobs effectively [2]. Health Information System (HIS) in low income countries including Ethiopia has an important role to support Ministries of Health and other government agencies in monitoring health service activities, morbidity, mortality, vital events, and achieved outcome of health services and helps leaders in evidence-based decision making, and resource allocation [3].

Even though, Health Management Information System (HMIS) were utilized during Strategic Planning and Management (SPM) in 2006 in Oromia, Amhara, SNNP and, Tigray regional states; HMIS information was not utilized, especially by those who produce the service: - Woreda health office (WorHO) and Health Center (HC), to improve service delivery management and the health of the population [4].

Meanwhile, the information quality and use remain weak within the health sector, particularly at the peripheral levels of Woreda health office and Health center, which have primary responsibility for operational management. This indicates HMIS is not utilized for the purpose it intended at Woreda level [5].

Moreover, the status and utilization of health information system at Woreda level in East Wollega zone is not known. Hence, this study is an attempt to assess how Woreda Health office and Health centers utilize the Health Information for decision making in the study area.

## **1.2 Statement of the problem**

Routine health information forms a critical backbone of strong health systems and its strengthening is a challenging task currently being confronted by countries throughout the developing world. Providing complete, timely, good-quality health information/data for evidence-based decision-making is a not easy task [6, 7 & 8].

Despite the apparent suitability of an HMIS for substantial resources invested in the development and operation, the extent to which data from HMISs are used to generate statistics of use to decision makers is extremely limited[9].

Ideally, all facilities report their data promptly and comprehensively every month. However, many of the facilities operate under difficult circumstances, and keeping detailed records and reporting them every month is not always at the top of the priority list. As a result, data from many of the facilities are missing for any given month, and the overall national picture is inevitably incomplete [10, 11]. In addition, many developing countries delay seriously behind the developed world in the coordination and sharing of information. Few staff members are properly trained to develop, operate or maintain the systems that are in place [12]. That is why, the utility and effectiveness of HIS in improving health system performance in developing countries has been questioned [13].

In India, data are collected in vast amounts but are mostly incomplete, unreliable and unused [14, 15]. Similarly, WHO Regional Committee for Africa reviewed the situation of national health information systems and adopted a strategy for strengthening them. However, regardless of efforts in countries to make National HISs operational, there are still lack of necessary resources , incomplete data, late processing and transmittal, lack of decentralized utilization of data for decision-making at all levels and insufficient use of available information[16].

Likewise, Health management information systems exist to address this need at national scales across Africa but are failing to deliver adequate data because of widespread underreporting by health facilities [11]. For instance; between 1996 and 2002, the Kenyan HMIS contained only 35% of the expected monthly records from government clinics providing outpatient care nationwide. This seriously limits the direct use of these data for planning health service needs [11]. Study done in Tanzania reported that information collected using top- down system would have little value for health care action at the site of data generation because it was supposed to be inappropriate and erroneous [17,18].

In the same way the health information systems are expected to provide health workers and health managers with a systematic tool for decision making. However, study done in Western Cape showed that the Health Information Systems (HIS) of developing countries are not optimal enough to support decision-based management. To illustrate some, HIS development and implementation in developing countries has proved to be difficult due to organizational complexity, unrealistic ambitions, and more generally due to the problem of sustainability [4, 19].

In Ethiopia, since the primary Health care era the importance of Health information systems have increased to create better opportunities for community oriented decision making [18]. However, as any other developing countries, it has been reported that health information is rarely used for management decision-making at periphery level. Too much data is collected from the health facilities and reported in multiple formats, the data is of poor quality, incomplete, untimely and not analyzed at the site of collection [20]. Moreover, a case study from Ethiopia shows several factors influence use of information for action. The major factors that affect information use include the characteristics of the data quality, characteristics of the required decision, organization or structural characteristics, resource constraints, appropriate incentive and motivation of the staff as a major impediment in relation to the HIS of child survival activities from different levels in the health care system of Ethiopia [19].

Even though, a number of reforms on HMIS have been made to improve the situation both at the federal and regional levels with the involvement of stakeholders in standardization of procedures in data collection, analysis and reporting, selection of sector-wide and programmatic indicators design of simplified items of the formats, and integrated flow of information, still there is insufficient use of health information to improve health service delivery across the country [4, 21].

Understanding the utilization of HIS at Woreda level is critical to make improvements in decision making. However, few studies have addressed the utilization of HMIS in Ethiopia and to the best of the investigators knowledge there is no study conducted on the utilization of HIS in East Wollega zone. Therefore, this study will identify how data and information are generated, utilized and factors influencing the utilization of HIS at Woreda level in the study area. The study will improve and strengthen the utilization of information for decision making at Woreda level.

## Chapter Two

### 2.1 Literature Review

Health Information System is an integral part of the health system whose operational boundaries include all resources, organizations and actors that are involved in the regulation, financing and provision of actions whose primary intent is to protect, promote and improve health. There are different users and uses of information such as Patients, communities, service providers, programme managers, policy-makers, and providers of funds, global agencies and organizations [22].

Health information systems help globally to develop the culture of evidence based policy making to identify issues; inform the design and choice of policy; forecast the future; monitor policy implementation; and evaluation policy impact. These needs go far beyond information from, and on, the health system itself, including information on the socioeconomic, demographic, environmental, and behavioral determinants of health outcomes. Health policies and outcomes are also linked to policies and outcomes in other sectors , such as education and to more general development frame work such as poverty reduction strategies and monitoring of the millennium development Goals .This is highlighted in the case of information needed to understand, prevent and cure diseases [23].

The health information system has to make available: - the right information, the right knowledge, to the right persons and institutions, in the right form, at the right time, and in the right place. This broad definition comprises the various expectations in information systems for Woreda health systems. The right persons and institutions include for example the members of the Woreda health team, the ministry of health, and the donor agencies which promote vertical programs and also the communities and individual clients of a health service [17, 24].

A study done in Tanzania shows, of all respondents, 81% had never been trained on HMIS, 65% did not properly define this system, 54% didn't know who is supposed to use the information collected and 42% did not use the collected data for planning, budgeting and evaluation of services provision and 40% didn't know the importance of HMIS. On the other hand, more than one third (37%) of all respondents did not know the HMIS information flow pattern [14].

Action oriented -data should be collected and reported in an appropriate time frame according to its use for decision-making. [25].

Observations in Ghana and Uganda suggest that not more than 10% and 20% of the information entered in a register is ever used to improve management in any meaningful way respectively. The raw data entered in to report form to be sent to higher level is not used very often. Thus a lot of data may be collected, but very little is ever used directly as a source to improve decision - making and to contribute to improved health care [26, 27]. In Kenya, reporting rates varied from month to month and facility to facility, but the overall reporting rate was only 35%, with 25% of the facilities never reporting [11].

The problem stems from the fact that health center staffs, who do not appreciate the purpose of the data collected, submit inflated figures in the mistaken belief that they are performance indicators rather than indicators of community health status. Likewise is also not seen as relevant to service delivery [28].

However, Ethiopian HIS indicate that there is no value in collecting HMIS data unless they are turned into information that health workers and managers can use to improve service delivery. Furthermore, priority in HMIS reform should be given to training in interpretation of information and problem solving techniques, and especially to facility and Woreda managers whose decisions and actions have the most immediate and direct effect on service delivery [4].

Consequently, the objectives of Ethiopian HMIS in HSDP III were to achieve 80% completeness and timeliness of routine health administrative reports and 75% evidence-based planning by 2010 [29]. On the same way Ethiopian MOH- HMIS guide line put or recommend 100% standard for Completeness, Timeliness and Consistency of the data reported and recorded whereas 85% minimum standard for Completeness & Timeliness and 90% for Consistency/accuracy[30].

The timeliness and completeness of HMIS reporting remains poor and such delays contribute to the failure to use data as the basis for informed decision making in planning and management at all level of health sectors [31, 32].

Information and communications technology (ICT), the infrastructure to support it, and the trained staff to use it are all weak at Woreda level and below. Some 40% of woredas report having computers. Only 9% of woredas report having HMIS staff with basic computer skills. At the Health Center level, 20% report having computers, with only 1% of HMIS staff having computer skills [32].

Assessments done in Amhara region indicate HMIS is unfamiliar in the region, the target zones, and the woredas. Malaria and immunization are regional priorities and thus regional, zonal and Woreda experts in malaria and immunization follow these indicators carefully and use these data to plan and modify activities. Data at the Woreda level were managed by the departments responsible for particular programs. Only 1 of 16 woredas (6.3%) noted that they had a committee designated to analyze all woreda data. However, all 16 woredas compared indicator performance against targets (plans), and 88% of Woreda noted compared indicator performance against the total eligible population. In addition, 81% of Woreda stated that they use analyses of data in decision-making for Woreda health activities; this was evident from changes in health indicator performance as a result of “campaigns.” Only 2 of 22 health centers and health stations reportedly had committees that were designated to assess facility HMIS data. However 64% of health facilities noted that data were used for decision making and planning of facility activities. Twenty four percent of health centers and health stations stated that the woreda health office never met with them to discuss HMIS results, 29% said they met with the woreda once a year to discuss HMIS results, 14% noted that they met biannually, 24% said they met quarterly, and 10% said there was no regular schedule for meeting to discuss HMIS results [33].

HSDP III report indicated that challenges faced in the country with in health management information system are lack of coordination efforts, leadership, and lack of strategy and policy shortage of skilled human resources and lack of guideline. The timeliness and completeness of HMIS reporting remains poor and such delays contribute to the failure to use data as the basis for informed decision making in planning and management at all level of health sectors [34]. Survey done by ESHE in Amhara Regional state reported that utilization of information at Woreda and health facilities level was partial and uneven. More systematic, long-term monitoring and data based planning were not inherent at Woreda level [35].

During 2006 HMIS/BPR assessments of four regions (Amhara, Oromia, SNNP, and Tigray) have been particularly active in the use of HMIS information in SPM, showing 50-60% of all health institutions. In the same report, health institutions receiving feedback and supervision using HMIS information are in higher proportions than in the other regions While 72% of HMIS workers could make a bar graph ranging from 92% at Woreda Health Offices to 54% at Health center, only 14% could detect an obvious trend shown in the graph ranging from 30% at RHB including Oromia, progressively down to 7% lowest level [4].

This finding reported the need for training and ongoing supportive supervision at peripheral levels.

According to Ministry of Health of Ethiopia HSDP II report health information system remains poor and these problems contribute to the failure to use data as the basis for informed decision-making [36] and Ministry of Health of Ethiopia HSDP III also reported that there were little use of information for planning and action-oriented decision-making; in frequent feedback and supervision [37].

Survey done by ESHE in some part of Amhara Region, reported that utilization of information at district and health facilities level was partial and uneven [35]. Similarly, study done in North Gondar shows the utilization rate of health information was found to be 22.5% [38]. Accordingly the FMOH has taken HMIS reform and assessment of HMIS conducted between June and September 2006 in all regions identified that the HMIS is cumbersome and fragmented; staff particularly at the periphery levels lacks adequate skills in data collection and analysis [26].

## ***2.2. Significance of the study***

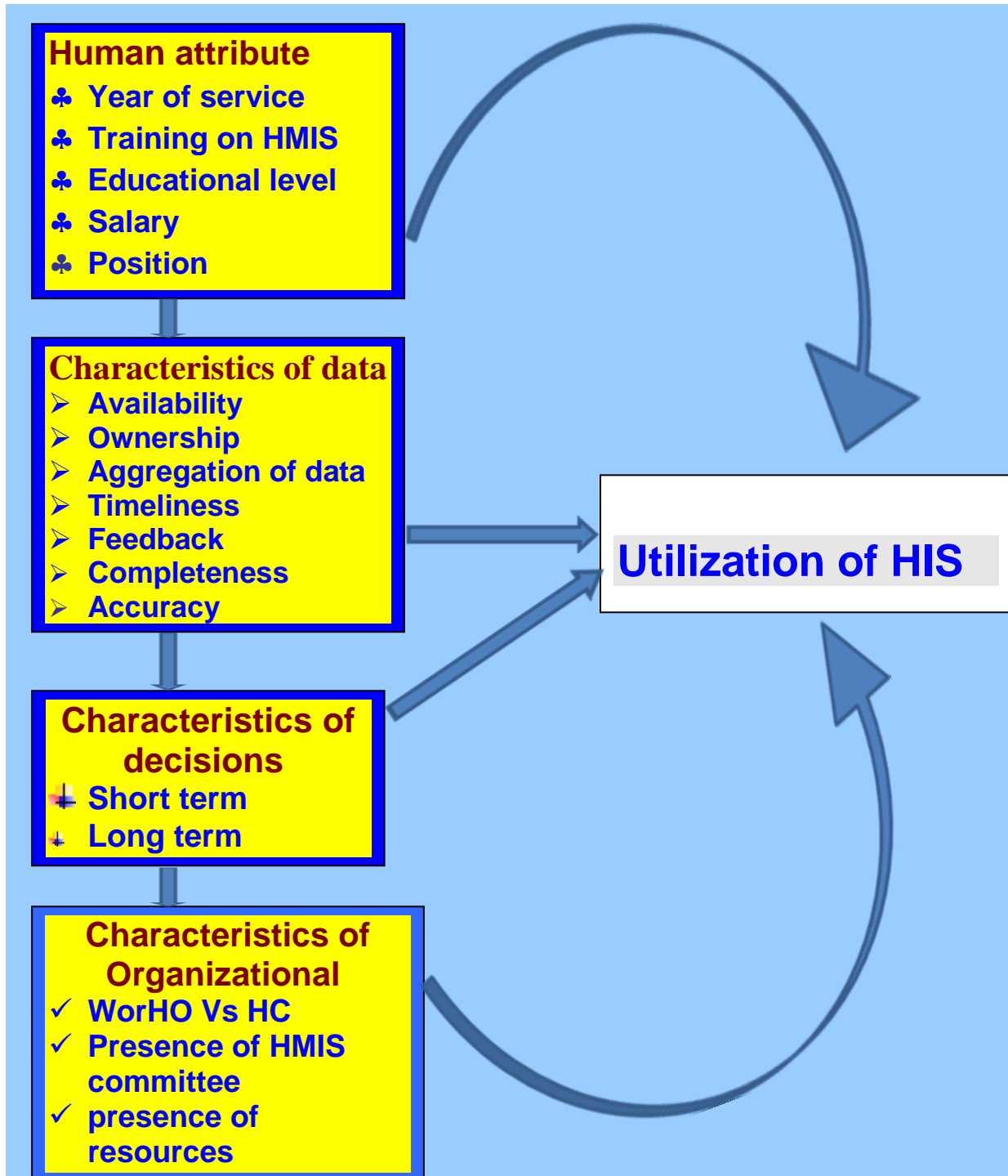
Ideally a robust HMIS should form the core of all health management and reform initiatives. However, a key observation in the field is that the existing HMIS do not systematically support the collection and use of data [26]. At the facility level, health workers commonly spend 40 % or more of their time filling in HIS forms but may make little use of the data for decision making [39]. Health management information system supports decision making at various levels, from central-level policy development to local monitoring of primary health care activities. Although data tend to move to higher levels in the system for compilation and analysis, use of the data for management at the district and facility level is also important. Given that, HMIS is a reform mediator, it needs immediate identification of problems associated with HIS utilization and urgent corrective actions. The implementation of HIS is being scaled up to all parts of the country with inclusive of east Wollega Zone. Even though studies conducted in four regions of Ethiopia including Oromia on HIS utilization at regional level partially but not at the whole Woreda level in general and in east Wollega zone in particular.

Thus, this assessment was tried to identify gaps associated with the utilization of Health Information which may help as an input for Zonal health department to improve the utilization in all woredas and health institutions already implementing HMIS and to consider the best practices obtained during expansion of the program to the other health institutions. And also assessment of the status of the utilization of HIS is highly recommended by Government to improve health care service.

