

# A Study on the Quality of Medical Records in Hadiya Zone Southern Ethiopia

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## ABSTRACT:

*Medical record is initial point of patient data production and primary source for all health information related to patient care, health service quality, decision making and resource allocation. However, the quality of medical records (MRs) is rarely evaluated and quality dimensions of medical record are not well assessed particularly in the study area as well as in Ethiopia. The study was intended to assess the quality of medical record in public health centers of Soro district, Hadiya Zone, Southern Ethiopia. Facility based cross-sectional study design supplemented with qualitative inquiry was conducted among randomly selected four health centers (HCs) in Soro district, Hadiya zone. Data on the quality of medical records were collected by reviewing document using checklist, while qualitative data for triangulation were obtained by interviewing key informants from the health center and to describe possible reasons for poor medical record quality. The data were entered in to Epi-data version 3.1, exported, and analyzed by SPSS version 22.0. A total of 384 medical records were reviewed from one-year medical records of four public health centers with 98% retrieval rate. Among the dimensions of MRs quality, none of health centers had enough facility for medical record quality and no auditing of medical record document as of the standard. Majority of medical records had incomplete administrative, clinical and legal components as of health centers standard of the country. The studied HCs are not fulfilled the national medical record management requirements to run medical record system of health centers since the Ethiopian HCs standard set the medical record personnel to be a health information technician and a minimum of three in numbers. Thus, medical record service providers should be trained and necessary supplies should be equipped in all health center.*

**KEYWORDS:** Quality, Medical records, Public health, Centers, Ethiopia

## INTRODUCTION

Medical record is the chronological, organized and comprehensive documentation of services delivered by service providers to the patient/client. It is a means of communication among health professionals, a legal document, and a tool for medical research and training. It is also the primary means of evaluating the quality and appropriateness of medical care rendered, as well as a source document for statistical use in research, planning budgeting and financial activity involving patient care (Ajelouni, et al. 2006; Bennett, et al. 2007).

The MR refers to all information collected, processed and held in both manual and electronic formats pertaining to the service user and their care. It includes demographics, unique identification, clinical data, images, investigations, samples, correspondence and communications relating to the service user and his/her care as well as to facilitating patient safety improvements (National Healthcare Records Management Advisory Group, et al. 2011; Ministry of Health, et al. 2002; WHO, et al. 2003). MR quality is the most serious global health problems in poorer countries. Good information of MR is vital in tackling the problems. Correct and up-to-date information is critical, not only for the provision of high-quality clinical care, but also for continuing and maintaining health care at an optimal level (Health, et al. 2013).

MR is potentially very important for the development of the health sector particularly in Ethiopia. Ethiopia has also poor health data status similar to other low-income countries, even within Sub-Saharan Africa (Federal Democratic Republic of Ethiopia, et al. 2010). The country has set out different

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strategies to improve the quality of records to provide safe, effective, patient-centered, timely, efficient and equitable medical service. Provision of standardized medical record is one of the components to consistently ensure and improve the outcomes of clinical care, patient safety and patient centeredness service for present and future follow up of health for all the Ethiopian population Health care (Waju, et al. 2018).

Currently, the emphasis of health systems development aims at the district level (Bradley, et al. 2008) and supporting strong data systems and feedback loops as “backbone” of all improvement actions is one of the four transformation agendas in the Health Sector Transformation Plan (HSTP) (Kiviri, et al. 2015). However, different stakeholders feed backs and 2010 EC annual reports of the District health office and Zone health department shows that there were information gaps in Hadiya Zone especially in Soro district health centers due to poor quality of medical record and factors related to incompleteness of components of medical records.

Medical record studies have showed (14%) of returning patients could locate their medical records and only (6.5%) of medical records contained complete patient information due to problems such as duplication, incompleteness and inaccuracy of clinical information in Ethiopia (Bradley, et al. 2008). Despite significant improvements in health care services in recent years, accessibility, authentication, completeness, timeliness, legibility and storage of medical record is a serious problem in health institutions (MOH, et al. 2016).

One of the four transformation agendas of the HSTP is supporting strong data systems and feedback loops as “backbone” of all improvement actions which is represent key levers to affecting change across our system as indicated in national health transformation strategy (Ejigu, et al. 2014). MR keeping is one of the health centers requirements in Ethiopia (Kiviri, et al. 2015).

Soro district public health centers have faced problem related with quality of patient medical records as indicated in 2010 E.C annual reports of district and Zone. Necessary data of patient care and service were not recorded in time line to the service provided for each patient. The responsible service providers do not authenticate for the care they have given for the clients and patient’s identifications were not recorded properly. In addition, customers have complained the quality problem on the medical record and the service the health care provided in the previous years of community meeting and forums of districts. Therefore, the study was intended to assess the quality of medical records in terms of completeness, accessibility, retention and durability, storage, security, supplies and equipment at the public health centers of study area.

