

*Article*

## **Medical record keeping practices in a tertiary level hospital**

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**Abstract:** Medical record is the most important document in the medical field. This cross sectional study was conducted at Chittagong Medical College hospital from January to December, 2017 with the aim to assess the existing medical record keeping practices. Around 214 patients' record files were selected by systematic sampling method and 30 record keeping personnel were also interviewed. Data were collected by review of records by observational checklist and semi-structured questionnaire were administered to medical record keeping personnel. This study showed that, out of 44 items of patient record file among them 33 items were recorded in 100%. Majority of the medical records (89.7%) were satisfactorily completed. All of the respondents mentioned that they had no training regarding medical record keeping practices. All the respondents stated that some problem faced during keeping the medical record and (90.0%) respondents stated that computerized medical record system could solve the problem they faced. This study showed that, the medical recording status is good in majority areas but keeping practice was not organized at all. There were important defects in keeping the medical records. It seems that there are multiple factors contributing to the problem, such as lack of manpower, insufficient record room and they had no training about medical record keeping practice. It is necessary for the government to develop policies and strategies to improve medical record keeping practice for patient safety, to reduce error, repetition of investigations, protect the medico legal issues and future health care advancement.

**Keywords:** record; medical record; completeness of medical record; filing of medical record; graphic chart; handwriting physician

### **1. Introduction**

A medical record is a significant issue that affects the quality of health care services in many hospitals of Bangladesh. Improving the completeness of patient's records is an important step towards improving the quality of healthcare. Medical records are an essential part of a patient's present and future health care. As a written collection of information about a patient's health and treatment, they are used specially for the present care of the patient. The terms medical record and medical chart are used somewhat interchangeably to describe the systematic documentation of a single patient's medical history and care across time within one particular health care provider's jurisdiction (Royal College of Physicians, 2015). Therefore, medical records are a tenet of good

medical practice and provide one method of communicating individual's follow-up arrangements, informing research data, and documenting medical intervention (Jafar *et al.*, 2015).

In present situation, with the increasing use of medical insurance for treatment, the insurance companies also require proper record keeping proving the patient's demand for medical expenses. Improper record keeping can result in declining medical claims. It is disheartening to note that in spite of knowing the importance of proper record keeping it is still in a nascent stage in Bangladesh.

Therefore, the core of the health information system in the hospital lies in the medical records. As a primary means of communication between health care workers, a properly documented medical record is so helpful to give supreme clinical care. In a study of (Farhan *et al.*, 2005) it was shown that 1051 items abstracted, 876 (83.3%) were accurately documented, 41 (3.9%) were inaccurately documented, and 134 (12.7%) were not documented (Farhan *et al.*, 2005). In Good Medical Practices, the General Medical Council (GMC) has stated the need for doctors to keep, clear, accurate and contemporaneous patient records which report the relevant clinical findings, the decisions made, the information given to patients and any drugs or other treatment prescribed Good Medical Practice also requires keeping colleagues well informed when sharing the care of patients, and taking part in regular and systematic medical and clinical audit (Mann *et al.*, 2003).

Healthcare systems are extremely complex and information demanding area, creating and utilizing a huge amount of healthcare information, which implies an assertion that paper-based records so it is necessary to maintain health care providers (Jalal-Karim, 2008).

A good medical record serves the interest of the medical practitioner as well as his patients. Medical negligence claim can be justified with the quality of the medical records. Record maintenance is the only way for the doctor to prove that the treatment was carried out properly. Medical records are often the only source of the truth (Bali *et al.*, 2011).

Health Records provide evidence about the care and treatment that patients receive. They include progress notes, assessments and care plans, as well as letters written to and about patients, and written communication between colleagues about patients. Health Records are not only evidence of care, they are also clinical tools, enabling continuity of care and appropriate decision making about future care and treatment. If the quality of care provided is called into question, then health records and documents will be essential to any investigation or review (Beach *et al.*, 2014).

