QUALITY OF MEDICAL RECORDS MANAGMENT AT PUBLIC HOSPITALS IN TIGRAY REGION

By:

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A research project submitted to faculty of public health, department/school of Jimma University; in partial fulfillment for the requirement for masters of public health (MPH), department of health planning and health service management

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Jimma, Ethiopia

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Abstract

Background: *Comprehensive medical records (MR) are cornerstones in the quality and efficiency of patient care during the hospitalization and in subsequent follow-up visits, as they can provide a complete and accurate chronology of treatments, patient results and future plans for care. However, the quality of MRs in health facilities of Tigray region is not well documented.*

Objective: *To assess the quality of MR management at public hospitals in Tigray region.*

Methods: *A cross-sectional study using stratified sampling method was conducted from March 1-15, 2011. A total of 768 MRs were reviewed at three public hospitals in Tigray Region. Review of MR was done using a checklist and in-depth interviews of health professionals and medical record staff. Data were checked, entered, cleaned and analyzed using SPSS version16. Ethical clearance was obtained from Jimma University public health and medical science ethical review board and Tigray regional health bureau. Verbal informed consent of the participants was obtained before the in-depth interviews.*

Result: Most of *the hospital had adequate medical record staff. Master manual patient index was not used by the hospitals. The mean retrieving (success) of medical record was 13.65(± 1.12) & the time to retrieve MRs was 6.3 (± 2.67). There was a significant difference among the hospitals in the mean retrieving time of medical record (P=0.001). The overall completeness of medical records of the hospitals was 54.1%. Suhul hospital had highest completeness of medical record (67.3%).*

Conclusion and Recommendation: *The number the medical records keepers were adequate to carry out the task of keeping medical records. All the hospitals didn't have manual master patient index. The overall completeness of medical records of the hospitals was low. Regular and sustainable supervision for medical record staff should be conducted. Basic materials and equipment such as master patient index, registration book, stationeries, folders and computer should be provide to the medical record department.*

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Abbreviations

ANOVA	Analysis of variance
DH	District hospital
DX	diagnosis
EMR	Electronic medical record
EPI	Expanded program of immunization
FH	Fistula hospital
ICD	International code of diagnosis
IP	Inpatient
IV	Intravenous
JU	Jimma university
MCH	maternal and child health
MPI	Master patient index
MR	Medical record
MRN	Medical record number
OP	Outpatient
OPD	Outpatient department
PBMR	Paper based medical record
RHB	regional health bureau
Rx	Treatment
SH	Specialized hospital
SIG	Signature
VS	Vital sign
ZH	Zonal hospital

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CHAPTER ONE: INTRODUCTION

1.1 Background

A medical record is a systematic documentation of a patient's individual medical history and care. The term 'Medical record' is used both for the physical folder for each individual patient and for the body of information which comprises the total of each patient's health history (1).

Comprehensive medical records are cornerstones in the quality and efficiency of patient care during the hospitalization and in subsequent follow-up visits, as they can provide a complete and accurate chronology of treatments, patient results and future plans for care (2).

A medical record is an essential tool in providing continuity of care for all patients, regardless of the nature of the relationship between the physician and patient, and/or the frequency of patient encounters. The record must tell the story of the patient's health care condition and should allow other health care providers to quickly read and understand the patient's health concerns or problems (3).

Medical Records (MR) are kept either as Paper-based Medical Record (PMR) or as Electronic Medical Record (EMR). In either forms, MR is expected to be complete and accurate for it to be useful as reference in continuing patient care, protection of the legal interest of the patient, physician, and the Hospital, and meeting regulatory requirements for standard and researches (4).

Hospitals deal with the life and health of their patients. Good medical care relies on good record keeping. Without accurate, comprehensive up-to-date and accessible patient medical record, medical personnel may not offer the best treatment or may in fact misdiagnose a condition, which can have serious consequences (5).

Medical record in the hospitals contain the following MR forms: patient information front sheet, routine observation charts, physician order sheet , medication administration records, intravenous fluid administration record, progress note, laboratory and radiology request, consultation request , discharge summary and the like. The forms are corner stone's for quality of health care, unless health care providers complete the sheets appropriately according to the blue print for hospital management in Ethiopia; it negatively affects the

health care to the patient. Moreover, unfavorable consequences on the health of the patient are likely (6).

The aim of this study was to assess the quality of documentation of paper based medical records in terms of completeness, availability and usability at the public hospitals in Tigray region.

1.2 Statement of the problem

"Low quality of medical record management affects quality of patient care during the hospitalization and in subsequent follow-up visits." One study conducted in 2005 estimated that two million adverse drug reaction in the ambulatory setting could be eliminated by an electronic medical records this could save up to 3.5 million a year in the ambulatory setting (7).

Medical records which are not organized and completed properly lead to frustration, debate, clinical misadventure and litigation (8). Moreover inaccurate, illegible, or altered, a patient's attorney may file a lawsuit, particularly if the medical record causes doubts about the quality of care rendered by a healthcare provider or organization (9).

Incomplete, torn or missing of sheets, illegible handwriting, and use of confusing abbreviations were the major drawbacks of paper based medical records. Some of these have been reported as common source of weakness in a surgeon's defense in medico legal (10). Paper based medical records are often unavailable, important information may not be written, or the handwriting of a health professional may not be legible (11).

Study conducted in the United Kingdom revealed that of the 200 case notes examined from eight hospitals found many different structures to the records and some with no structure at all. More than half had no index of contents; half were fat and disorganized. The records were not integrated (12).

Quality of medical record in Ethiopia especially in hospitals is low and do not fulfill the basic purposes of medical records system. The medical records are incomplete, lots of missed , and the handling and the tracking mechanism of medical records are also ineffective when the patient comes for follow up and other medical or surgical services he/she is compelled for

incurring additional cost, and besides the physician wastes more time in diagnosing and unnecessary ordering laboratory tests. (7).

Several studies were conducted on the quality of medical record management in other countries, whereas in Ethiopia few studies were conducted. Regarding the quality of medical records at public hospitals, few studies had been conducted so far. Hence, the purpose of this study was to assess the quality of medical records at public hospitals in Tigray region.

Furthermore, it focused on drawing a general picture of the quality of the Medical Records system at the hospitals and then to measure the completeness/incompleteness of Medical Records. Moreover, the views of health professionals and medical record keepers on the quality of medical records were taken into consideration. A further aim was to collect baseline information to serve as a base for further research.

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CHAPTER TWO: LITRATURE REVIEW

2.1. Literature Review

A prospective audit of the quality of medical record forms in a surgical department in one hospital (South Africa) revealed that: of 204 MR forms reviewed 71 % of patient name were written on every charts. (16) .A descriptive analytic study on the evaluation of data recording at teaching hospital (Iran) revealed that date of birth (34%), and father's name (24%) on every chart were written. Missed patient address and discharge sheets without address were 16.1 % (5). Identification of information varied on each sheet according to the study conducted in women hospital: the unit summary sheet with the highest value of documentation was (99%) and the fluid balance chart with the lowest value of documentation was 52 % (17).

The documentation of administrative information entails like date of admission, admitting physician, ward, room number, and bed number. Admission data are important in accessing to patients record and also for administering purposes. On many of the records, this information was incomplete (5).

Studies conducted to evaluate medical data recording at teaching hospital of Birjand University of medical science: completeness of the date of admission, ward, responsible physician were 61.7%, room number and bed number were 17% and 5% respectively. The highest value of documentation belonged to the admission and discharge sheets were 78% while the lowest were vital signs and radiology which is 24% and 57% respectively (5).

The documentation of diagnostic and treatment procedures comprise the following contents these are patient history, physical examination, laboratory exam, radiological exam, orders of medical intervention and orders of surgical intervention. The contents of the sheets are important from medical point of view particularly for meticulous patient follow up care and prognosis.(17).

A prospective audit of the quality of medical records in one surgical department showed that: history taking completeness presented as follows ; history of present complaint (65%), previous medical history (76%), drug history (47%), allergies (59%), social history (34%), and family history (11%) (16) .Study conducted in Iran women hospital: Documentation of the elements were varied in such a way that; the medical history and physical examination completed in 71% , while laboratory report attachment and radiological exam were 100%

and 53% respectively (17) . concerning vital signs the following contents were registered on the sheets: temperature only (12%), Temperature and pulse (41.6%), Temperature, pulse and blood pressure (15.9%) and all four vital signs (7.9%) (5).

Documentation of identification information of diagnosis and treatment provider includes the following contents: name of the physician, name of the nurse, signature of the physician and nurse, seal of the organization, and date and time. Studies revealed that absence of physician signature (2.3%) (12), clinicians name printed (8%), clinicians designation (2%) (16), In other similar studies date and time recorded 98.3% and 17.5% ,the signature of service provider and writing their designation were 56.3% and 7.3% respectively (19). Physician signature missing (1.5%), physician name (90.8%) and their position (96.1%) were missed (13). In addition in audited MR charts: all entries by doctors and nurses were legibly written in black ink and signing and dating of entries had been done in over 80% charts. While writing time of entries and printing of name had been done only in 40% and 38%.(20) Study carried out in Iran at women's hospital also pointed out that most of this information had been documented well, specifically those sheets which had been filled in by physicians, such as the medical history and physical examination sheet, physician order sheet and progress note all with 100% completeness of documentation of information (17).