## METHODS

The study was conducted in Soro district, which is located in Hadiya Zone of Southern Ethiopia. Geographically, it is situated at a distance of 206 Km from Hawassa- regional capital, 264 Km away from Addis Ababa and at 32 Km south-east from Hosanna-Hadiya Zone town. According to Central Statistical Agency projection for the year 2018, the total population of the district is about 209158, Male are 104459 and Female 104709 (Central Statistical Agency, et al. 2018). It has 46 rural kebeles and 3 municipalities in which Gimbichu municipality is the seat of district administration. It has 8 public health centers, 1 NGO health center, 1 district hospital and 46 health posts.

## SAMPLE

The sample size for quantitative study was calculated by using a single population proportion formula based on the following assumptions. The proportion of medical records having good quality was estimated to be 50% as there was no previous study in the study area.

$$n = (z \alpha/2)^2 p (1-p)/d^2$$

Where;

n =sample size.

d<sup>2</sup> = marginal error.

Z (α/2) at CI of 95% i.e.1.96.

By considering 95% level of confidence and 5% margin of error, the minimum required sample size was found to be 384 medical records. The sample size for qualitative study was determined purposively considering head of health centers, case team coordinators and medical record personnel from each selected health centers. A total of 20 key informants, 4 health centers heads and 16 case team coordinators from respective health centers participated to support the reviewed data and to show the attributes for quality medical record production (Figure 1).

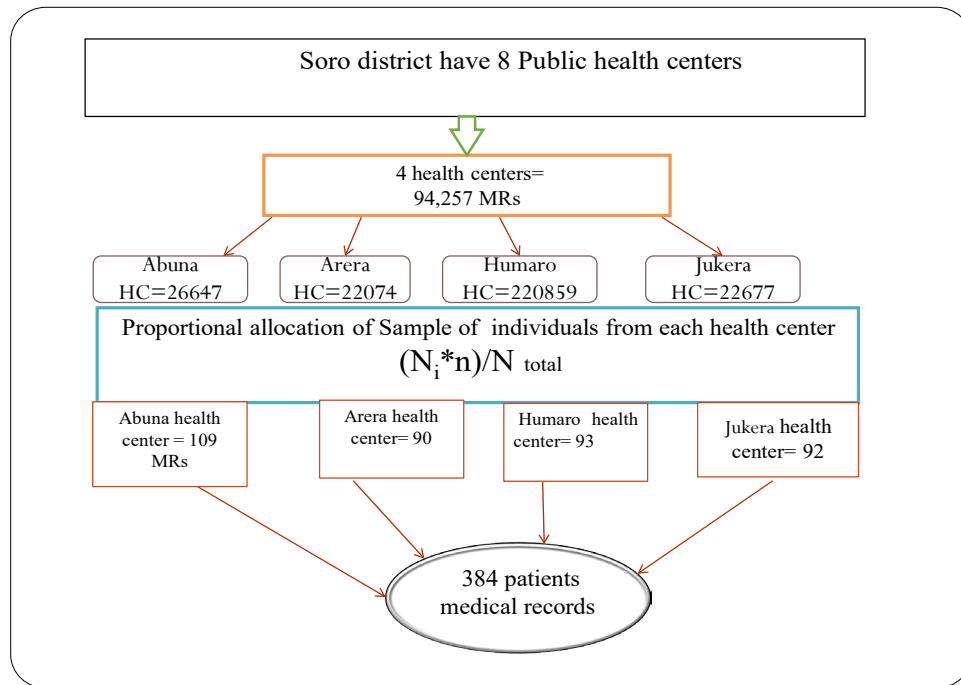
## ANALYSIS

The data were entered to Epi-data version 3.1 after coded and double checked for missing values, outliers and analyzed using SPSS version 22.0. Descriptive statistics was carried out and results were presented using proportions, percentage and mean. Average mean of the contents of medical record was taken to determine the overall quality of medical record.

## Result

Description of Medical records of health centers (Table 1; Figure 2).

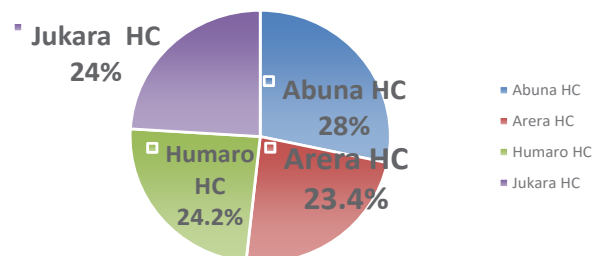
Three hundred eight four medical records were reviewed from four public health centers of Soro district with a retrieval rate of 98%. Of these, 109(28.3%) medical records were from Abuna Health center, 90 (23.4%) from Arera



**Figure 1.** Public health centers.

**Table 1.**  
Socio demographic characteristics of key informants.

S. N	Variables	Frequency	Percentage
1	Sex of participants	Male	70
		Female	30
2	Age by year	20-30	55
		31-40	45
3	Educational status	Diploma	80
		BA	15
		Other	5
4	Service year	5-Jan	90
		10-May	5
		15-Nov	5



**Figure 2.** Pie chart. Distribution of medical records with respect to health centers.

Health center, 93(24.2%) from Humaro Health center and 92(24%) from Jukera health center. In addition, 4 health centers heads and 16 case team coordinators from respective health centers participated to support the reviewed data and to show the attributes for quality medical record production (Table 2).

