Evaluation of Patients Record and its Implications in the Management of Trauma Patients

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Abstract

Introduction: A medical record audit is a type of quality assurance task which involves formal reviews and assessments of medical records to identify where a medical organization stands in relation to compliance and standards. A study was carried out with the objective to document the audit of the medical records in a tertiary care trauma center and suggest the corrective measures and preventive measures in case of lacunae. Methodology: A retrospective study was conducted in an apex trauma care facility of New Delhi. All the admissions on disaster bed from October 1, 2015, to December 31, 2015, were evaluated. A list of 106 admissions were made using the online software at the trauma center. The files were taken from the medical record departments and compared using a checklist prepared in accordance with the guidelines laid down by the Joint Commission International. Results: A total of 106 admissions on disaster bed from October 1, 2015, to December 31, 2015, were evaluated. The average length of stay for the disaster beds was 11.7 days and the mortality rate was 9.5%. Signature of the patient and doctor and name of the witness were missing in more than 50% of the cases of consent. Discharge summary in which the investigation details, signature of the doctor, and contact number in case of an emergency were not documented. In the miscellaneous records, transfer (61%) and referral (42%) were not documented properly. Conclusion: The average length of stay for the disaster beds was 11.7 days. Maximum admissions were under the neurosurgery department. The filling and assembling of records were poor. Signature of the patient and doctor and name of the witness were missing in more than 50% of the consent forms. There was no anesthesia consent form used. The doctor daily records were poor, while the nursing records were well maintained. It is recommended to have a periodic weekly auditing to minimize chances of deficiency/misplacing of records. Periodic training sessions and workshops should be organized.

Keywords: Inpatient records, medical record audit, trauma patients

Introduction

A medical record is as a systematic documentation of a patient’s personal and social data, history of his or her ailment, clinical findings, investigations, diagnosis, treatment given, and an account of follow-up and outcome. A medical record audit is a type of quality assurance task which involves formal reviews and assessments of medical records to identify where a medical organization stands in relation to compliance and standards. Florence Nightingale in 1863 wanted medical records to be standardized, organized, and legible. She stated, “In attempting to arrive at the truth, I have applied everywhere for information, but in scarcely an instance have I been able to obtain hospital records fit for any comparison.”

Every patient encounter involves generation of medical information which is then placed into medical records. Medical records are valuable legal documents for the insurance companies to settle the bills and they also prevent malpractice or insurance frauds. Although medical records serve many functions, their primary purpose is to record information about patients and their care. Yet, medical record-keeping quality is highly variable. Adopting a standard has benefits including completeness and accuracy, better communication between departments of Hospital Administration and Department of Hospital Administration Super Specialty Cancer Institute and Hospital, Lucknow, Uttar Pradesh, India.

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clinical care providers, and decreased adverse events. Few studies report a link between suboptimal medical records, care processes, and clinical outcomes for patients with specific conditions.

A well-planned evaluation of medical records and the related clinical documentation practices allows hospitals and physicians to have an accurate view of their current standings with regard to accuracy and compliance for medical record keeping. There are two ways by which the medical record audit can be done: one in terms of people performing audit and the other in terms of action taken. The goal of a quality assessment program for health-care documentation is to ensure that patient care documentation is clear, consistent, accurate, complete, and timely, and that it satisfies stated or implied requirements for documentation of patient care.

“If you did it, write it down; if you don’t write it down, it didn’t happen. If you did it, bill it; if you don’t bill it, it is a hobby, not a business. An artist always signs his work.”

Mark Twain

With about 139,000 deaths in 2011, India has become the road traffic death capital of the world. According to the Health Ministry, India accounts for almost 10% of total road accident fatalities in the world because of the large number of vehicles on Indian roads and the absence of any prehospital trauma care system which is most crucial when every minute impacts the patient’s chances of survival. Transport-related injuries represent only about 35%–40% of all injuries, others being related to workplace accidents, agriculture-related injuries, accidental falls, unintentional injuries, assaults, suicidal injuries, terrorist attacks, and mass casualty incidents. Total accidental deaths in 2011 numbered approximately 400,000.

Need of the study

Despite the high footfall in both the emergency department and outpatient department, the bed occupancy at the center has been at an all-time high of 83%. All efforts are being put in by the dedicated staff posted in the center to reduce the average length of stay from the current 11 days. The center has also managed to keep the hospital-acquired infection rates at par with the world’s best. There is a general perception that disaster beds are not owned by any department; hence, the transfer was not documented on the patients admitted on these beds, and there are no regular rounds by the doctor. Furthermore, it has been seen after computerization that there were some notes which were copied blindly. The medical record section has not been audited since the inception of the center; hence, we were not aware of the current situation of documentation. With many departments in one center, all had different forms for the same type of data. Medical records act as a legal document, and preservation of medical records with proper documentation is mandated by law. In the modern era, accreditation of hospital is an important benchmark for any hospital. Hence, a medical record audit was essential to document the current situation in the hospital and form future policy. To reduce the length of stay and provide the quality of care, a study to evaluate the medical records was planned to gain access to the patient’s history at the hospital.

