Status of Medical Records in a Tertiary Care Hospital

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Abstract

Background: *Medical record, health record and medical chart often to refers to the comprehensive documentation of a patient's medical history and care within a specific healthcare provider's domain. A medical record encompasses various types of "notes" created over time by healthcare professionals, including observations, drug and therapy administration details, orders for treatments, test results, X-rays, and other reports.The aim of the study was to evaluate the status of Medical Record keeping among healthcare providers in a tertiary healthcare hospital service.*

Materials and methods: *A retrospective observational study was conducted by recording data from secondary sources i.e. admission form, history sheet on admission, details recorded by nurses, progress sheets recorded by physicians, referral record sheets, reports of pathology, reports of radiology, informed consent form, operation notes, discharge certificates from the Record Department of Chattagram Maa-O-Shishu Hospital Medical College. The data were collected by data collectors after visiting the Record department and filling up a questionnaire after taking permission from the Record keeper on approval of Ethical Review Board of CMOSHMC. Record of the patients admitted to the indoor of various Departments were selected by systematic random sampling technique. Four days from the month of July and August 2024 were randomly selected and all the medical records of those days were used to fill up the questionnaire developed according to guidelines and frameworks provided by World Health Organization (WHO). Patients confidentiality was maintained. A total of 400 secondary data from the medical Record Department were selected to complete the questionnaire. Collected data was managed by a professional data manager. After completing the questionnaire the data were input into IBM SPSS (Version 24) and analyzed by frequencies and percentages.*

Results: *Occupation of the patients were not recorded in the medical record. Name and signature of the receiving physicians was not recorded in 19.5% and 31% files. Family history was not recorded in 87 % medical records. 95% of files did not have differential diagnosis recorded in it. 80% files did not have informed consent collected from patients. Signature of surgeon were absent in the operation note. History of alcohol, smoking, sexual history, exercise, dietary habits were absent. The report of pathology was not preserved in the files. Diseases among relatives and causes of death of relatives were absent 95% medical records. 47% patients were discharged on request.*

Conclusion: *Accurate recording of information in medical records can help preventfuture litigations and medical negligence cases.*

Key words: Informed consent; Medical record; Referral record; Secondary data.

INTRODUCTION

An Electronic Health Record or EHR is defined as "A longitudinal health record and includes all information contained in a health record such as a patient's health profile, behavioral and environmental information".[1] It fosters immediate access to individual and population-related information to support efficient processes for healthcare delivery and decision-making[2] Maintaining the privacy and confidentiality of patient data gathered throughout the healthcare process requires a properly authorized electronic medical record. It provides greater security than the conventional paper-based record because of the right protections and role-based work distribution on the EMR.[3]

The World Health Organization (WHO) advises nations to implement EMR in order to enhance patient safety and health management procedures at a reasonable cost.[4] The advantages of Electronic Medical Records (EMR) have primarily been reported in developed nations. These benefits include increased patient satisfaction and quality of care, quicker access to client records and fewer missing folders, better documentation, better within-facility healthcare coordination, reduced staff time spent on specific paper-based administrative tasks, fewer duplicate diagnostic tests ordered, and improved patient safety and health outcomes.[5-11]

94% of hospitals in affluent nations like the USA use data from Electronic Health Records (EHRs) to inform decisions on patient safety (81%) organizational performance measurement (77%) and quality improvement (82%). The least popular uses of EHR data were to create methods for patient data querying (51%), evaluating compliance with clinical practice guidelines (59%), and determining care gaps for particular patient populations (60%). Even though a variety of healthcare organizations and providers use EHRs, hospital attributes such as public, private, rural, and metropolitan settings have a big influence on how EMR data is used. Nonetheless, there was a great deal of diversity in how EHR data was used.[12] Healthcare computerization is a continuous process. While there has been significant progress in the adoption of IT within the healthcare industry, the widespread clinical application of EMR systems has not yet proven successful. There are a few plausible explanations for this lack of use, while the exact causes are unknown. Computer proficiency, the implementation procedure, the quick payoff and the effect on time efficiency are a few of these.[13]

Paper-based recordkeeping, however, have several drawbacks. It might be challenging for others to interpret illegible handwriting, which can lead to mistakes, which subsequently lower the quality of information obtained. Serious consequences result from poor data quality. On patient care, such combining samples in the lab and giving out the wrong prescriptions for drugs. paper-based documentation systems are shared among parties, hence they lack confidentiality. Privacy of patients and numerous users can be readily jeopardized.[14]

EMRs have been shown to enhance the quality of patient care by allowing for the storage of substantial volumes of data and facilitating speedy data retrieval, which lessens the time burden on medical staff.[15] Human barriers were identified as the most common obstacles. These barriers included unfavorable attitudes, behaviors, and beliefs of healthcare workers against such systems. Obstacles to the introduction of EMRs include a lack of money, an integrated EMR system, physicians' time and technical know-how.[16-18.]