The medical record is the property of the hospital. The chief value of medical records as evidence is that they contain unbiased statements in as much as the doctors, nurses and other concerned in making the medical record at the time of the patient's hospitalization had no interest in any subsequent litigation. The hospital medical record is not merely a collection of papers recounting the tale of patients sojourn under the care of his physician in a hospital. It is an inpatient document and is frequently used in the court (Singh *et al.*, 2005).

According to Mofiz (2010), a properly written medical record is associated with good patient care while a poor medical record invariably indicates poor care. Characteristics considered essential to a good medical record include: Complete, Adequate and Accurate. Record keeping is an integral part of clinical practice. High quality patient records are used to support safe, effective patient care and good communication within care teams and with the patient. Well-kept patient records ensure all members of the healthcare team know what has happened to the patient and have the necessary information to plan ongoing care (Griffiths *et al.*, 2011).

In Bangladesh medical record keeping practice has not yet developed to the same extent as good as in developed countries. Since no organization can run perfectly without record, likewise medical record should be of great interest to everybody working in the hospital. Moreover, they are neither being given any formal training for it nor any define format has been developed in our hospitals. Several studies were done worldwide regarding medical record keeping management but very few studies have been conducted on medical record keeping practice in the country. For this reason, this study was undertaken to assess the existing medical record keeping practice in Chittagong Medical College Hospital. This study will endeavor in assessing the existing medical record keeping practice in tertiary level hospitals of Bangladesh to improve better quality patient care.

## 2. Materials and Methods

### 2.1. Ethical Consideration

At the beginning, approval was obtained from the ethical committee of NIPSOM, under the Bangabandhu Sheikh Mujib Medical University, Dhaka, Bangladesh. Before collection of data, written permission was taken from the Director of the corresponding hospital and also informed written consent was obtained from participants after informing about the purpose of the study. A complete assurance was given that all information keeps confidentially. Their participation and contribution was acknowledged with due respects. The right was

being given to the participants not to participate and to discontinue participation at any time in study with consideration/without penalty. Informed consent will be documented properly.

## 2.2. Study Design

The study was a cross sectional study on discharged patient file.

## 2.3. Study Population

Medical records of tertiary level hospital of discharged patient file were the study population. Physicians Nurses and Record keeper were also included in the study to assess the existing medical record keeping practices and problem associated with medical record keeping practices.

## 2.4. Study Period

The study was carried in Chittagong Medical College Hospital at January to December, 2017. The sample was collected by systematic sampling method. 214 medical records were reviewed out of 10558 medical records where the sampling interval was 49th.

## 2.5. Tool of the study

Observational check list and semi-structured interviewer administered questionnaire were developed to collect the data. The check list and questionnaire were prepared by using the selected variables according to objectives. The questionnaire was pretested in Mugda Medical College & Hospital. Necessary modifications were done and finalized before collection of data. Level of completeness was assessed using 3 point Likert scale. Total 44 items were checked in the record. While checking the completeness, three responses were there- recorded, not applicable and not recorded. The collected data were checked coded, entered and analyzed in a computer. The statistical analysis was conducted using SPSS (statistical package for social science) version 20 statistical software. Each answer had a numerical value (3-1) and the final score had a maximum value of 132. The level of completeness was classified as bellows:

Satisfactory: If respondents were able to score 85% and above, they were considered as satisfactory completed.

Not satisfactory: If respondents scored below 85%, they were considered as not satisfactory completed.

