

THE QUALITY OF SURGICAL CASE NOTES USING CRABEL SCORE AT DOW UNIVERSITY HOSPITAL

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ABSTRACT

Objective: To find out the quality of medical records in the department of surgery at Dow University Hospital, a tertiary care teaching hospital.

Methodology: Medical records of all patients admitted in surgery department of surgery at Dow University Hospital from February 2012 to April 2012 were reviewed. By analyzing two sets of medical notes, a numerical score out of total 100 was calculated which is used as a representative value of quality; 100 being most accurate. For each omission of any of the criteria of CRABEL score, one point was deducted and the total scores was presented as percentage.

Results: The overall CRABEL score was 72.1 in all surgical case notes. Most frequents points were deducted in subsequent entry section with total deduction of 30.3% while least deduction was seen in discharge section with total deduction of 4.4%.

Conclusion: Quality of Record keeping in surgical department of surgery is 71% in relation to CRABEL score. Subsequent entry section is the major factor in decrease in the quality of notes.

Key Words: CRABEL, Medical records, Audit, Quality

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INTRODUCTION

Good medical record keeping is a primary skill for good clinical practice. It has become increasingly important not only for day to day patient care but particularly for research, audit and medico-legal purposes¹. All members of the medical team are accountable for ensuring that records are accurate, complete, legible, written at the time of contact with patient, signed, with the date, time, name and grade of the person making

the entry². Once written on file, notes cannot be changed and a following entry can be made if there is any change in the condition of patient or management plan.

Record keeping is of very paramount importance in surgery³. According to the Royal College of Surgeons of England (RCS England) published guidelines, in 'Good Surgical Practice'⁴, surgeons must ensure that all medical records are legible, complete and contemporaneous and include the accepted identification of the patient. Accurate documentation of surgical notes is crucial as it facilitates not only the immediate post-operative management of the patients but also the subsequent care of patient sometime years after the initial management.

Based on The Royal College of Surgeons of England guidelines, a scoring system has been formulated for assessing the quality of medical note keeping - the CRABEL score (CRAWford - BEresford - Lafferty) at Morrision Hospital in June 2001⁵. By assigning a numerical score to the assessment of patients record, comparisons between the standard of note keeping can be made between individual faculty, different subspecialties, departments and even between hospitals both nationally and internationally. The CRABEL score is easy, quick and reproducible technique for

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evaluating the quality of medical records. It can be used to monitor the standard of note keeping within a particular department at different times, or for comparison between different departments or even hospitals⁶.

Dow University Hospital is a newly established tertiary teaching health care facility affiliated with Dow International Medical College of Dow University of Health Sciences. Accurate record keeping is one of its important priorities. This audit is one the first report of surgical department medical record keeping practices so that current status is documented and areas of improvement are identified for further enhancement of this important area of quality enhancement.

METHODOLOGY

Medical records of all patients admitted in surgery department of surgery at Dow University Hospital from February 2012 to April 2012 were reviewed by AK and NB as part of the record keeping audit with multiple international criteria. This clinical audit study is about case note quality in terms of CRABEL Score.

By examining two sets of patient notes, a numerical score (out of 100) is calculated which is used as a representative value of quality; 100 being most accurate. Total 236 patient records were examined in this audit. Initial Clerking received a score out of 10 points. Subsequent Entries were scored up to a maximum of five and marks deducted out of a total of 30 points, Consent was scored out of five points and the Discharge Summary also out of five. One point was deducted for any omission in the criteria and

the total scores were presented as percentages. The balance of points is spread between four sections so there is a limit to the maximum number of points deducted in any one section to reduce bias from repeated identical errors⁵.

Data was analyzed by SPSS version 17. CRABEL score and each four sections were represented by frequency and percentages.

RESULTS

The overall CRABEL score was 72.1 in all surgical case notes. The frequency and percentage of absence of separate components of the CRABEL score categories is shown in Table-I. Most frequent points were deducted in subsequent entry section with total deduction of 30.3% while least deduction was seen in discharge section with total deduction of 4.4%.

Figure 1 shows that there was no deduction due to absence of name and consultant name while referral source and results of investigation documentation leads to 95.3% and 93.2% deduction in initial clerking section. About 5% deduction was due to absence of on duty doctors post and bleep number.

Figure 2 shows deduction in the subsequent entry category. Result of investigations documentation in notes lead to most of the deduction in this section (63.3%), however most of the notes were found to be legible with deduction of only 0.8%.

Figure 3 and 4 shows point deduction from consent and discharge documentation. Hospital registration number is missing in most of the consent forms (95.3%).

