

**Health Management Information System Implementation
and Utilization for Evidence-Based Decision Making in East
Wollega Zone, Western Oromia, Ethiopia.**

By

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Health Management Information System Implementation and Utilization for Evidence-Based Decision Making in East Wollega, Western Oromia, Ethiopia.

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Abstract

Background: Many opportunities to achieve national objective for better population health remain unused and countless life is lost due to failure of usage of health information system for evidence based decision making. However, in Ethiopia, data quality and use remain weak, particularly at Zonal health department, District Health Offices and primary health care facilities, which have primary responsibility for operational management.

Objective: To assess the implementation and utilization of health management information system at zonal, district and facility levels in East Wollega Zone.

Methods: A facility based cross-sectional study was conducted from September,10 - October 1, 2013 in East Wollega ZHD, 8 Woreda health offices, 16 health centers, and 31 health posts selected by multistage sampling technique. Both quantitative and qualitative research methods were used. Data was collected using structured questionnaires in 219 units/departments and document review checklist in 56 units for quantitative method. In-depth interview guide was used for qualitative study after ethical clearance was taken from JU and letter of permission was taken from respective organization. Descriptive and multiple logistic regressions were employed using SPSS version 16.0 for windows and the finding was presented in tables and figures. Statistical significance was declared at $P < 0.05$. The qualitative data was analyzed thematically and the finding was narrated and triangulated with quantitative findings.

Result: There were 219 respondents and among these 69(31.5 %) were from administrative and 150(68.5%) were from health care facilities. Majority of the respondents were diploma nurses. Seventy percent of the respondents took short course training on HMIS. Monthly data accuracy, completeness and timeliness were 88, 62, and 57 percent respectively which are far below National expectation. HMIS quality decreases as the hierarchical level of organization decrease. Half of the respondents confirmed the use of information. There is only limited or no evidence based decision making. Only in 5.2% of the assessed administrative and health care facilities had evidence based decision making.

Conclusion and Recommendations: it can be concluded that Statistics are weak, and local program managers make a little use of them. In addition, lack of, evidence-based program implementation. Quality was poorer at most bottom facilities. It is recommended that emphasis should be given to lower level health facilities which are the generators of data and local managers better practice evidence based decision making.

Key words: evidence-based, decision, Utilization, health information system

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Acronyms

CBO	Community based Organizations
C.I	Confidence Interval
CHP	Community Health promoters
CHIS	Community Health Information System
DDIU	Data Demand Information Use
eHMIS	Electronic Health Management Information System
EFY	Ethiopian Fiscal Year
ESHE	Essential Services of Health for Ethiopia
FMOH	Federal Ministry of Health
HC	Health Center
HEW	Health Extension Worker
HIS	Health Information System
HMIS:	Health Management Information System
HMN	Health Metric Network
HO	Health Officer
HSDP	Health Sector Development Program
ICT	Information Communication Technology
JSI	Johan Snow Inc
LHWs	Local Health Workers
LQAS	Lot Quality Assurance Sampling
M&E	Monitoring and Evaluation
MDG	Millennium Development Goals
MEASURE	Monitoring and Evaluation to Assess and Use Results
NGO	Non Governmental Organization
OPD	Out Patient Department
PASDEP	Plan for Accelerated and Sustained Development to End Poverty
PCV	Pneumonia Conjugated Vaccine
PHCU	Primary Health Care Units
RHIS	Routine Health Information System
PRISIM	Performance of Routine Information System Management

SPM Strategic Planning and Management
SNNPR southern nations and nationalities republic
WHO World Health Organization
WOHO Woreda Health Office



Chapter one: Introduction

1.1. Background

A management information system (MIS) provides information that organizations require to manage themselves efficiently and effectively. It is used to analyze and facilitate strategic and operational activities [1].

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. Health Management Information System interchangeably used with health information system but in certainty is a part of health information system involving the routine health information system only [2]. It is “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 [3].

Good health information system is crucial for addressing health challenges and improving health service delivery in developing countries. However, the quality of the data produced by such systems is often poor and the data are not used effectively for decision-making [4].

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 [4]. Accuracy and reliability should be stated as expectations and ensured through periodic review of data collection methods and through benchmarking with internationally credible definitions of indicators. An effective HIS requires an overarching architecture that defines the data elements, processes, and procedures for collection, spread, presentation, and use of information for decision making throughout the health sector [5].

In Ethiopia, even though not utilized especially by those who produce the service: Woreda health office, health center and health post to improve health service delivery and management and health of the population, HMIS is utilized at national and regional level for strategic planning and management in 2006 [6]. Moreover, the information quality and use remain weak within the health sector, particularly at the peripheral levels of PHCU which have primary responsibility for operational management. This indicates HMIS is not utilized for the purpose it intended at woreda level [7].

By the experience from the past three successive HSDP, in 2008, FMOH has identified strengthening Monitoring and Evaluation by reforming Health Management Information System (HMIS/M&E) as a key strategy for successful implementation. It employs the methodologies embedded in SPM and BPR and observes internationally recognized technical criteria for HMIS/M&E performance. Five strategic issues have been identified as critical to strengthen and continuously improve health sector HMIS/M&E. These strategies are Capacity building, Standardized and integrated data collection and reporting, Linkage between information sources, Information use, Action-oriented performance monitoring and appropriate technology [8]

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1.2 Statements of the problem

Around the world, countless lives are lost due to insufficient access to quality health information. The availability of accurate, timely, and analyzed data is directly relevant to the quality of healthcare system [9].

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 not an easy task [10, 11, 12].

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[13].

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. Hence, many opportunities to achieve national objective for better population health remain unused because of deficiency of evidence based decision making [14].

In Ethiopia, since the primary health care era, the importance of Health Information Systems has increased to create better opportunities for community oriented decision making [15].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 [16]. Even though, a number of reforms 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 and the records did not explain the community's health action and health service utilization [6, 7].

In addition, many developing countries delay seriously behind the developed world in the coordination and sharing of information. Inadequate staffing and few staff members training to develop, operate or maintain the systems that are in place [17]. That is why, the utility and effectiveness of HIS in improving health system performance in developing countries has been questioned [18].

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 but still remains poor, achieved 57% timeliness, 6% completeness and 15% accuracy [19, 20]. HSDP IV targets to achieve 100% the timeliness and completeness and 100% of woredas implement evidence based plan and use HMIS [21].

Nowadays evidence based decision making and accountability has become top in the agenda of governments and development partners requiring strong and transparent Health Information System (HIS) and Monitoring and Evaluation (M&E) systems. Use of the data for management at the district and facility level is important for evidence based decision making improvement is one of the ten strategic objectives of growth and transformation plan(GTP)[21].

Knowing the utilization of HIS in decision making at Woreda, health facility and community level is critical to make improvements in health system. Studies have addressed the utilization of HMIS in different zones of Amhara regional state and Jimma zone of Oromia region. This study tried to address the HMIS implementation and utilization in East wollega of Oromia region.

Chapter Two: Literature Review

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 [16, 21]

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 [21,22].

In India, data are collected in vast amounts but are mostly incomplete, unreliable and unused. Similarly, WHO Regional Committee for Africa reviewed the situation of national health information systems and adopted a strategy for strengthening them[24, 25].

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 incorrect [26].

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 [12]. 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 [12]

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 [6, 20].

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, program managers, policy-makers, and providers of funds, global agencies and organizations [27, 28].

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 [29].

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 [20, 28].

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 [16].

Action oriented -data should be collected and reported in an appropriate time frame according to its use for decision-making. [29]. 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 [30, 31]. 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 [13].

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 [32].

The poor communication infrastructure in developing countries has undermined efforts to spread ICT technology to modernize HMIS to the rural areas where majority of the people resides . As a result of these efforts enormous amount of data has been generated in many of these countries to the extent that in some of these countries data has become a source of problem. This is because often managers are overwhelmed with lots of data that they cannot analyse effectively and use it for decision-making. The collection, compilation and analyses of data become an end rather than the means of improving health care services. In addition, data produced continued to be of doubtful quality and untimely, thus ending up being not adequately used for decision-making [33]

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 [6].

Aggregating data in a data warehouse will not improve quality. Technology can help improve data quality, but data quality is not primarily a technological problem. Investment in sophisticated electronic storage is of limited value if poor data quality is largely a function of the burden of existing data collection processes and the lack of incentives for accurate reporting.

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 [21].

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 woredas noted compared indicator performance against the total eligible population. In addition, 81% of woredas 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 [7].

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 [7].

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 [33]. 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 [34].

During 2006 HMIS/BPR assessment 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 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 [6]. This finding points to 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 [41] 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 [20]

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 [34]. 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 [30].

District managers need to have the basic skills for day-to-day decision making using information generated through HMIS. They need to build their skill for creating supportive environment for the improvement of data quality and the use of evidence based management. Use of HMIS at community level is a vital importance. Community based LHWs can play an important role as they have good rapport with the woman group, the health committees and functional CBOs in the area. They can generate and disseminate important and pertinent information [17] More over Communities are capable of accurately describing their present situation/ problems and visualizing possible improvements and Local people should be the health analysts and presenters of their own health situation while health workers play the role of catalytic facilitation [18].

The MOH has introduced a Community Health Information System (CHIS) to capture basic health and health related information by Health Extension Workers (HEW) at household and individual level. The CHIS collects data on basic demographic statistics, health service delivery and utilization based on the health extension package. This is done by using a family folder which is a family centered tool designed for HEW to manage and monitor her work in educating households and delivering an integrated package of promotive, preventive and basic curative health services. [21]