Hence; this study is proposed to assess the utilization of Health Information of east Wollega Woreda Level for local health planner, decision makers. Furthermore; it may also be helpful for improving the general flow of health information and can serve as additional information for those who are interested to conduct further study on this area.



### 2.3. Conceptual Framework of the study



**Figure 1-** Conceptual framework of Assessment of Utilization of Health Information at Woreda Level in East Wollega Zone

## **Chapter Three: Objectives**

### **3.1. General objective**

To assess utilization of health information at Woreda /District level in East Wollega Zone.

### **3.2. Specific objectives**

1. To identify status of health data and information generation process at Woreda /district level.
2. To assess the level of utilization of health information for decision- making at Woreda /district and Health Center level.
3. To assess factors that affect utilization of health information at Woreda /district level.

## **Chapter Four**

### **Methods and Materials**

#### **4.1. Study area and Period**

This study was conducted in East Wollega zone from March 1 to April 15, 2011. East Wollega is one of the 17 zones in the Oromia National Regional State. Nekemte, the capital town of the zone, is located 331 Km west of Addis Ababa. It has a latitude and longitude of 9°5'N, 36°33'E and an elevation of 2,088 meters above sea level.

East Wollega comprises a total population of 1,285,130; of which 633,437 are Males and 651,693 Females. The Zone has one District Hospital, 17 Woreda Health Offices, 34 Health Centers, and 287 Health Posts and 102 private clinics. A total of 1,269 different level Health professionals and 407 Administrative workers are currently providing service to the community in the government health facilities. And also according to East Wollega zone Health Department 2002 EFY (2009/2010 G.C) reports 93% of population in the zone has access to health services facilities [40].

#### **4.2. Study design**

A cross-sectional facility based study design that utilize both quantitative and qualitative methods data collection was conducted on Assessment of Utilization of Health Information at Woreda Level in East Wollega Zone.

#### **4.3. Populations**

##### **4.3.1. Source population**

All Woreda Health Offices and Health Centers in East Wollega Zone

All Woreda health office head and unit heads in the zone.

All Health Centers heads, case managers and unit head in the zone

##### **4.3.2. Study population-**

Selected Woreda health offices, head of the health offices, units' expert in the Office, Health Centers, Head of the health centers and unit heads in the health centers

## **Inclusion criteria**

All Woreda health office and health centers who are implementing HMIS before July 2010  
Facility and Unit heads who have at least six months of work experience.

## **Exclusion criteria**

Health posts were excluded from the study.

Health office, health center and department/unit heads or experts served for less than six month.

## **4.4. Sample size and Sampling technique**

### **4.4.1 Samples size.**

Nine Woreda health office heads & 81 units' heads of health office

Eighteen health center heads & 198 units' heads in the selected health centers.

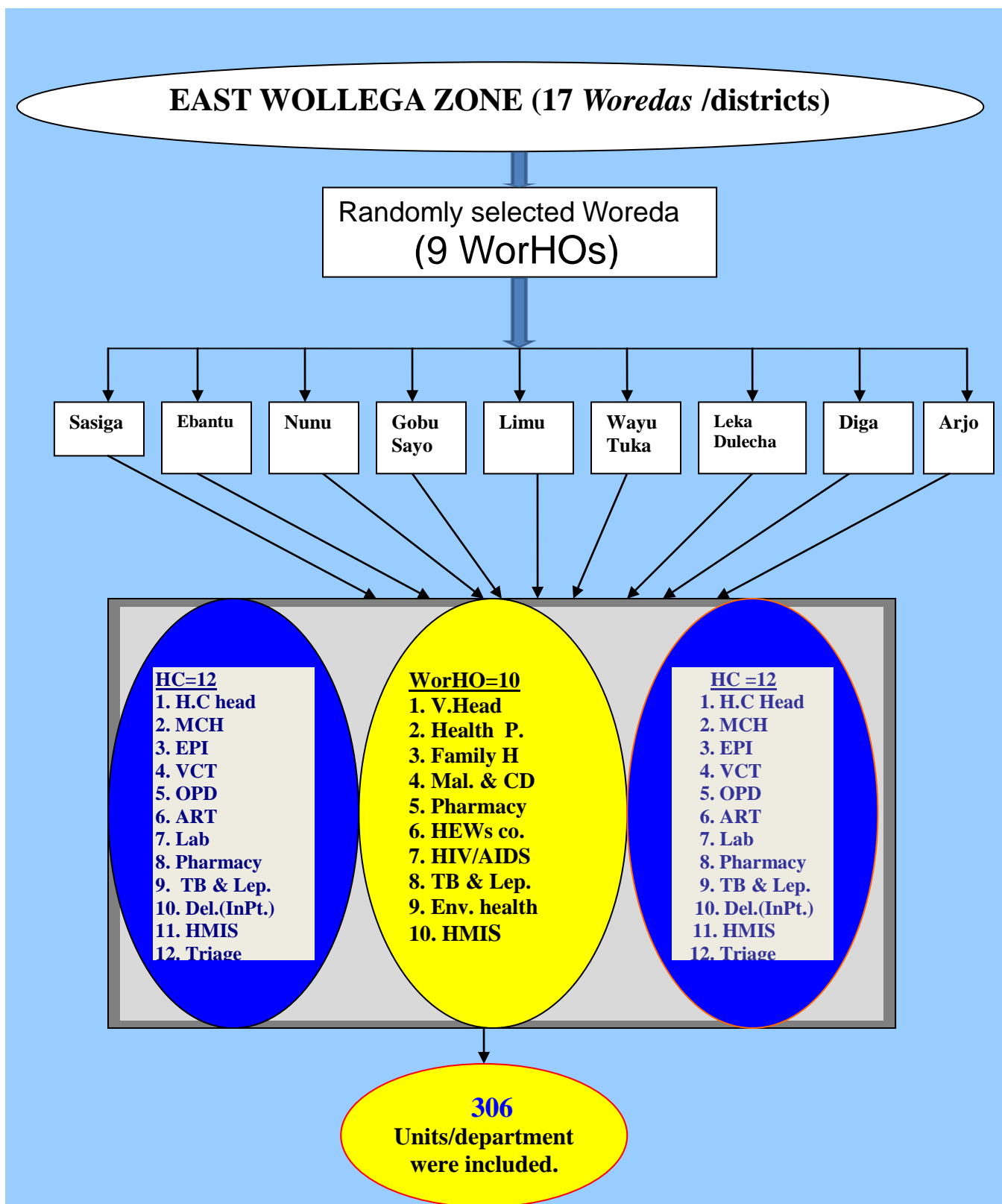
Yielding a total of 306 individuals was selected for the study.

All report records in specified HCs units and WorHO HMIS units from July1, 2010 to December 30, 2010 was reviewed.

For qualitative Part of the study, nine heads of the WorHO and 18 case managers at health centers were enrolled for in-depth interview based on data saturation principle.

### **4.4.2. Sampling technique or procedures.**

Woreda health office implementing HMIS were identified based on the information from East Wollega zonal health departments. There are 17 Woreda health offices in East Wollega zone [40]. For possible resource constraints only fifty percent of the Woreda health offices (9) with corresponding health centers (18), and 306 units implementing HMIS were selected randomly. The procedure is schematically presented **(Figure 2)**



**Figure 2:** Schematic representation of the sampling procedures of Assessment of Utilization of Health Information at Woreda Level in East Wollega Zone

## **4.5. Study variables**

### ***Dependent variables***

Utilization of health information system

### ***Independent variables***

#### **Human attributes:-**

Year of services, salary, educational level and training on HMIS, position in the Organization

#### **Characteristics of data:-**

Availability, ownership, aggregation of data, timeliness of reporting and feedback, completeness of the data, accuracy of data, Tools used.

**Characteristics of the required decisions:** - short term and long term decision

**Characteristic of organizational units or departments and presence of resources**

## **4.6. Data collection Instrument and Process**

### **4.6.1. Instrument**

Quantitative data collection tools are adapted after review of relevant literatures and modified to the local situation. For qualitative data collection observational checklist developed based on MOH of Ethiopia HMIS guide lines and using semi-structured in-depth interview guide.

### **4.6.2 - Data collection techniques**

Quantitative data was collected by six trained BSc level health professional data collectors through face-to-face interview using structured questionnaire on Woreda health office vice heads, head of Units/departments in the Woreda, health center heads and heads of units/departments in the respective health centers. Two BSc level health professional supervisors were recruited from Nekemte town which is out of East Wollega zone to reduce data collector bias and two days intensive training was given for both data collectors and supervisors on the purpose of the study and the instrument. The work experience of data collectors & supervisors were two years or above and trained in HMIS. Qualitative data was collected through observation and in-depth interview by principal investigator and assistant data collectors who had take part in note taking.

## 4.7. Operational definitions

**1. Utilization of health information:** - Is measured using information for:

- I. Decision making such as: planning, budget allocation, and monitoring and evaluation of programs to take immediate action
- II. Feedback from respective supervisors
- III. Calculation of area coverage & preparation of Maps
- IV. Presence of key indicators with charts or tables (For each department)
- V. Presentation of achievements of targets at the Health Center and Woreda Team (units).

Hence, units or departments were considered as Utilizing health information when they are practicing at list three of them out of the five criteria's listed above.

**2. Data Quality:** - is refers to state of completeness, timeliness & accuracy of data at all units and departments that makes data appropriate for a specific use.

**a. Completeness:** - is the percentage of all reports that were actually received, regardless of whether they were received within the programme's reporting deadline. Completeness > 85 %

**b. Timeliness:** - the proportion of reports received within the programme's reporting deadline to the total number of reports that should be received in a reporting time. Timeliness > 85%

➤ Weekly reports at the end of each week.

➤ HC to WorHO 26-30<sup>th</sup> of same month

➤ Submission of quarterly reports HC to WorHO 1-8<sup>th</sup> day of the following quarter.

**c. Consistency:**-Is Correspondence between data reported and data recorded in registers and patient / client records, as measured by a Lot Quality Assurance Sample (LQAS) checked by all units/Departments. Consistency > 90%

**3. Availability:** availability of standard recording and reporting tools, guidelines, manuals (at list one for each) and display chart at all unit/departments.

**4. Information-** is an organized data used for decision making at all units and departments.

**5. Health information** - is health care data that have been organized in to a Meaningful format, aggregate information about all patients and other related activates important for patients /clients and for overall services.

#### **4.8. Data entry and analysis**

For the quantitative data, the data was checked for completeness, inconsistencies, cleaned and then coded and entered in to SPSS for windows version 16.0. The data was expressed using descriptive analysis. Binary logistic regression analysis was made to obtain odds ratio and the confidence interval of statistical associations. Then, to control the confounding effect of other variables and to determine independent factors with utilization health information system, multivariable logistic regression analysis was carried out by taking significant variables in the bi-variate logistic regression model. The strength of statistical association was measured by adjusted odds ratios and 95% confidence intervals. Statistical significance was declared at  $P < 0.05$ . The findings were presented in tables and figures.

The qualitative data was transcribed in to an English text by the principal investigator after reading the written interview notes. Different ideas in the text were color coded and merged in their thematic areas and a thematic framework analysis was employed manually. The results were presented in narratives triangulation with quantitative data.

#### **4.9. Data quality assurance**

The quality of the data was assured by using validated questionnaire, translation, retranslation and pre-test of the questionnaire. The questionnaire was translated from English to Afaan Oromo by expert translator and back to English by another translator to compare the consistency.

Prior to the actual data collection, pre-testing was done on 15% of the sample size (Woreda) in Nekemte Town and who were not part of the study and based on findings necessary amendments were made. Data collectors and supervisors were trained for two days on the study instrument and data collection procedure. There were regular supervision of the data collectors by trained supervisors and each day collected data was counterchecked for completeness and corrective measures were taken accordingly.



#### **4.10. Ethical consideration**

The proposal was approved by Ethical Review Committee of College of Public Health and Medical Sciences, Jimma University. Letter of permission was obtained from East Wollega Zonal health department; randomly selected nine Woreda health office and respective health centers. In addition all of the study participants were informed about the purpose of the study and finally their oral consent was obtained before interview and it was also ensured during each activity of data collection. The respondents were notified that they have the right to refuse or terminate at any point of the interview. The information provided by each respondent was kept confidential.

#### **4.12. Dissemination Plan**

The thesis report will be submitted to Jimma University, College Of Public Health and Medical Sciences, Department of Health Services Management. After its approval, the findings of the study will be communicated to East Wollega zone health facilities through East Wollega Zonal health department. Efforts will be made to publish in reputable journals.

## **Chapter Five**

### **Results**

#### **Sociodemographic characteristics of the respondents**

A total of 306 participants of different responsibility have responded to the interview yielding 100% response rate. Of all the respondents 197(64.4%) were males and 109(35.6%) were females. The majority 220(71.9%) of the respondents had service experience of five years and lower, while nine (2.9%) of the respondents had served for more than 21 years. The educational status revealed that majority 226(74%) were diploma, 78 (25%) of them were Bachelor and the rest 2 (1%) were of certificate level. With respect to organizational responsibility about one fifth (21.6%) of the respondents were head of the units while 240 (78.4%) were Experts. The majority 197 (64.4%) of the respondent earn monthly salary between 1233-2249, 82 (26.8%) of them earn 2250 ETB and above as few as 27 (8.8%) earn 1232 ETB and less. With regard to qualification of the personnel's the majority 165(53.9%) were Diploma nurses followed by 31(10.1%) bachelor Nurse and 10(3.3%) were Environmental health workers (**Table 1**)

**Table 1: Socio-demographic characteristics of respondents in East Wollega Zone, March- April 2011**

Background characteristics		Frequency (%)
<b>Sex</b>	Male	197(64.4)
	Female	109(35.6)
<b>Monthly salary**</b>	<=1232	27(8.8)
	1233-2249	197 (64.4)
	2250 and above	82 (26.8)
<b>Year of service</b>	<=5	220 (71.9)
	6-10	65 (21.2)
	11-15	10 ( 3.3)
	16-20	2 (0.7)
	>=21	9 (2.9)
<b>Professional level</b>	Health officers	26(8.5)
	Nurse bachelor	31(10.1)
	Diploma nurse	165(53.9)
	Environmental health worker	10(3.3)
	Lab Technologist/technician	15(4.9)
	pharmacy Technician	24(7.8)
	Others*	35(11.4)
<b>Educational level</b>	Certificate	2 (1)
	Diploma	226(74)
	Bachelor	78 (25)
<b>Position/responsibility</b>	Head	66 (21.6)
	Expert	240 (78.4)

\* IT workers, Health assistances, Management, Accountant & Biology.