Methodology

A retrospective study was conducted in an apex trauma care facility of New Delhi. All the admissions on disaster bed from October 1, 2015, to December 31, 2015, were evaluated. There were a total of eight beds designated as disaster beds. A list of 106 admissions were made using the online software at the trauma center. The files were taken from the medical record departments and compared using a checklist prepared in accordance with the guidelines laid down by the Joint Commission International. The data were collected by analyzing the completeness of the records with respect to filing and assembling system, coding of the record during the review period, admission forms, general consent form, special consent form, anesthesia consent form, anesthesia management form, postoperative record, doctor’s report, nurse’s record, and discharge summary. Data were entered in Epi Info version 3.5.4 (Centers for Disease Control and Prevention, Atlanta, USA). Data were then transferred into Microsoft Excel 2010. Data cleaning was done in Microsoft Excel 2010. Analysis was done in Stata 11 (StataCorp, College Station, Texas, USA). Conformity to the standards was analyzed using descriptive statistics and has been presented as proportions.

Results

Process of patient care delivery was mapped where different bottlenecks were identified via the records and are presented in Figure 1.

A total of 106 admissions on disaster bed from October 1, 2015, to December 31, 2015, were evaluated. About 10 patients (9.5%) were being discharged the same day, i.e., within 24 h of admission. The average length of stay for the disaster beds was 11.7 days and the mortality rate was 9.5%. Almost 66% of the patients were admitted in the fourth floor which was nearer to the concerned clinical department [Figure 2]. About 63% of the admissions were done under the department of neurosurgery followed by 16% admissions in the orthopedics department. This signifies that more critical patients require admissions to disaster beds apart from the regular admissions [Figure 3]. In the functional status of the medical record department, the filing of records was accurate in 41.5% of the files, while coding was done in only 3.8% of files [Table 1]. The admission records consist of the admission form and the admission assessment sheet, signature of the doctor was present in only 10% of the cases, and time of reporting in the ward was recorded in only 60% of the cases. Time of reporting is essential to ascertain the delay in transfer of patient from the emergency to the ward after allotment of the bed. In the admission assessment sheet, past history and allergic history were not stressed upon [Table 2]. The next component of the form was the surgical and anesthetic forms in which consent form is the most essential part from the legal point of view. Of
the patients who underwent surgery, there were several lacunae identified. Signature of the patient and doctor and name of the witness were missing in more than 50% of the cases. Although signature of the witness was present in about 84% of files, there was no anesthesia consent form used in the institute. In the anesthesia management forms, signature of the doctor was present in about 57% of the files. Postoperative psychological assessment was done in only 5.5% of the postoperative cases. About 5.5% consisted of cases who had some psychological problem [Table 3]. With regard to doctor and nursing records, the doctor’s records were incomplete for many parameters, as shown in Table 4. Daily entries were not made and the time of record entry with the name was not being done. In contrast, the nursing record was found to be filled clearly and completed [Table 4]. The final component of a record is the discharge summary in which the investigation details, signature of the doctor, and contact number in case of an emergency were not documented. In the miscellaneous records, transfer (61%) and referral (42%) were not documented properly. While in the consultation chart, time and name of the doctor were not documented [Table 5].

The other points which were identified were orthopedics departments that have preprinted preoperative orders, and the details of implants which were used were missing from the minimal residual disease (MRD) file. In the anesthesia record, no Prothrombin time/ Clotting Time (PT/CT) was
documented which are critical component of surgical workup. In the blood transfusion report, the details of transfusion were not entered and the signature of the medical record officer was also not there. There is a transfusion chart where no details were entered. Even though the discharge was explained to the patient, but it was not documented in the file.