## 3. Results and Discussion

To assess the existing medical record keeping practice, 214 records were reviewed and 30 respondents were interviewed by using semi- structured questionnaire. Results were summarized in the following sections:

- a) Completeness of medical record
- b) Condition of the record room and files
- c) Socio-demographic statuses of the respondents
- d) Medical record keeping practices among concerned persons 5 Problem associated with the medical record practices
- e) Opinion of medical record keeping personnel to improve medical record keeping facility

**Table 1. Demographic characteristics of the respondents (n=30).**

Age of the respondents	Frequency	Percentage	Statistics
Up to 34 years	6	20.0	Mean±SD = 39.53±5.00
35- 44 years	20	66.7	
45 years and above	4	13.3	
<b>Gender</b>			
Female	16	53.3	
Male	14	46.7	
<b>Profession</b>			
Physician	14	46.7	
Nurse	14	46.7	
Record keeper	2	6.7	
<b>Duration of service</b>			
Up to 5 years	6 (No Training)	20.0	
6- 10 years	10 (No Training)	33.3	
More than 10 years	14 (No Training)	46.7	
<b>Department</b>			

Medicine	6	20.0	
Surgery	6	20.0	
Pediatrics	6	20.0	
Gynecology and Obstetrics	6	20.0	
ENT	2	6.7	
Eye	2	6.7	
Record Keeping Department	2	6.7	

Table 1 shows that majority of the respondents 20 (66.7%) were from 35-44 years age group, 6 (20.0%) respondents were from below 34 years age group and above 45 years age group 4 (13.3%). The Mean±SD age of the respondents was  $39.53\pm5.00$  with years. Among them 16 (53.3%) respondents were female and 14 (46.7%) respondents were male including 14 (46.7%) respondents were physician, 14 (46.7%) were nurses and the rest of respondents were record keepers. Out of 30 respondents, 14 (46.7%) had duration of service more than 10 years, one third of the respondents 10 (33.3%) had duration of service from 6- 10 years, and the rest of 6 (20.0%) had duration of service up to 5 years. The Mean±SD duration of service was  $9.80\pm4.86$  years. But none of the respondents had no training regarding medical record keeping practice. According to department, from Medicine (20.0%), Surgery (20.0%), Pediatrics (20.0%), Gynecology and Obstetrics (20.0%), ENT (6.7%), Eye (6.7%) and Record Keeping Department (6.7%).

**Table 2. Recording status of identification data (socio-demographic data and administrative characteristics) (n=214).**

Socio-demographic characteristics	Recorded n (%)	Not Applicable n (%)	Not Recorded n (%)
Name of the patient	214 (100.0)	0 (0.0)	0 (0.0)
Age	214 (100.0)	0 (0.0)	0 (0.0)
Gender	108 (50.5)	0 (0.0)	106 (49.5)
Fathers/Husbands name	214 (100.0)	0 (0.0)	0 (0.0)
Religion	13 (6.1)	0 (0.0)	201 (93.9)
Marital status	43 (20.1)	33 (15.4)	138 (64.5)
Occupation	0 (0.0)	41 (19.2)	173 (80.8)
Address of the patient	202 (94.4)	0 (0.0)	12 (5.6)
Address of nearest relatives	94 (43.9)	0 (0.0)	120 (56.1)
Administrative record characteristics			
Registration number	214 (100.0)	0 (0.0)	0 (0.0)
Ward number	214 (100.0)	0 (0.0)	0 (0.0)
Bed number	214 (100.0)	0 (0.0)	0 (0.0)
Date and time of admission	214 (100.0)	0 (0.0)	0 (0.0)
Name of signature of the admitting physician	214 (100.0)	0 (0.0)	0 (0.0)