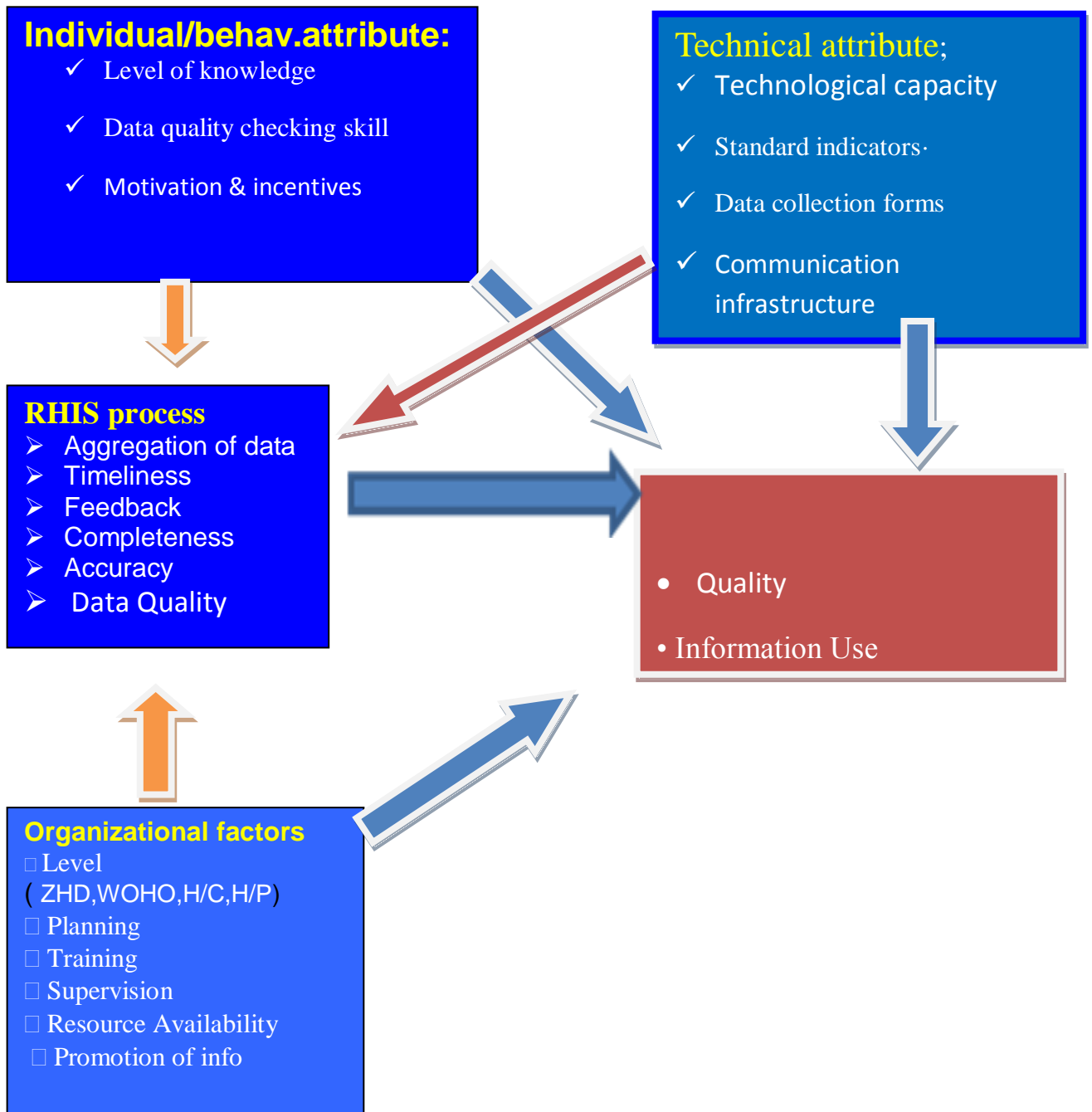
The study done by Sultan A, Chali J. and Waju B. in Jimma Zone identified how the units/departments of Health Centers and District Offices keep their data and their records in 2007. 71% keep their reports and registrations in well organized hard copy form. 24% units/departments did not have well organized data, while 5% secured data in both hard and soft copy form. Majority of the staffs feel that analysis and direct utilization of health data/information were left for higher levels and their duty were only collecting and passing the

data to the next levels. Based on the set criteria, the utilization of collected health data/information at units/departments were 26.7%, 31.3% and 36.0% for Health Posts, Health Centers and District Health Offices respectively. The cumulative utilization of data in study area was 32.9%. One of the major challenges to use data for decision-making is its timeliness and appropriateness [36].

Ideally there should be no data generation other than at the level at which the data will be used [37]. However, 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 [38].

2.2. Conceptual Framework

For better decision-making which contributes to the development of new knowledge related to health systems, assessment of health information systems is mandatory. Therefore; the conceptual framework for this study is developed based on concepts in Federal Ministry of Health HMIS/M&E Information use Guidelines and Display Tools, HMIS/ M&E Technical Standards: Area 4 and Assessment of the Ethiopian National Health Information System Final Report [25, 7] and PRISM Framework WHO, 2008 [23,] and MEASURE/Evaluation [39]. Based on the assumption that Human attribute, technical attribute, characteristic of data, and Characteristics of health service delivery Organizations will have direct relationship with the utilization of Health Information System; the conceptual framework of the study is illustrated as follows.



Adopted from;PRISM Framework: WHO, 2008, MEASUR/Evaluation, FMOH HMIS/M&E Information use Guidelines, FMOH HMIS assessment final report [18, 39, 7].

Fig.1- Conceptual framework of HMIS implementation and Utilization for evidence-based decision making in East Wollega Zone.

Chapter three: Significance of the study

Many avoidable shortcomings in the health sector that result in poor quality were due to inaccessible data, information, and knowledge.

Knowing the utilization of HIS in decision making at Woreda, health facility and community level was critical to make improvements in health system. Studies have addressed the utilization of HMIS in different zones of Amhara regional state, SNNPR and Jimma zone of Oromia region. This study tried to address the HMIS implementation and utilization in East wollega of Oromia region.

This study identified how data and information was generated at Zonal, woreda, and facility level and assessed the implementation process and utilization of HMIS and its determinants in the study area with the hope to improve and strengthen the utilization of information for decision making at Zonal, Woreda, community and individual level.

Thus, this assessment tried to identify bottlenecks of the implementation and utilization of RHIS which may help as an input for Zonal health department to improve the utilization in all woredas, health institutions, communities and individuals.

This paper also aimed at highlighting some of the opportunities and recommendations offered by managers, care givers and case managers in strengthening HMIS. HMIS practitioners, health planner and decision makers benefit from the practical insights derived from this study. Furthermore; it may also be helpful for improving the general flow of health information and can serve as in providing additional information for those who interested to conduct further study in this area.

Chapter Four: Objectives

4.1. General objective

To assess the implementation and utilization of routine health information system for evidence based decision making in East Wollega Zone, Oromia regional state, Ethiopia.

4.2. Specific objectives

1. To assess the availability of necessary HMIS inputs at ZHD, WOHO, Health facility, community level.
2. To assess factors affecting HMIS utilization at ZHD, WOHO, Health facility, and community level.
3. To determine the level of data quality in terms of accuracy, completeness and timeliness in the health management system
4. To determine the degree of utilization of health information for evidence-based decision-making at: ZHD, WOHO, Health facility, and community level.

Chapter Five: Methods and Materials

5.1. Study area and Period

This study was conducted in East wollega zone from Sep, 10 to Oct 1, 2013. 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.

East Wollega comprises a total population of 1,345,862. The Zone has one District Hospital, 17 Woreda Health Offices, 49 Health Centers, 292 Health Posts and 119 private clinics. A total of 1,588 different level Health professionals and 433 Administrative workers were providing service to the community in the government health facilities. The total man power in government, NGO and private institution were 3561. And also according to East Wollega zone Health Department 2004 EFY (2012 G.C) reports 96% of population in the zone had access to health services facilities [40].

5.2. Study design

A facility based, cross sectional study design was employed using both quantitative and qualitative study methods.

5.3. Populations

5.3.1. Source population

- ✓ All units'/departments' heads found in; Zonal health Department, Woreda Health Offices, Health Centers, health posts in East Wollega Zone.

5.3.2. Study population-

For quantitative Interview

- ❖ Expertsof ZHD units
- ❖ All heads of departments in the selected WOHO
- ❖ All department heads of selected H/Cs.
- ❖ All Health Extension Workers (the head) in selected HPs.

For quantitative review of document

Document/ registers in selected; Zonal Health Departments, Woreda Health Office, Health Centers& Health posts

For qualitative

- ❖ Head of ZHD,HMIS person,

- ❖ head of the selected Woreda health offices, HMIS officer,
- ❖ , Head of the selected health centers,
- ❖ Selected Health posts' heads.

Exclusion criteria

Newly employed health center, department/unit heads or experts with service experience of less than six month.

5.4. Sample size and Sampling technique.

5.4.1. Sample size

For Quantitative

ZHD, WoHO, HC and HP are selected in multi stage sampling technique, with the stages the hierarchy level of health system. Accordingly, 8 WOHO from 17 were selected. From each woreda health office, two health centers were selected. Hence, 16 HC from 49 were selected using lottery method. Under each health center two health posts were selected by lottery method. 32 HP from 292 were selected. All departments found in the selected administrative and health care facility (219) were studied in such a way to fulfill 25% of the source population for WHO criteria.

For Qualitative study

The head of the organization and statistician working in Zonal Health Department, Districts and Health Centers and health post heads were purposively selected for in-depth interviews and the number was determined based on data saturation.

5.4.2. Sampling technique or procedures.

Multi stage sampling was undertaken with stages were the hierarchy of health system and type of the institution. There were 17 Woreda health offices in East wollega zone [37]. By lottery method Eight Woreda health offices, 16 health centers and 32 health posts were selected. The procedure is schematically presented (Figure 2).

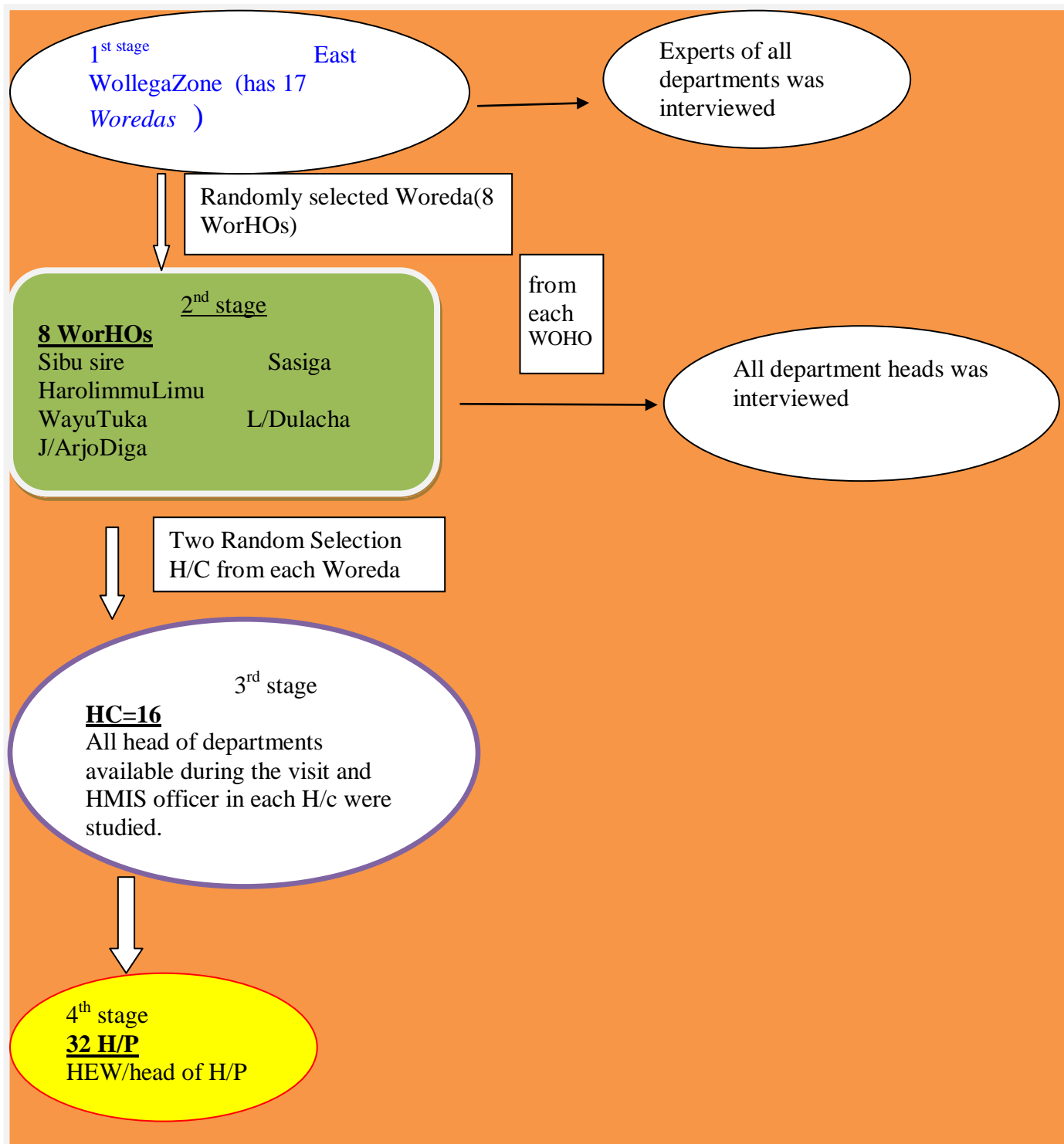


Fig.2. Schematic representation of the sampling procedures of implementation and Utilization of Health Information System in East Wollega Zone.