**Discussion**

About 9.5% of the patients being discharged on the same day of admissions indicate that the disaster beds were being used for day care procedures apart from the mandated emergency admissions. While the average length of the stay was 11.7 days which signifies that seriously ill patients were admitted on these beds. This can be important from the planning point where the number of beds in the emergency pool bed could be determined from the fact that patients being admitted to these beds require longer stay, as most of the cases in trauma care are being admitted in the department of neurosurgery. Since both the first and fourth floors had equal bed distribution of four beds each, the utilization of the fourth floor beds was better, this may be because surgeons prefer patients near their ward. The files which were audited did not have a standardized format which can lead to loss of information and makes record keeping a time-consuming affair. Wyatt and Wright argued that structured records are easier and quicker to search and therefore can improve decision-making, but they have the disadvantage of being more difficult to write. However, some have found no statistically significant difference in the time taken to complete structured pro formas and free-text
Table 4: Completeness of the doctor and nursing records of the medical records

| Parameters                               | Number accessed | Percentage found to be accurate |
|------------------------------------------|-----------------|---------------------------------|
| Doctor’s record                          |                 |                                 |
| Date                                     | 106             | 66.0                            |
| Time                                     | 106             | 13.2                            |
| Name of doctor                           | 106             | 11.3                            |
| Signature                                | 106             | 84.9                            |
| Making entries daily                     | 106             | 28.3                            |
| Plan for surgery                         | 84              | 54.8                            |
| Plan for discharge                       | 96              | 12.5                            |
| Patient details on every page            | 106             | 51.0                            |
| Nurse’s record                           |                 |                                 |
| Making daily entries                     | 106             | 98.1                            |
| Date                                     | 106             | 98.1                            |
| Time                                     | 106             | 84.9                            |
| Signature                                | 106             | 98.1                            |
| Input output chart                       | 104             | 92.3                            |
| Temperature chart                        | 106             | 96.2                            |
| Nurses daily chart                       | 104             | 98.1                            |
| Initial of nurses giving the injection   | 104             | 94.2                            |
| Time of injection                        | 104             | 94.2                            |

Table 5: Completeness of the discharge summary of the medical records

| Parameters                               | Number accessed | Percentage found to be accurate |
|------------------------------------------|-----------------|---------------------------------|
| Discharge summary                        |                 |                                 |
| Chief complaint, past history,           | 106             | 100.0                           |
| physical examination                     |                 |                                 |
| Medication and treatment given           | 106             | 100.0                           |
| Investigations details                   | 106             | 24.5                            |
| Condition at discharge                   | 98              | 93.8                            |
| Date or time for next follow up          | 92              | 100.0                           |
| Discharge medication or any advice on the discharge | 92 | 100.0 |
| Signature of the doctor                  | 104             | 46.1                            |
| Contact numbers in case of emergency     | 100             | 6.0                             |
| Physiotherapy form filled                | 46              | 82.6                            |
| Neurosurgery record details entered      | 52              | 80.7                            |
| Miscellaneous                            |                 |                                 |
| Transfer written                         | 72              | 61.1                            |
| Referral documented                      | 56              | 42.8                            |
| Casualty note                            |                 |                                 |
| GCS                                      | 98              | 93.9                            |
| History                                  | 98              | 93.9                            |
| Provisional diagnosis                    | 98              | 91.8                            |
| Advise                                   | 98              | 93.9                            |
| Resident name                            | 98              | 93.9                            |
| Consultation chart                       |                 |                                 |
| Advice after consultation                | 56              | 92.9                            |
| Date                                     | 56              | 64.3                            |
| Time                                     | 56              | 07.1                            |
| Name                                     | 56              | 03.6                            |
| Signature                                | 56              | 92.9                            |

GCS: Glasgow Coma Scale

history sheets. Furthermore, Wright et al. described how structuring information could enhance interpretation and therefore limit clinical errors, improving patient outcomes and reducing the costs of health care. There is also evidence that structured discharge summaries are preferred, they improve continuity of care, and they make it easier to extract information for “secondary purposes,” such as audit and performance monitoring.