Studies are also conducted concerning completeness of documentations and coding of medical records. A retrospective study performed in Lazio, Italy, showed that completeness was good in 70.8% of the documents (21). In Ethiopia a pre/post intervention study demonstrated that the percentage of complete medical records increased from 6.5 to 45.7%, and there were no charts which contain complete documentation (2) .Documentation and coding of medical records showed that 3.7% were inaccurately documented and 10.5% were assigned an incorrect code (14).

Retrieving of medical records is one of the aspects of quality medical records management. Studies conducted in Ethiopia noted that the average time needed to retrieve medical record number was two minutes, unable to find medical records (20%), average time to retrieve medical records was 4.7 minutes and number of missing medical records compared against registration log book was 25% (15). Moreover, the success rate of retrieving the proper medical record number for returning patient improved from 14 to 87% and time to locate medical records decreased from 31.2 seconds per record to 15.7 seconds per record (2).

The legibility of hand writing of medical records has a great importance in the patient's quality of health care service. Studies carried out in south west Spain on the illegibility of hand writing showed that 15% were so illegible that the meaning was unclear (23), and similar study in the united states of America in Texas ; 20% of the medication order and 78.5% of the physician signature were illegible or legible with effort (24). Moreover a study conducted in Hong Kong China revealed that legible records were 45 % (25).

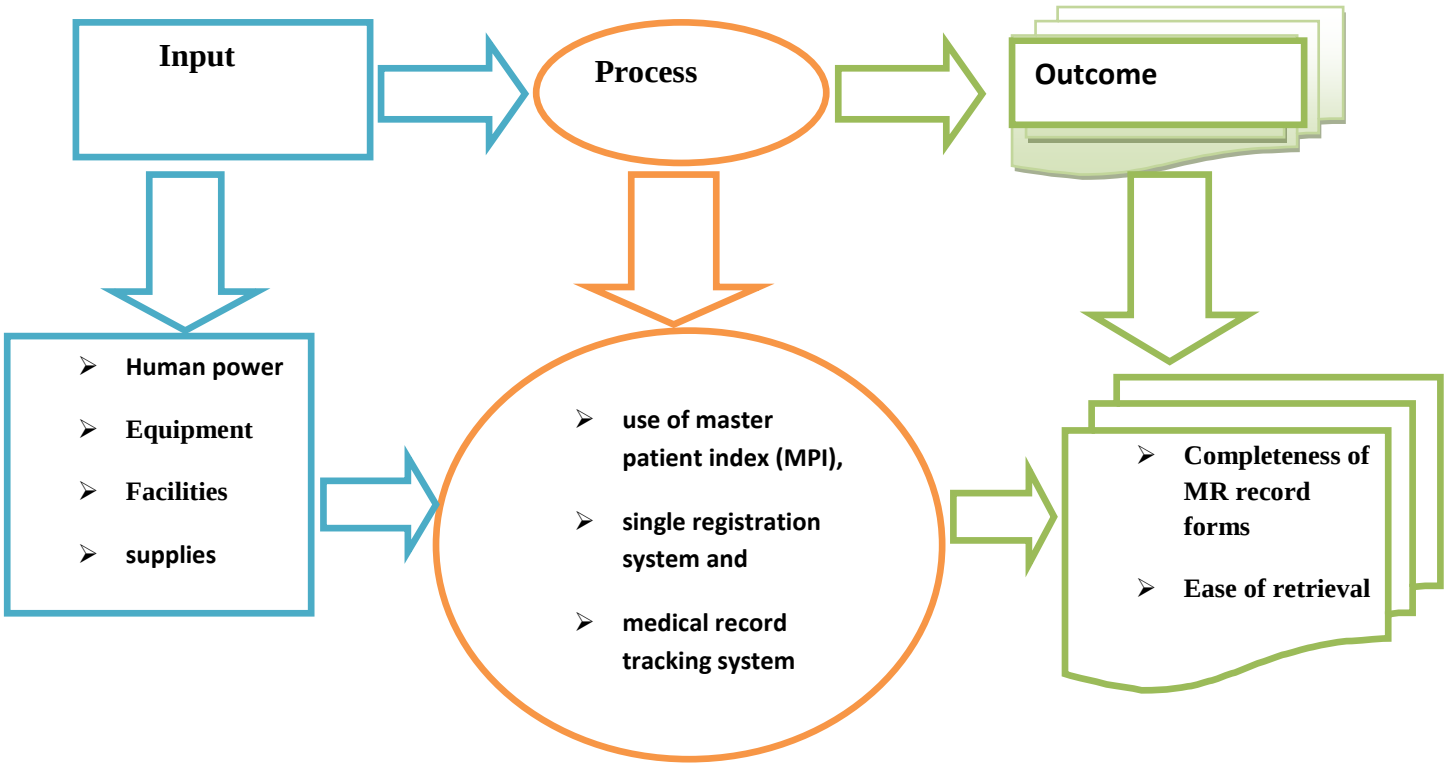

Figure 1: Adopted from Donobedian health care quality conceptual frameworks

Chapter three: Significance of the study

Medical Record is the collection of information concerning a patient and his or her health care. Each Medical Record shall contain sufficient, accurate information to identify the patient, support the diagnosis, justify the treatment, document the course and results, and promote continuity of care among health care providers. The Medical Record may serve as the documentation of the healthcare services provided to a patient. Poor handling of medical records are the major challenging area especially in developing countries. This problem is also an obstacle in providing quality and effective health service in hospitals and other health institutions in Ethiopia and the Tigray region. Therefore, this study aims to explore the quality of medical record at public hospitals in Tigray region. Exploring medical records at public hospitals helps to show their status in the quality of MR management, share best experience among the hospitals, enables decision makers and health care professionals to show their gaps in the quality of medical record management in their health care set up and has a contribution to reporting and monitoring and evaluation system of the country as a whole. It also provides baseline information and direction for further research activities in the area.

Chapter Four: Objectives

3.1 General objective

- To explore the quality of medical record management at public hospitals in Tigray region, North Ethiopia, 2011

3.2 Specific objective

- To verify the availability of the necessary inputs for medical record keeping and use
- To assess the process of medical record keeping (use of MPI, single registration system and MR tracking system)
- To assess the completeness of medical records
- To measure the ease of retrieving of medical record using past medical records.

Chapter Five: Methods and materials

4.1 Study area and period

The study was conducted in Tigray region public hospitals from March 1 to March 15, 2011 G.C. Tigray National Regional State is one of the National Regional States of the Federal Democratic Republic of Ethiopia, located in the northern most part of the country. It is bounded by two regional states and two African countries: Afar regional state to the east, Amhara Regional State to the south, Eritrea to the north, and the Sudan to the west.

The total area of the region is 54,572.6 km². For administrative and development purpose, the region is structured in to four administrative levels; the Regional State government, Zonal administration, Woreda administration and Tibias.

Mekele, the capital city of the region is having better social facilities, higher academic institutions, financial institutions and the like. Region is divided in to six zonal administrative divisions. The zones are: Mekele town, Northwestern, Western, Central, Eastern, South eastern, and southern zones. There are 34 rural Woredas and 11 urban Woredas in the region (26).

According to the Ethiopian central statistics authority, the total population of Tigray region is about 4,314,456 for the year 2009 G.C. When we see the population distribution, 81.9% of the total population resides in the rural areas and 19.1% are in the urban. (27)

In the Tigray medical care system, there are: one referral hospital , six zonal hospitals, and five district hospitals which are run by the regional health bureau ,and two private hospitals which are run by private sectors.

Ayder is a university hospital belonging to the University of Mekele. The School of Health Sciences includes a medical school, a nursing school, a school of pharmacy and a school for health officers. It has 470 beds, but only 216 of these are active. The hospital has an Emergency Room, and departments of Internal Medicine, Surgery, Gynecology & Obstetrics, Pediatrics and Dermatology. It has surgical theaters, delivery rooms, an intensive care unit for adults, a premature infant unit, outpatient clinics, a pharmacy, laboratories and an X-ray and imaging department.

The hospital has a staff of 140 nurses under the leadership of a head nurse. There are 25 doctors who are specialists. the hospital is dominant in terms of number of beds, variety of specialties and services it provide and is public hospital and available for all people. Patients are usually admitted referred from other health institutions and/or private sector physicians. The hospital serves for 5 million people (28).