5.5. Study variables

Dependant variables

Utilization of health information system,

Independent variables

Characteristic of organizational units or departments; presence of resources, training, supervision, resource availability, promotion of information.

Human attributes:-sex, Year of services, educational level.

Characteristics of data: - aggregation of data, timeliness of reporting and feedback, completeness of the data, accuracy of data, quality of data, tools used.

Technical attributes; Technical capacity, HIS design, Communication infrastructure

5.6. Data collection Instrument and Process

5.6.1. Instrument

Structured interview data collection tools was adapted after review of relevant literatures and modified to the local situation [15,39] The questions and statements were grouped and arranged according to the particular objectives that it can address. Quantitative data collection observational checklist developed based on MOH of Ethiopia HMIS guide lines and data demand information use tool kit of MEASURE/evaluation [15].

5.6.2 - Data collection techniques

Quantitative data was collected by face to face interview using structured questionnaire on zonal health department experts, Woreda health office experts/ department head, heads of units/departments and staff in the respective health centers and Health extension workers in Health Post.

Four diploma level health professionals were recruited for face to face interview and two Bsc level health professionals were recruited for supervision and document review. A two days training was given for data collectors and supervisors and pre-test was done in one woreda health office, one health center, and two health posts. Document review of registers for completeness, timeliness and accuracy was reviewed and HMIS and Administrative meeting minute in specified units was reviewed for identification of utilization. The work experience of data collectors were two years and above, trained in HMIS and have experience of quantitative data collection. Supervisors have reviewed document for accuracy, timeliness and completeness and meeting minute for assessment of HMIS utilization for evidence based decision making at organization level. For qualitative study, in depth interview of key informants was conducted by principal investigator using interview guide.

5.7. Operational definitions

1. **Utilization of health information system;** units or departments will be considered as utilizing health information system when they are practicing at list ten of the fifteen criteria's listed below.

- Departments change data in to information, use data to prepare plan of action,
- adapted national target to local situation,
- has key indicators with charts, tables,
- Maintain worksheets and charts for monitoring performance,
- identify problems in performance, discuss and analyze with unit staff and present possible reason,
- present information discuss with their management committee and staff,
- was the achievement of targets included in team meetings,
- having HIS/HMIS multi disciplinary committee for overall design and direction users of information,
- has a Health information steering committee,
- monitors key indicators and prepare woreda profile,
- supervises Health information system activities at facilities,
- compare facility performance against plan target,
- compare facility performance against target Population,
- presence display related to your department activity[8, 39,42]

2. **Data Quality:** - is the mechanism to check the state of completeness, timeliness & accuracy of data at facility, 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 programmer's reporting deadline. Completeness > 85 %

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

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. **Evidence- based decision making**- At least one topics discussed by management and HMIS committee meeting for the last three months and made decision based on the best available peer-reviewed evidence Using data and information systems systematically from the following: Management of RHIS, such as data quality, reporting, or timeliness. RHIS findings such as patient utilization, disease data, or service coverage, or medicine stock out [39,42].

5.8. Data Entry and Analysis

Data was entered in epi data and transported to SPSS 16.0 window version statistical packages where cleaned, edited and analyzed. Descriptive analysis was employed to determine utilization rate of information. Bivariate and logistic regression analysis was carried out to obtain odds ratio and the confidence interval of statistical associations. Then, to determine independent predictors of HIS utilization multivariate logistic regression analysis was carried out by taking significant variables in the bi-variate logistic regression model at p value of ≤ 0.25 . The strength of statistical association was measured by adjusted odds ratios and 95% confidence intervals and Statistical significance was declared at $P < 0.05$. The qualitative data was color coded, analyzed thematically and the finding is presented narratively, triangulated with quantitative findings.

5.9. Ethical consideration

The study was carried out after getting permission from the ethical clearance committee of College of Public Health and Medical Sciences, Jimma University. After that, Data was collected after getting written permission from the East Wollega zonal health Department and selected woreda health office. Informed verbal consent was obtained from all study subjects. Study participants were informed about the objective of the study and privacy was maintained during interview.

5.10. Dissemination Plan

The research 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.

6. RESULT

6.1. socio-demographic characteristics

A total of 219 department/unit heads were studied with 100% response rate. The sex distribution of respondents in the study units showed that 57.1% (125) were males. Majority of respondents position participated in quantitative study were care providers followed by experts and managers respectively.

Among the total, 80 (36.5%) respondents had service year of less than Four years, and 66(30.1%) of them had 5-8 year of services, 32(14.6%) had service year of 9-12 years, while 33(15.1%) had greater than 16 years.

Distribution of level of education showed that health workers with diploma constituted 103 (47%), degree holders constituted 91(41.6%) while 24(11%) were certificate and only 1(.5%) had masters degree.

The result showed diploma level health professionals were high in first class service year (1- 4 years) while certificates composing rural health extension workers were only found in service year category -2 that means four to Eight years back. The degree levels were almost constant among service year categories and only One participant having masters level involved in the study had greater than 16 years service(table-1).

Table -1.Socio-demographic characteristics of respondents working at health post, health center, woreda health offices and Zonal Health departments, East Wollega zone, 2013

Variable		Frequency	Percent
Category	Z HD	8	3.7
	Woreda Health office	61	27.9
	H/Center	119	54.3
	H/Post	31	14.2
	Total	219	100.0
Departments assessed	Mothers child health	30	13.7
	OPD	31	14.2
	In patient department	10	4.6
	Dispensary	12	5.5
	Laboratory	10	4.6
	ART clinic	14	6.4
	TB&Leprosy	12	5.5
	Under-5	6	2.7
	Health post	31	14.2
	Expert	63	28.8
Position of respondents	Manager	10	4.6
	care provider	143	65.3
	Expert	66	30.1
Service year	1-4 years	80	36.5
	5-8 years	66	30.1
	9-12 years	32	14.6
	13-16 years	8	3.7
	>16 years	33	15.1
Educational Level	Certificate	24	11.0
	Diploma	103	47.0
	Degree	91	41.6
	Masters	1	.5
	Total	219	100.0
Profession	Nurse	109	49.8
	HEW	31	14.2
	HO	32	14.6
	Laboratory technician	8	3.7
	Pharmacy technicians	13	5.9
	Others	26	11.9

	Total	219	100.0
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6.2. Organizational and Technical assessment

The study revealed that 75%, 80%, 90% and 65% of units/departments in ZHD, WoHO, H/C, and Health posts had standard manually filled data collection registration respectively. Similarly, 66.7% of health centers and only 42% of health posts had standard tally sheet. 75% , 88.8% , 77.3% and 67.7% of ZHD, WOHO, HC, and health posts respectively had all the required reporting format. Only 55.2% of the assessed departments in average had standard manual of HMIS, while on average 48.9% and 58.5% of them had standard information use guideline and all necessary stationeries respectively (table-2).

Table-2. Availability of standard HMIS tools in units/departments in East Wollega zone, 2013.

Necessary tools	Availability	Health facility/office				Total
		ZHD	WoHo	H/C	H/POST	
Availability of standard register	available	6(75%)	49(80%)	107(90%)	21(67%)	183(83.5%)
	not available	2(25%)	12(20%)	12(10%)	10(33%)	36(17%)
	Total	8	61	119	31	219
availability of standard tally sheet	available	2(25%)	42(68.8%)	78(66.7%)	17(42%)	139(63.5%)
	not available	6(75%)	19(31.2%)	41(44.3%)	14(58%)	80(42%)
	total	8	61	119	31	219
availability of report format	available	6(75%)	56(88.8%)	92(77.3%)	21(67.7%)	173(79%)
	not available	2(25%)	7(11.2%)	27(32.7%)	10(32.3%)	46(21%)
	total	8	63	119	31	219
availability of standard manual of HMIS	available	2(25%)	33(54%)	79(66.4%)	7(22.5%)	121(55.2%)
	not available	6(75%)	28(46%)	40(43.6%)	24(77.5%)	98(43.5%)
	Total	8	61	119	31	219
availability of standard information use guideline	available	2(25%)	31(50.8%)	67(56.3%)	7(22.5%)	107(48.9%)
	not available	6(75%)	30(49.2%)	52(43.7%)	24(77.5%)	112(51.1%)
	Total	8	61	119	31	219
availability of all necessary stationeries	available	2(25%)	37(60.7%)	71(59.7%)	18(58%)	128(58.5%)
	not available	6(75%)	14(39.3%)	48(40.3%)	13(42%)	91(41.5%)
	Total	8	61	119	31	219

Data collection standard and rules of data collection, transmission and transformation are other inputs for HMIS processes. According to the study 39.9% of the units/department had no standard rules of data collection, transmission and transformation. One hundred sixty seven (76.3%) of the unit/ department heads attended formal training on HMIS. The service years of majority of non trained respondents were less than 4 years.

In East wollega, units/ departments were assessed on their habit of supervision and feedback mechanism. 99(45.2%) of the units did not got any supervision in the last year and 53.5% did not got it in the last quarter. Only 122(55.7%) of the units got feed back in the last year whether from supervision or for their report. Majority of the feedback got were quarterly (fig. 3).

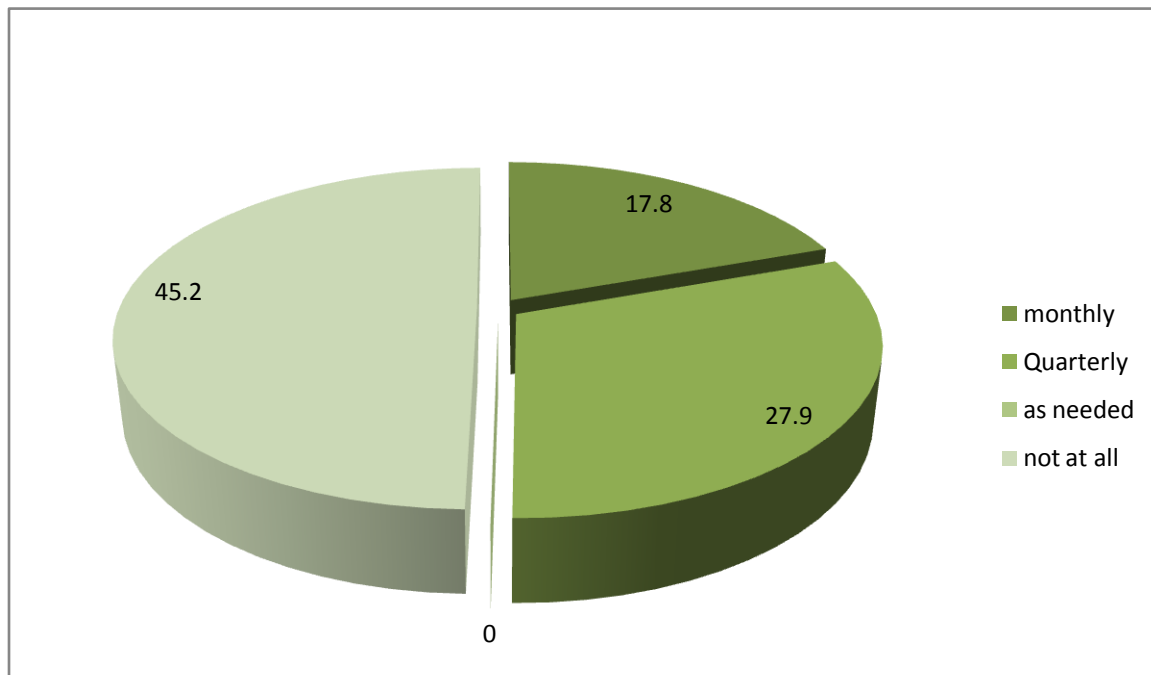


Fig. 3. frequency of supervision of departments from the top level in the last one year in east wollega zone, 2013

Department heads were also assessed for their suggestion on the report formats and information generation system. Only 72(23%) respond that the information generation in the department was well and good while 67(21%) claimed report formats were redundant and lack uniformity, 72(23.0%) revealed report formats were incomplete, 32 (10.2%) claimed report formats were ambiguous, while 63(20.1%) reported report formats were time consuming(table-3).