\*\* Salary category is based on the current FDRE civil servant salary standard for health professionals (For Diploma = 1233 & Bachelor =2250)

## **Health data and information generation process**

### **HMIS training**

Out of the 90 heads/experts from 9 WorHO and 216 heads/experts from 18 HCs included in this study, all of them (100%) trained on HMIS. The training was provided to all staffs before starting implementation of the new system. Moreover, in- service training/on job training was given for 36 (11.8%) while for 270 (88.2%) not. The findings from key informants are consistent with this finding that means all the respondents were trained. However, two of the participants said that” *I can’t say it is training but rather it is simple orientation*”. Similarly, another key informant said “*as to me training was just to full fill the formality*”

### **Availability of newly designed register and tally sheet at health center level**

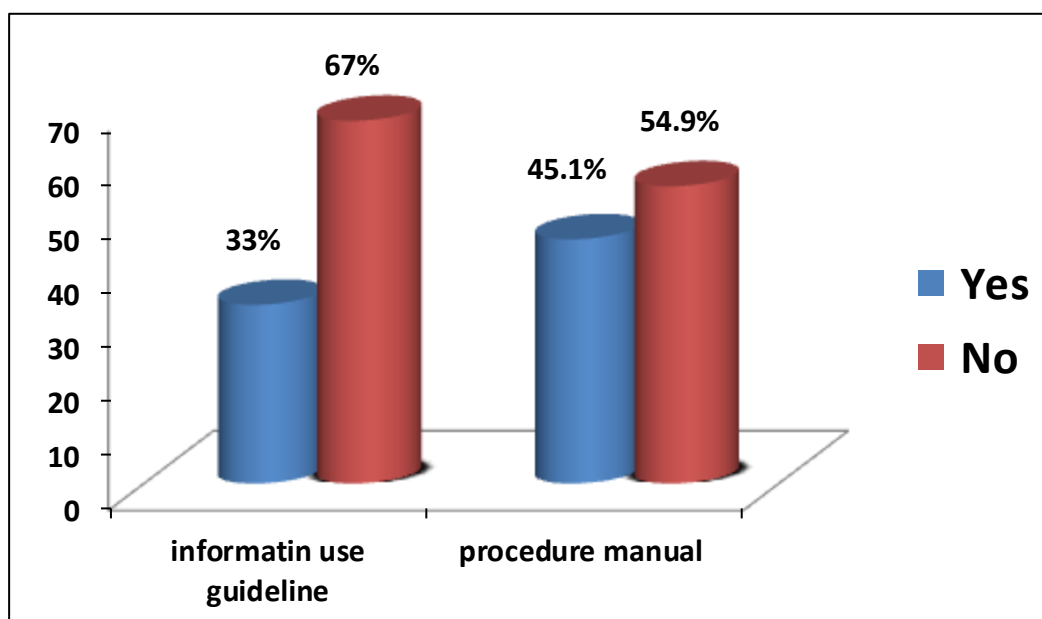
During the study period from the total, 96(44.4%) of unit/department have the newly designed register. Whereas, 120(55.6%) of them did not have. Regarding the availability of tally sheet, 85(39.4%) of unit/department had the newly designed tally sheet whereas about 131 (60.6%) of them hadn’t. With respect to the availability of the formats from the total in 97(45 %) of units/departments the newly designed monthly and quarterly reporting formats were available but not in 119(55 %) of units/departments. In about 82(38 %) the units/departments, the required stationeries for recording of health information were available. Moreover, participant from key informant two case managers mentioned “*we used piece of paper for tallying the daily activities of some units*”. Furthermore, during observation at HCs; registers, tally sheets and reporting formats were not available in all units/departments. However, in all health Center ART unit’s registers and Standard reporting formats were 100% available. Whereas at pharmacy and laboratory departments only 2(11.1%) and 5(27.8%) of health centers respectively had standard recording formats. But 89(49.4%) of HCs units/departments had tally sheet. (**Table 2**)

**Table 2: Availability of Standard recording register, reporting formats & Tally sheet at Health Center at in East Wollega Zone, for July- December, 2010**

Units/ Departments	Standard recording registers (N=180)		Standard reporting formats (N=216)		Tally sheet (N= 180)	
	Number	%	Number	%	number	%
HC head	-	-	12	66.7	-	-
MCH	14	77.8	12	66.7	9	50
EPI	16	88.9	14	77.8	12	66.7
VCT	15	83.3	10	55.6	9	50
OPD	13	72.2	9	50	10	55.6
ART	18	100	18	100	15	83.3
Lab.	5	27.8	4	22.2	4	77.8
Pharmacy	2	11.1	5	72.2	2	88.9
TB & Lep.	16	88.9	14	77.8	13	72.2
Delivery /In Pt.	15	83.3	12	66.7	9	50
HMIS	-	-	11	61.1	-	-
Triage	10	55.6	7	38.9	6	33.3
<b>Total</b>	<b>116</b>	<b>64.4</b>	<b>120</b>	<b>55.6</b>	<b>89</b>	<b>49.4</b>

**Availability of information use guideline and HMIS procedure manual**

About 101 (33%) of units/ departments had information use guideline and, 138(45.1%) have new HMIS procedure manual (**Figure 3**). During observation, out of the total 98 (29.1%) of heads and units /departments have indicators and information use guideline whereas majority of them 208(67.9%) do not have.



**Figure 4:** Availability of information use guideline & HMIS procedure manual at HC & WorHO, in East wollega Zone, March- April 2011

**Data management** (*completeness, timeliness, accuracy, supervision and tools*)

The study revealed that 192(62.7%) of the respondents in the selected units aggregate/compile data on daily basis and 185(60.5%) of the respondents fill the data registration book completely. On the other hand 199(65.1%) of them compiled there services monthly and reported using the standard reporting formats (**Table 3**) Majority of the key informants said that the units /departments do not uniformly aggregate data and the register are not filled completely.

**Table 3:** Compiling and reporting of services at health center and Woreda health offices in East Wollega Zone, March- April 2011

Statements (N=306)	Yes (N/%)	No (N/%)
Aggregate or compile daily services from tally sheet.	192 (62.7)	114 (37.3)
Register filled completely.	185 (60.5)	121 (39.5)
Compile of services monthly and reporting using the standard reporting format.	199 (65.1)	107 (34.9)

Two hundred thirty seven (77.5%) of respondents submitted their reports by keeping its completeness within agreed time and from the total respondents in the selected unit/departments, 69(22.5%) were not submitted their reports by keeping its completeness and within proper time.

Data accuracy assessment was conducted by 109(35.6%) of the units/departments. The accuracy assessment was conducted by 66(60.5%) monthly and by 43(39.5%) quarterly .The reasons mentioned for not conducting the assessment was lack of awareness on its importance 95(48.2%) and 102(51.8%) it is not applicable in their specific units/department.

The finding from record review on the accuracy of data that was reported from the Health Center to WorHO during July- December, 2010 on eight data elements showed that the data accuracy was 96% for OPD, 95% for Maternal and child health (MCH) unit/department 101% for TB&Lep and 100% for ART (**Table 4**).

**Table 4:** Data accuracy of recorded and reported data elements services at Health Centers in East Wollega zone, March- April 2011

S. N.	Data element	Quarter I (July-Sept.2010)			Quarter II Oct. – Dece.2010)		
		recorded	Reported	Accuracy (%)	recorded	Reported	Accuracy (%)
1	MCH	3351	3179	95	3568	3272	92
2	EPI	2252	2336	104	2138	2120	99
3	VCT	5424	5395	99	6135	6135	100
4	OPD	26989	26458	98	27294	26188	96
5	ART	210	210	100	195	189	95
6	LAB	28730	26283	91	28370	26019	92
7	TB& Lep	473	482	102	400	400	100
8	Delivery & inpt	298	314	105	314	334	106

Note: In all pharmacy units/department documents were not found or standard register/tally sheet were not present to check its accuracy.

On the other hand, the completeness of reports from HCs units/departments to HC HMIS unit were 82% for weekly, 90% for monthly, 88% for quarterly and 93% for bi-annually respectively. While, from HC to WorHO were 89% for weekly, 92% for monthly, 86% for quarterly and 94% for bi-annually. Similarly, the Completeness of Reports submitted from each Units/Department of WorHO to Woreda health office HMIS unit on weekly, monthly, and quarterly and bi-annually bases were 86%, 80%, 90% and 93% respectively (**Table 5**).

**Table 5:** Completeness of submitted Reports for July- December, 2010 at various level of the Districts East wollega zone, March- April 2011

<i>Reports submitted from</i>	<i>Weekly</i>			<i>Monthly</i>			<i>Quarterly</i>			<i>Biannually</i>		
	Expected	Submitted	% of Completeness	Expected	Submitted	% of Completeness	Expected	Submitted	% of Completeness	Expected	Submitted	% of Completeness
HC to WorHO	432	384	89	108	99	92	36	31	86	18	17	94
Units/Dep. to WorHO HMIS	216	186	86	432	378	80	144	130	90	72	67	93
HC Units/Dep. to HC HMIS	432	356	82	1080	972	90	360	316	88	180	168	93



Review of record for timeliness of reports for quarterly bases from July-December 2010 from Units/Dep. Of HC to HC HMIS unit, shows that, 90% were submitted on the agreed time schedule. On the other hand 88.9% of health centers reports were submitted on time to WorHO. Moreover, timelines of reports from health center to woreda health office for the study period were 87%, for weekly, 90% for monthly, 89% for quarterly and 100 % for bi-annually (**Table 6**).

**Table 6:** Timeliness of submitted Reports for July- December, 2010 at various level of the Districts East Wollega zone, March- April 2011

<i>Reports submitted from</i>	<i>Weekly</i>			<i>Monthly</i>			<i>Quarterly</i>			<i>Biannually</i>		
	<i>Expected</i>	<i>Submitted</i>	<i>% of Timeliness</i>	<i>Expected</i>	<i>Submitted</i>	<i>% of Timeliness</i>	<i>Expected</i>	<i>Submitted</i>	<i>% of Timeliness</i>	<i>Expected</i>	<i>Submitted</i>	<i>% of Timeliness</i>
HC to WorHO	432	377	87	108	97	90	36	32	89	18	18	100
Units/Dep. to WorHO HMIS	216	189	88	432	376	87	144	130	90	72	69	96
Units/Dep. to HC HMIS	432	374	81	1080	983	91	360	324	90	180	166	92

Regarding Supervision and feedback from immediate supervisor, about 130(42.5%) of unit/department head/experts were supervised and 176(57.5%) were not. Among the supervised department/units the frequency of supervisions made during the past two quarters were once for 74(56.9%), twice for 41(31.5%) and three times for 15(11.5%). Nevertheless, feedback was received by 40.2 %. The feedback was in written form for about 50.4% & verbal for 49.6%. Participants of in-depth interview claimed that supervision was inadequate and irregular.

One of the key informants from Woreda health office said that *“from my experience and observation supervision is less frequent from immediate supervisors and supervision records are not kept properly by most of the units/departments”*. Similarly, one of the health centers case manager mentioned that *“to my opinion supervisions are not planned and the majority of the supervisions I have observed lack feedback”*.

Concerning data collection tools or formats understandability, for about 154(50.3%) of respondents the tool or formants were understandable while for 152 (49.7%) it was not. Two hundred (65.4%) of the units/departments had data transmission or reporting rules. A participants of health center case manager said *“to my knowledge tools and formats are not difficult & complex, my fear is that all staff do not have equal understanding about it.”*

### **Utilization of Health Information**

Data on utilization of information for decision -making in the study area, revealed that 166 (54.2 %) of the units and departments have utilized the generated health information. Based on multiple response, information was used by 279 (91.1 %) for decision-making, 122(39.9%) to provide feedback to respective supervisors, 73(23.9%) for calculation of area coverage & preparation of Maps, 85(27.8%) for development of key indicators with charts /tables and 182(59.5%) for Presentation of achievements of target (**Table 7**).

In depth interviews with heads of woreda health office and health centers case managers showed that they did not used the information for decision making.

**Table 7:** Purpose for which Health Information Utilized at different level, in East Wollega Zone, March- April 2011

<b>Purpose (N=306)</b>	<b>Number</b>	<b>Percent (%)</b>
<b>Decision making</b>	<b>279</b>	<b>91.2</b>
<b>Feedback form respective supervisors</b>	<b>122</b>	<b>39.9</b>
<b>Calculation of area coverage &amp; preparation of Maps</b>	<b>73</b>	<b>23.9</b>
<b>Development of key indicators with charts /tables</b>	<b>85</b>	<b>27.8</b>
<b>Presentation of achievements of targets</b>	<b>182</b>	<b>59.5</b>

As to departments / units at WorHO or health center level who specifically utilized the health information, from the total at health center level, about 15(83.3%) of HC heads, 15(83.3%) ART, 11(61.1%) EPI and 10(55.6) MCH utilized Health Information whereas at WorHO level, from the nine Woreda all of WorHO heads & HIV/ AIDS unit and except one all of ,Health program unit, HEWs coordinators unit and Environmental health unit utilize Health information.. However, laboratory unit at health center level and pharmacy unit at Woreda health office level less frequently utilized HIS (**Table 8**).

**Table 8:** Utilization of Health information at Woreda level by units/departments in East Wollega Zone, March- April 2011

Unit/departments	Number	%
H.C head	15	83.3
MCH unit	10	55.6
EPI Unit	11	61.1
VCT “	6	66.7
OPD “	8	44.4
ART “	15	83.3
Lab. “	4	22.2
Pharmacy “	4	22.2
TB & Lep. Unit of HC	9	50.0
Delivery & In Pt. unit	5	27.8
HMIS unit of HC	5	27.8
Triage unit	5	27.8
WorHO head	9	100.0
Health program unit	8	88.9
Family Health unit	7	77.8
Malaria & other vector born disease control unit	6	66.7
Pharmacy unit	2	22.2
HEWs coordinators unit	8	88.9
HIV/ AIDS “	9	100.0
Environmental health unit	8	88.9
TB & Lep. “	6	66.7
HMIS unit	6	66.7
<b>Total</b>	<b>166</b>	<b>54.2</b>

Assessment of knowledge of respondents on who should utilize Health information, indicated, the majority 279(91.2) reported correctly while, 27(8.8) of them did not.

Two hundred forty five (80.1 %) of the units /departments change their data in to information every month. one hundred twenty two (36.6%) calculated area coverage for essential services and prepare Maps at district/Woreda level.

Similarly from the total study subjects 202 (66.0%) of the units /departments head/expert used information to prepare plan of action or used for short term decision. Among the total (56.6%) of them did not adapted national target to local situation and 58.2% of them did not have key indicators with charts or table. Majority of the Woreda Health Offices and Health Centers 192(62.7%) of them did not Maintain worksheets and charts for monitoring performance, while 145(47.4%)of them were not identify problems in performance, discuss and analyze with unit staff and present possible reason or cause to review in team meeting (**Table 9**). Also one of qualitative informant from health centers case manager stated” *mostly majority of units/departments utilize heath data /information for short term decision such as for defoliators tracing or epidemic control*”

**Table 9:** Utilization of Health Information for different purpose at Health center & Woreda Health office In East Wollega Zone, March- April 2011

Statements (N=306)	Number	Percent (%)
Change the data in to information every month	245	80.1
Calculating area coverage for essential services and Prepare Maps	122	36.6
Use data to prepare plan of action/for short-term	202	66.0
Departments adapted national target to local situation	136	44.4
Department who have key indicators	128	41.8
Maintain worksheets and charts for monitoring Performance	114	37.3
Identify problems in performance, discuss and analyze	161	52.6

About 59.5% of the study participants reported that information generated is presented and discussed with management committee. In the same way out of the total 162(52.9%) of them were presented their achievement of target on department team meetings through department heads and 144(47.1%) of them were not.

From all Health center only 3(16.7%) and Woreda health offices 4(44.4%) of them had HMIS multi-disciplinary committee for overall design and direction users of information, but majority of them 15(83.3 %), 5(55.6%) hadn't respectively. Likewise, out of the total respondent few 25(8.2%) of them had Health information steering committee to set the long- term goals for HIS however, greater part 281(91.8%) of them hadn't. Similarly, key informants stated they did not have HMIS multi-disciplinary committee. One key informant from health centers explained this as follows: *“even I don't know whether HMIS multi-disciplinary committee was established or not and its importance.”*

Of the 90 Woreda health offices units/departments respondents, 31.1% had never used key indicators for monitoring and did not prepare Woreda profile. And 52.2% of the units/departments did not supervise Health information system activities at Health centers in the Past six months, whereas about 60% of them did not carried out performance audits of Health centers.