Suhul zonal hospital is one of the six zonal hospitals in Tigray region and is located in the North West zone of Tigray region which is far way 300km from Mekele capital city of Tigray. The hospital was established in 2002G.C by federal ministry of health and accommodates for one million people and act also as a referral for six Woredas of the North West zone. The hospital was organized with the necessary materials and medical equipment and skilled human resource. The hospital had a total of 202 technical and supportive staffs of this 69 clinical diploma nurses, 4 Bsc nurses one health officer, two specialist (one internist and one surgeon) and two general practitioners.

Adua hospital was one of the five district hospitals in Tigray region and is located in central zone of Tigray region which is far 220 km from the capital of Tigray. The district hospital established in1936 and serves for 250,000 people. The total staff technical supportive were 198 the hospital had two specialist ,3 medical doctors and 56 nurse under leader ship of nurse and 5 lab technician and 2 physiotherapist and 2 environmental health officer.

4.2 Study design

A descriptive cross-sectional study design that employed both qualitative and quantitative data collection methods were used.

4.3 Population

4.3.1 Source population

All medical records of the public hospitals in Tigray region generated during the last one year period (2010 G.C) constituted the source population for this study. In addition, medical record personnel, health managers and health professionals working in the hospitals during the study period were the source population.

4.3.2 Study population

Sampled medical records from those generated during the last one year period and purposively identified key informants including medical record personnel, health managers and health professionals working in the hospitals during the study period were included in the study.

4.3.3 Inclusion and Exclusion Criteria

4.3.3.1 Inclusion criteria

All medical records of outpatient and inpatient of 2010 G.C, medical record workers, health care professionals working in outpatient and inpatient department (physicians, nurses and health officers)

4.3.3.2 Exclusion criteria

Assuming that they have different characteristics, medical records generated at maternal and child health unit, EPI, pharmacy were excluded from the study.

4.4 Sample size determination and sampling procedure

Single population formula was used assuming 95% confidence interval and 50% prevalence (P) due to lack of such study, and a precision of 5% between the sample and the parameter had been taken, thus a total of 384 MR charts were required for the study. Taking the design effect into consideration the sample size is multiplied by two then the total sample size was 768.

$$n = Z^2 \alpha^{1/2} (1- P) / d^2 = 384 \times 2 = 768$$

n = the required sample size

α= 0.05 (1.96) level of significance

p= 0.5 proportion of complete of medical records (since there was no a similar study)

d^2= 0.05 margin of error

Public hospitals were stratified into referral, zonal, district and hospitals. Then study hospitals were selected randomly from each stratum. Next using proportional to size allocation method the required sample size were taken from each of the selected hospitals, and the observation unit (MR charts) were selected from each hospital using systematic random sampling technique. The total medical records were 60587 of these Ayder referral hospital (15358), suhul zonal hospital (32240) and Adua district hospital (12989).Total sample size were 768 medical records of these Ayder referral hospital (195), suhul zonal hospital (409) and Adua district hospital (164).The first card was selected using lottery method from 79 medical records selected form registration book, then the interval between the cards were every 79 cards until the required sample size were collected.

The total sample size for in-depth interview was 40 which 20 from Ayder referral hospital, 10 from suhul zonal hospital and 10 from Adua district hospital.

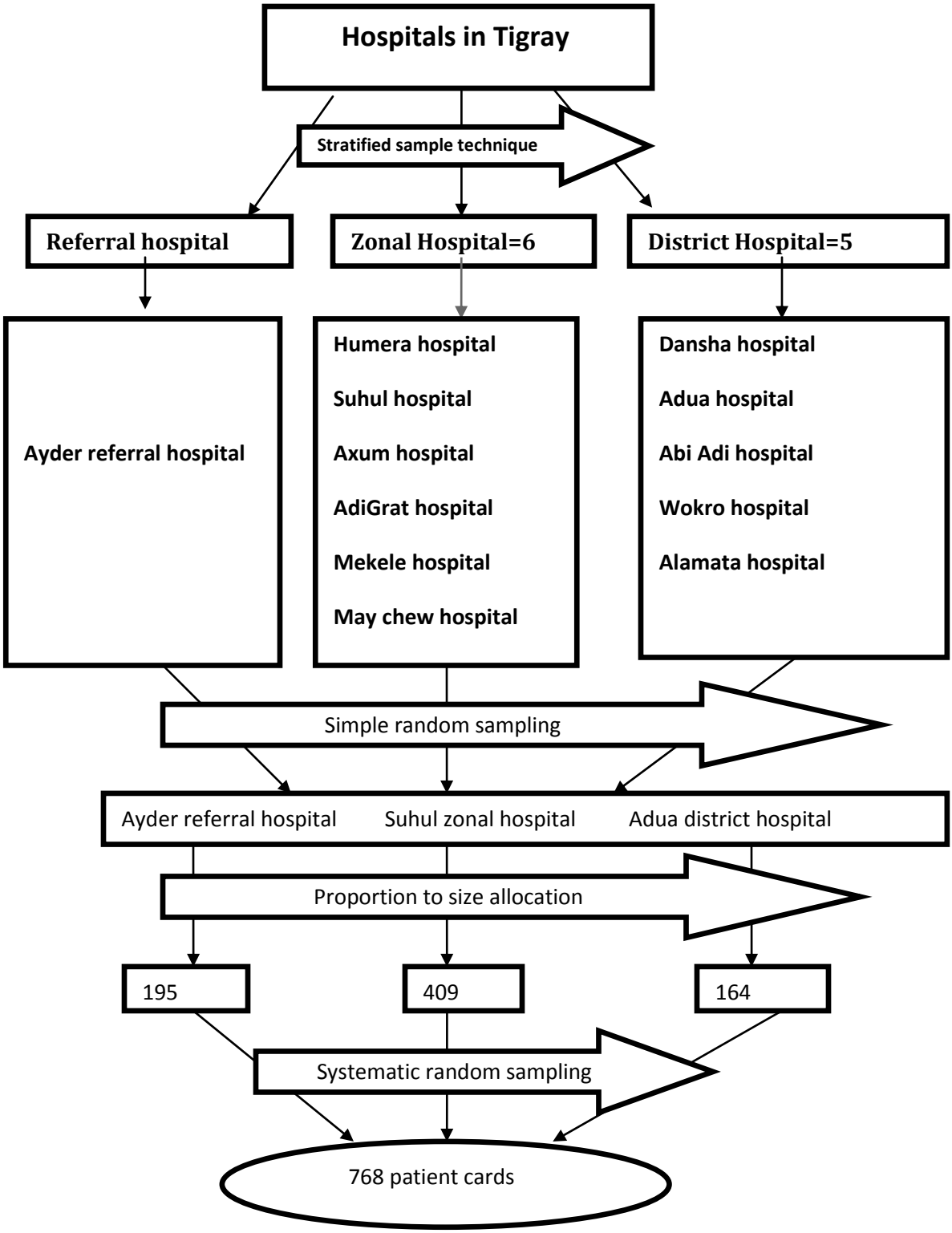

Figure 2: Schematic presentation of the sampling procedure of studies hospital, 2011.

4.5 Data collection methods and tools –

4.5.1 Data collection tools

Quantitative data were collected from Medical Records of patients using observational checklist. The observational checklist had three parts: the first part contained structure with indicators of human resource and training taken (health professional and medical record staff) medical supplies and equipment (computer, printer, MPI, shelves, file cabinets, stationeries and adequacy of medical record space). The second part contained the process attributes with indicators of the use of master patient index, single registration system and medical record tracking system. The third checklist is the outcome part with an indicator of availability of medical record forms in the chart, and checking completeness of MR and ease of retrieving (MRN, MR).

In order to support the data obtained by the use of checklist, in-depth interviews were conducted on health professionals working in OPD and supportive staff working in the medical record department. The participants were selected using purposive sampling. An in-depth interview guide, which contained open ended questionnaire, was used. The checklist and questionnaire were adopted from different literatures (7, 11)**.**

4.5. 2 Data collection procedure

Data were collected using checklist for medical records. Medical records were selected by observing the medical record number of MR in order to bring the selected MR from the shelf. Appropriate information of the MR was filled to the checklist and time was taken to measure the mean time of retrieval medical records. The total sample size of the MR was grouped into fifteen MR to measure the mean time and success of retrieval medical records.

In-depth interview guideline was developed to gather information from different health profession (physicians, nurses and health officers) for the qualitative part of the study based on purposive sampling technique.

4.5.3 Personnel

One supervisor with background of BSc nursing was assigned as supervisor. Four BSc nurse were recruited from Mekele hospital as a data collector. Training was given for data collectors and supervisor for two consecutive day on the purpose, technique of data collection, art of interviewing and supervising, objectives of the study and how to get informed consent to conduct in-depth interview.

4.6 Data quality control

The responsibilities of the supervisor were checking whether the checklist is correctly completed or not. The data collectors and supervisor were given training for two days on procedures, techniques, and ways of collecting data. The checklist was pretested in Mekele zonal hospital on the 5% of the sample size 5 days before the actual collection of data. Necessary modifications were made for the finale questionnaire after it was pretested.

4.7 Operational definition

Adequate Human resource –five and above MR staff and at least with educational status of grade 10 completed and computer skill.