Clinical data collected during the course of the patient's diagnosis and treatment is recorded in the medical record. As a result, each patient must have an accurate and comprehensive medical record for every medical service activity, and each physician must accurately and promptly fill up the medical record.

MATERIALS AND METHODS

This retrospective Observational study was carried out in Chattagram Maa-O- Shishu Hospital Medical College, from July to August 2024.

● *Inclusion criteria*

❏ The study incorporated the medical records of discharged patients from different departments at CMOSHMC, collected on four randomly selected dates in July and August 2024.

● *Exclusion criteria*

❏ The medical records of patients discharged on dates other than the randomly selected dates were excluded from this study.

The ethical clearance of the study was taken from Institutional Ethical Review Board of Chattagram Maa-O-Shishu Hospital Medical college. Permission was taken from the Director and General Secretary of the hospital prior to data collection. A total of 400 medical records were selected to complete the questionnaire form. Data were recorded from the secondary sources i.e. admission form, history sheet on admission, details recorded by nurses, progress sheets recorded by physicians, referral record sheets, reports of pathology, reports of radiology, informed consent form, operation notes, discharge certificates from the Record Department of Chattagram Maa-O-Shishu Hospital Medical College. The data were collected by data collectors after visiting the Record Department and filling up a questionnaire. Record of the patients admitted to the indoor of various departments were selected by systematic random sampling technique. Four days from the month of July and August 2024 were randomly selected and all the medical records of those dayswere used to fill up the questionnaire developed according to guidelines and frameworks provided by World Health Organization (WHO). Patients confidentiality was maintained.

The socio-demographic details of the patients, including name, age, gender, guardian's name, occupation, address and mobile number, were reviewed to ensure the completeness of the records. The completeness of the administrative records was

verified by checking the patient's registration number, ward number, bed number, date and time of admission, as well as the signature and name of the receiving doctor.

RESULTS

Among 400 medical records, 237 (59.2%) were of female and 163 (40.8%) were of male patients.

The median bill of the patients during their hospital stay was 4982.50 Bangladeshi Taka. The minimum days of hospital stay was 1 day and maximum of 23 days. The minimum age of the patients was 1day and the maximum was 80 years. The type of discharge of patients were discharge on request 188 (47%) discharge with advice 156 (47%) discharge on risk bond 32 (8%) discharge on risk and risk bond 20 (5%) discharge against medical advice 1 (0.3%) death in hospital 3 (0.8%) shown in Table I.

Table I Socio- demographic pattern of the admitted patients from medical records

Parameters of the patients	Frequency (n = 400)	Percentage (100%)
Male	163	40.8
Female	237	59.2
Age range of the patient (Years) :		
0-10	179	44.8
11- 20	39	9.8
21- 30	76	19.0
31- 40	36	9.0
41- 50	19	4.8
51- 60	21	5.3
61- 70	26	6.5
71- 80	4	1.0
Type of discharge :		
Discharge with advice	156	39
Discharge on request	188	47
Discharge on risk bond	32	8
Discharge on request and risk bond	20	5
Discharge against medical advice	1	0.3
Death in hospital	3	0.8

From the electronic medical record documents, based on admission details of the patients, patient's name, age, gender, father/ husband's name, address of patient, mobile number of the patient 400 (100%) data were present. Regarding occupation of patient, address of nearest relative, mobile number of the relative 400 (100%) were absent shown in Table II.

Table II Particulars of patients noted by the data entry clerk

Sl. No.	Socio-demographic pattern	Recorded n = 400 (100%)	Not recorded n = 400 (100%)
i)	Name of the patient	400 (100)	0
ii)	Age of the patient	400 (100)	0
iii)	Gender	400 (100)	0
iv)	Father/husbands name	400 (100)	0
v)	Occupation	0	400 (100)
vi)	Address of the patient	400 (100)	0
vii)	Address of the nearest relative	0	400 (100)
viii)	Mobile no. of patient	400 (100)	0
ix)	Mobile no. of relative	0	400 (100)

Among 400 medical records, 138 (34.5) were admitted to Paediatrics Department followed by Gynaecology and Obstetrics, Medicine and others shown in Table III.