Table 1: Points deduction in total CRABEL Score and subcategories of score (n=236)

Category	Points deducted	Percentage
Initial Clerking	648	27.45
Subsequent entries	2148	30.3
Consent	449	19.9
Discharge	52	4.40
Total CRABEL Score	3297	27.9

Figure 1: Points deduction in initial clerking (Percentage is shown above each bar)

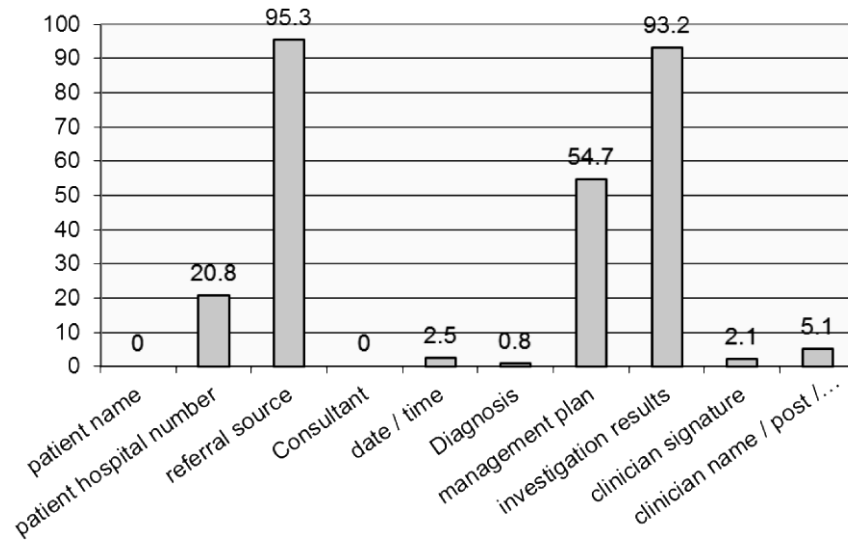


Figure 2: Points deduction in subsequent entries (Percentage is shown above each bar)

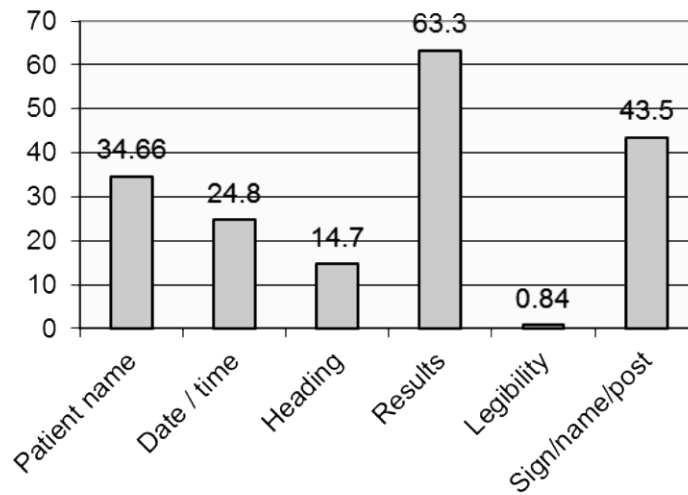


Figure 3: Points deduction in consent (Percentage is shown above each bar)

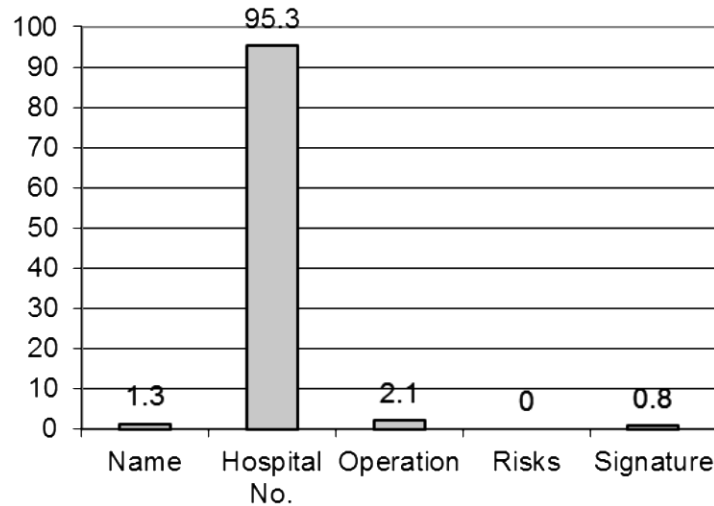
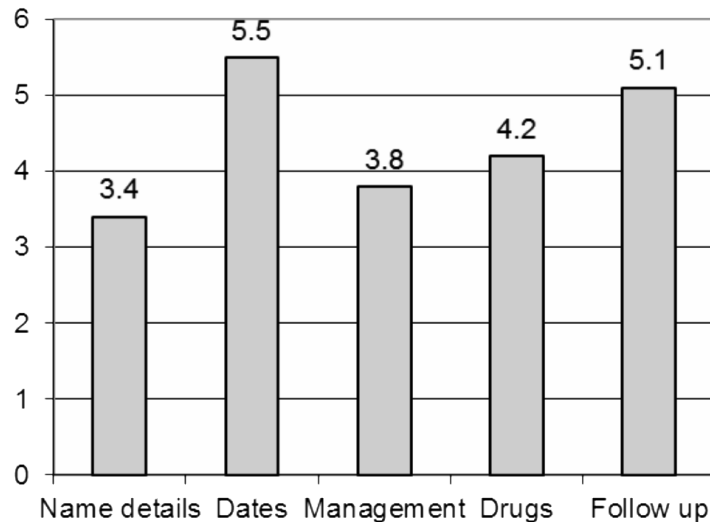