Inadequate Human resource – four and less MR staff and have educational status of less than grade 10 completed and didn't have computer skill.

Adequate supplies- hospitals had at least Photocopy machine, printer, computer, file cabinet, shelf, MPI, medical records binder, stationeries, clipboard and binder.

Inadequate supplies-hospitals didn't have at least Photocopy machine, printer, computer, file cabinet, shelf, MPI, medical records binder, stationeries, clipboard and binder.

High experience-health professional - working five years and above in the hospital.

Low experience-health professional - working less than five years in the hospital.

Adequacy health facility - space of medical records balance with patient flow.

Inadequacy health facility - space of medical records imbalance with patient flow.

Good registration system – hospital had single registration system.

Poor registration system – hospital had not single registration system.

Good MPI- hospital used at least functional manual MPI.

Poor MPI- hospital didn't use manual MPI.

Good Frequency of monitoring- hospital monitor at least weekly with evidenced based record.

Poor Frequency of monitoring- hospital didn't monitor at least weekly with evidenced based record.

Functional MR committee- hospitals had functional MR committee.

Non functional MR committee- hospitals did not have functional MR committee.

Non established MR committee- hospitals did not have established MR committee

Good registration book-hospital used check in and checkout registration book according to the content.

Poor registration book-hospital didn't use check in and checkout registration book according to the content.

Complete MR-medical records complete 80% and above of its entries.

Incomplete MR-medical records complete less than 80% of its entries.

4.8 Study Variables

- Educational status of health workers
- Computer skills by the medical record personnel
- Type of hospital
- In-service training for the MR personnel
- Availability of supplies and equipment
- Service year of MR staff and health workers
- Use of MPI
- Presence of single registration system
- Presence of MR tracking system
- Complete medical records
- Time taken to retrieve medical record of a patient
- The number of medical records successfully retrieved

4.9 Data analysis and management

Data were entered, cleaned coded and analyzed using SPSS version 16 computer software packages. After the data were cleaned & edited, frequency distributions and tables were prepared. Data were analyzed using non parametric statistics; kruskal Wallis test and Mann-whitey U test to see the difference in mean time and success of retrieving of MR among the hospitals. In-depth interview was analyzed by thematically by summarizing similar words together and words of some participants puts by their own word.

4.10 Ethical considerations

Ethical clearance was obtained from JU public health and medical science ethical review board, and Tigray regional health bureau. Verbal informed consent of the study participants were obtained from each study subjects (health professionals and medical record keepers) prior to the interviews by explaining the purpose of the study and confidentiality of the information was assured. The instruments and procedures were not cause any harm to the study subjects, the community, the data collectors and supervisors to be involved in the study. While reviewing records care had been taken to make sure that no individual other than the research team

members had access to records. Moreover, name and other identifiers were not recorded during the completion of the checklist.

4.11 Result dissemination

The study will be presented and submitted to health service management department of public health and medical college of Jimma university. The results of this finding also submitted to TRHB and studied hospitals after letter of approval given by the health service management department of public health and medical college of Jimma university. Efforts will be made to publish the finding of the study in different journal and publication.

Chapter six: Results

5.1 Input Attributes of quality

As information obtained from checklist the Number of medical record keepers was twelve in Suhul zonal hospital. Educational status of medical record keepers in Ayder referral and Suhul zonal hospital were diploma holder. Five from Ayder referral and two from Suhul zonal hospital MR staff had computer skill. With respect to training both Ayder and Suhul hospital were trained in short course training on health information management system in the previous six month. (Table 1).

Table 1: Input attributes of medical record quality, Tigray regional hospital, Ethiopia, March, 2011

Input attributes		study area		
		Ayder hospital	Suhul hospital	Adua hospital
Number of record keepers		9	12	5
educational status	Diplomas	9	12	0
	Grade 10 complete	0	0	5
MR staff with computer skill		5	2	0
Service year	<5 year	7	5	3
	>5 year	2	7	2
Space (MR department) in m-square**		645	44	24
Availability of materials and supplies in %*		7	2	4

***** Photocopy machine, printer, computer, file cabinet, shelf, MPI, medical records binder, stationeries, clipboard and binder. ** Ayder referral hospital taken as a reference (served for 5,000,000 people)

In addition to the above as information obtained from observational checklist the space of medical record for Ayder referral hospital was (645 msq) which has seven class and two big hall. The area of space for MR was measured by count the floor “matonela”. The central filling space

for Ayder referral hospital was adjacent to the registration area, the archive space room was separated and easily accessible by medical records staff. The supply or storage room also separated and it was clean and used for storing, forms and supplies. Whereas Adua and suhul hospitals had no separated room, all the activities were carried out in a single room.

Photocopy machine was not available in all hospitals. Adequate shelves were available in Ayder referral hospital whereas Adua and suhul hospital were inadequate. Master patient index was not available in Ayder referral hospital. Binders for filling statistical report and folders for patient cards were only available in Ayder referral hospital. Ayder referral hospital had six computers and two printers and suhul only two computers, whereas no computer and printer in Adua hospital.

5.2 Process attributes of quality

As information obtained from observational checklist medical record registration system of Ayder referral hospital was centralized. Ayder referral hospital use computerized master patient index. Suhul zonal hospital was change the system of master patient index into computer based. In Adua district hospital and suhul hospitals although Manual master patient index available, they were not function.

At referral hospital medical record committee was established and the committee was composed of technical staffs and administrative bodies. However there was no record whether the committee function or not. There were checks in, and, checks out log books in all hospitals, but, none of them were function properly according to the format developed for purpose, and the entries in the books also did not contain all the sections specified in the blue print for hospital management in Ethiopia. (Table 2).

Table 2: Process Attributes used for the assessment of quality of MR management Tigray regional hospital, Ethiopia, March, 2011

No	Process attribute	Hospitals		
		Ayder referral	Suhul zonal	Adua district
1	Registration system	Centralized	not centralized	Not centralized
2	Computerized MPI	available	available	Not available
3	Manual MPI	Not function	Not function	Not function
4	Frequency of monitoring	Weekly	Weekly	Weekly
5	Medical record committee	Established & Functional	Not established	Not established
6	Check in & checkout registration book	Not used	Not used	Not used

In addition to the above as information obtained from observational checklist constraints which hinder medical record keeping processes were; clients who were visit for the second time or more came without medical record number cards , the system for check in and checkout of medical records was poor, proper handling of MR in outpatient and in inpatient was low, health professionals did not return the patient cards to medical record department on time , there was shortage of skilled human resources and the necessary materials important for MR keeping , there was no responsible body for each activities of MR processes in MR department the activities were done based on rotation and this affect quality of medical records handling.

5.3 Outcome attributes of quality

5.3.1 Ease of retrieving medical records

The mean time to retrieve patient card from the shelf was 6.3 ±2.67 minutes with a minimum of 2 minutes and a maximum of 12 minutes. Since the significance value of the statistic was (homogeneity test P-Value =0.001). Because this value was less than 0.05 the groups have unequal variances in the time taken to generate a MR for the three hospitals hence it was not fulfill the assumption of normal distribution. Therefore a non parametric statistical method was applied to test the difference in mean retrieving time of patient card from the shelf. Based on this test there was significant difference in mean retrieving time of medical record from the shelf among the three hospitals at (p=0.001). To estimate the time of retrieving in Ayder referral hospital (179 MR), Adua district hospital (273 MR), and Suhul zonal hospital (402MR) were assessed. The mean time to retrieve the ranked medical records were 228.7, 385.8 and 344.2 minutes for Ayder, Adua and shire hospital respectively. (Table-3)

In addition to this most of the participant of the in depth interview had problem for ease retrieval of medical records.

One health officer from OPD department (22 years old, Male) expressed his feeling as follows:

"…up to know I am not going asking for patient card for which one patient examined before rather than examine him/her in a new card this could be due to difficult to retrieve the card easily from the medical records department…"

Table 3: Time to retrieve a medical record in the study hospitals, Tigray Region, 2011

Time in minutes taken to retrieve MR among	N	Mean rank	X^2	P-value
Ayder referral hospital	166	204.10	153.41	<0.001
Adua district hospital	177	325.97		
Suhul zonal hospital	361	433.75		

Mann-Whitney test for the time taken to generate MR; there was a significant difference among the three hospitals in mean time of retrieving medical records. When we compared Ayder with Adua hospital regarding to the mean time retrieval for medical records Ayder hospital was better in addition to this it was also better than shire hospital. Adua hospital had better mean retrievals time than shire hospital. (Table-4).