Table III Departments where patients were been admitted and received treatment

Sl. No.	Name of the department	Total n= 400	Percentage (100%)
i)	Paediatric Medicine	138	34.5
ii)	Gynaecology and Obstetrics	92	23
iii)	Medicine	42	10.5
iv)	A.M.U. and Emergency	39	9.8
v)	General surgery	24	6.0
vi)	Paediatric surgery	16	4.0
vii)	Urology	5	1.3
viii)	ENT	1	0.3
ix)	Oncology	28	7.0
x)	Neurosurgery	4	1.0
xi)	Neuro Medicine	3	0.8
xii)	Cardiology	2	0.5
xiii)	Cathlab	1	0.3
xiv)	C.C.U.	1	0.3
xv)	Nephrology	1	0.3
xvi)	Paediatric Cardiology	3	0.8

Based on the details of Medical Records recorded by physicians and nurses, 317 (79.4%) files had presenting complaints, 341 (85.5%) had history of present complaints, 247 (61.8%) had history of past illness and 50 (12.5%) had family history written in the files by the receiving physicians.

348 (87%) had physical findings of the patient, 352 (88.2%) had vital signs of the patient, 342 (85.7%) had date of examination, 267 (66.9%) had time of examination and 305 (76.4%) had signature of the physician noted in the medical record.

Only 375 (94%) had provisional diagnosis and 19 (4.8%) had differential diagnosis noted in the medical record.

104 (26%) files had report of investigation but only 9(2.3%) had signature of pathologist and technologist.82 (20.6%) medical record files consisted of informed consent form.

50 (12.5%) medical record files had family history of common diseases and 21 (5.3%) had history of cause of death of relatives written in them.

None of the files had history of habit of tobacco, alcohol, exercise, dietary habits, sexual history written in them.177(44.4%) files had immunization history noted in them. 396 (99%) files had diet order, medication time, medication name, dosage details noted. None of the files had history of allergy to any drugs noted in them.

348 (87%) had vital signs recorded by the nurses. 386 (96.5%) medical record files had graphical details of temperature, medication name, date and time of medication given to the patients by the nurses.

127 (31.8%) had progress note of the patient at the time of admission and 123(30.8%) had progress note of the patient at the time of discharge.

Regarding the discharge certificate, 337 (84.5%) had date of discharge, 301 (75.4%) had time of discharge, 364 (91%) had provisional diagnosis recorded shown in Table IV.

Table IV Details of medical records of the patient

Sl No.	Variables	Recorded	Not recorded
i)	Medical history of the patients	n=400 (100%)	n = 400 (100%)
	Presenting complaints	317 (79.4)	83 (20.6)
	History of present complaints	341 (85.5)	59 (14.5)
	History of past illness	247 (61.8)	153 (38.0)
	Family history	50 (12.5)	350 (87.5)
ii)	Physical examination findings		
	Physical findings	348 (87)	52 (12.8)
	Vital signs	352 (88.2)	48 (11.8)
	Date of examination	342 (85.7)	58 (14.3)
	Time of examination	267 (66.9)	133 (33.1)
	Signature of physician	305 (76.4)	95 (23.6)
iii)	Diagnosis		
	Provisional diagnosis	375 (94)	25 (6)
	Differential diagnosis	19 (4.8)	380 (95.2)
iv)	Diagnostic, therapeutic and lab investigations		
	Report of investigation	104 (26)	296 (74)
	Signature of pathologist	9 (2.3)	391 (97.8)
	Signature of technologist	9 (2.3)	391 (97.8)
v)	Evaluation and consultation with other physicians	73 (18.3)	327 (81.8)
vi)	Collection of informed consent from patient	82(20.6)	318 (79.4)
vii)	Family history of the patient		
	History of common disease	50 (12.5)	350 (87.5)
	History of cause of death of relative	21 (5.3)	379 (94.7)
viii)	History of habit of patients		
	Tobacco	0	400 (100)
	Alcohol	0	400 (100)
	Exercise	0	400 (100)
	Dietary habits	0	400 (100)
	Sexual history	0	400 (100)