Among the total respondents, 77(85.6%) and 74(82.2%) of units/departments compared facility performance against planned targets and target population respectively. 65(72.2%) of woreda health office unit/department experts have assisted Health Centers in completing the forms correctly, in informing what data means and the use of data for Decision-making (**Table 10**). Key informant from woreda health office said *“we do have supervision plan and check list, but we haven't conducted it for the past two quarters.”*

**Table 10:** Utilization of Health Information by Woreda health offices for different purpose in East Wollega Zone, March- April 2011

Statements (N=90)	Number	Percent (%)
Monitors key indicators and prepare woreda profile	62	68.9
Supervises HIS activities at HC in the past 6 months	43	47.8
To perform performance audits of HCs	36	40
Compare facility performance against plan target	77	85.6
Compare facility performance against target Population	74	82.2
Assisted HCs in completing the Forms	65	72.2
Assisted health facilities in informing about data	56	62.2
Assisted its health facilities in using the data for Decision –making	55	61.1

### Availability of resources

Findings from observation shows about 204(66.7%) of units/departments had standard reporting formats and 98(29%) of them had Indicators and information use guideline. In addition from the expected chart to be displayed in each units/departments 43.6% displayed Map of catchment area, 40.8% Catchment Population Profile, 22.4% Ten Top Causes of Morbidity, 6.5% Ten Top Causes of Morbidity in < 5 Children, 30.0% Immunization Monitoring chart, 18.2% Disease cases 9.8% quarterly and 11.4% Annual Plan & Performance Monitoring charts respectively (**Table 11**).

**Table 11:** Result from observation on availability of resource/chart & presence HMIS committee at Health center and Woreda health offices in East Wollega Zone, March- April 2011

Name of Chart/Statements	HC (18)	WorHO (9)	Total		%
			expected	observed	
Standard reporting formats	120	84	306	204	66.7
Indicators and information use guideline	27	71	306	98	29.0
Map of catchment area	28	54	188	82	43.6
Catchment Population Profile	20	42	152	62	40.8
Ten Top Causes of Morbidity(Males & Females)	8	14	98	22	22.4
Ten Top Causes of Morbidity n < 5 Children	3	3	92	6	6.5
Immunization Monitoring chart For < 1 Children (Penta 3, Measles)	16	14	100	30	30.0
Disease cases (Malaria, all ages, and Pneumonia amongst Under 1s) HIV/AIDS (VCT, PMTCT, and ART) chart.	7	17	132	24	18.2
Routine Report Submission Check	46	52	306	98	32.0
Feedback received Report/ registers	12	31	306	43	14.1
Supervision worksheet	2	30	126	32	25.4
Quarterly Plan & Performance Monitoring chart	8	22	306	30	9.8
Annual Plan & Performance Monitoring chart	16	19	306	35	11.4
Review meeting register	2	4	54	6	11.1
presence of HIS committee	3	4	27	7	26.0



Findings on the assessment of individuals' opinion on process of data generation at the level of institution identified that 74.5% of the respondent felt that the absences of computer and other materials to record and to process the data in to information affected data generation process, 69% feel that there were problem of understanding formats by low level health professionals and additionally out of the total , 15.7 % of them feels that the redundant, non-uniformity of reporting formats, absences of guidelines & all this affect the quality of data and 10.1% of them respond that reporting formats are ambiguous then it affect data quality (**Table 12**).

**Table 12:** Respondents opinion on data collection tools and process of data management in East Wollega Zone, March- April 2011

Opinion	Number	Percent (%)
Tedious and redundant, non-uniformity of reporting formats,	48	15.7
Reporting formats are ambiguous	31	10.1
Tedious and time consuming	24	7.8
Incompleteness of reports and not reported timely	28	9.2
Well and good	93	30.4
Problem of understanding formats	211	69.0
Absences of computer and other materials	228	74.5

## **Factors affecting utilization of Health Information Woreda/district level**

### **Human attribute related factor**

As indicated in Table the analyses were done using both Bivariate and multivariate analysis. Results of Bivariate analyses depicted that Monthly salary and Position/responsibility in an institution/organization were statistically significant factors that affect utilization of Health Information. Respondents whose monthly salary is 2250 and more ETB were 4.5 times more likely to utilize Health Information than those respondents whose monthly salary is 1232 and less ETB (COR = 4.5 and  $P < 0.01$ ). Respondents who were working as an expert position were 80% less likely to utilize Health Information as compared to those working at head position (COR = 0.2 and  $P < 0.001$ ). Further analysis was performed using the adjusted odds ratios (AORs) with 95% confidence interval which were obtained from multivariate logistic regression Model.

In this model as depicted in Table 13 at 5% level of significance the results of multivariate logistic regression on respondents salary, organizational responsibility were found to be significant in determining utilization of Health Information. those respondents whose monthly salary is 2250 and above ETB were 3.19 times more likely to utilize Health Information than those whose monthly salary is 1232 and less ETB (AOR = 3.19 and  $P = 0.02$ ) and those respondents who were working as an expert position were 66% less likely to utilize Health Information as compared those working at head position (AOR = 0.34 and  $P = 0.002$ ). Sex, Year of service and educational level were not statistically significant to affect Health Information utilization (**Table 13**).

**Table 13:** Human attribute related factors that affect utilization of health information at Woreda /district level in East Wollega Zone, March- April 2011

Variable	N (%)	COR(95%CI)	P	AOR(95%CI)	P
<b>Monthly salary</b>					
<=1232	27(8.8)	1		1	
1233-2249	197(64.4)	1.3(0.6-2.9)	0.53		
>=2250	82(26.8)	4.5(1.8-11.3)	0.001	3.19(1.24-8.23)	0.02
<b>Position in organization</b>					
Head	66(21.6)	1		1	
Expert	240(78.4)	0.2(0.1-0.5)	0.001	0.34(0.17-0.66)	0.002

#### Data characteristics related factor

The significant data characteristics related factors that affect the utilization of Health Information at Woreda level were Timeliness & completeness of data, data accuracy and feedback from immediate supervisors. Thus those respondents who not submitted complete report timely were 55% less likely to utilize Health Information than those who report complete & timely data with COR of 0.45 and P <0.01 .

Similarly those who conduct data accuracy were 1.8 times more likely to utilize Health Information than who didn't conduct data accuracy with COR of 1.8 and p value of 0.02. Likewise those who get feedback from immediate supervisor were about 21 times more likely than those who did not get feedback (COR=21.5;P<0.001). The only significant data related factor that affects utilization of Health Information in multivariate analysis was found to be Feedback from immediate supervisors. Hence those who got feedback were about 20 times more likely utilize HIS than those who did not with AOR of 20.24 P value of <0.001.

#### Characteristics of decisions

Types decision were also one of the highly significant factor affecting the utilization Health Information the study area in which Health Information has been utilized 7.9 times for short term decision than for long term decision (COR=7.9, P<0.001).

### **Organizational characteristics**

Organizational characteristics were also one of the significant determinants identified on Health Information utilization. Bivariate logistic regression shows that WorHO was utilized Health Information 4 times more likely than HC (COR=4.0, P<0.001). Other organizational characteristic that may affect Health Information utilization is the presence of HIS committee. Consistent with this concept observational checklist result showed that less than one third of the expected institution had HIS committee and at the same time not utilized Health Information.

### **Over all factors affecting HIS utilization**

Multiple logistic regression analysis was done to control potential confounders of factors affecting utilization of Health Information. Consequently from data characteristics factor, feedback from respective supervisor, types of the decision made and organization/institution type were found to be the overall significant factors affecting Health Information utilization.

Feedback from respective supervisor which was significant before adjusting confounders and still shows significant association yet in multiple logistic regressions analysis [AOR=14.5(6.9-30.3)] p-value at <0.001. Types of the decision made which was significant before adjusting confounders and also still shows significant association yet in multiple logistic regressions analysis [AOR= 3.9(1.9-7.8)] at P- value <0.001. Similarly, type of the organization/institution which was significant before adjusting confounders and still shows significant association yet in multiple logistic regressions analysis[AOR= 3.5(1.5-8.1)] P-value at=0.004. But the remaining socio-demographic variables still have not shown statistically significance associations (**Table 14**).

Likewise, almost all of the key informants stated that the absence of on job training, absence of planned supervision and feedback, shortage of recording and reporting materials, quality of the data, capacity of unit/department to make decision, types of organization or unit and type of decision, absence of information use guideline/manuals and deficiency of sense of ownership of the data were the main factors affecting utilization of Health information system.

**Table 14:** Multiple logistic regressions analysis on factors affecting utilization of health information at District level, East Wollega Zone, March- April, 2011

Variable	N (%)	COR(95%CI)	P	AOR(95%CI)	P
Monthly salary					
<=1232	27(8.8%)	1			
1233-2249	197(64.4%)	1.3(0.6-2.9)	0.53		
>=2250	82(26.8%)	4.5(1.8-11.3)	0.001		
Position					
Head	66(21.6%)	1			
Expert	240(78.4%)	0.2(0.1-0.5)	0.001		
Timeliness & completeness					
Yes	237 (77.5%)	1			
No	69(22.5%)	0.45(0.26, 78)	0 .005		
Accuracy					
Yes	109 (35.6%)	1.8(1.10-2.87)	0.02		
No	197 (64.4%)	1			
<b>Feedback</b>					
Yes	123 (40.2%)	21.5(11-42.3)	0.001	14.5(6.9-30.3)	0.001
No	183 (59.8%)	1		1	
<b>Type of decision</b>					
Short term decision	202 (66%)	7.9(4.6-13.6)	0.001	3.9(1.9-7.8)	0.001
Long-term decision	104 (34%)	1			
<b>Type of institution</b>					
Health center	216 (70.6%)	1			
WorHO	90 (29.4%)	4.0 (2.3-7.0)	0.001	3.5(1.5-8.1)	0.004

## **Chapter Six**

### **Discussion**

Health Information System is a system that integrates health data collection, processing, reporting, and use of the information necessary for improving health service delivery, effectiveness and developing efficiencies in the reporting systems. Without reliable and appropriate health information system, health care managers and health care providers cannot optimally allocate resources or improve the quality of health services.

This institutional based cross-sectional study was conducted to identify information on how health data generated, compiled/aggregated and utilized for different purpose at Woreda level in east Wollega zone.

This study identified that all of the studied facilities were trained on the use of the new HMIS. This is higher than the study conducted in Tanzania by Angelo S Nyamtema which was 19% [6] and study done in North Gondar by G.Andargie reported that 23.8 % were trained both in the health center and Woreda Health Office level [38]. This difference may probably due to emphasis given to training on HIS to build the capacity of staffs on Health Information utilization at the study area and the time difference among the studies.

In the current study the proportion of complete report from health data were, weekly 89%, Monthly 92%, quarterly 86% and biannually 94% which is more than the (85%) requirement by FMOH-HMIS guideline [30]. With regard to timeliness of report in this study the weekly 87%, monthly 90%, quarterly 89% and biannually 100% which is also in line with the suggested FMOH-HMIS guideline [30]. The accuracy of reported data across the units/departments at Health Center were not 100% in both quarter I and II which is not in accordance with FMOH-HMIS guideline[30] which may be attributed to lack of standard reporting format & in-service trainings and staff reluctances & misunderstanding of the importance of data/information.

Concerning the availability of the HMIS registers and forms in this study identified unacceptably low achievements as per standards which is 45.8% and 57.8% of the all units/department had respectively. This is a slightly lower than study done in four region of Ethiopia which were 50% and 60% respectively [29]. Even though 100% availability is expected both at the given area and nationwide as per HMIS guideline [30], for this particular study the difference may be attributed to the difference in sample size and coverage. This was also a major issue raised as a problem during in depth interview.

The newly designed registry and tally sheets are expected to be available in all Health Centers and HMIS standard guidelines are also supposed to be presented in all units. But, interruption of supply of forms and registers may frustrate the health staff in units/departments, compromising the attention paid to successful utilization of the health information system. In most unit/departments, HMIS standard guidelines were not available at various levels which might affect the quality of generating, aggregating and utilization of health data. As a result of absence of standard registers and tally sheet, they might often maintain unstandardized tallies that affect quality of data and information generation process which needs due attention. Furthermore, 43.6% of health facilities used standard Map of catchment area indicators. 30% HCs and WorHO were able to maintain Immunization Monitoring chart For <1 Children, ANC, Ten Top Causes of Morbidity, 18.2% of them had Ten Top Causes of Morbidity In < 5 Children, VCT clients and ART users monitoring charts. This finding are by far lower than the country set HMIS standards in which 100% of units/departments in the country should utilize health information as displayed chart or maps [5, 30]. The difference might be due to absence of supervision and feedback, absence of on job training and absence or shortage of necessary materials

Regarding Health Information utilization based on the set criteria even though all of the staff trained on HIS, only 54.2% units/departments utilized Health information system. This comparably higher than HIS utilization rate in Ghana 10%, Maria Uganda 20% and north Gondar 22.5 % [26, 27&38]. These greater differences might be due to relatively higher trained unit/department head/experts on the new HIS utilization guideline in the current study and difference in time duration of the study. However the finding is comparable with findings in Tanzania 58% [14] and survey done by ESHE in some part of Amhara Region [35].

On the other hand in this study Specifically at Health Center level; ART, EPI & MCH units and at woreda health office level; Heath programs, Family health & HIV/AIDS departments more frequently utilized health information than the rest of units/departments. This may be due to the aforementioned units/departments in addition to the government they are supported by different NGOs like WHO, UNICEF etc. Therefore the utilization of health information in the study area might be slightly increased by donor support activities.

Moreover, majority of the unit/department head/experts do not appreciate the importance of health information for their particular work activities and relevance about the data at generation site which is similar with WHO assessment finding [28].

As to the use of health data for decision making in the current study 66% of them used for short term decision which is comparable with study finding reports in Oromia, Amhara, SNNP and, Tigray regional states[29] and slightly comparable with study findings in Tanzania[14].

The analysis, interpretation and utilization of data at any given health service level can help to identify health problems at onsite to solve the problems using local resources [1, 2]. However; in this study 45.8% of the respondents have not utilized health information. And also as stated by key informants majority of the unit/department experts/heads did not used the health information for decision making, monitoring and evaluation of programs to take action, for planning, tracing lost patients or defaulters and priority setting.

As to the factor affecting Health Information utilization in general from the literature training of staff on HMIS, monthly salary of the staff, supportive supervision and feed backs, availability of HIS materials, quality of the data, types of decision in Health Information utilized for, at which level of health institution HIS utilized, position of health experts in the organization and service experience, education level, appropriate incentive and motivation of the staff were found to be significant factors affecting Health Information [4,14,19,37 & 38]. Nevertheless, in the current study un adjusted factors affecting HIS in east Wollega at Woreda level were monthly salary of workers, position of experts in organization, Timeliness & completeness of health data/information, data accuracy, getting feedback from respective supervisor, types of decision in Health Information utilized for and the level of institution/organization were significant factors affecting utilization of Health Information at Woreda level. From identified factors affecting Health Information utilization related to Human attribute, those who get monthly salary of 2250 and above ETB per month were more three times more likely to utilize health information as compared to those with monthly salary of 1232 and less ETB per month (AOR=3.19 P= 0.02) and those respondents who working as an expert position were 66% less likely to utilize health information as compared those working at head position (AOR=0.34, P=0.002). The monthly salary factor is slightly comparable with study findings from North Gondar [38].



The only significant data related factor that affects utilization of Health Information identified adjusted for the other was Feedback from immediate supervisors in which those who got feedback were about 20 times more likely utilize health information than those who did not get feedback (AOR= 20.24 , P <0.001). Types decision were also one of the highly significant factor affecting the utilization of HIS in the study area in which health information has been utilized over seven times for making short term decision than for long term decision (COR=7.9, P<0.001).

Identified organizational characteristics that significantly affecting Health Information utilization were the level of institution in which WorHO utilized health information four times than Health centers (COR=4.0, P<0.001).

This may due to supportive supervision and feedback, availability of resources, capacity to make decision and motivation. Other organizational characteristic that may affect Health Information utilization is the presence of HIS committee. Consistent with this concept observational checklist result showed that less than one third of the expected institution had HMIS committee and at the same time not utilized health information system.