Table 4: Difference in the time taken to retrieve MRs between the different hospitals, Tigray Region, 2011

	Hospitals	N	Mean rank	P-value
Time taken to generate MR in minutes	Ayder referral	166	133.92	0.001
	Adua district	177	207.72	
	Ayder referral	166	153.68	0.001
	Suhul zonal	361	314.73	
	Adua district	177	207.25	0.001
	Suhul zonal	361	300.02	

The mean to retrieve a medical record was 13.65 ±1.12 standard deviation with a minimum of 11MR and a maximum of 15MR. Since the test of homogeneity for equality of variance (p=0.001). Because the value was less than 0.05 the groups had no equal variance. The result showed that there was a significant difference in mean retrieving of medical records among the three hospitals. (Table-6)

Table 5: Number of MRs retrieved in the study hospitals, Tigray Region, 2011

Success to retrieve MR among hospitals	N	Mean rank	X^2	P-value
Ayder referral hospital	166	435.47	40.436	<0.001
Adua district hospital	177	340.99		
Suhul zonal hospital	361	319.99		

Mann-Whitney test for mean to retrieval (success); there was a significant difference among the three hospitals in mean retrieval (success) medical records. Ayder hospital had better success of retrieving medical records than Shire and Adua hospital. Adua hospital had better success of retrieving medical records than shire hospital.(Table 7)

Table 6: Success of retrieving MRs in the study hospitals, Tigray Region, 2011

	Hospitals	N	Mean rank	P-value
Success to retrieve MR among hospitals	Ayder referral	166	200.55	0.001
	Adua district	177	145.23	
	Ayder referral	166	318.42	0.001
	Suhul zonal	361	238.97	
	Adua district	177	284.77	0.001
	Suhul zonal	361	262.01	

5.3.2 Completeness of medical records

During the assessment of completeness of entries of the medical records it was found that From the front component of the cards: name of the patient, sex of the patient , age of the patient, registration of the date, address of the patient were 100% complete , while medical record number, were 99.9% complete. From the observation chart time and vital sign were 100% complete where as MRN and bed number 42.1%, 39.5 % were complete respectively. The highest completeness for physician order sheet was date and diagnosis each 20(83.3%) and the lowest MRN & ward entries each 10(41.7%). From the laboratory request form 316 (99.7%) test result was complete while comment entry 31(9.8%) was complete. From the patient form part the highest completeness was observed in diagnosis, 558 (93.8%). Whereas the lowest comment entry 31 (9.8%) (Table-8).

In addition to this most of the participant of the in depth interview said that they don't document the medical records of patient cards properly and almost all the form need some change while it is printed.

One Nurse from OPD department (32 years old, Male) expresses his feeling as follow:

"….most of the cards was feeling by negligence because one health professional is responsible to see more than 30 cards in the morning…"

In contrary to the above expression of poor documentation

One physician from Medical ward department (29 year's old, female,) expresses her feeling as follow:

"…we don't have problem in case of filling medical records however there was a problem for getting information from the paper and some modification should be made…"

Table 7: Summary of completeness of entries of the medical records in the study hospitals, Tigray, Ethiopia, 2011

No	Medical record forms	complete		No	Medical record forms	complete	
1	**Front sheet n=768**	n	%		Investigation	10	41.7
	Medical record number	767	99.9		Treatment	21	87.5
	Name of the patient	768	100.0		Prescription	6	25.0
	Age of the patient	768	100.0		Clinician name	22	91.7
	Sex of the patient	768	100.0		Clinician sign	22	91.7
	Registration date	768	100.0	**4**	**Medication administration n=30**		
	Address of the patient	768	100.0		Name of the patient	28	93.3
2	**Observation chart n=38**				Medical record number	24	80.0
	Medical record number	16	42.1		Ward	24	80.0
	Name of the patient	33	86.8		Diagnosis	18	60.0
	Ward	17	44.7		Allergy	1	3.3
	Bed number	15	39.5		Treatment	27	90.0
	Date	36	94.7		Medication	29	96.7
	Time	38	100		Medication dose	29	96.7
	Vital sign	38	100		Medication rout	29	96.7
3	**Physician order sheet n=24**				Medication frequency	28	93.3
	medical record number	10	41.7		Time to give	29	96.7
	Name of the patient	19	79.2		Date	29	96.7
	Ward	10	41.7		Given by	27	90.0
	Bed number	1	4.2	**5**	**Laboratory request n=317**		
	Date	20	83.3		Name	315	99.4
	Diagnosis	20	83.3		Medical record number	233	73.5
	Diet	13	54.2		Outpatient	72	22.7
	Nursing care	8	33.3		In patient	37	11.7

Table 8: Summary of completeness of entries of the medical records in the study hospitals, Tigray, Ethiopia, 2011

Continued…

No	Medical record forms	complete		No	Medical record forms	complete	
	Bed number	5	13.3	**7**	**Discharge summary N=10**		
	Date of laboratory ordered	304	95.9		Medical record number	2	20.0
	Date of specimen collection	267	84.2		Ward	3	30.0
	Test result	316	99.7		Bed number	10	100.0
	Laboratory ordered by	306	96.5		Patient name	8	80.0
	Laboratory performed by	296	93.4		Date of discharge	1	10.0
	Comment	31	9.8		Hospital coarse	4	40.0
	estimated cost	12	3.8		Instruction for home	4	40.0
6	**Radiology request N = 41**				Diet	5	50.0
	Name of the patient	41	100.0		Activities	5	50.0
	Medical record number	38	92.7		Specific care needs	5	50.0
	Date	41	100.0		Medication	9	90.0
	Age of the patient	41	100.0		Drug	8	80.0
	Sex of the patient	41	100.0		Dosage	8	80.0
	Outpatient	20	71.4		Frequency	6	60.0
	In patient ward	8	42.1		Follow up care	3	30.0
	Bed number	19	100.0		Appointment	6	60.0
	Diagnosis	20	48.8		To be seen by	3	30.0
	Radiology request	41	100.0		Physician signature	7	70.0
	Physician name	41	100.0		Nurse signature	4	40.0
	Physician signature	41	100.0		Patient signature	1	10.0
	Comment	2	66.7		date	6	60.0
	Radiology name	32	78.0	**8**	**History sheet N=86**		
	Radiology signature	41	100.0		Name of the patient	65	75.6

Table 9: Summary of completeness of entries of the medical records in the study hospitals, Tigray, Ethiopia, 2011

Continued …

No	Medical record forms	complete		No	Medical record forms	complete	
	Age	61	70.9		Name of assistant surgeon	5	83.3
	Sex	59	68.6		Name of anesthetist	6	100.0
	Date of admission	11	12.8		Instrument nurse	4	66.7
	Ward	11	12.8		Preoperative diagnosis	5	83.3
	Room number	3	3.5		Operation proposed	5	83.3
	Bed number	2	2.3		Post operative	5	83.3
	department	3	3.5		Operation procedure	5	83.3
9	**Operation note N=6**			10	**Patient form N=595**		
	Name of the patient	6	100.0		Name of the patient	381	64.0
	Department	3	50.0		Age of the patient	364	61.2
	Age of the patient	6	100.0		Sex of the patient	368	61.8
	Sex of the patient	6	100.0		Date	467	78.5
	Ward	2	33.3		Medical record number	282	47.4
	Bed number	2	33.3		Diagnosis	558	93.8
	Name of surgeon	6	100.0		treatment	530	89.1

The highest completeness of medical record forms was front sheet 768(100%) where as history sheet 64(95.5%) was incomplete (Table-9).

Table 10 Completeness of medical record forms in Tigray region hospitals, Ethiopia, March, 2011G.C

S.No	Variables	Complete		Incomplete	
		No	%	No	%
1	Front sheet	768	100	0	0.0
2	Observation chart	18	47.4	20	52.6
3	Medication administration	27	93.1	2	6.9
4	Physician order	5	21.7	18	78.3
5	Radiology	9	21.9	32	78.1
6	Laboratory	52	16.4	266	83.6
7	Discharge summary	1	10.0	9	90.0
8	History sheet	3	4.5	64	95.5
9	Operation note	8	30.8	18	69.2
10	Patient form	320	54.7	265	45.3

Table 11: Over all medical record form completeness by type of hospitals, Tigray region, 2011

Name of Hospital	variables	Complete		Incomplete	
		n	%	n	%
Ayder referral hospital	Front sheet	180	100	0	0.0
	Observation chart	10	43.5	13	56.5
	Physician order	5	21.7	18	78.3
	Medication administration	4	80.0	1	20.0
	Radiology	9	22	32	78.0
	laboratory	35	35.0	65	65.0
	Discharge summary	1	10.0	9	90.0
	History sheet	3	4.5	64	95.5
	Operation note	2	50	2	50.0
	Patient form	56	58.9	39	41.1
Suhul zonal hospital	Front sheet	402	100	0	0.0
	Observation chart	3	100	0	0.0
	laboratory	14	7.4	175	92.6
	Operation note	2	100	0	0.0
	Patient form	140	45.2	170	54.8
	Medication administration	23	95.8	1	4.2
Adua district hospital	Front sheet	180	100	0	0.0
	Observation chart	8	66.7	4	33.3
	Laboratory request	3	10.3	26	89.7
	Patient form	124	68.9	56	31.1

Patient information and authentication of the medical record entries

From the patient identification: front sheet, discharge summary and operation note were 100% complete. The lowest value of completeness was physician order (60.5%), observation chart (64.5%) and history sheet (72.1%). The highest value for administrative information were Radiology (100%), and medication administration (80%), and the lowest value were history sheet (7%) , and discharge summary (33.3%). From the diagnostic and treatment part: the highest completeness was observation chart (100%), laboratory request form and patient form (91.5%), and the lowest value was discharge summary (61.5%). From the identification of service provider: the highest value was operation note (100%), and the lowest value of completeness was discharge summary (41.7%) (Table11).