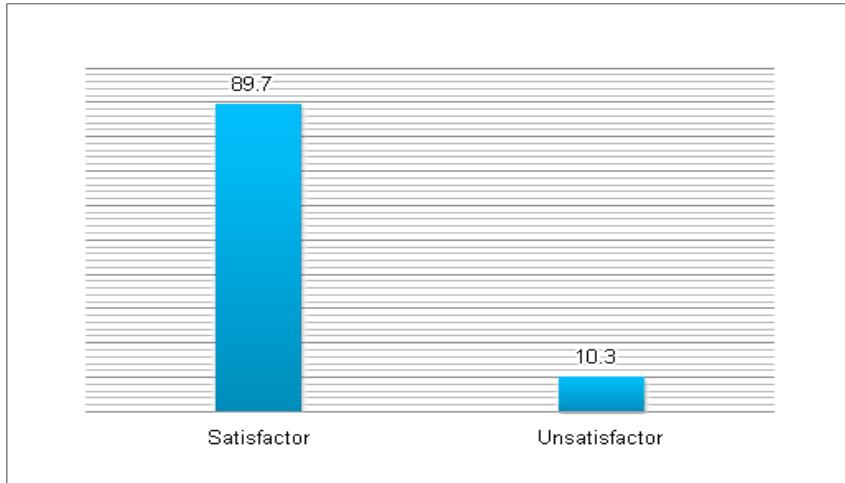
Department	Frequency	Percentage
Medicine	98	45.8
Pediatrics	33	15.4
Surgery	31	14.5
Gynaecology and Obstetrics	43	20.1
ENT	7	3.3
Eye	2	0.9

Table 2 shows the recording status of socio-demographic data and administrative characteristics of patient record file. The medical records for name, age, fathers/husband's name, registration number, ward number, bed number, date and time of admission, name of signature of the admitting physician were recorded (214) 100% cases. For gender 108 (50.5%), for religion 13 (6.1%), for marital status 43(20.1%), and for address patients 202 (94.4%) were recorded. Addresses of the nearest relatives were recorded in 94 (43.9%). Occupation was not recorded in any patient record file. Most of the patient record files 98 (45.8%) were from the medicine department followed by gynecology and obstetrics department (20.1%).The least number of 2 (0.9%) were from eye department.

**Table 3. Distribution of patient record files to completeness of medical record (n=214).**

<b>Medical history</b>	<b>Recorded (%)</b>	<b>Not Applicable (%)</b>	<b>Not Recorded (%)</b>
Presenting complaints	214 (100.0)	0 (0.0)	0 (0.0)
History of present illness	214 (100.0)	0 (0.0)	0 (0.0)
History of past illness	196 (91.6)	0 (0.0)	18 (8.4)
Family history	43 (20.1)	0 (0.0)	171 (79.9)
<b>Physical examination</b>			
Physical Finding	214 (100.0)	0 (0.0)	0 (0.0)
Provisional diagnosis	214 (100.0)	0 (0.0)	0 (0.0)
Date and time of examination	214 (100.0)	0 (0.0)	0 (0.0)
Signature of the physician	214 (100.0)	0 (0.0)	0 (0.0)
Diagnosis	214 (100.0)	0 (0.0)	0 (0.0)
<b>Laboratory report</b>			
Laboratory report with signature of the pathologist or laboratory technologist	214 (100.0)	0 (0.0)	0 (0.0)
<b>Physician's order</b>			
Treatment of medication order	214 (100.0)	0 (0.0)	0 (0.0)
Diet order	214 (100.0)	0 (0.0)	0 (0.0)
If operation done, date and time	87 (40.7)	127 (59.3)	0 (0.0)
Follow up note	214 (100.0)	0 (0.0)	0 (0.0)
Signature of the physician	214 (100.0)	0 (0.0)	0 (0.0)
<b>Nurses' record</b>			
Graphic chart	141 (65.9)	0 (0.0)	73 (34.1)
Medication given	117 (54.7)	0 (0.0)	97 (45.3)
Date and time of medication	117(54.7)	0 (0.0)	97 (45.3)
<b>Referral note</b>			
Referral note	17 (7.9)	197 (92.1)	0 (0.0)
Carbon copy	<b>Present</b>	<b>Absent</b>	-
	17 (7.9)	197 (92.1)	0 (0.0)
<b>Progress note</b>			
Condition of patient at the time of admission	214 (100.0)	0 (0.0)	0 (0.0)
Condition of patient at the time of discharge	214 (100.0)	0 (0.0)	0 (0.0)
<b>Discharge note</b>			
Name of the attending physician	214 (100.0)	0 (0.0)	0 (0.0)
Date and time of discharge	214 (100.0)	0 (0.0)	0 (0.0)
Final diagnosis	214 (100.0)	0 (0.0)	0 (0.0)
Result (outcome of the treatment)	214 (100.0)	0 (0.0)	0 (0.0)
Condition of patient at the time of discharge	214 (100.0)	0 (0.0)	0 (0.0)
Advice for further care	214 (100.0)	0 (0.0)	0 (0.0)
Date and time of hospital leaving	214 (100.0)	0 (0.0)	0 (0.0)
Signature of the physician	214 (100.0)	0 (0.0)	0 (0.0)