After including all significant factors in Bivariate logistic regression analysis, feedback from respective supervisor which was significant before adjusting confounders and still shows significant association yet in multiple logistic regressions analysis [AOR=14.5(6.9-30.3)] p-value at <0.001. Types of the decision made which was significant before adjusting confounders and also still shows significant association yet in multiple logistic regressions analysis [AOR= 3.9(1.9-7.8)] at P- value <0.001. Similarly, type of the organization/institution which was significant before adjusting confounders and still shows significant association yet in multiple logistic regressions analysis[AOR= 3.5(1.5-8.1)] P-value at=0.004, But the remaining socio-demographic variables were not significant.

Generally the overall utilization of health management information System in all the study units was found to be low based on WHO standard guide lines and FMOH-HMIS information use guideline.

## **Limitations and Strengths of the study**

### ***Limitations of the study***

- As any cross-sectional survey, this study will not explain cause effect relationship.
- The incompleteness of data and documents from some units/ departments may under estimate the findings in this study.

### ***Strength of the study***

- Bias was minimized by training of data collectors supported by regular supervision. And also the use of pre-tested questionnaire & both quantitative & qualitative methods of data collection is strong side of this research.

## Chapter Seven

### Conclusion and Recommendation

#### 7.1 Conclusion

Based on the finding of the study the principal investigators have made the following conclusion

- Data and information was generated at the health center and district/Woreda level from routine reports from routine activity.
- In spite of the fact that all of the unit/department experts trained on HMIS , still the key informants claim that the training was not sufficient to implement the new system in line with HMIS standard.
- There was neither regular refresher training nor on job training.
- In all Health Centers registers, tally sheets and reporting formats were not equally available, similarly majority of units/departments do not have indicators and information use guideline.
- The quality of the data in relation to timeliness and completeness were in line with the set national HMIS guide line whereas the accuracy of data in east Wollega zone was low in line with HMIS guide line.
- The overall utilization of Health Information in east Wollega is 54.2%. However WorHO utilized Health Information more frequently than HC. Specifically at HC level ART, EPI & MCH units and at Woreda health office level health programs, Family health & HIV/AIDS departments more frequently than the rest of units/departments, in general the utilization rate of Health information was found to be very low in the study area.
- Among many factors expected to affect the utilization rate of health information only feedback from respective supervisor, types of decision to be made and types of organization or institution significant factors after adjusted odds ratio. But factors like monthly salary, position in the organization , timeliness of reports, completeness of reports and accuracy of reports were found to be significant factors before adjusted odds ratio and insignificant after adjusted odds ratio.
- Consequently, use of HMIS data/information was in progress at health facility level but not uniform throughout the health facilities.

## **7.2 Recommendations**

Based on the conclusion the investigator forwarded the following recommendation to east Wollega health department

- Enhance staff in-service training and capacity building programs so that it improve decision making.
- Ensure availability of standard reporting formats and registers at all health centers and ensure availability of indicators, information use guideline and all other resource needed at all units/departments.
- Strengthen periodic supportive supervision at all levels and ensure provision of written feedback systems.
- Establish timeliness and completeness of report tracking system at all levels in the woreda.
- Improve use of HIS data/information for service delivery improvement & link with the planning system and also make certain informed decisions making that lead to action and positive change at all levels in the Zone.

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**Jimma University**  
**College of Public health and medical sciences**  
**Department of Health Service Management**

ASSESSMENT OF UTILIZATION OF HEALTH INFORMATION SYSTEM AT  
WOREDA LEVEL IN EAST WOLLEGA ZONE, OROMIA REGIONAL STATE

## ANNEXES

### Instruction

Jimma University, College of Public Health and Medical sciences, Department of Health Service Management is conducting this study on utilization of health information system in East wollega zone. The survey is aimed at better understanding the data collection & reporting that contributes to utilization of health information system at woreda level in east wollega zone, Oromia regional state. We hope to learn also what factors are contributing or affecting utilization of health information system at woreda level in east wollega zone.

Please be patient while the interviewer read the following statement to you and ask any unclear question before you agree to participate.

1) The information you provide will be crucial in determining assessment of utilization of Health information system at your units/departments, your facility and the over all assessment of the study area. The questions are simple and ask you about background information and the way you generate data or information and how you utilize Health information system for decision making in your institution or specific Unit / Department.

#### 2) Participation Procedures and Guidelines

- a. The information you provide will be keep completely **anonymous**, that is, your name will not be on any of the form
- b. your information will be kept confidentially
- c. The interview will take about 20-30 minutes to complete.

#### 3) Rights to Participate.

Your participation is **voluntary** and there is no penalty for you not wanting to participate.

**Agree to participate** Yes \_\_\_\_\_

Date \_\_\_\_\_



**Part I: A Questionnaire designed to collect data on Assessment of utilization of Health Information System at health center level**

**A: background general information**

1. Code( to be given by principal investigator)	
2. Name of the health institution	
3. Name of Woreda	
4. unit/department/office	
5. Year of services	
6 Salary	
7 Sex	<ol style="list-style-type: none"> <li>1. Male</li> <li>2. Female</li> </ol>
8. Profession:-	<ol style="list-style-type: none"> <li>1. Medical Doctors</li> <li>2. Health Officer</li> <li>3. BSC Nurse</li> <li>4. Diploma Nurse</li> <li>5. BSC Environmental health</li> <li>6. Environmental health Diploma</li> <li>7. Health assistant</li> <li>8. Laboratory technician</li> <li>9. Pharmacy technician</li> <li>10. Others(specify)_____</li> </ol>
9. Educational level	<ol style="list-style-type: none"> <li>1. Certificate</li> <li>2. Diploma</li> <li>3. Degree</li> <li>4. Master</li> <li>5. Others specify</li> </ol>
10 Position in the organization	

<b>B. HMIS utilization information at Health Center level</b>	
1. Have you ever trained on HIS/HMIS?	1 Yes 2 No
2. If yes to Q1, do you know the importance of HMIS?	1 Yes 2 No
3. If yes to Q2, please mention them	_____
4. Have you had in service Training after 6 months on HIS/HMIS?	1 Yes 2 No
5. In your unit/ departments, is the newly designed register available?	1 Yes 2 No
6. In your unit/ departments, is the newly designed tally sheet available?	1 Yes 2 No
7. In your unit/ departments, are the newly designed monthly and quarterly reporting formats available	1 Yes 2 No
8. In your unit/ departments, is the new HMIS procedure manual available?	1 Yes 2 No
9. In your unit/ departments, is the newly information use guideline and manual available?	1 Yes 2 No
10. In your unit/ departments, are the required stationeries for recording of health information available?	1 Yes 2 No
11. Is the unit/department aggregate or compile daily services from tally sheet?	1 Yes 2 No
12. Is the register filled completely?	1 Yes 2 No
13. Did you compile the services provided monthly and reported using the standard reporting format?	1 Yes 2 No
14. Is the report submitted complete and timely?	1 Yes 2 No
15. If yes to Q15, how do you ensure that?	_____
16. If notQ15, why?	

<b>17.</b> Did you conduct data accuracy?	1 Yes 2 No
<b>18.</b> If yes to Q18, How frequently?	
<b>19.</b> If not to Q18, why?	
<b>20.</b> In the past 3 months, is the unit/department was supervised by your immediate supervisor?	1 Yes 2 No
<b>21.</b> If yes to Q20, how many times	
<b>22.</b> Did you get feed back from your immediate supervisor?	1 Yes 2 No
<b>23.</b> If yes toQ22, in what way?	1 written 2 verbal
<b>24.</b> If yes toQ22, how often? .	1.Monthly 2.Quarterly 3.Annual
<b>25.</b> Are all data collection tools or formats understood & easy to use in the unit/ department?	1 Yes 2 No
<b>26.</b> Are the units/departments having data transmission, processing, and reporting rules?	1 Yes 2 No
<b>27.</b> Are the units/departments having training design and standards, including standards for Production and dissemination of materials?	1 Yes 2 No
<b>28.</b> Is the units/departments Utilize health Information system at the Institutional /Unit level?	1 Yes 2 No

<p><b>29.</b> If yes to Q28, evidence based see these criteria's circle if applicable:</p> <ol style="list-style-type: none"> <li>1. Using information for decision making such as planning, budget allocation, and monitoring and evaluation of programs to take immediate action,</li> <li>2. Feedback from respective supervisors</li> <li>3. Calculation of area coverage and preparation of Maps,</li> <li>4. Presence of key indicators with charts or tables,</li> <li>5. Presentation of achievements of targets at the last health center and Woreda team minutes</li> </ol>	
<b>30.</b> . Do you know who utilize HIS (information)?	1 Yes 2 No
<b>31.</b> Is the units/departments change the data in to information (organized data that can be communicated) every month?	1 Yes 2 No
<b>32.</b> Are the units/departments calculating area coverage for essential services and Prepare Maps?	1 Yes 2 No
<b>33.</b> Is the units/departments use your data to prepare your plan of action or for short-term decision making?	1 Yes 2 No
<b>34.</b> . Is the units/departments adapted national target to local situation?	1 Yes 2 No
<b>35.</b> Is the unit/department has key indicators?	1 Yes 2 No
<b>36.</b> Did you Maintain worksheets and charts for monitoring performance?	1 Yes 2 No
<b>37.</b> Did you try to identify problems in performance, discuss and analyze with unit staff and Present possible reason/cause to review in team meeting?	1 Yes 2 No
<b>38.</b> Is the unit/department present information to and discuss with Health Center Management committee?	1 Yes 2 No
<b>39.</b> Is at your Health center management / unit or department team meetings, was the Achievement of targets included?	1 Yes 2 No

<p><b>40.</b> Is the unit/department having HIS multi disciplinary committee for the all over all design and direction users of information?</p>	<p>1 Yes 2 No</p>
<p><b>41.</b> Is the Health Center has a Health information steering committee to set the long- term goals for HIS and needs to decide which key indicators should be measured and which data are necessary?</p>	<p>1 Yes 2 No</p>
<p><b>42.</b> In general how do you feel about the data generation at institution especially on department?</p> <ol style="list-style-type: none"> <li>1. Tedious and redundant, non uniformity of reporting formats, absences of WHO code and all this affect the quality of data.</li> <li>2. Reporting formats are ambiguous then it affects data quality.</li> <li>3. Tedious and time consuming this leads to report delaines.</li> <li>4. Incompleteness of reports and not reported timely.</li> <li>5. Well and good</li> <li>6. Problem of understanding formats by low level health professionals affect the quality of data.</li> <li>7. Absences of computer and other materials to record and to process the data in to Information.</li> <li>8. Other _____</li> </ol>	

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ASSESSMENT OF UTILIZATION OF HEALTH INFORMATION SYSTEM AT  
WOREDA LEVEL IN EAST WOLLEGA ZONE, OROMIA REGIONAL STATE

*ANNEXE*

**Instruction**

Jimma University, College of Public Health and Medical sciences, Department of Health Service Management is conducting this study on utilization of health information system in East wollega zone.

The survey is aimed at better understanding the data collection & reporting that contributes to utilization of health information system at woreda level in east wollega zone, Oromia regional state. We hope to learn also what factors are contributing or affecting utilization of health information system at woreda level in east wollega zone.

Please be patient while the interviewer read the following statement to you and ask any unclear question before you agree to participate.

1) The information you provide will be crucial in determining assessment of utilization of Health information system at your units/departments, your facility and the over all assessment of the study area. The questions are simple and ask you about background information and the way you generate data or information and how you utilize Health information system for decision making in your institution or specific Unit / Department.

**2). Participation Procedures and Guidelines**

- a. The information you provide will be keep completely **anonymous**, that is, your name will not be on any of the form
- b. your information will be kept confidentially
- c. The interview will take about 20-30 minutes to complete.

**3) Rights to Participate.**

Your participation is **voluntary** and there is no penalty for you not wanting to participate.

**Agree to participate**

Yes \_\_\_\_\_

Date\_\_\_\_\_

**Part II: A Questionnaire designed to collect data on Assessment of utilization of Health Information System at Woreda level**

**A: background general information**

1. Code( to be given by principal investigator)	
2. Name of the health institution	
3. Name of Woreda	
4. unit/department/office	
5. Year of services	
6 Salary	
7 Sex	<ol style="list-style-type: none"> <li>1. male</li> <li>2. Female</li> </ol>
8. Profession:-	<ol style="list-style-type: none"> <li>1. Medical Doctors</li> <li>2. Health Officer</li> <li>3. BSC Nurse</li> <li>4. Diploma Nurse</li> <li>5. BSC Environmental health</li> <li>6. Environmental health Diploma</li> <li>7. Health assistant</li> <li>8. Laboratory technician</li> <li>9. Pharmacy technician</li> <li>10. Others(specify)_____</li> </ol>
9. Educational level	<ol style="list-style-type: none"> <li>1. Certificate</li> <li>2. Diploma</li> <li>3. Degree</li> <li>4. Master</li> <li>5. Others specify</li> </ol>
10. Position in the organization	

<b>B. HMIS utilization information at Woreda Health Office level</b>		
<b>1.</b> Have you trained on HIS/HMIS?	1) Yes	2) No
<b>2.</b> If yes to Q1, do you know the importance of HMIS?	1) Yes	2) No
<b>3.</b> If yes to Q2 , Pleas mention it		
<b>4.</b> Had it given in service Training after 6 months about HIS/HMIS?	1) Yes	2) No
<b>5.</b> In your unit/ departments, is the newly designed register available?	1) Yes	2) No
<b>6.</b> In your unit/ departments, is the newly designed tally sheet available?	1) Yes	2) No
<b>7.</b> In your unit/ departments, are the newly designed monthly and quarterly reporting formats available?	1) Yes	2) No
<b>8.</b> In your unit/ departments, is the new HMIS procedure manual available?	1) Yes	2) No
<b>9.</b> In your unit/ departments, is the newly information use guideline and manual available?	1) Yes	2) No
<b>10.</b> In your unit/ departments, are the required stationeries for recording of health information available?	1) Yes	2) No
<b>11.</b> Is the unit/department aggregate or compile daily services from tally sheet?	1) Yes	2) No
<b>12.</b> Is the register filled completely?	1) Yes	2) No
<b>13.</b> Did you compile the services provided monthly and reported using the standard reporting Format?	1) Yes	2) No
<b>14.</b> Is the report submitted complete and timely?	1) Yes	2) No
<b>15.</b> If yes to Q15, how do you ensure that?		