The filing and assembling done by MRD was not proper, and this showed the careless nature of the department over record keeping where the basic tasks of the MRD were not followed. In the admission records, the doctor does not sign the forms which could imply that the doctor did not receive the patient in the ward. On the contrary, it could also be interpreted that the doctor had received the patient but has not documented the same. It is essential to note down the time of reporting to ascertain time delay of transfer of patient from the emergency to the ward after allotment of the bed. Consent for any procedure is essential legally and must be obtained and completed in each and every case. Casual approach toward the filling of the same can have several legal complications. There was no separate anesthesia consent form, the same blanket consent is taken from the patients. A separate consent form from the patient ensures that everything has been explained and understood by the patient. A study by Elhalawani et al. showed that there were significant deficiencies in the adequacy of preanesthetic and intraoperative records. This finding for the anesthesia record was similar to our study. Deutsch summarizes the legal importance of anesthetic documentation in his book Medical Records for Attorneys “…if there is a crisis in the operating room, one can generally say that the anesthetist is responsible, as a matter of general protocol. In such cases, the quality of the anesthesia record will likely be the most critical documentary evidence in the case…” One French study by Falcon et al. highlights similar deficiencies in both pre- and intraoperative records. The doctor’s daily records were found to be deficient on multiple aspects. A similar finding was documented by Kumar et al. who found that a major gap in the medical records was in the investigation details, consent for admission, and doctor progress notes. The reason for poor record keeping can be attributed to lack of supervision, less working workforce, and joining of new residents every 6 months. The nursing records were good and the reason may be due to adequate supervision and permanent staff filling the records. Discharge summary was filled completely except for few parameters. In 2002, Mann et al. audited 149 case notes and found that 10% were unsigned undated, 17% of the discharge summaries had no diagnosis, 19% had no procedure, and 21% had no follow-up arrangements. This study had findings similar to our study. The transfer and referral were not documented in about half of the files which show that
transfers and referrals are communicated verbally which lead onto dispute when the desired output is not obtained. Same is the case with the consultation form where the doctor does not write their name and time when attended the call. This lead onto many calls being unattended and delaying of the patients discharge or operation. When the name is not written, then it is difficult to contact the person for any clarification required, and there is break in continuity of care. Further, it is difficult to fix responsibility of care.

CRABEL can be used as an alternative study tool or audit tool. CRABEL was designed in 2001 in response to the Good Surgical Practice in 1989. CRABEL was proposed as a quick, simple, and reliable method for auditing the quality of medical records.[27] It assessed the initial clerking, subsequent entries, and discharge letters to give an overall total. They demonstrated an improvement in the quality and accuracy of surgical record keeping with their tool, which was replicated by a separate independent study conducted into the maxillofacial surgery records.[28] Conversely, more recently in 2009, surgeon education and the use of a formal checklist have shown to produce better operation notes for total hip replacements, in line with recommendations from the British Orthopedic Association.[29]

**Conclusion**

Furthermore, proper referral and follow-up system should be in place to reduce the patient’s average length of stay. The average length of the stay for the disaster beds was 11.7 days. Maximum admissions were under the neurosurgery department. The filing and assembling of records were poor. Signature of the patient and doctor and name of the witness were missing in more than 50% of the consent forms. There was no anesthesia consent form used. The doctor daily records were poor, while the nursing records were well maintained. In discharge summary, laboratory investigations and emergency contact number were not recorded in maximum files. In the miscellaneous records, transfer (61%) and referral (42%) were not documented properly. It is recommended to standardize the medical records by adopting an established standard. The language used by the nursing staff can also be standardized. There were various attempts to standardize the nursing language, few examples being the North American Nursing Diagnosis Association, Nursing Interventions Classification (NIC) (NIC Website), and Nursing Outcomes Classification (Website). The medical record department/personnel should identify incomplete records and send them to the concerned professional to be completed and then only it should be filed. Filing should be proper using standard operating procedures (SOPs) and regular audit. It is recommended to train the MRD staff regarding filing and assembling of records with special focus on the International Classification of Disease 10 codes. To make the staff of the hospital (doctors, nurses, social workers, etc.) aware of the documentation standards, medical record personnel should circulate standard guidelines list to every department. It is recommended to have a periodic weekly auditing to minimize chances of deficiency/misplacing of records. Periodic training sessions and workshops should be organized by management to educate the staff about the importance of the documentation and update them on the latest in documentation methodologies and technologies. The medical record department/personnel should take the responsibility of organizing such training sessions. Medical records should to be introduced in the induction training of the residents. Meeting with all head of departments to finalize a format will be acceptable to the trauma center. Care should be taken to type and document the discharge summaries in every record, as the documentation of the discharge summary is compulsory for continuity of care, even the emergency contact and the investigation details. These fields can be made mandatory in the software. In addition, the nursing station staff may also take up the responsibility of ensuring that all the details of the patient in forms/records are complete, while they are in charge of that patient, so that if any variations are found, they can be resolved immediately by reporting to the concerned head of department. The main bottlenecks for patient care identified were no plan of discharge, the referral not properly documented, investigations not entered, plan for surgery, etc. These may lead to increased length of stay, mortality, morbidity, and also patient dissatisfaction. Policies need to be placed regarding to start a plan of discharge. It is also proposed that daily twice before the morning and evening rounds nursing officer should document and check the investigations are entered or not. It is also proposed that after admission, the surgery plan is prepared and the Operation Theatre dates and time are fixed at the earliest. These need to be documented as the nursing staff has to prepare the patients for surgery timely. SOPs should be formulated where all the staff and doctors are explained about their role in documentation with regular checking of the documents.

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**Conflicts of interest**

There are no conflicts of interest.

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