Table 12: Patient information and authentication of the medical record entries at public hospitals, Tigray Ethiopia 2011E.C

No	forms	Patient identification* %	Administrative information* %	Dx & Rx* %	Identification of service provider* %
1	Front sheet	99.8	NA*	NA*	NA*
2	Observation chart	64.5	42.1	100	94.7
3	Physician order	60.5	NA*	60.2	91.7
4	Medication admi	86.7	80	62.5	94.4
5	Laboratory	86.6	78	99.1	96.1
6	Radiology	97.6	100	46.3	92.7
7	Discharge summary	100	27.8	61.2	41.7
8	History sheet	72.1	7.0	NA*	NA*
9	Operation note	100	33.3	83.3	100
10	Patient form	62.3	NA*	91.5	NA*

NB

***Patient identification:** MRN, patient name, age, address.

***Administrative information**: date of admission, admitting physician, ward, room and bed No.

***Diagnostic and treatment procedures**: Hx, P/E, laboratory, and radiology request.

***Identification information of service provider**: Name of physician, nurse, signature, date and time

***NA** not available

The overall completeness of medical records of the studied hospital were 54.1%.out of the studied hospital Suhul hospital had highest completeness(67.3%) ,followed by Adua hospital (65.6%).

Table 13: Overall completeness of studied hospitals, Tigray region, 2011.

Name of hospital	Percent
Ayder	45
Adua	65.6
Suhul	67.3
Overall	54.1

Chapter Seven: Discussion

However, the findings reported in this study must be assessed with the following limitations in mind:

- The study focuses on limited dimensions (completeness and time to generate medical records). Other quality dimensions like consistency, correctness, legibility, accuracy, and meaningfulness were not included in this study.
- It was difficult to distinguish between inpatient and outpatient medical records. It was also not possible to check for presence of required formats in each medical record.

The number and qualification of medical record keepers in Ayder referral hospital was 9 and diploma. This finding was different with the blue print standard of Ethiopia which set as a standard at least five and grade 10 completed (15). However the medical record keepers were complained shortage of skilled human resource in terms of numbers and qualifications this might be since it is referral hospital it has high patient flow and covers large catchment area including from different regions.

Majority of the medical record keepers of the hospital gain training on the previous six month on health information management system. This was consistent with the blue print standard of Ethiopia indicates that training should be given at least once a year. (15)

Majority of the hospital space for medical record was inadequate .This is different with the blue print standard of Ethiopia indicates that the space for medical record should be adequate (15).This might be due to the fact that Adua and suhul hospital had inadequate space for medical records which is 24 and 44 metre square respectively.

Majority of the hospitals had shortage of supplies and equipment for medical record such as photocopy, shelves, printer, computer and stationeries. This is different with the blue print standard of Ethiopia indicates that the medical records should have adequate supplies and equipment. (15).This might be due to shortage of annual budget of the hospitals.

All the hospital didn't use manual master patient index in case of interruption of light and some technical problem of the computer. This is different with the blue print standard of Ethiopia indicates that the medical records should have manual master index (15). This might be due to low awareness of the staff.

Two third of the hospital didn't have centralized registration system. This is different with the blue print standard of Ethiopia indicates that the registration system should be centralized. (15). This might be due to weak integration of the system such as HIV/AIDS, TB and eye clinic were working alone.

All hospitals used medical record tracking system, but the mechanism did not function properly as a result medical records were not returned on time to the MR department and were not also recorded in registration book. Therefore the system with regard to medical record keeping processes in these hospitals was inconsistent compared to the blue print of hospital management in Ethiopia (15). This might be due to weak integration of the system and weak monitoring and follow up of the medical record department as evidenced from observation checklist and list of registration book.

The completeness of medical records in terms of name of patient was 89.8% this finding also consistent with study done in Iran (Emam Reza hospital and Valiasr hospital) which is 85%.(5).

The completeness of medical records in terms of date of admission of history sheet 12.8% this finding was lower as compared with study done in Emam Reza hospital and Valiasr hospital of Iran which is 61.7%.(5).This might be due to weak monitoring and follow up of the medical record department as evidenced by majority of the hospitals didn't have written information on schedules and reports of their evaluation.

The completeness of medical records in terms of date of birth was empty this finding was lower as compared with study done in Emam Reza hospital and Valiasr hospital of Iran which is 61.7 %.(5). This might be due to weak monitoring and follow up of the medical record department as

evidenced from observation checklist and list of registration book and this finding also supported by the report of in-depth interview recall bias by the patient.

The completeness of medical record in terms of medical record number was (72.2%),ward (46.8%) and responsible physician (85%).This was inconsistent with study done in Emam Reza hospital and Valiasr hospital of Iran which was 61% medical record number, 61% ward, and 61% responsible physician .(5). This might be due to methodological difference because the method was evaluation type for the Iran hospital.

The completeness of medical record of date in physician order was 83.3% the finding was lower as compared with result of Emam Reza hospital and Valiasr hospital in Iran which was 96%. However it was higher in case of vital sign (100%) (5).This might be due to methodological difference because the method was evaluation type for the Iran hospital.

Completeness of name of patient's, anesthetist and clinicians on every page in operation note forms were 100% .this is high as compared to a study in Durban in which patient's name (71%) and name of clinicians (69%) and name of anesthetist (69%). (16).This might be due to methodological difference because the method was prospective and deals only for surgical ward.

This study reveals that Patient identification in physician order (60.5%), observation chart (64.5%) and front sheet (99.8%) were complete. This is similar as compared to Iran women hospital which is 54%, 59%, and 99% respectively. While discharge summary, laboratory and radiology were high in the present study compared to Iran women's hospital. (17). This might be due to methodology difference between the hospitals because it includes private and social insurance hospital.

Administrative information of laboratory request form (78%) was similar with study conducted in Iran hospital (72%) while it was low in case of discharge summary (27.8%), and observation chart (42.1%). But it was higher in case of Radiology (100%). (17).This might be due to methodology difference between the hospitals because it includes private and social insurance hospital.

Diagnostic and treatment procedures for laboratory, observation chart or vital sign and radiology and Health care provider identification for physician order, laboratory, radiology and observation chart were similar as compared to Iran hospital. (17).This might be due to methodology difference between the hospitals because it includes private and social insurance hospital.

The mean time to retrieve one patient card from the shelf was 27 second, the study was inconsistent with the finding of study done in two hospitals of Ethiopia 47 second (15) and rural hospital of Ethiopia which is 15.7 second. (2). This might be due to the difference in the study area and methodology because used only 30 sample size for the two hospitals and the study used pre and post evaluation test for rural hospital.

Ninety three percent of the medical record was successfully retrieved within the limited time this finding was consistent with study of rural hospitals of Ethiopia which was 87% (2). But it was higher as compared with finding of study done in two hospital of Ethiopia which is 80%. (15). This might be due to the difference in the study area and methodology because it uses only 30 sample size.

The percentage of complete medical records was 45.7% in a study of rural hospital of Ethiopia, and study in Italy 70.8% (2). But the finding was different from the result of this finding which is the overall completeness of medical records was 54.1%. This might be due to difference in the study area and methodology.

Chapter Eight: Conclusions and Recommendations

8.1 Conclusions

- The number of the medical record keepers were adequate to carry out the task of keeping medical records.
- Most of the hospitals didn't have adequate space for medical records keeping and adequate supplies and equipments of medical records.
- Even though most of the hospitals had weekly monitoring schedule of medical records, almost all hospitals did not have documentation of the monitoring process.
- Except for Ayder referral hospital central registration system was not practiced. Moreover, two third of the hospitals didn't have functional manual master patient index.
- All the three hospitals didn't use check in and checkout registration book for MRs. Similarly, two of the three hospitals have not established medical records committee.
- The percentage of MR forms was complete for front sheet and medication administration, whereas it was incomplete for laboratory, operation note, and patient form.
- The overall completeness of medical records for the hospital was found to be low.

8.2 Recommendations

The following recommendations were forwarded out of what has been reported so far:

Regional health bureau

- To achieve the quality of medical record management Regional health bureau should be strengthen the department of medical records in terms of planning, financing and human resource development.
- Planned and need based training for medical record keepers staffs and health care professionals should be provided.
- Regular and sustainable supervision for medical record staff should be conducted.
- Strengthen monitoring and evaluation particularly focused to medical record department staff should be available.