<b>16.</b> If not to Q15, why?	
<b>17.</b> Did you conduct data accuracy?	1) Yes      2) No
<b>18.</b> If yes to Q18, how frequently?	
<b>19.</b> If not to Q18, why?	
<b>20.</b> In the past 3 months, how many times the unit/department supervised?	1) Yes      2) No
<b>21.</b> If yes to Q20, how many times.	1) One    2)Two    3)Three & above
<b>22.</b> Did you get feed back from your immediate supervisor?	1) Yes      2) No
<b>23.</b> If yes to Q22, in what way?	1 written 2 verbal
<b>24.</b> If yes to Q22, how often?	1.Monthly 2.Quarterly 3.Annual
<b>25.</b> Are all data collection tools or formats understood & easy to use in the unit/ department?	1) Yes      2) No
<b>26.</b> Are the units/departments having data transmission, processing, and reporting rules?	1) Yes      2) No
<b>27.</b> Is the units/departments have training design and standards, including standards for Production and dissemination of materials?	1) Yes      2) No
<b>28.</b> Is the units/departments Utilize health Information system at the Woreda Level?	1) Yes      2) No

<b>29.</b> If yes to Q30, see these criteria's circle if applicable:		
<ol style="list-style-type: none"> <li>1. Using information for decision making such as planning, budget allocation, and monitoring and evaluation of programs to take immediate action,</li> <li>2. Feed back from respective supervisors</li> <li>3. Calculation of area coverage and preparation of Maps,</li> <li>4. Presence of key indicators with charts or tables</li> <li>5. Presentation of achievements of targets at the last health center and Woreda team minutes</li> </ol>		
<b>30.</b> Do you know who utilize HIS (information)?	1) Yes	2) No
<b>31.</b> Is the units/departments change the data in to information (organized data that can be communicated) every month?	1) Yes	2) No
<b>32.</b> Is the units/departments calculate area coverage for essential services and Prepare maps?	1) Yes	2) No
<b>33.</b> Is the units/departments use your data to prepare plan of action or for short-term decision?	1) Yes	2) No
<b>34.</b> Is the units/departments adapted national target to local situation?	1) Yes	2) No
<b>35.</b> Is the unit/department has key indicators with charts, tables?	1) Yes	2) No
<b>36.</b> Did you Maintain worksheets and charts for monitoring performance?	1) Yes	2) No
<b>37.</b> Did you try to identify problems in performance, discuss and analyze with unit staff and present possible reason/cause to review in team meeting?	1) Yes	2) No
<b>38.</b> Is the unit/department present information to, and discuss with Woreda Management committee?	1) Yes	2) No
<b>39.</b> In your WorHO management & unit/ department team meetings, was the achievement of targets included?	1) Yes	2) No

<b>40.</b> Is the unit/department having HIS/HMIS multi disciplinary committee for over all design and direction users of information?	1) Yes	2) No		
<b>41.</b> Is the unit/department has a Health information steering committee to set the long- term goals for HIS and needs to decide which key indicators should be measured and which data are necessary?	1) Yes	2) No		
<b>42.</b> Is the unit/department monitors key indicators and prepare woreda profile?	1) Yes	2) No		
<b>43.</b> Is the unit/department supervises Health information system activities at Facilities in the past 6 months?	1) Yes	2) No		
<b>44.</b> If yes to Q43, How many timed in a years	1) 1	2) 2	3) 3	4) $\geq 4$
<b>45.</b> Is the unit/department performs performance audits of health facilities?	1) Yes	2) No		
<b>46.</b> If yes to Q44, how the unit/department perform performance audits of Health facilities?				
<b>47.</b> Does the Woreda health Office compare facility performance against plan target? (Ask to see to confirm analysis /report)	1) Yes	2) No		
<b>48.</b> Does the Woreda health Office compare facility performance against target Population? (Ask to see to confirm analysis /report).	1) Yes	2) No		
<b>49.</b> Has the Woreda health Office ever assisted its health facilities in completing the Forms correctly?	1) Yes	2) No		
<b>50.</b> Has the Woreda health Office ever assisted its health facilities in understanding what the data means?	1) Yes	2) No		
<b>51.</b> Has the Woreda health Office ever assisted its health facilities in using the data for Decision –making?	1) Yes	2) No		

**52.** In general how do you feel about the data generation at institution?

- 1.** Tedious and redundant, non uniformity of reporting formats, absences of WHO code and all this affect the quality of data.
- 2.** Reporting formats are ambiguous then it affects data quality.
- 3.** Tedious and time consuming this leads to report delaines.
- 4.** Incompleteness of reports and not reported timely.
- 5.** Well and good
- 6.** Problem of understanding formats by low level health professionals affect the quality of data.
- 7.** Absences of computer and other materials to record and to process the data in to Information.
- 8.** Other \_\_\_\_\_

**Observation checklist**

**Informed verbal consent form before starting to fill the Data collection tools**

**Instructions to the data collectors:**

Carefully read and follow the instructions indicated in each part when you collect the data. This data collection form is only used to collect data regarding the Assessment of Utilization of Health Information System at Woreda Level in East Wollega Zone, Oromia Regional State. Please explain the purpose of the study and complete the informed verbal consent form before starting to precede collection of the data.

Hello, my name is..... I am data collector for Kefyalew Emiru who is doing research for a partial fulfillment of Masters Degree in Public Health, in Department of Health Services Management, Collage of Public Health and Medical Science, Jimma University. The information collected from your HF's is kept confidential and only used for extracting lesson in this Utilization of Health Information System. You have the right not to allow me to collect the data or refuse not to give all or part of the needed information.

Are you willing to allow me to collect the data?

Yes, continue to collect the data      No, Stop to proceed collecting the data

Signature of the data collector \_\_\_\_\_

## Observation checklist

Name of health facility .....

Observers code \_\_\_\_\_ Departments / units.....

Check lists	yes	No	NA*
1. Standard recording formats/ registers			
2. Tally sheet			
3. Standard reporting formats			
4. Indicators and information use guideline			
5. Map of catchment area			
6. Catchment Population Profile			
7. Ten Top Causes of Morbidity(Males & Females)			
8. Ten Top Causes of Morbidity n < 5 Children			
9. Immunization Monitoring chart For < 1 Children (Penta 3, Measles)			
10. Disease cases (Malaria, all ages, and Pneumonia amongst Under 1s) HIV/AIDS (VCT, PMTCT, and ART) chart			
11. Routine Report Submission Check			
12. Feedback received Report/ registers			
13. Supervision worksheet			
14. Quarterly Plan and Performance Monitoring chart			
15. Annual Plan and Performance Monitoring chart			
16. Review meeting register			
17. presence of HMIS committee			

Adapted from HMIS information use guideline

NA\*- Not applicable

**Checklist for Record Review: Data Accuracy of quarterly report submitted to WorHO**

Name of Health center .....

Record reviewer code .....

S. N.	Data element	Quarter I (July-Sept.2010)				Quarter II Oct. – Dece.2010)			
		Figure and source		Comparison	Figure and source		Comparison		
		report	register		report	Register /tally			
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									

Checklist for Record Review: completeness of report submitted to HMIS unit within the HC & WorHO from July, 2010-December, 2010

Name of health facility .....

No of units/ departments expected to submit report .....

Record reviewer code .....

No of weekly reports		No of monthly reports		No of quarterly reports		No of 6 months reports	
Expected	submitted	Expected	submitted	Expected	submitted	Expected	Submitted

Checklist for Record Review: completeness of report submitted from HCs to WorHO from July 2010- December 2010

No of HCs expected to submit report .....

Record reviewer code .....

No of weekly reports		No of monthly reports		No of quarterly reports		No of 6 months reports	
Expected	submitted	Expected	submitted	Expected	submitted	Expected	Submitted



Checklist for Record Review: timeliness of report submitted to HMIS unit within the HC & WorHO from July 10- December 10

Name of health facility .....

No of units/ departments expected to submit report .....

Record reviewer code .....

weekly	Submitted Within the agreed time	monthly	Submitted Within the agreed time	quarterly	Submitted Within the agreed time	6 months	Submitted Within the agreed time

**Checklist for Record Review: timeliness of report submitted from HC to WorHO from July, 2010-December, 2010**

No of HCs expected to submit report .....

Record reviewer code .....

Weekly	Submitted Within the agreed time	monthly	Submitted Within the agreed time	quarterly	Submitted Within the agreed time	6 months	Submitted Within the agreed time

Adapted from HMIS information use guideline

**INFORMED VERBAL CONSENT FORM BEFORE STARTING COLLECTING DATA FROM HC CASE MANAGERS**

Greetings

Hello, my name is..... I am data collector for Kefyalew Emiru who is doing a research for a partial fulfillment Master’s Degree in Public Health, in Department of Health Services Management, collage of public health and medical science, Jimma University. He is conducting a study on Assessment Utilization of Health Information System in East wollega zone, at woreda level. So, you are kindly requested to participate in the study, which will have importance in improving the program by identifying successes and gaps in the utilization. If you agree to be involved in this study, I would like to ask you some questions and this will take about 30 to 45 minutes. The information you give me will be kept confidential. If any problem you can stop at any time.

Do you volunteer to participate in the study?

A) Yes (continue to ask the questions)      B) No (stop to ask the questions)

Name of Interviewer: \_\_\_\_\_

Signature -----

Date: \_ / \_ / \_

Time of interview -----

## IN-DEPTH INTERVIEWER GUIDE FOR HC CASE MANAGERS

I. Name of health Center .....

### II. Respondent Information

1. Sex .....
2. Profession .....
3. Level of education .....
4. Duty Post .....
5. Year of services .....
6. Date of Interview .....
7. unit /department

### III. Interviewer code .....

1. How long implemented the new HMIS in your Health facility?
2. Since the establishment of HMIS in your organization how well or bad/worse it is going?
3. Would you please explain the HMIS process in your organization? at woreda level, at health center level on the area of
  - 3.1. Recording
  - 3.2. Reporting, frequency of reporting and its deadline of reporting
  - 3.3. Data aggregation, analysis , interpretation , displaying and utilization(who, for what)
  - 3.4. data-quality audit
  - 3.5. Feedback to and from
  - 3.6. Supervision: plan, checklist, frequency
4. To make HIS function and usable what activities your unit/department undertaken?
  - a) Meeting and scheduling
  - b) Committee forming
5. In your opinion what factors affects the utilization of HIS?
6. Please provide any information that could help to improve the utilization of health information system.

**INFORMED VERBAL CONSENT FORM BEFORE STARTING COLLECTING DATA FROM WORHO HEADS**

Greetings

Hello, my name is..... I am data collector for Kefyalew Emiru who is doing a research for a partial fulfillment Masters Degree in Public Health, in Department of Health Services Management, collage of public health and medical science, Jimma university. He is conducting a study on Assessment Utilization of Health Information System in East wollega zone, at woreda level. So, you are kindly requested to participate in the study, which will have importance in improving the program by identifying successes and gaps in the utilization. If you agree to be involved in this study, I would like to ask you some questions and this will take about 30 to 45 minutes. The information you give me will be kept confidential. If any problem you can stop at any time.

Do you volunteer to participate in the study?

A) Yes (continue to ask the questions)      B) No (stop to ask the questions)

Name of Interviewer: \_\_\_\_\_

Signature -----

Date: \_ \_ / \_ \_ / \_ \_

Time of interview -----

**INTERVIEWER GUIDE FOR WorHO HEADS.**

- I. Sex .....
  - II. Profession .....
  - III. Level of education .....
  - IV. Duty Post .....
  - V. Year of services .....
  - VI. Date of Interview .....
  - VII. Interviewer code .....
1. How long implemented the new HMIS in the Woreda? .....
  2. Since the establishment of HMIS in your organization how well or bad/worse it is going?
  3. Would you please explain the HMIS process in your organization? at woreda level, at health center level on the area of
    - 3.1.Recording
    - 3.2.Reporting, frequency of reporting and its deadline of reporting
    - 3.3.Data aggregation, analysis , interpretation , displaying and utilization(who, for what)
    - 3.4.data-quality audit
    - 3.5.Feedback to and from
    - 3.6.Supervision: plan, checklist, frequency
  4. To make HIS function and usable what activities your unit/department undertaken?
    - c) Meeting and scheduling
    - d) Committee forming
  5. Did WorHO & HC managers utilize HMIS data? For what purpose?
  6. Do you think that RHIS procedure manual is user-friendly? How? Please explain
  7. Do you think that monthly/ quarterly report form is complex and difficult to follow? How? please explain
  8. In your opinion what factors affects the utilization of HIS?
  9. Please provide any information that could help to improve the utilization of health information system.

## **Geggeessituu:1.A**

### **Kutaa Odeeffannoo Dhimma Qorannichaa**

#### **Yuunivarsiitii Jimmaa**

#### **Kolleejjii Fayyaa Hawaasaa fi Saayinsii Madiikaalaa**

#### **Kutaa Barnoota Hogansaa Hojii tajajiila Fayyaa**

Yuunivarsiitii Jimmaatti Kolleejjii Fayyaa Hawaasaa fi Saayinsii Madiikaalaatti, Kutaa Barnoota Hogansa Hojii tajajiila Fayya Qorannoo barataa digirii Maastersii Pabiliki Halzi(MPH)n geggeeffamu irratti hirmaachuuf afeeramtee jirta. Maaloo gaaffilee namicha sigaafatu irraa siif dhiyaatu obsaan deebisi. Yaada ifa siif hintaane deebisuu fi ykn irratti waliigaluu ken dura gaafadhuu adda baafadhu.

**1.** Odeeffannoon sirraa argamu Qa`anoo Itti fayadaama Oddefanno Fayya Sadarka Aanaa, Godina Baha Wallagatti irratti rakollee mul'atu adda baasuuf baay'ee murteessaadha. Gaaffileen dhiyaatan saalphaa fi dhimmoota kanneen akka: odeeffannoo ka'umsaa, haalota odefannoo fayya fi akka kutaan hojii keetti odefaano fayyaa murtti hojii tiif itt fayadama jiruu ilaalchisee odeeffannoo jiran sigaafatu.

#### **2. Adeemsa Hirmaannaa fi Qajeelfamoota**

- a.** Odeeffannoon ati kennitu abbumaadhaan qabama. Kanaafis, maqaanke guca kamirrattiyyuu tasa hinkatabamu.
- b.** Odeeffannoon ati laattu iccitiidhaan eegamu.
- c.** Aff-gaaficha xumuruuf daqiiqaa 20-30 fudhachuu danda'a. Garuu, qo'anicha keessatti hirmaachuuf yoo feha hinqabanne dhiisuuf mirga guutuu qabda.

#### **3. Fedhii Hirmaannaa**

Hirmaachuuf waliigalteettaa?

Eeyyee \_\_\_\_\_ Guyyaa \_\_\_\_\_

**Kutaa I:Gaffilee qa`anno Itti fayyadama Sirna odeffanno fayya sadarka****Bufata Fayya ittin guuramu****A: Odeeffannoo ka'umsaa**

<b>1. Kodii</b>	
<b>2. Maqaa Bufata Fayya</b>	
<b>3. Maqaa Aanaa</b>	
<b>4. Kutaa hojii/Dep.</b>	
<b>5. Bara Tajajiila</b>	
<b>6. Minda</b>	
<b>7. Salaa</b>	<b>1. Dhiira</b> <b>2. Dhala</b>
<b>8. Ogumma</b>	<b>1. Doktoora</b> <b>2. Qondala Fayya</b> <b>3. Narsii digirii</b> <b>4. Narsii dipilooma</b> <b>5. Saniteriyanii digirii</b> <b>6. Saniteriyanii Dipilooma</b> <b>7. Gargaraa Fayya</b> <b>8. Tekinishinii Lab.</b> <b>9. Tekinishinii Farmasii</b> <b>10. Kan biroo _____</b>
<b>9. Sadarka Barnota</b>	<b>1. Sertifiketa</b> <b>2. Dipiloma</b> <b>3. Digirii</b> <b>4. Mastarsii</b> <b>5. Kan biroo</b>
<b>10. Ga`ee hojii</b>	

<b>B. Itti Fayyadama “HMIS” sadarka Bufata Fayya.</b>	
<b>1.</b> . “HIS/HMIS” irrattii lenjii Fudhatteta?	<b>1. Eeyyee 2. Lakki</b>
<b>2.</b> 2.Gaffin 1ffaa Eeyyee Yoo ta`ee fayida isa ni bektaa?	<b>1. Eeyyee 2. Lakki</b>
<b>3.</b> Gaffin 2ffaa Eeyyee Yoo ta`ee, malloo nattii himii.	_____
<b>4.</b> “HIS/HMIS” irratti ji`a 6 asitti lenjii hojii irra fudhatetta?	<b>1. Eeyyee 2. Lakki</b>
<b>5.</b> Kutaa hojii kee kessa, galmeen dizayini hara ni jiraa?	<b>1. Eeyyee 2. Lakki</b>
<b>6.</b> Kutaa hojii kee kessa, talii Shiiti dizayini hara ni jiraa?	<b>1. Eeyyee 2. Lakki</b>
<b>7.</b> Kutaa hojii kee kessa, formiin haraa gabasa ji`a fi kurmaanaf oluu ni jiraa?	<b>1. Eeyyee 2. Lakki</b>
<b>8.</b> Kutaa hojii kee kessa, akkaataa “HMIS” ittin hojjetamu ilaalchsee kitaaba odeeffanno kennu ni jiraa?	<b>1. Eeyyee 2. Lakki</b>
<b>9.</b> Kutaa hojii kee kessa, akkaataa itti fayyadama odeffanno haraa ilaalchsee kitaaba odeeffanno kennu ni jiraa?	<b>1. Eeyyee 2. Lakki</b>
<b>10.</b> Kutaa hojii kee kessa, meeshalen barrefama odeffaanno fayya guuruf barbachisan ni jiruu?	<b>1. Eeyyee 2. Lakki</b>
<b>11.</b> Kutaa hojii kee kessa, talii Shiitin guyya guyyaan walitti ida`amu?	<b>1. Eeyyee 2. Lakki</b>
<b>12.</b> Galmen gutumma gututti ni gutaamu?	<b>1. Eeyyee 2. Lakki</b>
<b>13.</b> Hojii ji`a ji`an hojjetama walitt qabuun; formaatti sadarkasa isa eegen ni gabastaa?	<b>1. Eeyyee 2. Lakki</b>
<b>14.</b> Gabasin ergamu gutuu fi yeroo isa kan egee dha?	<b>1. Eeyyee 2. Lakki</b>
<b>15.</b> Gaffiin lakk:14ffaa Eeyyee yoo ta`e malin mirkanessita?	_____
<b>16.</b> Gaffiin lakk:14ffaa yoo Lakki ta`e malif?	