Table 3. Respondent's suggestion on the report formats and information generation in East Wollega zone, 2013

	frequency	Percent
Information generation is well and good	72	23.0%)
Report is incomplete	84	26.8%)
Report formats are time consuming	63	20.1%)
Report formats are ambiguous	32	10.2
Report formats are redundant and lack uniformity	67	21.4%)

6.3. Behavior of respondents on HMIS

Respondents were assessed for their knowledge of HMIS. Ten percent replied they did not know the use of HMIS, 25% answered inappropriate and 57% gave appropriate answer for the use of HMIS.

Only 23.7 % know that HMIS is utilization was at all level. For the question, who is responsible to utilize health information system: Thirteen percent respond that, they did not know who utilize health information system. From those who replied they know who utilize health information system, 25(11.4%) answered it was utilized at federal level only, 24(11%) replied it was utilized at regional health bureau, 12(5.5%) replied it was utilized at woreda health office and 76(34.4%) answered as it was utilized at data generation site only and 52(23.7%) replied it was used at all levels.

Regarding attitude of respondents, 40% had the feeling that collecting information was forced on them and 47.5 % made bored by collecting information while for 77.2% collecting information was meaningful. Thirty two percent lack confidence to make decision.

The study also assessed opinion of the respondents on; their habit of registering their activity, aggregation of the data from tally sheet, registration completeness, and completeness, timeliness and accuracy of report. Thirty percent of respondents did not register all of their activity, 80(37.4%) did not aggregate data from tally sheet, 66(30.1%) of the respondents suggested their registration were not complete and 68(31.1%) respondents suggested their report were not complete, not timely and not accurate (fig-4)

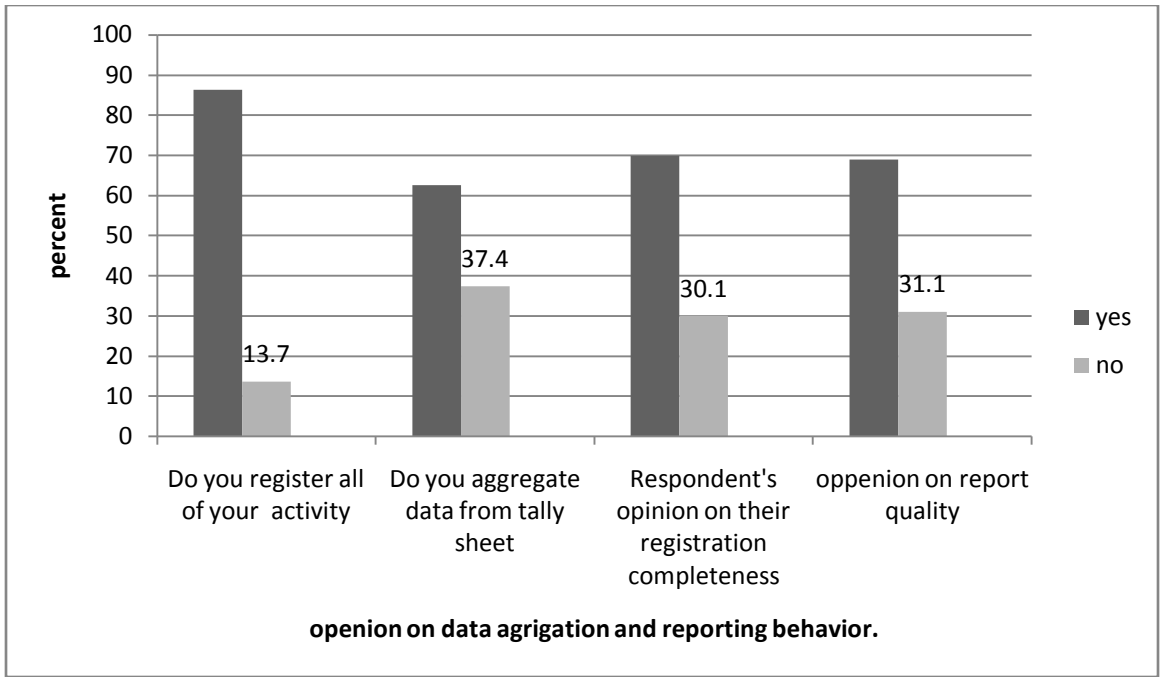


Fig -4.Respondents opinion on their habit of data registration and reporting in East wollega,2013

The result showed that 151(68.9%) of units /departments had data quality check mechanisms While 31.1% did not. Majority of them did it quarterly. The mechanisms used by major of respondents to check the data quality were by simply reviewing their document which is not appropriate method, and only 10units (4.5%) of them had been doing LQAS (Lots Quality Assurance Sampling). While the major causes for not doing quality checks mechanisms was, it was not adapted in the facility and they were doing in the traditional way 38(80.9%).

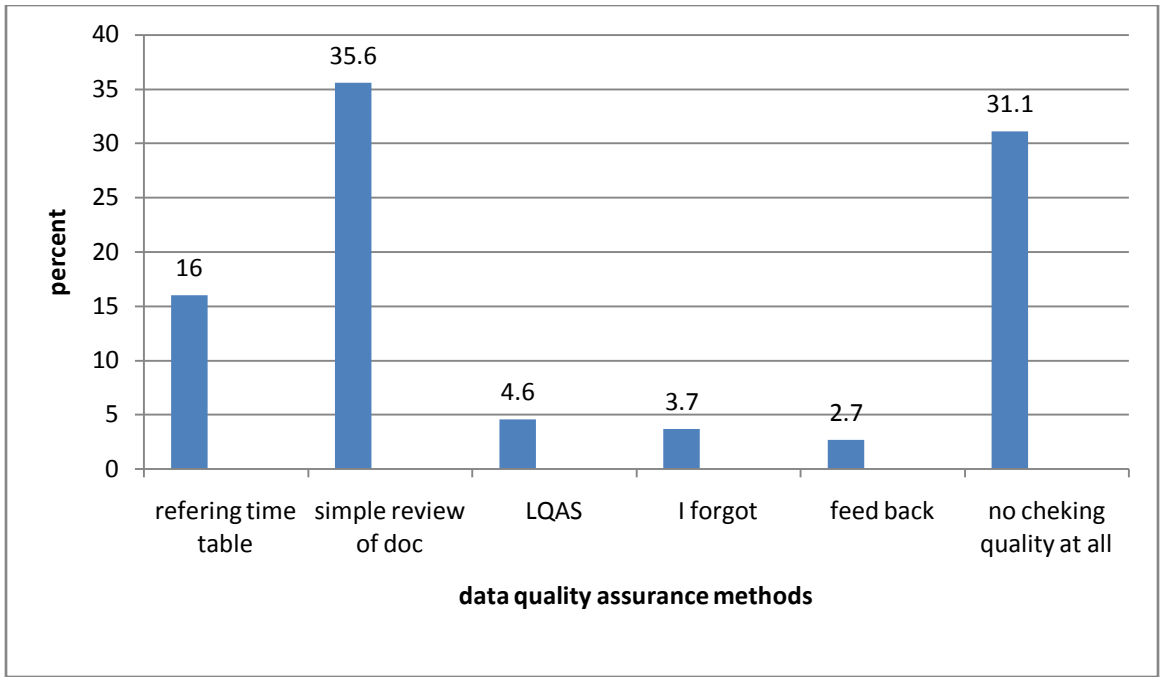


Fig. 5. Method of data quality assurance conducted in administrative and care providing facilities in East wollega, 2013.

During the study; it had been tried to assess whether the data gathered at health facility level were analyzed to get meaningful information that can be utilized as an input to support the management of health service at the institution level. 69.6% of unit heads responded they analyze their data. However 66.8% stated they present their analysis as a form of graphs, charts and some printout.

The most common analysis observed through interviews and inspections were; the analysis Prepared from summed up reports on the incidences of disease or services provided and some presented in manually prepared graphs. These reports are aggregated according to the report forms.

Thirty one percent of the unit heads had doubt on the quality of their data. 81% confirmed the timeliness of their reports while 87% had responded that their report was accurate.

6.4. HMIS utilization

The study assessed the performance of the units/ departments on 15 core HMIS utilization factors. The criteria are selected according to Data Demand and Information Use part of MEASURE/Evaluation.

Table -4. Performance of units/ departments on specific HMIS Utilization indicators in east wollega 2013

Variable	Frequency	Percentage
Departments changing data in to information	151	68.9%
Departments using data to prepare plan of action	181	82.6%
units/departments adapted national target to local situation	154	70.3%
Unit/department has key indicators with charts, tables	157	71.7%
Departments Maintain worksheets and charts for monitoring performance	155	70.8%
try to identify problems in performance, discuss and analyze with unit staff and present possible reason	158	72.1%
unit/department present information to, and discus with management committee and staff	161	73.5%
The achievement of targets included in unit team meetings	150	68.5%
HIS/HMIS multi disciplinary committee is found in the unit/departmentfor overall design and direction users of information?	85	38.8%
unit/department having Health information steering committee	82	37.4%
unit/department monitors key indicators and prepare woreda profile	129	58.9%
unit/department supervises Health information system activities at facilities	140	63.9%
unit compare facility performance against plan target	168	76.7%
unit compare facility performance against target Population	166	75.8%
any type of display related to the department activity	146	66.7%
Average		65.3%

The most commonly performed HMIS utilization indicator by unit/departments was preparation of plan of action (82.6%)using HMIS followed by comparison of facility performance against plan target(76.7%), but the least indicator performed was the availability of Health information steering committee (37.4%). Seventy six percent compare facility performance against target population. The

average performance of the units for indicators was 65.3%.The result of the fifteen indicators was presented in the table (table-5).

Depending on these HMIS utilization indicators, we tried to set criteria for utilization of HMIS in the department. The departments that perform more than 10 of the 15 indicators were categorized as HMIS utilizers while the departments performing less or equal to 10 indicators were not utilizers of HMIS. Accordingly 110(50.2%) not utilized HMIS in their department.