Sl No.	Variables	Recorded	Not recorded
ix)	Immunization history	177 (44.4)	223 (55.6)
x)	Treatment details		
	Diet orders	396 (99)	4 (1)
	Medication time	396 (99)	4 (1)
	Medication name	396 (99)	4 (1)
	Dosage details	396 (99)	4 (1)
	Any allergy to medication	0	400 (100)
xi)	Details recorded by nurse		
	Vital signs	348 (87)	52 (13)
	Graphical details of temperature	386 (96.5)	14 (3.5)
	Medication given	386 (96.5)	14 (3.5)
	Date and time of medication	386 (96.5)	14 (3.5)
xii)	Progress note		
	Condition of patient at the time of admission	127 (31.8)	273 (68.2)
	Condition of patient at the time of discharge	123 (30.8)	277 (69.2)
xiii)	Discharge note		
	Date of discharge	337 (84.5)	63 (15.5)
	Time of discharge	301 (75.4)	99 (24.6)
	Final diagnosis	364 (91)	36 (9)
	Result of the treatment	326 (81.5)	74 (18.5)
	Advice for patient	344 (86.2)	56 (13.8)
	Follow up date	321 (80.3)	79 (19.5)
	Name of doctor	300 (75)	100 (25.00)
	Signature of the doctor	358 (89.5)	42 (10.5)
	Designation of the doctor	353 (88.3)	47 (11.7)

Obstetric history of the patient is taken in patients who had previous history of pregnancy. Any female during puberty who has menstruated becomes eligible to give her obstetric history. As puberty begins after 10 ½ years, the obstetric history of such females is necessary. Out of 237 female medical records 154 were above 11 years. Out of 154 female medical records, 103 (66.88%) had history of prior pregnancy, 103 (66.88%) had outcome of previous pregnancy, 98 (63.63%) had complications of previous pregnancy recorded in it shown in Table V.

Table V Obstetric history of the female patients from the medical record files

Obstetric history of the patient (n = 154)	Recorded n (%)	Not recorded n (%)
History of prior pregnancy	103 (66.88)	51(33.12)
Outcome of previous pregnancy	103 (66.88)	51 (33.12)
Complication in previous pregnancy	98 (63.63)	56 (36.37)

Among 400 medical record files, 66 operations were done in various departments. 59 (89.39%) had operation notes, date and time of operation, operating doctor's name recorded in them. Only 1 (1.51%) file had signature of the operating surgeon. 84.84% had follow up details and 81.81% had report of the operation recorded in them displayed in Table VI.

Table VI Surgical details observed in the medical records

Surgical details	Operations done n= 66 (100%)	
	Recorded	Not recorded
Any operation done	59 (89.39)	7 (10.60)
Date and time of operation	59 (89.39)	7 (10.60)
Operation done by whom	59 (89.39)	7 (10.60)
Signature of the operating doctor	1 (1.51)	65 (98.48)
Follow up details	56 (84.84)	10 (15.15)
Report of the operation	54 (81.81)	12 (18.19)

Regarding the referral record to other department, 69/400 files had referral record. Though 69 referral sheets were there no carbon copy of referral were maintained in any of the files shown in Table VIII.

Table VII Referral record of the patients

Referral record	n= 69 (100%)	
	Recorded	Not recorded
Referral note	69 (100)	0
Carbon copy of the referral	0	69 (100)

DISCUSSION

100 % medical records did not have occupation of patient and mobile number of relative recorded in it.Giordano D et al, conveyed in his research that including details about a patient's job, industry, and occupation in the Electronic Health Record (EHR) can enhance occupational health monitoring, improve health outcomes, support preventive measures, and help identify workers' compensation cases.[19.]

The signature of the receiving doctors was absent in 19.5% and name of the receiving doctor was absent in 31% medical record files. Any document which is verified has to be signed by the attending physician or nurse according to Tavakoli N et. al. [20.]

History of present complaint, history of past illness and family history was not recorded in 14.5%, 38%, and 87.5% medical records. Giving treatment to patient without noting down the proper history of the patient becomes meaningless by Saravi BM et. al.[21]

14.3 % of files did not have date of examination, 33.1% did not have time of examination recorded in it. Bali M et al, stated that date and time of examination of patient is an important feature to be noted.[22.]