Clinical components of medical records include medical and therapeutic information of the patients. The contents of this section are important from medical point of view.

Among the clinical data contents, 363 (95%) clinical data components recording the presenting problem/complaints, 301(78%) had records current diagnosis information, and 317 (83%) had medication and diet information (Table 3).

Concerning financial and legal data in medical records, 83(21.6%) of medical records of patients had an information about service fee, and 42 (10.9%) had also information about the accomplishment of medication fee.

**Table 2.**  
Recorded components of administrative data of medical records of patient.

S.N	Administrative data components	Abuna HC		Arera HC		Humaro HC		Jukera HC		Total 4 HC	
		(n=109)		(n=90)		(n=93)		(n=92)		(n=384)	
		Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
1	Title and name of health center recorded	105	95.5	83	92	91	99	91	99	117	31
2	Full name of patient recorded	91	83	67	74	88	96	82	89	370	96
3	Date of birth recorded	56	52	27	30	61	66	58	63	328	85
4	Home address recorded	90	82	55	61	85	92	86	96	202	53
5	Sex of patient recorded	24	22	0	0	5	5	11	12	316	82
6	Health care record number assigned at registration	26	24	22	24	5	5	15	16	199	52
7	Mode of arrival. (reason to come to HC)	57	52	37	41	39	42	48	52	68	18

**Table 3.**  
Recorded Components of clinical data of medical records of patient.

S. No	Clinical data contents	Abuna HC		Arera HC		Humaro HC		Jukera HC		Total 4 HC	
		Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
1	Presenting problem/complaint	105	96	85	94	87	95	86	96	363	95
2	Past illnesses	46	42	47	52	12	13	17	19	122	32
3	Current diagnoses	93	85	77	86	61	66	70	76	301	78
4	Service user alerts/allergies	18	16	0	0	2	2.2	6	7	26	7
5	Procedures and investigations	52	47	43	48	40	44	44	48	179	47
6	Medications and diets	81	74	76	84	80	87	80	87	317	83
7	Family history	24	22	2	2.2	7	8	11	12	44	12
8	Examination findings	55	50	29	32	51	55	55	60	190	50
9	Results of investigations	65	59	45	50	51	55	51	55	212	55
10	Overall assessment	52	47	51	57	63	69	42	46	208	54
11	Management plan	58	53	39	43	70	76	57	62	224	58
12	Information given to service user.	19	17	16	18	4	4	20	22	59	15
13	Follow-up entry	21	19	19	21	1	1.1	17	19	58	15
14	Authenticated by service provider	53	48	29	32	8	9	41	45	131	34

In this study, 384 medical records were reviewed for assessing quality and to identify dimensions of medical record for quality; (40.2%) of components of the quality medical records completed based on the standards of health centers medical record requirements. Similarly, a study that conducted in rural hospital of Ethiopia showed that 45.7% of medical records were completed (Bradley, et al. 2008). In consistence with a study of Minilik II Referral hospital, the completeness of medical record was 73% (Tola, et al. 2017).

In present study, it is clear that the result shows all medical records were incomplete in these health centers. However, medical records have a significant benefit for high quality and efficient care management of patients. In many of health centers set up of developing countries including Ethiopia, medical record has not been a priority, generally inadequately supported and poorly managed. To alleviate the quality problem related with medical records studies have indicated the presence of interventions to improve the completeness of medical records (Bradley, et al. 2008; Mohammed, et al. 2014; Anwar, et al. 2016)

In the current study, completeness of medical record formats was evaluated. Although the availability of medical record formats as a standard in health facilities (Health Center-

Requirements, et al. 2012), but the availability of formats was below the standard in this study. The finding showed that the incompleteness of medical record formats might be due to the shortage of formats in the health centers. Supporting this, a study that conducted in England revealed that evidence-based standards and record keeping format are necessary for standardization of recording patient information (Royal College of Physicians, et al. 2008).

## CONCLUSION

Majority of medical records had poor quality on administrative, financial, and legal contents as of the requirement of health centers standards of the country. Human resource who assigned in medical record department was unqualified and not enough to run medical record system. Absence of medical record formats, regular monitoring and evaluation were common problem in all studied health centers.

The findings of this study indicated that lack of accessibility of the medical record for returning service users, absence of separate store room for storage of medical records, lack of consistent and efficient supervision, standardized formats, written rules and regulations of medical records, failure to

conduct training and lack of adequate human resources were investigated as a challenge for quality of medical records.

Therefore; based on the findings of the study the following recommendations forwarded for responsible bodies at different levels. Since there is poor quality in components of medical records particularly in administrative contents of data, monitoring and evaluation, Supportive supervision, induction/orientation and on-job training should be provided for medical record personnel and staffs of health centers related to medical record. The district health office should hire qualified, competent and efficient human resource.

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