6.5. Independent Predictors of HMIS Utilization

Multiple logistic regressions were done to control the effect of confounder on HMIS utilization after being checked by binary logistic regression. Socio demographic variable like sex, educational level, working experience and position of respondents were analyzed and become a candidate for multiple logistic regressions at $p \leq 0.25$. Association between utilization of information and socio demographic variable was observed.

Hence sex, position, and service year were significant for HMIS utilization. In this study Male sex has higher likelihood of utilization of HMIS when compared with females at p value of 0.006, (OR=8.082, (95% C.I, 1.83, 35.62)). Similarly, position of respondent had significant associations with HMIS utilization after adjustment at p value 0.001. As can be understood from the table below, respondents in position of care providers utilized HMIS 0.026(95% C.I, (.003 ,0.196))times less likely than experts. Managers utilized 0.01(95% C.I, 0.00, 0.26)) times less likely than that of experts. As year of service increase utilization of HMIS decrease. The only exception is unit/department heads with work experience of 5-8 years utilized better than unit/department heads with work experience of 1-4 years. This could be due to the absence of training in the latter group. Long service year had negative impact on HMIS utilization keeping the other constant. But the Remaining socio-demographic variables did not showing significant statistical associations after adjustment (table-5).

Table-5.Socio demographic independent predictors of utilization of health information at units and Departments , in East Wollega zone2013.

Variables		freque ncy	Perce nt	Sig.	AOR at 95.0% C.I)
Sex	sex(F)	94	42.9		1
	sex(M)	125	57.1	.006	8.082(1.834,35.6)#
Position	Position (expert	66	30.1	.001	
	Position (manager)	10	4.6	.026	.001(.000, .461)#
	Position (care provider)	143	65.3	.000	.026(.003, .196)#
Profession	Profession(Others)	26	11.9		.137
	Profession(nurse)	109	49.8	.613	.622(1.353,.407)
	profession(HEW)	31	14.2	.835	.437(.523, 102)
	profession(HO)	32	14.6	.669	.332(.523,.141)
	profession(Laboratory)	8	3.7	.959	.999(.999,.153)
	profession(Pharmacy)	13	5.9	.858	.133(3.6, .675)
Educ. level	Educational level (masters)	1	.5	7.575	.056
	Educational level(certificate)	24	11.0	.000	1.000
	Educational level(Diploma)	103	47.0	.000	1.000
	Educational level(Degree)	91	41.6	.000	1.000
Service year category	Service year (> 16)	33	15.1	.043	1
	Service year (1-4 yrs)	80	36.5	.023	14.33(1.455,141)#
	Service year (5-8 yrs)	66	30.1	.027	16.9(1.4,207.3)#
	Service year (9-12 yrs)	32	14.6	.044	9.4(1.064, 82.85)#
	Service year (13-16)	8	3.7	.003	8.7(20.4, 3.71)#

Utilization of information was also compared with other important (key) selected variables: availability of information use guideline, supervision frequency, formal training on HMIS, received feedback for reports, quality assurance of health data, and knowledge on who utilize HMIS. Among the variables listed, that were considered to affect the utilization of HMIS, supervision frequency, received feedback

and availability of information use guideline had significant association with HMIS utilization were statically significant. Formal training on HMIS, performing data accuracy and knowledge of who utilize information had no significant association with HMIS utilization. Units/ departments having information use guideline utilized six times more than departments having no information use guideline.

Departments supervised monthly, utilized 0.4 times less likely than supervised as needed. Semi annually supervised departments utilized 0.02 times less likely than supervised as needed while quarterly and annually supervised units had no any significant association(table-6).

Table-6. independent predictors of utilization of health information at units and Departments , in East Wollega zone2013

Variables	frequency	percent	Sig.	OR(Adjusted)	95.0% C.I.for OR	
					Lower	Upper
supervision						
Supervision frequency (as needed)	14	6.4	.019	1		
Supervision frequency (monthly)	39	17.8	.387	.404	.052	3.153
Supervision frequency (quarterly)	61	27.9	.003	.022	.002	.260
Supervision frequency (semi-annually)	2	9	1.000	.000	.000	.
Supervision frequency (annually)	99	45.2	.727	1.734	.079	38.189
Feedback in the last quarter						
No	97	44.3		1		
Yes	122	55.7	.001	.341	.181	.642
Training						
No	52	23.7		1		
Yes	167	76.3	.173	2.176	.711	6.658
Infor use guideline						
No	112	51.1				
Yes	107	48.9	.004	6.055	1.794	20.439
Data accuracy						
No	102	46.6				
Yes	117	53.4	.140	2.490	.741	8.364
Know who utilize HMIS						
No	28	12.8				
Yes	191	87.2	.755	.792	.183	3.426

The analysis of variance showed activities of supervisors, staff motivation and satisfaction had significant association with HMIS process and its utilization but staff attitude and performance on the general public health activity showed no association with HMIS process and utilization.

Table-7. The relationship between Attitude variable and utilization of utilization of HMIS at units/ Departments in East Wollega 2013

Factors	F	Sig.
Supervisors Check data quality at the facility and higher level Regularly	25.525	.000
Supervisors Provide regular feedback to their staff through regular report based on evidence	12.623	.000
Staff Document their activities and keep records	13.261	.000
Staff Feel guilty for not accomplishing the set target/performance	1.665	.192
Staff Are rewarded for good work	16.030	.000
Staff Are empowered to make decisions	12.565	.000

6.6. Facility observation and document review

The facility document observation and minute review was done at administrative organization and health center level because majority of the factors to be assessed were not found at department level. The observation included: availability of infrastructures, Feedback received from report/ registers, routine report Submission Check, Supervision worksheet, review meeting register, documentation exist on use of information, discussion of committee on management of RHIS(data quality, reporting timeliness..), discussion on RHIS findings (patient utilization, disease data, service coverage, or medicine stock out), decisions made based on the topic discussed, follow-up action taken place on the decisions made and report timeliness, completeness and accuracy.

Availability of infra structures like Computers, internet access, databases and transport facilities to ensure data quality and enhance feedback and data use will greatly facilitate the ability of health information systems to produce timely, relevant and high quality information. At districts, computers are available currently in use for HIS purposes but there is no access to internet facilities.

Majority of the service providers (80%) do not have local area network at their facility to transfer data. An assessment was done on availability of automated health management information system software. Study revealed that all administrative and model health centers started eHMIS software.

Only 9(15.8%) of the observed had documented feedback received from top organization; only 31.5% had report submission check; Observation and interview showed that there is only limited or no evidence based decision making. The administrative and facility minute revue showed that only 4(7%) had review meeting on HMIS register, no anyone had documentation on use of information, 5.2% had discussion on management of RHIS like data quality, reporting, timeliness, while 5.2% had documented discussion on RHIS findings; like patient utilization, disease data, or service coverage, or medicine stock out. Hence evidence based decision making in east wollega was 5.2%. Only ZHD had documented decisions made based on the topic discussed but it had no follow up action taken(table-8).

Table-8. Facility observation of selected variables on evidence based decision making in east wollega zone, 2013

	Feedback received	Report Submission Check	Supervision worksheet	Review meeting	Documentation on use of information	Discussion on quality of RHIS	Discussion on RHIS findings	decisions made	Follow up action
yes	9(15.8%)	20(35.1%)	10(17.5 %)	4(7%)	0	3(5.2%)	3(5.2%)	1(1.8%)	0
No	48(84.2%)	37 (64.9%)	47(82.5%)	55 (96.4%)	57(100.0%)	54(94.8%)	54(95.4%)	56 (98.2%)	57 (100%)
Total	57(100%)	57(100%)	57(100%)	57(100%)	57(100%)	57(100%)	57(100%)	57(100%)	57 (100%)

The observational part of the study also assessed the accuracy of reports in the health facilities. In 15(31%) of the facilities their report was less than 75% accuracy, in 13(26.5%) the accuracy range from 75% to 90% while 19(39.6%) had 100% accurate report when compared with the registered data. The mean data accuracy was 89%. The reports of health centers were more accurate than that of the health posts.

It was determined that timeliness decreases as hierarchy of the organization decrease and the timeliness decrease as frequency of reporting increase (table-9).

Table-9. Mean timeliness of reports of facilities in East wollega zone, 2013

	N	Minimum	Maximum	Mean	Std. Deviation
Timeliness of weekly reports	57	30.00	100.00	60.2807	22.16155
Timeliness of monthly report	57	.00	90.00	59.4211	30.91633
Timeliness of quarterly reports	25	.00	70.00	38.0000	34.52053
timeliness of Sem annual report	25	.00	80.00	42.4000	38.86730

In east Wollega, the mean monthly data accuracy, completeness and timeliness of the August 2013 was 88%, 62%, and 57 percent respectively.

The result also shows data quality interims of accuracy, timeliness and completeness of monthly report increase as hierarchy of organization increase. All the above descriptions suggest that quality of HMIS increase as the level of organization increase.

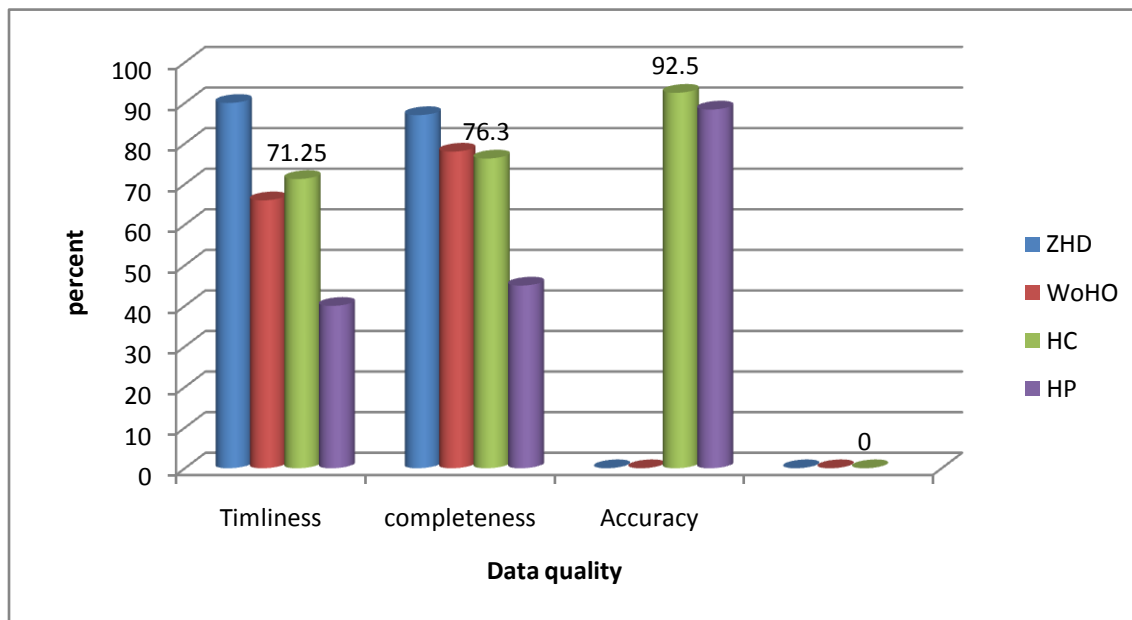


Fig 6. Quality of monthly report interims of accuracy, timeliness and completeness at different hierarchy levels of health institutions, East Wollega, 2013.