Table 3 shows that, the medical histories for presenting complaints, history of present illness were recorded in 214 (100%) cases, history of past illness were recorded in 196 (91.6%). The least number of family histories were recorded in 43 (20.1%). Provisional diagnosis, date and time of examination, signature of the physician and diagnosis were recorded in 214 (100.0%) cases. Laboratory report with signature of the pathologist or laboratory technologist was recorded in all patients file 100.0%. Here, Patient record file for treatment of medication order, diet order, if operation had done data and time, follow up note and signature of the physician were recorded in 214 (100.0%) cases. Majority of the patient record file for graphic chart were recorded in 141 (65.9%) followed by medication given and date and time of medication were recorded in (54.7%). And medication given and date and time of medication were not recorded in 97 (45.3%). Referral notes of patient record file were recorded in 214 (100%) cases where it was applicable. Carbon copies were also present with the referral notes. Condition of patient at the time of admission and condition of patient at the time of discharge were recorded in 214 (100%) cases. The medical records for name of the attending physician, date and time of discharge, final diagnosis, result (outcome of the treatment), condition of patient at the time of discharge, advice for further care, date and time of hospital leaving and signature of the physician were recorded in 214 (100.0%) cases.



**Figure 1. Distribution of medical record by level of completeness.**

Figure 1 shows the most of the patient record file were satisfactorily completed in 192 (89.7%) and near about one fourth of patient record file 22 (10.3%) were not satisfactorily completed.

**Table 4. Distribution of the condition of record room.**

Condition of the record room	Criteria
Ventilation	Not well ventilated
Lighting	Inadequate lighting
Method of medical record keeping	Traditional
Cleanliness	Not clean
Fire extinguisher	Absent
Condition of the files	Criteria
Files	Dusty
Papers	Discolored
Filing system	Both vertical and horizontal
Labeling of files	Not labeled
Bin card	No bin card
Place of files	Not appropriately placed
Hand writing of the physician	Legible

Table 4 shows that, the record room was not well ventilated. Lighting condition was inadequate. The medical record room was not clean. Fire extinguisher was absent. All files were dusty. Files were not placed properly. No specific filing system was followed. Files were not labeled. No bin card was used. Papers were discolored. Hand writing of the physician was legible.

**Table 5. Distribution of respondents about medical record keeping practices (n=30).**

Know about medical record keeping practices	Frequency	Percentage
Yes	30	100.0
No	0	0.0
<b>Coding system</b>		
Followed	30	100.0
Not followed	0	0.0
<b>Tremendous value of medical record</b>		
Yes	30	100.0
No	0	0.0
<b>Supervision of medical record</b>		
Supervised regularly	30	100.0
Not supervised regularly	0	0.0
<b>Accessibility of medical records</b>		
Easily accessible	30	100.0