Hospitals

- Basic materials and equipment such as master patient index, registration book, stationeries, folders and computer should be provide to the medical record department.
- Medical record committee should be strengthened and established.
- Routine monitoring and follow up should be conducted in the medical record department.
- Periodic assessment of medical record charts should be introduced.
- Should have manual master patient index in case of an electrical outrage and other reasons.
- Should strengthen the use of computer based medical record keeping.
- Should use in and out patient registration log book correctly
- Blue print Management of medical records for Ethiopia should be introduced and implemented

Medical record department

- Education to the patient and his family should be given on the importance of keeping and bringing their medical record number.

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ANNEX

English questionnaire

Hospital medical record checklist and questionnaire Tigray region 2011G.C
Part one Identification

Facility name_____

Zone or Woreda_____

Facility categories referral hospital (01) Zonal hospital (02) District hospital (03) enter code_____

Interviewer name_____

Date of interview_____

Time started _____

Time ended_____

Supervisor's signature_____

Hello my name is _____I came from Jimma University to assess the quality of medical records on your hospital. I would like to obtain information on the medical records. The information you provide will assist in designing for the improvement of quality of medical

records in this region. The information you provide will not divulge to anyone. If you have any question regarding this study, please forward. Thank you. Do you have your consent to continue with these questions?

Tick as appropriate consent agreed_____ consent declined_____

Part two

Name of the hospital_____ Code No_____

Table 1 Human resource

1 Staffing and training					
What is the status of skilled human power in MR department					
No	**status**	**Enter current number**			
		1 certificate	**2 diplomas**	**3 degree**	**4 other**
1	**education**				
2	**Computer skill**				
3	**In-service training**				
Number of staff assigned					
1	**Patient registration**				
2	**Retrieving and filling MR**				
3	**Delivering files**				
4	**Recording chart location**				

5	Filling report generated				
6	other				

Thank you

Table 2 Supplies and equipment

Name of the hospital_____ code No_____

If available enter 1 if not available enter 2		
1	photocopier	
2	printer	
3	computer	
4	MPI file cabinets	
5	Shelves for filing	
6	MPI files	
7	Binder for filling statistical report	
8	MR folders	
9	Stationeries	
10	Clip board for inpatient	

Thank you

Part three
Table 3

Number of MRN	Time taken to generate MRN in minutes	Number of MRN able to retrieve
Number of MR	Time taken to generate MR in minutes	Number of MR able to retrieve

Availability of medical records

No	forms	If available enter 1 if not available enter 2 if not ordered enter 3														
		Card number														
1	Front sheet															
2	Inpatient admission															
3	initial assessment															
4	physician order															
5	Medication administration															
6	IV fluid															
7	Laboratory order															
8	Radiology request															
9	Consultation request															
10	Observation chart															
11	Discharge summary															

Table 4 CHECKLIST FOR COMPLETNESS OF medical record FORMS

Name of the Hospital_____ Code No_____

If complete Enter 1 If Incomplete Enter 2

no	forms	Card number														
100	**Front sheet**															
101	MRN															
102	Name															
103	Sex															
104	Date of birth															
105	Registration date															
106	Address															
200	**observation chart**															
201	Name															
202	MRN															
203	Ward															
204	Bed number															
205	Date															
206	Time															
207	V/S															
300	**Physician order**															
301	Name															
302	MRN															
303	Ward															
304	Bed number															
305	Date															
306	DX															
307	Diet															
308	Nurse care															
309	Investigation															
3010	Treatment															
3011	Prescription															
3012	Clinician name															
3013	Clinician sign															
400	**Medication administration**															

401	MRN															
402	Name															
403	Ward															
404	DX															
405	Allergy															
406	Date															
407	Medication name															
408	Medication dose															
409	Medication rout															
4010	Medication frequency															
4011	Time to give															
4012	Date															
4013	Given by															
500	**IV fluid administration**															
501	Name															
502	MRN															
503	Ward															
504	Bed															
505	Dx															
506	Allergy															
507	Date															
508	IV fluid name															
509	Iv fluid volume															
5010	IV fluid rate															
5011	Discontinue date															
5012	Date of start															
5013	Time of start															
5014	Given by															
5015	Time completed															
600	**Progress note**															
601	Name															
602	MRN															
603	OP															
604	IP ward															
605	IP bed no															
606	Date															
607	progress note															
700	**Laboratory order**															
701	Name															
702	MRN															
703	Op															
704	IP ward															
705	IP bed No															
706	Date ordered															
707	Date specimen collected															
708	Test result															
709	Ordered by															
7010	Performed by															
7011	Comment															
7012	Estimated cost															

800	**Radiology request**															
801	Name															
802	MRN															
803	Date															
804	Age															
805	Sex															
806	Op															
807	IP ward															
808	IP bed															
809	Dx/ICD code															
8010	Radiology request															
8011	Physician name															
8012	Physician sig															
8013	Comments															
8014	Radiology/ physician name															
8015	Sig															
900	**Consultation request**															
901	Name															
902	MRN															
903	Ward															
904	Bed No															
905	Date															
906	Consultation requested by															
907	Sig															
908	Type of consultation needed															
909	Reason for consultation															
9010	Consultation report															
9011	Consultation physician															
9012	Specialty															
9013	Sig															
1000	**Discharge summary**															
1001	MRN															
1002	Ward															
1003	Bed															
1004	Patient name															
1005	Date of discharge															
1006	Hospital coarse															
1007	Instruction for home															
1008	Diet															
1009	Activities															
1010	Specific care needs															
1011	Medications															
1012	Drug															
1013	Dosage															
1014	Frequency															
1015	Follow up care															
1016	Appointment date															
1017	To be seen by															
1018	Physician sig															
1019	Nurse sig															

1120	Patient or family sig															
1121	date															

Part four Guidelines for in-depth interview

Name of the hospital _____

Code of the hospital **01 Referral hospital**

02 Zonal hospital

03 District hospital

1 Profession of the health personnel _____
2 Work experience in years _____
3Time spent in OPD _____
4 Time spent in Inpatient _____
5 Number of patient seen in OPD per day_____
6 Number of patient seen in the ward per day_____

7 How often do you document all informational elements on related sheets in medical records?
7.1 Please, explain?

_____
_____
_____
_____
_____

8 How do you rate the ease of getting information out of the paper based medical records in this hospital?
8.1 Please, explain?

_____
_____

_____
_____
_____

9 Do you think the paper based medical records system needs change?

_____
_____
_____
_____
_____

9.1 If yes why and in which aspects?

_____
_____
_____
_____
_____

9.2 If no why?

_____
_____
_____
_____
_____

10 Have you requested previous medical records of your return visit patients during the last two weeks? How frequently did you get the MRs you requested? Would you please explain if there is a gap?

_____
_____
_____
_____
_____
_____
_____

11 What do you suggest to improve the quality of medical record management?

_____
_____
_____
_____
_____
_____

Part five: checklist to assess the process of organizing medical records kept.

Name of the hospital _____

Referral hospital 01 **Zonal hospital** 02 **District hospital** 03

1) Does the Hospital have a single, unified registration system for all categories of patients?

_____
_____
_____
_____
_____

2) Is the Hospital establishes a MR tracking system to monitor the generation, Completion, and filing of a patient's MR?

_____
_____
_____
_____
_____

3) Is the Hospital tracking process manual or Computer-based MR system?

_____
_____
_____
_____
_____

4) How does the Hospital assign a unique MRN to each patient's MR upon first registration at the hospital?

_____

_____
_____
_____
_____

5 Does the hospital assign folder after the MRN is generated?

_____
_____
_____

6 Does the medical records department of the hospital have Master Patient Index? If yes, how does it work?

_____
_____
_____
_____
_____
_____
_____
_____

7 Does the Hospital audit the files periodically (quarterly or as per hospital policy) to ensure correct filing and prevent loss?

_____
_____
_____
_____
_____

8 Does the hospital have Medical Records Committee? If yes, is it functional?

_____
_____
_____
_____

9 How do you check in and checkout medical records (Do you have tracking system for medical records not found in the MRD)?