17. Sirii ta`uu ragaa “data accuracy” ni hojjeta?	1. Eeyyee 2. Lakki
18. Gaffiin lakk:18ffaa Eeyyee yoo ta`e, halaa akkamitin?	
19. Gaffiin lakk:18ffaa yoo Lakki ta`e malif?	
20. Ji`a 3n darban kessaa itti gafatama sitti dhiyatun ilalamitetta/ to`atamtetta?	1. Eeyyee 2. Lakki
21. Gaffiin lakk:20 ffaa Eeyyee yoo ta`e, yeroo meqaa?	
22. Itti gafatama sitti dhiyatu/to`ataa irra odeffannoo dug-dube argatetta?	1. Eeyyee 2. Lakki
23. Gaffiin lakk:22ffaa Eeyyee yoo ta`e, halaa akkamitin?	1 Barefaman 2 Afanin
24. Gaffiin lakk:22ffaa Eeyyee yoo ta`e, halaa akkamitin? .	1. Ji`an 2. Kurmanan 3. Kan waggaa
25. Kutaa hojii kee kessatti meshaleen fi gucii ittin data guran hundi salphaa fi ifa dha?	1. Eeyyee 2. Lakki
26. Kutaa kee kessaa sera fi formatin ittin “data”/odeffanno guurani fi dabarsan ni jira?	1. Eeyyee 2. Lakki
27. Kutaa hojii kee kessa karoraa lenjii fi qophii rabsaa meshalee sadarka isni egatan ni jiraa?	1. Eeyyee 2. Lakki
28. Kutaa hojii kee kessatti, sirni odeffanno fayyaa sadarka dhabatatti fayida irra ni olaa?	1. Eeyyee 2. Lakki
29. Gaffiin lakk:28ffaa Eeyyee yoo ta`e, Ulaaga arman gadii irratti hunda`i debisii? 1. Odeffanno murtii karoraa,qoddaa bajata, to`anoo fi hordofitti fayadamu. 2. Dug-debii to`ata dhiyoo irraa? 3. Herreggii nannoo hojii fi qophii kartaa. 4. Jirachuu furtuu agarsistu chartii ykn gabatetin. 5. Jirachuu rawwii karoraa sadarka aanaa fi bufataa fayyaa tti/ qopha`uu.	

30. Sirna odeffanno fayyaatti abaa itt fayyadamu ni bektaa?	1. Eeyyee 2. Lakki
31. Kutan hojii kee ji`a ji`an data gara odeffannoo ni jijjira?	1. Eeyyee 2. Lakki
32. Kutan hojii kee tajajilaa ada adaa ttif Herreggii nannoo hojii fi qophii kartaa ni hojeta?	1. Eeyyee 2. Lakki
33. Kutan hojii kee data ketti fayadamun karora hojii ni qophefata?	1. Eeyyee 2. Lakki
34. Kutan hojii kee galma akka biyatti ka`ame bu`urefatee kan nanno isa ni bafataa?	1. Eeyyee 2. Lakki
35. Kutan hojii kee furtuu agarsistuu ni qaba?	1. Eeyyee 2. Lakki
36. workishit fi gabate to`anno rawii hojii ttif qophefatetaa?	1. Eeyyee 2. Lakki
37. Rakollee rawii irratti mudate addan bafachun, xinxxalun marii furmataa fi sababasa ada bsuuf marii hojjetota irratti ni dhiyesita?	1. Eeyyee 2. Lakki
38. Kutan hojii kee odeffannoo marii dhaaf koree manajimantti bufata fayyaa ttif dhiyese waliin ni mariataa?	1. Eeyyee 2. Lakki
39. wal-ga`ii Kutan hojii kee /koree manajimentti bufata fayyaa irratti wa`een rawii hojii ijoo ni dhiyataa?	1. Eeyyee 2. Lakki
40. Kutan hojii kee kessatti Sirna odeffanno fayyaa hojii irra olchuuf kan gargaru korren dhabatte jira?	1. Eeyyee 2. Lakki
41. Bufati fayyaa , koree sirna odeffannoo fayyaaf karoora galma yeroo dheraa qabuu qophesu , safartuu furtuu agarsistu fi data barbachissa ta`ee kan ada basuu/murttesu ni qabaa?	1. Eeyyee 2. Lakki

42. Walumagalla Kutaa hojii kee kessatti halla ittin datan madu fi sasabamuu malitu sitti dhaga`ama?

- 1.Nufisisa,gattii kan hin qabine fi walk an hin fakane; dhibuu koddi”WHO”: kun hundumituu quliqulina data irratti dhibaa qaba.
- 2.Gucii gabasa ittin funanan ifa tau`u dhabun quliqulina data irratti dhibaa qaba.
- 3.Rakisaa fi yoo kan fudhatu waan ta`eef gabassa bodetti hambisuuf sababa.
- 4.Gabasa gutuu hin tanne fi yeroo isaa kan hin eginee.
- 5.Bayessa fi garii dha.
- 6.Rakkon hubannoo dhabille fayyaa sadarka gadii quliqulina data irratti dhibaa qaba.
- 7.Dhabinissa komptara fi meshalee biroo data gara odeffannootti jijjiru irratti rakko qabachuu..
- 8.Kan biroo \_\_\_\_\_

## **Geggeessituu:1.B**

### **Kutaa Odeeffannoo Dhimma Qorannichaa**

#### **Yuunivarsiitii Jimmaa**

#### **Kolleejjii Fayyaa Hawaasaa fi Saayinsii Madiikaalaa**

#### **Kutaa Barnoota Hogansaa Hojii tajajiila Fayyaa**

Yuunivarsiitii Jimmaatti Kolleejjii Fayyaa Hawaasaa fi Saayinsii Madiikaalaatti, Kutaa Barnoota Hogansa Hojii tajajiila Fayya Qorannoo barataa digirii Maastersii Pabiliki Halzi(MPH)n geggeeffamu irratti hirmaachuuf afeeramtee jirta. Maaloo gaaffilee namicha sigaafatu irraa siif dhiyaatu obsaan deebisi. Yaada ifa siif hintaane deebisuu fi ykn irratti waliigaluu ken dura gaafadhuu adda baafadhu.

1. Odeeffannoon sirraa argamu Qa`anoo Itti fayadaama Odeeffanno Fayya Sadarka Aanaa, Godina Baha Wallagatti irratti rakollee mul'atu adda baasuuf baay'ee murteessaadha. Gaaffileen dhiyaatan saalphaa fi dhimmoota kanneen akka: odeeffannoo ka'umsaa, haalota odeffannoo fayya fi akka kutaan hojii keetti odeffannoo fayyaa murtti hojii tiif itt fayadama jiruu ilaalchisee odeffannoo jiran sigaafatu.

#### **2. Adeemsa Hirmaannaa fi Qajeelfamoota**

- i. Odeeffannoon ati kennitu abbumaadhaan qabama. Kanaafis, maqaankee guca kamirrattiyyuu tasa hinkatabamu.
- ii. Odeeffannoon ati laattu iccitiidhaan eegamu.
- iii. Aff-gaaficha xumuruuf daqiiqaa 20-30 fudhachuu danda'a. Garuu, qo'anicha keessatti hirmaachuuf yoo feha hinqabanne dhiisuuf mirga guutuu qabda.

#### **3. Fedhii Hirmaannaa**

Hirmaachuuf waliigalteettaa?

Eeyyee \_\_\_\_\_

Guyyaa \_\_\_\_\_

**Kutaa II:Gaffilee qa`anno Itti fayyadama Sirna odeffanno fayya sadarka  
Wajira eegumsa Fayya aanaatti ittin guuramu**

**A: Odeeffannoo ka'umsaa**

<b>1. Kodii</b>	
<b>2. Maqaa Bufata Fayya</b>	
<b>3. Maqaa Aanaa</b>	
<b>4. Kutaa hojii/Dep.</b>	
<b>5. Bara Tajajiila</b>	
<b>6. Minda</b>	
<b>7. Salaa</b>	<b>1. Dhiira</b> <b>2. Dhala</b>
<b>8. Ogumma</b>	<b>1. Doktoora</b> <b>2. Qondala Fayya</b> <b>3. Narsii digirii</b> <b>4. Narsii dipilooma</b> <b>5. Saniteriyanii digirii</b> <b>6. Saniteriyanii Dipilooma</b> <b>7. Gargaraa Fayya</b> <b>8. Tekinishinii Lab.</b> <b>9. Tekinishinii Farmasii</b> <b>10. Kan biroo _____</b>
<b>9. Sadarka Barnota</b>	<b>1. Sertifiketa</b> <b>2. Dipiloma</b> <b>3. Digirii</b> <b>4. Mastarsii</b> <b>5. Kan biroo _____</b>
<b>10. Ga`ee hojii</b>	

<b>B. Itti Fayyadama “HMIS” sadarka wajira Fayya aanaa.</b>	
1. “HIS/HMIS” irrattii lenjii Fudhatteta?	<b>1. Eeyyee 2. Lakki</b>
2. Gaffin 1ffaa Eeyyee Yoo ta`ee fayida isa ni bekaa?	<b>1. Eeyyee 2. Lakki</b>
3. Gaffin 2ffaa Eeyyee Yoo ta`ee, malloo nattii himii.	
4. “HIS/HMIS” irratti ji`a 6 asitti lenjii hojii irra fudhatetta?	<b>1. Eeyyee 2. Lakki</b>
5. Kutaa hojii kee kessa, galmeen dizayini hara ni jiraa?	<b>1. Eeyyee 2. Lakki</b>
6. Kutaa hojii kee kessa, talii Shiiti dizayini hara ni jiraa?	<b>1. Eeyyee 2. Lakki</b>
7. Kutaa hojii kee kessa, formiin haraa gabasa ji`a fi kurmaanaf oluu ni jiraa? m	<b>1. Eeyyee 2. Lakki</b>
8. Kutaa hojii kee kessa, akkaataa “HMIS” ittin hojjetamu ilaalchsee kitaaba odeeffanno kennu ni jiraa?	<b>1. Eeyyee 2. Lakki</b>
9. Kutaa hojii kee kessa, akkaataa itti fayyadama odeeffanno haraa ilaalchsee kitaaba odeeffanno kennu ni jiraa?	<b>1. Eeyyee 2. Lakki</b>
10. Kutaa hojii kee kessa, meeshalen barrefama odeffaanno fayya guuruf barbachisan ni jiruu?	<b>1. Eeyyee 2. Lakki</b>
11. Kutaa hojii kee kessa, talii Shiitin guyya guyyaan walitti ida`amu?	<b>1. Eeyyee 2. Lakki</b>
12. Galmen gutumma gututti ni gutaamu?	<b>1. Eeyyee 2. Lakki</b>
13. Hojii ji`a ji`an hojjetama walitt qabuun; formaatti sadarkasa isa eegen ni gabastaa?	<b>1. Eeyyee 2. Lakki</b>
14. Gabasin ergamu gutuu fi yeroo isa kan egee dha?	<b>1. Eeyyee 2. Lakki</b>
15. Gaffiin lakk:14ffaa Eeyyee yoo ta`e malin mirkanessita?	
16. Gaffiin lakk:14ffaa yoo Lakki ta`e malif?	

17. Sirii ta`uu ragaa “data accuracy” ni hojjeta?	<b>1. Eeyyee 2. Lakki</b>
18. Gaffiin lakk:18ffaa Eeyyee yoo ta`e, halaa akkamitin?	
19. Gaffiin lakk:18ffaa yoo Lakki ta`e malif?	
20. Ji`a 3n darban kessaa itti gafatama sitti dhiyatun ilalamitetta/ to`atamtetta?	<b>1. Eeyyee 2. Lakki</b>
21. Gaffiin lakk:20 ffaa Eeyyee yoo ta`e, yeroo meqaa?	
22. Itti gafatama sitti dhiyatu/to`ataa irra odeffannoo dug-dube argatetta?	<b>1. Eeyyee 2. Lakki</b>
23. Gaffiin lakk:22ffaa Eeyyee yoo ta`e, halaa akkamitin?	1 Barefaman 2 Afanin
24. Gaffiin lakk:21ffaa Eeyyee yoo ta`e, halaa akkamitin?	1. Ji`an 2. Kurmanan 3. Kan waggaa
25. Kutaa hojii kee kessa sera/istandaridii ittin data sasabani fi hikka sababotaa ni qaba?	<b>1. Eeyyee 2. Lakki</b>
26. Kutaa kee kessaa sera fi formatin ittin “data”/odeffanno guurani fi dabarsan ni jira?	<b>1. Eeyyee 2. Lakki</b>
27. Kutaa hojii kee kessa karoraa lenjii fi qophii rabsaa meshalee sadarka isni egatan ni jiraa?	<b>1. Eeyyee 2. Lakki</b>
28. sirni odeffanno fayyaa sadarka wajjira eegumsa fayyatti fayida irra ni olaa?	<b>1. Eeyyee 2. Lakki</b>

<b>29. Gaffiin lakk:27ffaa Eeyyee yoo ta`e, Ulaaga arman gadii irratti hunda`i debisii?:</b>	
<ol style="list-style-type: none"> <li>1. Odeffanno murtii karoraa,qoddaa bajata, to`anoo fi hordofitti fayadamu.</li> <li>2. Dug-debii to`ata dhiyoo irraa?</li> <li>3. Herreggii nannoo hojii fi qophii kartaa.</li> <li>4. Jirachuu furtuu agarsistu chartii ykn gabatetin.</li> <li>5. Jirachuu rawwii karoraa sadarka aanaa fi bufataa fayyaa tti/ qopha`uu.</li> </ol>	
<b>30. Sirna odeffanno fayyaatti abaa itt fayyadamu ni bektaa?</b>	<b>1. Eeyyee 2. Lakki</b>
<b>31. Kutan hojii kee ji`a ji`an data gara odeffannoo ni jijjira?</b>	<b>1. Eeyyee 2. Lakki</b>
<b>32. Kutan hojii kee tajajilaa ada adaa ttif Herreggii nannoo hojii fi qophii kartaa ni hojeta?</b>	<b>1. Eeyyee 2. Lakki</b>
<b>33. Kutan hojii kee data ketti fayadamun karora hojii ni qophefata?</b>	<b>1. Eeyyee 2. Lakki</b>
<b>34. Kutan hojii kee galma akka biyatti ka`ame bu`urefatee kan nanno isa ni bafataa?</b>	<b>1. Eeyyee 2. Lakki</b>
<b>35. Kutan hojii kee furtuu agarsistuu gabate wallin ni qaba?</b>	<b>1. Eeyyee 2. Lakki</b>
<b>36. workishit fi gabate to`anno rawii hojii ttif qophefatetaa?</b>	<b>1. Eeyyee 2. Lakki</b>
<b>37. Rakollee rawii irratti mudate addan bafachun, xinxxalun marii furmataa fi sababasa ada bsuuf marii hojjetota irratti ni dhiyesita?</b>	<b>1. Eeyyee 2. Lakki</b>
<b>38. Kutan hojii kee odeffannoo marii dhaaf koree manajimantti W.E.F.aanaa ttif dhiyese waliin ni mariataa?</b>	<b>1. Eeyyee 2. Lakki</b>
<b>39. wal-ga`ii Kutan hojii kee /koree manajimantti W.E.F. aanaa irratti wa`een rawii hojii ijoo ni dhiyataa?</b>	<b>1. Eeyyee 2. Lakki</b>