6.7. In-depth interview Result

An in depth interview was conducted with 21 respondents; 2 in ZHD, 7 in WOHO, 7 in health centers, 5 in H/P. The interviewed personnel were heads and HMIS officers of the administrative and health facilities and Health post head.

The respondents were asked to express their views about how training was given in the system: one of the HMIS officer indicated that on the start of the reformed HMIS implementation, mass training was given but no one remembered about the need of refreshment training and training of new comers since four years.

Key informants are also asked about standard recording and reporting format, and put ideas by saying: standard recording and reporting format were developed by higher level but it still now and then changed every period. One of the key informant said "...now we are on the era of starting e-HMIS, but staff have still now problem of data handling and indicators are varying..."

As part of the HMIS reform a total of 105 core indicators have been identified for use in monitoring and evaluation of the HSDP and there is still a strong feeling that the number of these indicators should further be reduced to a manageable size, preferably somewhere between 80 and 85 [18]. But many key informants explore that HMIS does not have place to register and report much of public health problems and newly started activities Example community conversation, environmental health activities, , rotavirus immunization, hence the need to increase indicators.

The HMIS committee was established in some administrative and facilities but no or very little discussion on HMIS was held because the implementation and focus of HMIS was week. "...One of the HMIS officers replied HMIS committee was established because the top level organization ordered but as far as I know in our setting, no single HMIS committee meeting was held and no management committee held discussion on HMIS issues..."

Regarding the commitment and motivation, one of the woreda HMIS officers says "...Usually responsible persons start to count/find tally sheet when report is asked. They do not consider time schedule, completeness, accuracy so that HMIS quality is poor. Some professionals dislike doing HMIS. They consider that it is a burden rather than usefulness. We get report with pressure. This may be due to double

reporting system that means, we are reporting the old routine health information and the new reformed HMIS since the reform. The cause for this double reporting may be the new reformed HMIS do not include Environmental health activities or gave little attention on public health in general which are available on the old HMIS.....”Another WHO head says “...in settings no incentive for HMIS or reward for good HMIS activities. There is no awareness of data use and its effect was not understood by workers.....”

Most respondents said that the reformed system is very comfortable for staff and as well as for patient for easily access when need arises. A key person says “...Our agency has no technical capacity to insure access to and availability of reliable data and sometimes we get difficulty to use data ...but due to financial problem we made no further intervention on HMIS like training, follow up of HMIS quality and staff motivation.....”

One of respondents from health center answered that the HMIS has usually been viewed as a way of sending reports to a higher level not use of information to take actions to improve performance that thing make them discourage.

It was frequently mentioned by the interviewees that responsible government bodies do not seem to care about the quality of HIS except for the reports send to them on regular bases - he said: A head of one health center pointed out that “ HMIS focal person has little contribution to the responsibility of the staff to fill format properly that makes the data lose its quality. This year HMIS officers from WHO and HC are on long term on service training. I hope this may improve their capacity and contribute to HMIS quality in the country.....”

Another respondent said that” There is no more supervision from outside organ, sometimes supervisors come and observe the registration book, it seems fault finding, they did not have feedback mechanism and no experience sharing among workers.”

On the general comment for HMIS in their setting, one of the WHO head says “...We know that in some facilities work is done but we got little report but in some facilities massive report comes while no work is in place. They report what they do not did, because the government expect from them. This is common in health extension workers. ...communication problems, false report, failure of workers to document their activities,... are critical barriers in HMIS implementation and utilization.”

He provide example saying “...it is not uncommon to get report of 30 children vaccinated from a HEW received 2 vials (20 doses) of polio vaccine...”

7. DISCUSSION

The components of HMIS were assessed regarding their strength and weakness of the Implementation status; investigate factors that possibly affecting implementation program and utilization. This finding is discussed based on Performance of Routine Information System Management (PRISM) and Health Metric Network [13].

PRISM frame work considered the behavioral and technical determinants of information that the system developer and implementer should focus. Organizational differences in terms of access to infrastructural resources availability significantly influence the implementation process of HMIS [13,41]. Sixty percent (60%) of this study respondents revealed that necessary inputs such as legislatives, regularly planning frame works concerning the use of HIS are sufficiently available. National HIS road map assessed policy and advocacy availability was only 33% and put it in critically inadequate category [21]. In this result, resource availability was better than the national HMIS resource availability which was 42% [20]. Such improvement may also link with distribution of aid delivered by nongovernmental organization to improve health service delivery. But in Eastern Kenya, resource availability was almost better than this study, only 35% had lack of equipment to manipulate data [42]. Only 50% of units had information use guideline and they utilized six times more than those had not.

To be in line with health metric network, important question regarding public health activities were assessed. But majority of respondents claimed that there is no variable place in HMIS for some important public health activities to report. This revealed that the registration formats are not full of informatics and it also missed the necessary public health indicators. Double reporting of the all activity exists in the zone for the last four years. This was one of the major problems observed which violates the goal of HMIS reform [8].

As with all aspects of health care, effective and continuously improving HMIS/M&E depends on ongoing supportive supervision. In this study 99(45.2%) of the units did not have any supervision in the last year and 53.5% did not got it in the last quarter. Only 17.5% of the facilities on observational assessment had supervision worksheet. On contrary to the expected, this result was worse when compared to the national assessment and Jimma zone while believed to be improved by HMIS reform. According to FMOH, Assessment of the Ethiopian National Health Information System in 2007, 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 [7]. In Jimma 51.1% of departments in HC and 87.0% of District Health Offices were visited at least once quarterly by upper organization [36].

Only 122(55.7%) of the units suggested they got feed back in the last year whether from supervision or for their report. It was better than Eastern Kenya (51.4%) Provided feedback to records team and feedback was addressed [42].

Fifty seven percent know the use of HMIS and Only 23.7 % know that HMIS utilization was at all level from data collection site to FMOH but 87% know that HMIS was utilized at least at one place. A study done in Tanzania shows, 54% didn't know who is supposed to use the information collected and 40% didn't know the importance of HMIS [16]. The difference may be the difference in time of study and the HMIS reform in Ethiopia may raised the awareness of workers.

According to 32.4% of the respondents, they lack Confidence to participate and make decision for HMIS related activities. According to 57.7% of the respondents they believed that they lack promotion about information use and culture. Many studies show similar findings that the management of HMIS should be accompanied with follow up, coordination, cooperation and communication among responsible bodies. [22, 23]

The record review part of this study showed the mean monthly data accuracy, completeness and timeliness was 88, 62, and 57 percent respectively and it decreases as the level of health organization decrease. It was also supported by qualitative study, Thus, the result was still far below the national expectation (100%) but better than the 2007(57%) [34,35,18]. The difference may show improvement on HMIS quality since reform, but much journey is still need to be covered. "...it is not uncommon to get report of 30 children vaccinated from a HEW received 2 vials (20 doses) of polio vaccine..."

The study also assessed quality and utilization of HMIS decreases as hierarchy of the organization decrease. This may be due to: HMIS infrastructures are lacking at the bottom of hierarchy; majority of the facilities had no their own data quality assurance system by themselves (only 4% did LQAS in their facility) and extremely low supervision and feedback mechanism. Different studies conducted in Ethiopia also assessed similar finding. Studies conducted from 2007-2012 in Ethiopia HMIS assessment

indicated, the skill of staff to manipulate data, quality and utilization of HMIS decrease as hierarchy of institution decrease [6, 20, 34].

The result of the study showed 30% of the unit/department heads had perceived problem on their data quality which was better when compared to the study done in Kenya. In central Kenya and East Kenya 50% had perceived problems with completeness of information, in East Kenya 35.7% had perceived problems with timeliness of information [42]. The difference may be the perceived level of data quality difference in Ethiopian and Kenyan health professionals.

The overall utilization of HMIS in the zone was 49.8% with 75% at ZHD, 57% at WOHO, 45% equal at health center and health post. This result was almost similar with the national HMIS utilization expectation (48%) and less than HMIS utilization in Tanzania which was 58% but greater than that of the study conducted in Jimma Zone which was 32%. The difference may be due to duration of time conducted. There may be improvement in HMIS utilization after the Jimma's study. [16, 21,36]

Sex, position of respondent, service year, availability of information use guideline, supervision frequency and feedback had significant association with HMIS utilization. These factors are the predictors of HMIS utilization according to this study. Motivation and staff satisfaction also had an association with HMIS process and utilization.

The result of the finding of Ethiopia HMIs assessment [21] showed Knowledge of HMIS concept, and supervision has an association with better quality and utilization of HMIS data.

Observation and interview showed that there is only limited or no evidence based decision making. 40% of the observed institutions had HMIS committee. But the administrative and facility minute review showed that only 7% had meeting on HMIS register, no one had Documentation on use of information. Five percent had discussion on Management of RHIS like data quality, reporting, timeliness, while 5.2% had documented discussion on RHIS findings like patient utilization, disease data, or service coverage, or medicine stock out. Only ZHD had documented decisions made based on the topic discussed but it had no follow up action taken (table-9).

This was supported by in-depth interview by “.....One of the HMIS officer replied HMIS committee was established because the top level organization ordered but as far as he know in our setting no single

HMIS committee meeting was held and no management committee held discussion on HMIS issues.....”the legislation from MOH increased the percentage of institutions having HMIS committee from 7% in 2007 to 40%[7], but decision making process based on facts of HMIS is still poor.

8. Limitation

- ✓ Social desirability bias for face to face interview.
 - On face to face interview respondents may answer the standard they know rather than the actual one.
- ✓ Improper documentation of minute could affect the finding of document review.

9. conclusion and recommendation

9.1. Conclusion

Data quality is much lower than the national expectations and becoming poor and poor while going down to lower level health facilities.

There is inadequacy of equipments, trainings, standards, rules and coordination mechanisms in the facilities which are necessary inputs to HMIS activities.

Many of key informants and quantitative participants complained the burden of work for reporting and confusion of the double reporting of the same activity for the same indicator; the old and reformed HMIS. This is why environmental and public health activities are missing in the new HMIS.

No local quality control mechanisms as well as up to date quality assurance trainings.

There is Lack of incentives, feedback, technical support, low attitude of health workers, and awareness, low decision making habit and absence of information use culture.

Limited discussion on HMIS by HMIS committee, hence no or little evidence based decision making.

All in all infrastructures and HMIS equipments are inadequate, Statistics are weak, and local program managers make a little use of them. In addition, local program managers are unaware of the need for, and lack of, evidence-based program implementation.

9.2. Recommendation

Based on the conclusions, the following recommendation are forwarded for the success of HMIS implementation progress in east wollega

HMIS implementation program in the facilities should have follow-up, cooperation and communication to avoid dissatisfaction-.

Emphasis should be given to lower level health facilities and health professional to improve quality of data.

The data quality assurance processes of facilities must be taken in to account before they are requested to send reports.

Sensitization trainings and training of new workers should be incorporated in the plan of administrative categories.

Supportive supervision and technical assistance should be delivered to monitor their progress towards HIS objectives

Efforts have to be made to improve the culture of information use and the attitude of staffs towards HIS in the facilities both at the zonal as well as facility levels;

Facilities should practice HMIS committee meeting and evidence based decision making.

Double reporting should be avoided at all by locally adapting missing indicators.

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Assessment of Implementation And Utilization Of HMIS For Evidence-Based Decision Making in East Wollega, Western Oromia , Ethiopia.