_____
_____
_____
_____

10 Who are responsible in handling Medical Records in this hospital?

_____
_____
_____
_____

11 Finally, please feel free to list down the main problems related to the process of medical records keeping in your hospital_____
_____
_____
_____
_____

Tigrigna questionnaire

ብትግርኛ ዝተዳለወ ቃል መሕተቲ

ጅማ ዩኒቨርሲቲ

እዚ ዕሬትን ኣተሓሕዛን መረዳእታ ሕሙማት ወይ ድማ መዲካል ሪኮርድስ ኣብ ተመላሊሶምን ደቂሶምን ዝሕከሙ ኣብ መንግስታዊን ውልቀ ሆስፒታላት ንምድህሳስ ዝሕግዝ መረዳእታ መኣከቢ ቃል መሕተቲ እዩ

ሽም ጥዕና ትካል _____

ሪፈራል ሆስፒታል	***01***	**ዞናል ሆስፒታል**	***02***
ዲስትሪክት ሆስፒታል	***03***	**ናይ ውልቀ ሆስፒታል**	***04***

ቅድሚ ቃል መሕተቲ ናይ ቃል ፍቃድ መርከቢ ቅጥዒ

ሰላምታ

ከመይ ኣለኹም/ኽን

ሽመይ _____እበሃል ኣብ ጅማ ዩነቨርሲቲ ዲፓርትመንት ጥዕና ስራሕ ትልምን ኣመራርሓን ተምሃሪ ኾይነ መዕናዕቲ ንመክያድ መፂኤ ኣለኹ ብዘዓባ ኣተሓሕዛን መረዳእታን ዶኩመንት ሕሙማት ወይ ድማ ሜዲካል ሪኮርድስ እዚ ሆስፒታል ሕቶ ከሓተኩም እየ:: ዕላማ ናይዚ መዕናዕቲ ብርኪ መረዳእታን ዶኩሜንትን ሕሙማት ኣብ ሆስፒታላት ትግራይ ንምድህሳስ ኣብ ዕሬት ኣተሓሕዛ መረዳእታ ሕሙማት ዕልዋ ዘሕድሩ ቀንዲ ምኽንያታት ብምልላይ ኣወሃህባ ግልጋሎት ጥዕና ንምምሕያሽ እዩ ኣብ ምስታፍ እዚ ቃለ መሕተቲ ትሕብብርኩም/ክን ክንፍቃደኝነትኩም/ትክን ኣብ ዕሬት ኣተሓሕዛ መረዳእታ ሕሙማት ዝተተሓሓዙ ፀገማት ንምልላይ ኣዝዩ ጠቃሚ እዩ

ሽምኩም/ክን ኣብዚ ቅጥዒ ኣይፀሓፍን ዝሃብኩምዎ/ክንኦ ሓበሬታ ኩሉ ብምስጢር ከምዝተሓዝን ንማንም ዘይግለፅን ምኻኑ ከረጋግፅ ይደሊ ኣብዚ ቃል መሕተቲ ምስታፍ ኣብ ፍቃድኩም/ክን ጥራይ ዝተመስረተ ኾይኑ ኣብዚ ቃለ ምልልስ ንምስታፍ እንተዘይደሊኹም/ኽን ኣብ ዝደለኹሞ/ንኦ ግዜ ንምቁራፅ ትኽእሉ/እላ ኢኹም/ኽን

ፍቃድኩም/ክን እንትኾይኑ ክቅፅል ይኽእል ዶ?

***1* እወ**

2 ኣይፋሉን ኣቓርፅ

ሽም ሓታቲ_____ ፊርማ _____

ዝተጀመረሉ እዋን_____ ዝተወዳኣሉ እዋን_____

ዕለት_____

ንትሕብብርኩም/ክን የመስግን

ኩነታት ሰራሕተኛታትን ስልጠናን ዝምልከት ቅጥዒ

ብርኪ ክኢላ ሓይሊ ሰብ ኣብ ዘፈር ማህደርን ሪኮርድ

ሽም ጥዕና ትካል_____

ሪፈራል ሆስፒታል 01 ዞናል ሆስፒታል 02

ዲስትሪክት ሆስፒታል 03 ናይ ውልቀ ሆስፒታል 04

ተቁ	ዝርዝር	ሐዚ ዘሎ በዝሒ ይቀመጥ			
		ሰርቲፊኬት	ዲፕሎማ	ዲግሪ	ካልእ
1	ብርኪ ትምህርቲ				
2	ክእለት ኮምፒተር ዘለዎም				
3	ኣብ ዘሓለፈ ሓደ ዓመት ብዝዓባ ኣተሓሕዛ ናይ ሕሙማት ማህደርን ሪኮርድን ስልጠና ዝረኸቡ ሰራሕተኛታት				
4	ግልጋሎት ዘመን ኣብ ስራሕ ንዘለዉ ሰራሕተኛታት				
	ትሕቲ 1 ዓመት				
	1-5 ዓመት				
	ልዕሊ 5 ዓመት				
5	ሓይሊ ሰብ በዝሒ ብኽፍሊ ብርኪ				
	መዝገብ ቤት				
	ካርዲ ክፍሊ				
	ፋይል ክፍሊ				
	ሪኮርድ ክፍሊ				
	ፋይልን ሪፖርትን				

ኣብ ማህደርን ሪኮርድን ዘለዉ እታዎታት

ተቁ	ዝርዝር	በዝሒ	መብርሂ
1	ፎቶ ኮፒ ማሽን		
2	ፕሪንተር		
3	ዎርድ ፕሮሰሶር		
4	ፋይል ካቢነት		
5	ሸልፍ		
6	ማስተር ፕሸንት ኢንዴክስ		
7	መዲካል ሪኮርድ መትሓዚ		
8	ፅሕፈት መሳርሒ		
9	ክሊፕ ቦርድ		
10	ባይንደር		
11	ስፍሓት መስርሒ ቦታ ብካሬ ሜትር		

ሽም ሓታቲ_____ ፊርማ_____ ዕለት_____

ንኸይዲ ስራሕ ኣተሓሕዛን ኣወዳደባን መዲካል ሪኮርድ ዝተዳለወ ቃለ መሕተቲ

ሽም ሆስፒታል_____

ኮድ ቁፅሪ ጥዕና ትካል

ሪፈራል ሆስፒታል 01 ዞናል ሆስፒታል 02

ዲስትሪክት ሆስፒታል 03 ናይ ውልቀ ሆስፒታል 04

1 ናይ ሕሙማት ማህደርን ሪኮርድን ኣተሓሕዛ ከምኡውን ናይ ሕሙማት ምዝገባ ስርዓት ዝተማእኸለ ድዩ?

2 ኣብ እዋን ምዝገባ ንተመላለስቲ ይኹን ደቂሶም ንዝሕከሙ ሕሙማት ንእሽቶ ካርዲ ቁፅሪን ሽምን ዝሓዘ ንሕድ ተሓካማይ ይወሃቦ እዩ ኣጋጣሚ ኾይኑ ሕሙም ንኻልኣይ ግዜ ወይ ካብኡ ንላፅሊ ግልጋሎት ንምርካብ ናብ ሆስፒታል ኣብ ዝመፀሉ እዋን መለለይ ካርዲ ሒዙ ንዝመፀ ካርዲ ብቀሊሉ ክወፃሉ ይኽእል ዩ ነገር ግን ካርዲ ረሲዑ ኣብ ዝመፀሉ እዋን ብኽመይ ተተኣናግድዎ?

3 ናይ ሕሙማት ማህደርን ሪኮርድን ወይ ድማ ሙሉእ ካርዲ ናይ ሕሙማት መንነቶም ዝገልፅ ካብ ካርዲ ምውፃእ ጀሚሩ ስጋብ ብኣግባቡ ኣብ ማህደርን ሪኮርድን ስጋብ ዝቅመጥ ዘሎ ስርዓት ከመይ ይገልፅዎ?

4 ስርዓት ማህደርን ሪኮርድን ወይ መዲካል ሪኮርድ ናይ ሕሙማት ብቴክኖሎጂ ወይ ብኮምፒተር ዝተደገፈ ድዩ?

5 ናይ ሕሙም ካርዲ ቁፅሪ ብኽመይ ኣገባብ ንሕሙም ይወፃሉ ናይ ቁፅሪ ምድርራባት ከይረአ ብኽመይ ኣገባብ ትከላኸልዎ ?

6 ስርዓት ኣተሓሕዛ ፋይላት በብእዋኑ ክትትልን ቁፅፅርን ዘድልዮ ጉዳይ እዩ ናይ ክትትልን ቁፅፅርን ስርዓት ኣሎ ዶ በቢክንደይ እዋን ክትትልን ቁፅፅርን ይግበር?

7 መዲካል ሪኮርድ ኮሚቴ ኣሎኩም ዶ? እንተሃልዩ ይሰርሕ ዶ? ካበየናይ ዘፈር ዝተወፃፀኡ እዮም ? እንታይ ዓይነት ስራሕቲ ይሰርሑ?

8 ናይ ሕሙማት ማህደርን ሪኮርድን ወይ መዲካል ሪኮርድ ንዝተፈላለዩ ስራሕቲ ብፍላይ ኸኣ ኩነታት ሕሙማት ንምክትታል ካብ ክፍልኹም ናብ ዝተፈላለዩ ደፓርትመንት ይለኣኹ እዮም ኣወፃፀኡምን ከመይ ከምዝምለሱ ናይ ክትትልን ቁፅፅርን ስርዓት ኣለኩም ዶ?

9 ኣብ መወዳእታ ኣብ ከይዲ ስራሕቲ ናይ ሕሙማት ማህደርን ሪኮርድን ኣተሓሕዛ ብፍላይ ምስ መዲካል ሪኮርድ ተኣሳሲሩ ዘለዉ ዓበይቲ ፀገማት ምስ ምኽንታቶም ከመይ ይገልፅዎም?

ሽም ሓታቲ_____ ፊርማ_____ ዕለት_____