Figure 4: Points deduction in discharge (Percentage is shown above each bar)

DISCUSSION

This is one of the first studies which has documented the quality of surgical case notes in reference to CRABEL score from Pakistan. Overall quality is 71% with most of the deduction in subsequent entry category and the least deduction in discharge notes category. Quality of notes is quite comparable to other such audits. A study from United Kingdom from the maxillofacial department reported quality of notes to be 70% at initial audit⁷, while a study from Basildon and Thurrock University Hospital, UK showed 64% accurate record according to CRABEL score⁸.

This scoring system can be used to demonstrate quality of documentation between elective and emergency admission as recently reported by Suh J, et al⁹. In their study the mean CRABEL score for acute admissions was 79.2% (77.0–81.3, 95% C.I.) compared to 81.3% (78.8–83.8, 95% C.I.) for elective admissions without any statistical significant difference⁹.

The most deficient area in our study was subsequent entry section. The same findings have also been reported by Ho MY, et al¹⁰. In our audit, documentation of investigation results on case notes is the most frequent omitted point. The usual practice at our institute is to insert test reports or X-ray films in file without documenting its results on notes. On discharge, patient are given their reports in most cases, which resulted in non-availability of these reports afterward. Doctor's name and post were also one of the most omitted points in about 43% of entries in subsequent entry section. Doctors on duty usually only sign their

written documentation in our setup. Still, this practice is sufficient in many instances as their signature is very clear with their names identification, However it's always a good practice to write name and post afterward.

In the initial section, many parameters of documentation according to CRABEL score were very good apart from referral source and investigations results. Omissions of documentation of investigations are due to the same reason as discussed above. However, reason of referral source omission was because our printed 'Accommodation Form' didn't have this section which highlights the importance of good and accurate printed forms requirement in all documentations.

Overall, consent form documentation was quite good apart from omission of patient's hospital registration number. Usually only patient name was written on consent form at our hospital. Another important point needs to be highlighted here is about documentation of risks of surgery. Although, there is not a single omission due to risks of the surgery (Figure 3) its quality cannot be rated as excellent. The reason being printed consent Form at our hospital. It has a general statement which says that 'all complications are discussed with the patient in detail' but in reality it's not always true¹¹. Important case specific complications are not discussed in detail with patients and rarely documented in the records. This highlights the important limitation of CRABEL. It does not measure the quality of the content of records, accuracy of patient management plan or

presence/absence of specific clinical information. When individual entries were scrutinized, it was common to find pages in the patient records with no identifying features of the writer or incomplete entry of management plan or progress notes. Such poor findings are not very well accounted for with the CRABEL score.

In a surgical or medical ward, note keeping is often the duty of most junior medical team member¹². At institute level there is no formal training sessions for medical students or trainees about medical record keeping and taught what should be included in different sections in medical notes. The result of this audit will be a useful reference for this purpose. Even if the notes are written by junior medical staff; the quality of notes is ultimately the responsibility of the primary consultant⁷.

A study performed in theUK,⁸ obtained an initial average CRABEL score of 64%. The authors of this study carried out interventions intended to improve the record keeping practices of staff by not only informing the initial audit result on a regular basis but also providing pre-designed documentation forms with aid mnemonic. They found that over the next three years the scores were sustained to about 90%. However, there is decline in quality with time, which highlights the need for continuous education about quality maintenance. A similar educational intervention is planned at our institute with the hope to improve the quality of record in next audit about documentation.

Documentation in the medical record facilitates diagnosis and management of patients, communicates important information to other health care providers and reduce the chances of medical errors¹³. Electronic medical record (EMR) systems may also improve the quality of care delivered as well as the documentation of that care^{14,15}.

There is a need to conduct such audits on regular basis to improve and maintain the quality of records with provision of periodical training of junior doctors. The CRABEL scoring system can be universally applied to any in-patient specialty including medicine and surgery. Healthy competitions can be arranged between different departments of same hospital or between different hospitals which will results in quality improvement in this important aspect of quality assurance specially required for accreditation of hospitals¹⁶.

CONCLUSION

Quality of Record keeping in surgical department of surgery at Dow University Hospital

is good in relation to CRABEL score. Subsequent entry section is the major factor for reduction in quality of notes. Training of doctors, regular audits and availability of good quality documentation Forms can increase the quality to near perfect.

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CONTRIBUTORS

MJ conceived the idea and planned the study. AK, FAM & NB did the data collection and analyzed the study. All the authors contributed significantly to the research that resulted in the submitted manuscript.