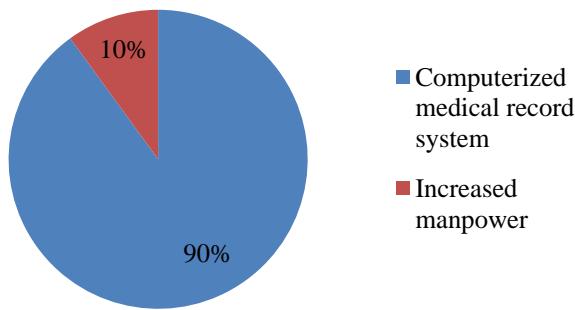
Not easily accessible	0	0.0
<b>Keep medico-legal records separately</b>		
Yes	28	93.3
No	2	6.7
<b>Retention period of medical records</b>		
1 month	10	33.3
2 years	18	60.0
According to file	2	6.7
<b>Periodical checkup of medical records</b>		
Always	11	36.7
Sometimes	19	63.3
Never	0	0.0
<b>Ways of destroying the records</b>		
Yes	20	66.7
Don't know	10	33.3
<b>Ways of destroying the records</b>		
Incineration	20	66.7
Don't know	10	33.3
<b>Informing public advertisement destruction of medical records</b>		
Advertisement in newspaper.	30	100.0
Don't know	0	0.0

Table 5 Shows that all the respondents stated that, they knew about medical record keeping practice, they followed coding system; they gave tremendous value of medical record keeping practice, medical records were supervised regularly, and they were easily accessible for anyone's need. All most all the respondents 28 (93.3%) stated that they kept medico-legal records separately and few respondents 2 (6.7%) stated that they did not keep medico-legal records separately. Majority of the respondents 18 (60.0%) stated that retention periods of medical records was 2 years, one third of the respondents 10 (33.3%) stated that retention period of medical records was 1 month and few respondents 2 (6.7%) stated that retention period of medical records was according to file. Among the respondents, 11 (36.7%) stated that medical records were always checked up periodically and majority of respondents 19 (63.3%) stated that medical records were sometimes checked up periodically. Majority of the respondents 20(66.7%) stated that Yes, there are ways of destroying the medical records after retention period and one third of the respondents 10 (33.3%) stated that they don't know the ways of destroying the medical records after retention period. Among the respondents 20 (66.7%) stated that the ways of destroying the medical records after retention period was incineration and one third of the respondents 10 (33.3%) stated that they did not know the ways of destroying the medical records after retention period. All of the respondents stated that publics were informed before the destruction of medical records by giving advertisement in newspaper.

**Table 6. Distribution of respondents according to face any problem during keeping the medical records and types of problems (n=30).**

Faced problem during keeping medical record	Frequency	Percentage
Yes	30	100.0
No	0	0.0
<b>Type of problems</b>		
Lack of manpower	19	63.3
Non-availability of record room	9	30.0
Time constrain	2	6.7

Table 6 shows that, majority of the respondents 19(63.3%) stated that lack of manpower was the problem faced during keeping the medical record and near about one third of the respondents 9 (30.0%) stated that non-availability of record room was the problem faced during keeping the medical record. Few respondents 2(6.7%) stated that time constrain was the problem faced during keeping the medical record.



**Figure 2. Distribution of the respondents' by opinion regarding improvement of medical record keeping.**

Figure 2 shows that among the respondents, 27 (90.0%) respondents stated that computerized medical record system could solve the problem and few 3 (10.0%) respondents stated that increased manpower could solve the problem they faced.

#### 4. Conclusions and Recommendations

According to findings of the study it is evident that, the medical recording status is good in majority areas but keeping practice was not organized at all. Proper maintenance of medical record can provide better health care to assure the hospital quality service and organizing the files, clearly labeling the shelves and using bin card improved efficiency and reduced time to retrieve the medical records.

On the basis of findings of the study the following recommendation may be considered from priority basis.

- To arrange the training on medical record keeping practice.
- To issue an office order to ensure keeping medical record.
- To renovation of medical record room infrastructure and establish department wise record room.
- To strengthening supervision and monitoring for better medical recordkeeping.
- To disseminate the medical record keeping information arranging seminar.
- To establish the computerized medical record system.

#### Conflict of interest

None to declare.

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