Instruction

I am BeressaAzmeraw. I am studying MPH program in Jimma University, College of Public Health and Medical sciences, Department of Health Service Management. Now, I am conducting my graduation thesis on information generation and its utilization for evidence based decision making in East wollega zone.

In health information systems, the ultimate purpose of collecting and analyzing data is to improve programs by enabling more informed decisions based on facts. However, information is not always available to make decisions or if it is available, it is not always used. This study is designed to find out what barriers and constraints are causing these conditions, and how to resolve them. Your participation is requested to provide your insights about constraints and barriers to data use. Your participation is very important to this research, but it is entirely voluntary. Your responses will be treated as confidential, and we will ensure that any statements or comments you make cannot be linked either to you as an individual or to your organization. We will be producing a report that is intended mainly to help JU and health system for decision

Are you willing to participate? YES (proceed) NO (stop)

A Questionnaire prepared to collect data on Assessment of implementation and utilization of Health Information System in East Wollega zone, Oromia Regional State.

Part I- identification

1. Code: Woreda code....., H/F code.....H/F name.....Resp.cod.....
2. unit/department/office _____
3. Sex 1. Male 2. Female
4. Profession:-.....
5. Year of services _____
6. Duty/position :- 1. Manager (department head) 2. Care provider 3) other (specify).....
7. Educational level
 1. Certificate
 2. Diploma
 3. Degree
 4. Master

Part II. HMIS implementation

21. Have you trained on HIS/HMIS?
 - 1) Yes 2) No
22. If not trained at all, have you ever heard about health information system/HMIS?
 - 1) Yes 2) No
23. Do you know the importance of HMIS?
 - 1) Yes 2) No
24. If yes, Pleas tell me _____

25. What about the availability of the these items in your unit/ departments,

		Available	not available
251	standard register		
252	standard tally sheet		

253	standard monthly and quarterly reporting formats		
254.	New HMIS procedure manual		
255	newly information use guideline and manual		
256	required stationeries for recording of health information		

26. Do you register all your activity 1) yes 2) No

27. Is the register filled completely 1) Yes 2) No

28. Is the unit/department aggregate or compile services from tally sheet correctly according to the guideline 1) Yes 2) No.

29. Is the report submitted complete, timely, and accurate?
1) Yes 2) No

291 If yes, how do you ensure that? _____

292 If not, why? _____

210. Did you conduct data accuracy taste?
1) Yes 2) No

211. If yes, How frequently?
0) daily 1) monthly 2)Quarterly 3)Semi-annually 4) annually 5) as needed.

212. .If not to Q 211, why? _____

2 13 In the past 3 months, how many times the unit/department supervised.

2 14. Did you get Feedback from top level organization?
1) Yes 2) No

216. If yes, how offen?
0) daily 1) monthly 2)Quarterly 3)Semi-annually 4) annually 5) as needed.

2 17.Is the units/departments have data collection standards including case definitions?
1) Yes 2) No

218. Are the units/departments having data transmission, processing, and reporting rules?
1) Yes 2) No

219. In general how do you feel about the data generation at institution? (*Multiple answer is possible*)

- 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 _____

220. have you ever conducted Self Assessment of your performance . 1) Yes 2) No

221. if yes for Q above how often?

- 0) daily 1) monthly 2)Quarterly 3)Semi-annually 4) annuually 5) as needed.

16. TABLE : RESPONDENTS' ORGANIZATIONAL AND BEHAVIORAL, KNOWLEDGE, SKILLS, CONFIDENCE, AND MOTIVATION

	<i>In health department, superiors:</i>	<i>Strongly Disagree</i>	<i>Disagree</i>	<i>Neutral</i>	<i>Agree</i>	<i>Strongly Agree</i>
	Emphasize data quality in monthly reports					
	Discuss conflicts openly to resolve them					
	Use HMIS data for setting targets and monitoring					
	Check data quality at the facility and higher level Regularly					
	Provide regular feedback to their staff through regular report based on evidence					
	Report on data accuracy regularly					
	<i>In health department, staff:</i>	<i>Strongly Disagree</i>	<i>Disagree</i>	<i>Neutral</i>	<i>Agree</i>	<i>Strongly Agree</i>
	Document their activities and keep records					
	Feel committed in improving health status of the target population					
	Set appropriate and doable target of their performance					
	Feel guilty for not accomplishing the set target/performance					
	Are rewarded for good work					
	Use HMIS data for day-to-day					

33	I want you to respond by yes or no answer (confirm by observation)	yes	No
	Is the units/departments change the data in to information (organized data that can be communicated) every month?		
	Is the units/departments use your data to prepare plan of action?		
	Is the units/departments adapted national target to local situation?		
	Is the unit/department has key indicators with charts, tables?		
	Did you Maintain worksheets and charts for monitoring performance?		
	Did you try to identify problems in performance, discuss and analyze with unit staff and present possible reason/cause to review in team meeting?		
	Is the unit/department present information to, and discus with your management committee and staff?		
	In your unit team meetings, was the achievement of targets included?		
	Is the unit/department having HIS/HMIS multi disciplinary committee for overall design and direction users of information?		
	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?		
	Is the unit/department monitors key indicators and prepare woreda profile?*		
	Is the unit/department supervises Health information system activities at facilities?		
	Does the unit compare facility performance against plan target?		
	Does the unit compare facility performance against target Population?		
	Are there any type of display related to your department activity		

34. How do you gues the Utilization of health Information system in the unit.

- 1) very poor 2) poor 3) neutral 4) good 5)very good

35. if very poor/poor, why?

- 1) Limited-decision-making space
- 2) Focus on curative care
- 3) No motivation
- 4) Lack skill to use data
- 5) Little idea of benefits of using it

6) 'HMIS is for higher level use'

7) HMIS gives incomplete information

36. if the unit monitors key indicators, How many times in a year _____

37. Is the unit/department performs performance audits of health facilities?

1) Yes

2) No

38. if yes, for No 36 how the unit/department perform performance audits of Health facilities? _____

In-Depth Interviewer Guide For key informants

I. Greetings like above

II. Organization type

III. Respondent Information

Sex.....Profession.....education.....Duty Post.....

Year of services Interviewer code

1. How do you see the training on HIS including new comers.
2. How do you see the standard recording and reporting formats?
3. How do you see use of standardized recording and reporting formats? (Did HF's capable to collect, compile, aggregate, analyze and interpret the data, feedback, keep copy of ...)
4. What about HMIS committee and meeting on
5. What about supervision?
6. Is a data-quality audit routinely performed?
7. Did the office maintain minimum display monitoring charts and worksheets?
8. How do you feel about data collection instrument, data generation and the whole processes?
9. Have you ever Utilized health Information at this organization level? For what purpose the information utilized?
10. Could you provide us major problems associated with the utilization? What else?
11. Please provide any information that could help to improve the utilization of health information system.
12. Have you ever made a decision based on RHIS information? How?
- 13 what chalenges due you faced? Related to: Technical constraints, Individual constraints
Organizational constraints

Observation checklist for document review

Name of health facility

Observers code _____ Departments / units.....

	yes	No	NA*
Standard recording formats/ registers			
Tally sheet			
Standard reporting formats			
Indicators and information use guideline			
Map of catchment area			
Catchment Population Profile			
Ten Top Causes of Morbidity (Males & Females)			
Ten Top Causes of Morbidity In < 5 Children			
Immunization Monitoring chart For < 1 Children (Penta 3, Measles)			
Disease cases (Malaria, all ages, and Pneumonia amongst Under 1s) HIV/AIDS (VCT, PMTCT, and ART) chart			
Routine Report Submission Check			
Feedback received Report/ registers			
Supervision worksheet			
Quarterly Plan and Performance Monitoring chart			
Annual Plan and Performance Monitoring chart			
Review meeting register			
Did all necessary data available Departments / units? <ul style="list-style-type: none"> • Weekly report (of how many months)..... • Monthly report (of how many months)..... • Quarterly report (of how many months)..... 			

Adapted from HMIS information use guideline

NA*- Not applicable **Checklist: Data**

Accuracy of monthly report From.....To.....

Name of health facility

Record reviewer code

S. N.	Data element	July (July-Sept.2013)				Aug.2013)			
		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: completeness of report submitted to HMIS unit within the HC ,WorHO& ZHD from June, 2013-August, 2013

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: completeness of report submitted from to

No 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 : timeliness of report submitted to HMIS unit within the HC, WorHO& ZHD from July.....

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 : timeliness of report submitted from to from July

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

check list;- the management and HMIS committee meeting records for the last three months to see if the following topics were discussed

Discussion on:	Yes(frequency)	NO	remark
Management of RHIS, such as data quality, reporting, or timeliness			
RHIS findings such as patient utilization, disease data, or service coverage, or medicine stock out			
<i>Have they made any decisions based on the above</i>			
Has any follow-up action taken place on the decisions made			
Are there any RHIS related issues/problems referred to higher level			
Did records of the organization show that senior management issued directives on use of information			
Did district annual action plan showed decisions based on HIS information?			
Does documentation exist showing the use of information for various types of advocacy?			

oromiffa version used for health posts

Seensa

An jedhama. Obbo Barasaa Azmaraaf raga funaanaan jira University Jimmaa, Kollejjii fayyaa hawwaasaa fi saayinsii yaalaa, Diipartimentii gaggeessummaa fayyaatiin sagantaa qorannoo “ health information generation and its utilization for evidence based decision making in East wollega zone.”rratti hojjechaan jira. Anis raga kanan funaanaa jira.

Dhaabbilee fayyaa keessatti galmi ragaa funaanuu, murtoo qabatamaa ta’ee irratti hundaa’uun sagantaa fayyaa fooyyessuudha. Haata’u malee odeeffannoon murtoof gargaaran kun yeroo baayyee hin argaman, yoo jiraatanis faayidaa irra hin oolan. Kanaaf qu’annoon kun rakoo kanaa adda baasuudhaan sirni odeeffannoofi murtoof fayyadamuu akka fooyya’u yaadameeti. Hirmaannaan keessan kanaaf tumsa gudda kan qabudha garu fedhake barbaada.

eeyyamamaadhaa?Eeyyee itti fufi

Lakii.....dhaabi

.....

.....

A Gaaffiilee qu'annoo haala raga fayyaa

Part I- Gaaffiilee Eenyummaa

1. Codii: koodii aanaa....., koodiidhaabbata fayyaa.....maqaa dh/fayyaa.....koodii deebisaa.....
2. diipartmentii _____
3. saala 1. dhiira 2. Dhalaa
4. ogummaa -.....
5. bara tajaajilaa _____
6. Duty/position :- 1. Geggeessaa garee 2. ogeessa 3) kan biroo (haa ibsamu).....
7. sadarkaa barnootaa
 1. sertifikeeta
 2. Diploma
 3. Degree
 4. Master

Part II. Haala hojiirra oolmaa HMIS

21. HIS/HMIS irratti leenjii fudhatteettaa?
 - 1) eeyyee
 - 2) lakki
22. yoo hin leenjine ta'e waa'ee HMIS dhageessee beektaa?
 - 1) eeyyee
 - 2) lakki
23. faayidaa HMIS beektaa?
 - 1) eeyyee
 - 2) lakki
24. Yoo beekta ta'e ibsi _____
25. Waanti armaan gaditti tarreeffaman kun departmentii keessan keessa jiruu?