40. Kutan hojii kee kessatti Sirna odeffanno fayyaa hojii irra olchuuf kan gargaru korren dhabatte jira?	<b>1. Eeyyee 2. Lakki</b>
41. Kutan hojii kee kessatti , koree sirna odeffannoo fayyaaf karoora galma yeroo dheraa qabuu qophesu , safartuu furtuu agarsistu fi data barbachissa ta`ee kan ada basuu/murttesu ni qabaa?	<b>1. Eeyyee 2. Lakki</b>
42. Kutan hojii kee kessatti furtuu agarsistu to`anno fi ragollen aanaa ni qopha`uu?	<b>1. Eeyyee 2. Lakki</b>
43. Kutan hojii kee , sochii hojii odeffannoo fayyaa dhabillee fayyaa irratti horddofi ni gagessa?	<b>1. Eeyyee 2. Lakki</b>
44. Gaffiin lakk:45ffaa Eeyyee yoo ta`e,waggatti si`a meqaa ?	
45. Kutan hojii kee to`anno rawii hojii dhabillee fayyaa ni gagessa?	<b>1. Eeyyee 2. Lakki</b>
46. Gaffiin lakk:47ffaa Eeyyee yoo ta`e,waggatti si`a meqaa ?	
47. W .E .F. aanaa rawii dhabillee fayyaa karora isani waliin ni madalaa?	<b>1. Eeyyee 2. Lakki</b>
48. W .E .F. aanaa rawii dhabillee fayyaa bayina uumataa isan tajajilan waliin ni madalaa?	<b>1. Eeyyee 2. Lakki</b>
49. W .E .F. aanaa ,dhabillee fayyaa isan jalaa jiran formatti/gucaa ada adaa siritti akka gutanif ni gargaraa?	<b>1. Eeyyee 2. Lakki</b>

<p><b>50.</b> W .E .F. aanaa ,dhabillee fayyaa isan jalaa jiran data jechuun mal jechuu akka ta`ee akka hubatan ni gargaraa?</p>	<p><b>1. Eeyyee 2. Lakki</b></p>
<p><b>51.</b> W .E .F. aanaa ,dhabillee fayyaa isan jalaa jiran akkata datan muritti dhaf itti fayadaman ni gargaraa?</p>	<p><b>1. Eeyyee 2. Lakki</b></p>
<p><b>52.</b> Walumagalla Kutaa hojii kee kessatti halla ittin datan madu fi sasabamuu malitu sitti dhaga`ama?</p> <ol style="list-style-type: none"> <li><b>1.</b> Nufisisa,gattii kan hin qabine fi walk an hin fakane; dhibuu koddi”WHO”: kun hundumituu quliqulina data irratti dhibaa qaba.</li> <li><b>2.</b> Gucii gabasa ittin funanan ifa tau`u dhabun quliqulina data irratti dhibaa qaba.</li> <li><b>3.</b> Rakisaa fi yoo kan fudhatu waan ta`eef gabassa bodetti hambisuuf sababa.</li> <li><b>4.</b> Gabasa gutuu hin tanne fi yeroo isaa kan hin eginee.</li> <li><b>5.</b> Bayessa fi garii dha.</li> <li><b>6.</b> Rakkon hubannoo dhabille fayyaa sadarka gadii quliqulina data irratti dhibaa qaba.</li> <li><b>7.</b> Dhabinissa komptara fi meshalee biroo data gara odeffannootti jijjiru irratti rakko qabachuu..</li> <li><b>8.</b> Kan biroo _____</li> </ol>	

***Guca Eyyamaa gafii affani itti gafatama Garee Bufata fayyaa hasofsisuuf qopha`ee.***

Akkam bultee/oolte?

Obbo\_\_\_\_\_n jedhama. Yuunivarsitii Jimmaatti, miseensa garee qorannooti. Har'a gara kana kanan dhufeef, qorannoo itti fayyadama sirina odeffannoo fayyaa sadarkaa aanaa Godina Baha wallagaatti gageffama jiruuf wajjira kesaan irra raga walitti qabuufidha. Odeeffannoon dhimma kana ilaalchisee kennamu iccitiin kan qabameefi maqaan nama tokkooyyuu hinbarreeffamu. Yeroo kamittiyyuu adeemsa gaaffii fi deebii taasifamuu addaan kutuu dandeessa. Kanan siyaadachiisuu barbaadu garuu, gaaffi fi debin kuun daqiqaa 30 – 45 tau`u isa fi gaafiin tokkollee yoo osoo hindeebi`in hafte, hiika raga kanaa guutuu hintaasisu Qorannoo kana keessatti hirmaannaa cimaa taasiftuuf durseen sigalateeffadha.

Maqaa fi Mallattoo nama Eyyama gaafatee:\_\_\_\_\_

Maqaa To`ataa:\_\_\_\_\_

Mallattoo:\_\_\_\_\_

Guyya\_\_\_\_\_

## **GAFFI FI DEBII GADII FAGENYAN ITTI GAFATAMA GARE WALIN GAGGEFAME**

I. Maqa Bufata Fayyaa .....

II. Odeffanno debisa

1. Saala .....
2. Gahee hojii .....
3. Sadarka barnota .....
4. Gita hojii .....
5. Bara tajajila .....
6. Kutaa hojii .....
7. Guyyaa gaffii .....

III. Kodii gaffii fi debii .....

1. Eerga “HMIS” hojii irra olchitani hangam fixera?
2. Eergaa dhabbata kesanitti “HMIS” hojii irra olchitanii hallii garii fi gadheen jiru mal fakkataa?
3. Maloo halaa adamsa “ HMIS” dhabbataa kee kessa naf ibsita? Sadarka aanaa, sadarkaa B/Fayyaa nannoo keeti.
  - 3.1. Galmessuu
  - 3.2. Gabasa, bayinna gabasaa fi guyyaa dhumaam/xumuraa gabasii itti eergamu.
  - 3.3. Dataa walitti qabuu, xinixaaluu, hikuu, manxasuu/agarsisuu fi itti fayyadamu. (Eenyun, Hojii maliif?)
  - 3.4. Qulqulina data to`achuu.
  - 3.5. Dug-debii kennuu fi fudhachuu.
  - 3.6. To`anna hojii: karora , cheklisti, deddebiitii
4. Kutaan hojii kee” HIS” hojii irra olichuu fi fayida qabessa gochuuf maltu hojjetame?
  - a) Walga`ii fi saganta isa.
  - b) Koree dhabu.
5. Akka yadaa keetti sirni odeffannoo fayyaan sababotti akka hojii irra hin ole godhan mal fa`i?
6. Maloo, odeffannoo itti fayadama sirna odeffannoo fayyaa foyeesuu danda`an dabalatan naaf keen.

***Guca Eyyamaa gafii affani itti gafatama W.E.F.Aanaa hasofsisuuf qopha`ee.***

Akkam bultee/oolte?

Obbo\_\_\_\_\_n jedhama. Yuunivarsitii Jimmaatti, miseensa garee qorannooti. Har'a gara kana kanan dhufeef, qorannoo itti fayyadama sirina odeffannoo fayyaa sadarkaa aanaa Godina Baha wallagaatti gageffama jiruuf wajjira kesaan irra raga walitti qabuufidha. Odeeffannoon dhimma kana ilaalchisee kennamu iccitiin kan qabameefi maqaan nama tokkooyyuu hinbarreeffamu. Yeroo kamittiyyuu adeemsa gaaffii fi deebii taasifamuu addaan kutuu dandeessa. Kanan siyaadachiisuu barbaadu garuu, gaaffi fi debin kuun daqiqaa 30 – 45 tau`u isa fi gaafiin tokkollee yoo osoo hindeebi`in hafte, hiika raga kanaa guutuu hintaasisu Qorannoo kana keessatti hirmaannaa cimaa taasiftuuf durseen sigalateeffadha.

Maqaa fi Mallattoo nama Eyyama gaafatee:\_\_\_\_\_

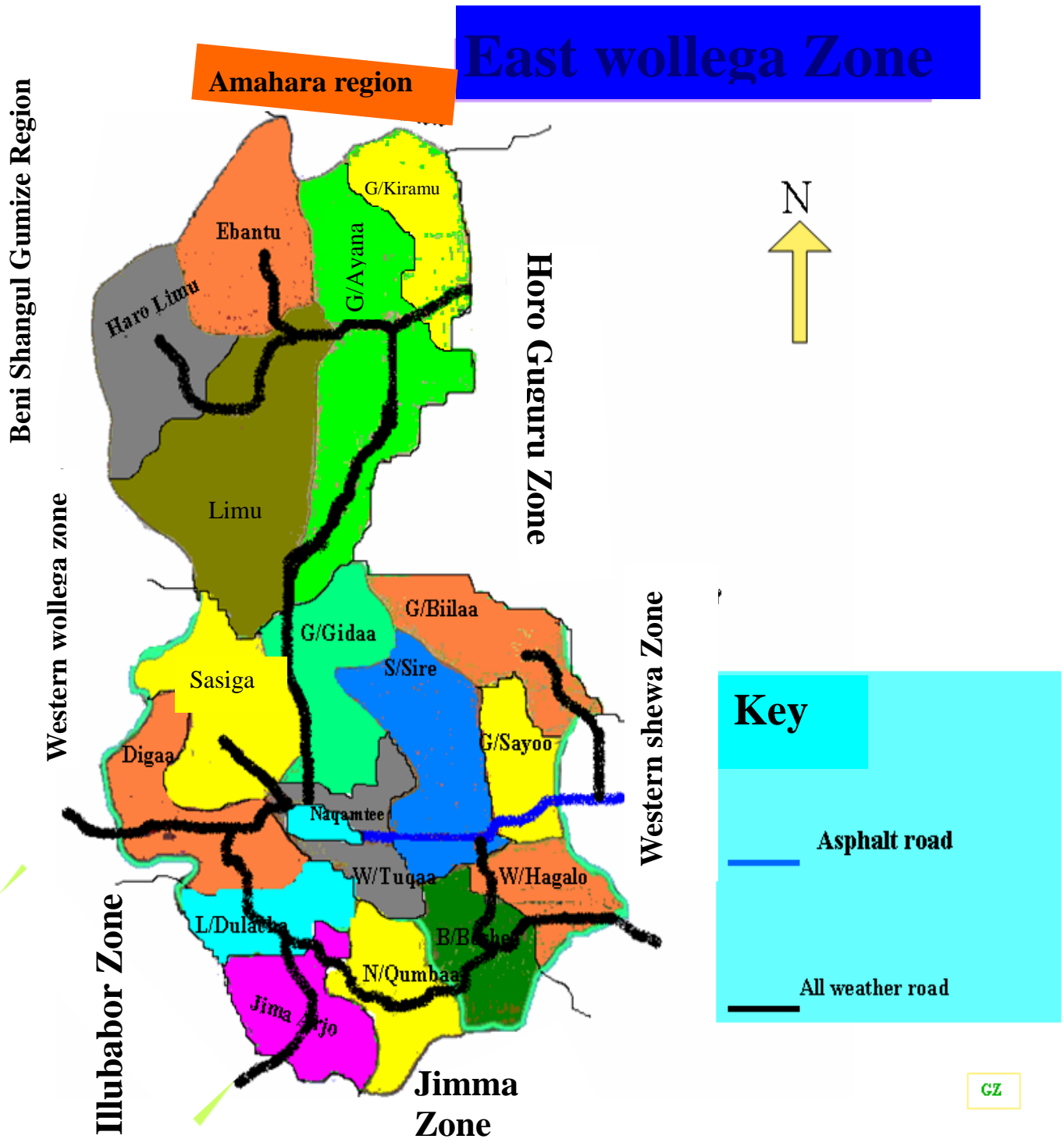
Maqaa To`ataa:\_\_\_\_\_

Mallattoo:\_\_\_\_\_

Guyya\_\_\_\_\_

**GAFFI FI DEBII GADII-FAGENYAN ITTI G.W.E.F.AANAA WALIN  
GAGGEFAME**

- I. Saala .....
  - II. Gahee hojii .....
  - III. Sadarka barnota .....
  - IV. Gita hojii .....
  - V. Bara tajajila .....
  - VI. Guyyaa gaffii .....
  - VII. Kodii gaffii fi debii .....
1. Eerga “HMIS” aanaa keetti hojii irra olchitani hangam fixera? .....
  2. Eergaa dhabbata kesanitti “HMIS” hojii irra olchitanii hallii garii fi gadheen jiru mal fakkataa ?
  3. Maloo halaa ademsa “ HMIS” dhabbataa kee kessa naf ibsita? Sadarka aanaa, sadarkaa B/Fayyaa nannoo keeti.
    - 3.1 Galmessuu
    - 3.2 Gabasa, bayinna gabasaa fi guyyaa dhumaam/xumuraa gabasii itti eergamu.
    - 3.3 Dataa walitti qabuu, xinixaaluu, hikuu, manxasuu/agarsisuu fi itti fayyadamu.  
(Eenyun,Hojii maliif?)
    - 3.4 Qulqulina data to`achuu.
    - 3.5 Dug-debii kennuu fi fudhachuu.
    - 3.6 To`anna hojii: karora , cheklisti, deddebiitii
  4. Kutaan hojii kee” HIS” hojii irra olichuu fi fayida qabessa gochuuf maltu hojjetame?
    - a. Walga`ii fi saganta isa.
    - b. Koree dhabu.
  5. Dataa “HMIS”tti gagesiton W.E.F.aanaa fi B/Fayyaa itti fyadamu? Hojii maliif?
  6. Kittabn toraa itti fayadama”RHIS” ibsuu itti fayadamn isa salpha dha? Akkamitti? Maloo naf ibsii.
  7. Formatti/gucii gabasaa ji`a fi kurmana rakissaa dha jeteen ni yadaa? Akkamitti?maloo naf ibsii.
  8. Akka yadaa keetti sirni odeffannoo fayyaan sababotti akka hojii irra hin ole godhan mal fa`i?
  9. Maloo, odeffannoo itti fayadama sirna odeffannoo fayyaa foyeesuu danda`an dabalatan naaf keen.



**Figure 4: Map of East wollega Zone**

**DECLARATION**

I, the undersigned, declare that this thesis is my original work, has not been presented for a degree in this or any other university and that all sources of materials used for the thesis have been fully acknowledged.

Name: KEFYALEW EMIRU

Signature: \_\_\_\_\_

Name of the institution: JIMMA UNIVERCITY

Date of submission: \_\_\_\_\_

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

Name and Signature of the first advisor:-

**Yohannes H/ Michael (BSc, MPH, DVLDP)**

\_\_\_\_\_  
\_\_\_\_\_

Name and Signature of the second advisor

**Shimeles Ololo (BSc.PH, MPH)**

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\_\_\_\_\_