95.2 % records did not consist of differential diagnosis noted in the files. Kammer JE et al, mentioned that differential diagnosis can reduce chances of diagnostic errors.[23.]

91.4 % of the medical records did not have the pathological reports signedby pathologists and technologists. Soleimani N et al, expressed that Pathologists should collaborate with their clinical colleagues to determine which diagnoses are considered critical. Additionally, effective communication and thorough documentation in pathology reports are essential for developing a policy on critical diagnoses.[24]

79.4% medical records did not have obtained informed consent from the patients by the physicians. Plough T et al, described thatthe requirement for obtaining informed consent for research involving health records must be strictly adhered to.[25]

87.5 % medical records did not have history of common diseases among relatives, 94.7 % did not have cause of death of relatives recorded in them. Having a relative with a certain condition is a significant indicator of an individual's lifetime risk for various diseases. In primary care, this information is crucial for preventive healthcare efforts as claimed by Walter FM et. al.[26]

100 % of files did not have history of tobacco, alcohol, exercise, dietary habits, sexual history recorded in them.According to a research on medical patients, there is a strong correlation between alcohol abuse and smoking status, meaning that a person's present smoking status can be utilized to identify problem drinkers.[27-28]

55.6 % medical records did not have history of immunization recorded in them.Although vaccination records should be preserved for life, there is a lack of standardization in the recording of immunization episodes.[29]

100% of medical records did not have any information regarding allergy to any drugs.An average of 1.95 medication allergies were recorded by each patient, accounting for 35.5% of the total patients in a research by Zhou L, Dhopeshwarkar N et. al.[30]

68.2% of records did not have condition of patient recorded at the time of admission and 69.2% did not have condition of patient noted at the time of discharge recorded in the progress sheet.Documenting the course of a disease and the doctor's instructions using the SOAP model can improve the amount of information in the records, enabling the right diagnosis and course of treatment to be prescribed and improving the students' educational experience.[22]

In the discharge certificate, date of discharge (15.5 %) time of discharge (24.6 %), follow up date (19.5%), name of the doctor (24.8%), signature of doctor (10.5%), designation of doctor (11.7%) were not recorded in them. A discharge summary should consist of summary, relevant investigations, operative procedures, date of admission, date of discharge, dietary advice, follow up date to avoid litigation later.[31]

98.48% records did not have signature of the operating surgeon recorded in them. In contrast, the date and type of procedure, name of surgeon/assistant and signature were documented in 100% medical record in a research by Khalid A et. al.[32]

47% of discharges were discharge on request followed by 39% discharge with advice, followed by discharge on risk bond, discharge on request with risk bond, then discharge against medical advice.Doctor wrote in the files that familial problems and financial restrains were the cause of discharge on request.

Ramakrishnan N et. al. stated in his research that among 663 patients, 100 (15.08%) were Discharged Against Medical Advice (DAMA) and other were discharged on advice in comparison to our study.[33]

LIMITATION

As it is a single centered study, more hospitals could be included. So, the result of the study may not be representative of the whole community.

CONCLUSION

Occupation of the patients were not recorded in the medical record. Name and signature of the receiving physicians was not recorded in one- fourth of the files. Family history, differential diagnosis, informed consent of the patients was not recorded properly. Signature of surgeon were absent in the operation note. History of alcohol, smoking, sexual history, exercise, dietary habits were absent. The report of pathology was not preserved in the files. Diseases among relatives and causes of death of relatives were absent in most of the medical records.Most of the patients were discharged on request. There are lapse and gaps in record keeping.Many aspects were inappropriately recorded which may cause hurdles to patient and hospital authority to face legal consequences. Moreover, faulty record keeping may not be fruitful for research activities for hospital care development. So, medical records should be preserved properly.

RECOMMENDATION

A seal of all the physicians from intern doctors to professors must be maintained that shall consist of name of physician, designation, name of the department, BMDC registration number of the physicians. The reports from the pathology department consisting of signature of pathologist and technologist must be preserved in the medical record files. Name of surgeon with signature must be recorded just below the operation note. Carbon copy of the referral note must be preserved. Progress sheet on admission and discharge of the patient must be recorded. Informed consent must be collected from the patient by the physicians for all the procedures. An orientation program on record keeping is hereby advocated for relevant persons.

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DISCLOSURE

All the authors declared no conflict of interest.

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