		Jira	Hin jiru
251	Galmee (standard register for each activity)		
252	standard tally sheet		
253	Unka gabaasaa kan gosa hundaa		

254.	Maanuwaalii HMIS ibsu		
255	Fayyadaminsa odeeffannoo kan ibsu		
256	Isteeshinariii barbaachisaa ta'an		

26. hojiike hunda ni galmeessitaa? 1) eeyyee 2) lakki
27. galmeenke guutummaat ni guutamaat 1) eeyyee 2) lakki
28. dippartimentiin kun odeeffannoo yeroo yerootti walitt qabaa (taaliishiittii irraa)
1) eeyyee 2) lakki
29. Gabaasni guutuu, yeroo isaa kan eeggateefi sirrii dhaa?
1) eeyyee 2) lakki
- 291 Eeyyee yoo ta'e, attamiin mirkaneessita? _____
- 292 mit yoo ta'e , maaliif? _____
210. "data accuracy taste" ni gootuu? 1) eeyyee 2) lakki
211. Eeyyee yoo ta'e, yeroo ammamiitti?
0)guyaan 1)ji'aan 2)kurmaanaan 3) walakkaa-waggaa 4)waggaan 5)akkabarbaachisummaasaatti.
212. 'Lakki yoo ta'e , maaliif? _____
- 2 13 kurmaana darbe keessa yeroo meeqa suupperviiziyinii argattan?

- 2 14. Qaama ol aanurraa dubdeebbi argattaniittuu?
1) eeyyee 2) lakki
215. eeyyee yoo ta'e, yeroo meeqa?
0)guyaan1)ji'aan2)kurmaanaan 3) walakkaa-waggaa 4)waggaan 5)akkabarbaachisummaasaatti
- 2 16. Kutaan kun akkaataa ragaa funaanuu sadarkaa eeggate qabaa?
1) eeyyee 2) lakki
217. kutaan kun seera daataa qindeessuu, dabarsuuf gabaasuu ni qabaa/
1) eeyyee 2) lakki
218. Waliigala haala ragaa funaanuu maal jetta?
1) Dadhabsiisaafi irra deddeebbi kan qabu waan ta'eef qulqullina dhaba
2) buci gabaasaa kan nama dogogorsudha(ambiguous).
3) yeroo kan fudhatuufi dadhabsiisaa waan ta'eef bal'inaan gabaasuuf rakkisaadha
4) Gabaasni guutuu miti, yeroodhaanis hin gabaasamu.
5) baayyee gaariidha
6) boca hubachuuf rakkisaa waan ta'eef qulqullina gad buusa
7) compiitaraaf meeshaan adda addaa hanqinni jira.

8) kabroo _____

219. Hojiike ofumake madaaltee beektaa? 1) eeyyee 2) lakki

220. Eeyyee yoo ta'e yeroo meeqa?

0))guyaan1)ji' aan2)kurmaanaan 3) walakkaa-waggaa 4)waggaan 5)akkabarbaachisummaasaatt

TABLE : RESPONDENTS' ORGANIZATIONAL AND BEHAVIORAL, KNOWLEDGE, SKILLS, CONFIDENCE, AND MOTIVATION

	<i>Dhaabbilee fayyaatti to'attoonni:</i>	<i>Cimseen Morma</i>	<i>Nan Morma</i>	<i>Giddu galeees sa</i>	<i>Irratti waliig ala</i>	<i>Cimseen irratti waliigala</i>
222	Gabaasa ji'aa fi qulqullina raga irratti xiyyeeffatu					
223	ragaa HMIS gamaggama hojiif itti fayyadamu					
224	Qulqullina ragaa dhaabbilee fayyaa mirkaneessu					
225	Yeroo mara dub-deebii kennu					
226	Qulqullina raga irratti gabaasa kennu					
	<i>Dhaabbilee fayyaatti, hojjettoonni (staff):</i>	<i>Cimseen Morma</i>	<i>Nan Morma</i>	<i>Giddu galeees sa</i>	<i>Irratti waliig ala</i>	<i>Cimseen irratti waliigala</i>
227	Hojiisaanii hundaa raga qabatu					
228	Fayyaa uummataasaanii eeguuf ofkennanii hojjetu					
229	Manii guddaa qabatanii hojiirra oolchu					
230	Karoora isaanii yoo hin ga'iin hafan qaaniin itti dhaga'ama					
231	Hojii gaariif badhaafamu					
232	ragaa HMIS hojii guyya-guyyaasaanii hrdofuuf itti fayyadamu					
233	Raga maxxansuudhaan karooraaf raawwii isaanii hordofu					
234	Karooraaf raawwisaanii gamaggamuu danda'u					
235	Murtoo kennuuf angoo qabu					
236	Murtoon ragaadhaan hin deeggaramne taanaan hogganaa isaanii diduu danda'u					
237	Raga HMIS tajaajila hawaasaaf fayyadamu					
	<i>Personal</i>	<i>Cimseen Morma</i>	<i>Nan Morma</i>	<i>Giddu galeees sa</i>	<i>Irratti waliig ala</i>	<i>Cimseen irratti waliigala</i>
238	Raga murtoof hin fayyadne funaanuun na jibbisiisa					

239	Raga funaanuun na nuffisiisa					
240	Raga funaanuun hiika naaf qaba					
241	Raga yoon funaanu miira daataan dhaabbata fayyaa hordofuuf akka fayyadu natty dhageessisa					
242	Raga funaanuun waantan dirqisiifameen hojjedhu natty fakkaata					
243	Raga funaanuun hojjetoota biraaf to'attoota biratti ni galateeffatam					

Part III. Itti fayyadama HMIS

31. raga fayyaa eenyu akka fayyadamu beektaa?

- 1) eeyyee 2) lakki

32. Eeyyee yoo ta'e eenyu?

1. Federala
2. BEFO
3. Qajeelcha fayyaa godina W/Bahaa?
4. Aanaatti
5. Bakkuma ragaan funaanamutti

33	I want you to respond by yes or no answer (confirm by observation)	yes	No
331	Mana hojii kana keessatti raga funaaname ji'a ji'aan qindaa'ee faayidaaf oolaa?		
332	Manni hojii kun raga at funaante karoora baasuuf itt fayyadamaa?		
333	Manni hojii kun manni kan biyyoolessaa gara naannootti ni jijjiiraa?		
334	Manni hojii kun safartuu(indicators) gurguddoo fakii ykn gabateedhaan qabuu?		
335	Raawwii hordofuuf gabatee karooraaf raawwii ibsu qopheessitee maxansitaa?		
336	Rakkoo raawwiiratti jiru adda baasuu yaalaa, sababasaa gareef dhiyeessitaa?		
337	Kutaan hojii kun raga koree maanajimentiif dhiyeessee mariisaa?		
338	Walgahii kutaa hojii kana keessatti raawwiin hojii ilaalamaa?		
339	Manni hojii kun koree HIS/HMIS qabaa?		

3310	Manni hojii kun koree steering HIS/HMIS qabaa? Karoora yeroo dheeraa baasuuf manii maaltu akka gamaggamamuu qabu an adda baasu*	<input type="checkbox"/>	<input type="checkbox"/>
3311	Is the unit/department monitors key indicators and prepare woreda profile?*	<input type="checkbox"/>	<input type="checkbox"/>
3312	Is the unit/department supervises Health information system activities at facilities?*	<input type="checkbox"/>	<input type="checkbox"/>
3313	Manni hojii kun karooraaf raawwii walbra qabee ilaallaa?	<input type="checkbox"/>	<input type="checkbox"/>
3314	Manni hojii kun raawwiifi target Population walbra qabee ilaallaa?	<input type="checkbox"/>	<input type="checkbox"/>
3315	Kutaa hojii kana keessa agarsiifni kamiyyu maxanfamee jiraa	<input type="checkbox"/>	<input type="checkbox"/>

*intentionally blank for health posts

34. itti fayyadama raga kutaa hojii kanaa maal jettee tilmaamta.

- 1) baayyee laafaa 2) laafaa 3) gidugaleessa 4) gaarii 5) baayyee gaarii

35. yoo baayyee laafaa / laafaa, maaliif?

- 1) murtoo xiqqaatu kennama
- 2) dhukkuba fayysuu irratti kan xiyyeeffate waan ta'eef
- 3) onnachiiftuun hin jiru
- 4) dandeetti raga fayyadamuu dhabuu
- 5) raga fayyadamuun bu'aa xiqqoo qaba jedhamee waan yaadamuuf
- 6) 'HMIS kan fayyadamu qaama ol aanaadha
- 7) HMIS raga guutuu waan hin qabneef

36. kutaan kun karooraaf raawwii yoo hordofa ta'e waggaatti al-meeqa _____

37. kutaan kun raawiisaa sakatta'aa? 1) eeyyee 2) lakki

38. yoo eeyyee ta'e attamiin? _____

39 walii gala yaada raga funaanuufi gabaasarratti qabdu

ibsi.....
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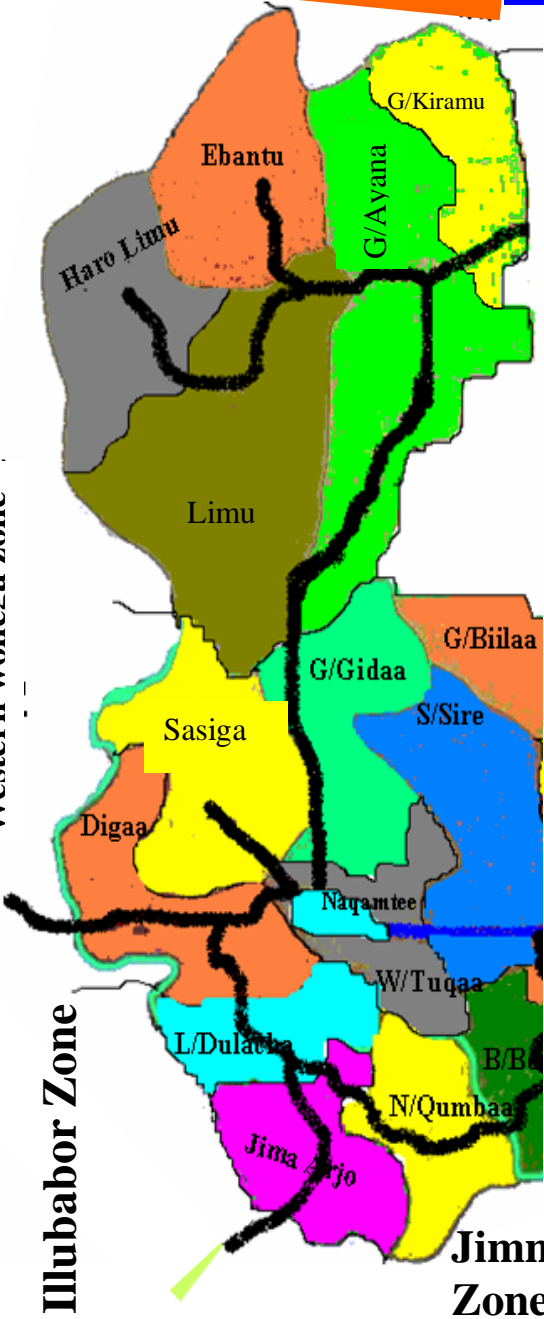
Galatoomi!!!!!!!!!!!!!!

East wollega Zone

Amahara region

BeniShangulGumize Region

Western wollega zone



HoroGuguru Zone

Western shewa Zone

Key