Original Article

The Standard of Hand Written Operative Notes; A Long Campaign towards Refinement — A Complete Audit Loop Study in a Teaching Hospital

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Background : A comprehensive, thorough, accurate, legible and professional operative note allows seamless and proper transfer of patient care from the operating table to the postoperative care room and beyond. Further, incomplete and illegible handwritten operative notes in medico legal cases may be an Achilles heel in the surgeon's defense.

Aims : This study audited the quality of operative note keeping of general surgical procedures against the standards set by the Royal College of Surgeons of England (RCSE) guidelines. The aim of the study was to assess the compliance while also improving record keeping, documentation, the quality of operative notes, and educating surgery residents.

Materials and Methods : The information from operative notes of every patient undergoing general surgical procedures was collected over a period of seven months. The data was formulated and analyzed using the SPSS version 20.

Results : Total of 560 operative notes were recruited and audited. All the notes were hand-written, with the majority being written by postgraduate residents (86%).The postoperative care advice, fluid and antibiotic instructions were documented in the finest manner (100%). However, only 1% of the notes mentioned the Patients' name, Gender and Age. All operative notes (>99 percent) included the names of the operative surgeon and assistants. The consultant in charge was documented in only 12 percent emergency notes and 100 percent elective procedures. The name of runners (Nursing Orderly) was missing from all the notes. Notably, no details of closure techniques were mentioned in any of the operative notes. Almost all of the operative notes were not signed properly to include the resident's name and code.

Conclusion : The quality of the operation notes that were entered into the patient's case sheets was poor and insufficient, and it needed to be greatly improved. The findings of the study underline the necessity for residents to receive mandatory training on data collection and how to produce operative notes according to institutional rules.

[*J Indian Med Assoc* 2022; **120(11):** 16-9]

Key words **: Audit, Operation notes, General surgery, Medical records.**

Clinical auditing is a component of clinical governance that determines whether the healthcare being provided is in accordance with accepted standards, thereby aiding in the improvement of service quality and, if necessary, identifying areas for improvement[1]. Good medical and operative records are essential for proper medical practice in order to ensure effective patient care. Operative notes not only serve as a record of patient care and evidence for medico-legal issues but also provide critical information for research and auditing the performance of hospitals and the working staff[2-4]. The Royal College of Surgeons of England published Good Surgical Practice Guidelines for legible, comprehensive and all-inclusive medical record keeping[5]. These guidelines capture the details of patient, surgical procedure, intra-operative findings, complications and postoperative care instructions. The compliance to Good Surgical Practice Guidelines for operative notes varies from hospital to hospital. The ongoing auditing and assessment of handwritten operative notes is now an important aspect of Departmental clinical governance, as it determines whether the changes listed in the action plan following the baseline audit are being implemented for overall patient care improvement. This study audited the quality of operative note keeping for elective and emergency general surgical procedures against the standards set by the Royal College of Surgeons of England (RCSE) guidelines. The aim of the study was to assess the compliance while also improving record keeping, documentation, the quality of operative notes, and educating surgery residents.

Editor's Comment :

- A comprehensive and precise operative documentation is indispensable not only for superior postoperative care but also for academic and research purposes. Inadequate postoperative notes is an Achilles Heel in a surgeon's defence and therefore may prove to be a medico-legal liability.

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Received on : 23/03/2022
Accepted on : 10/04/2022

Materials and Methods

This descriptive hospital-based audit loop study was carried out at the SKIMS, Medical College and Hospital, in a department of General and Minimal Access Surgery over a period of seven months. The audit was carried out with the approval of the Departmental Academic and Research Committee (Order No. SKIMS/MCH/GS/2021-571) and under the supervision of the Head of Department. A total of 560 patients who underwent various surgeries in elective and emergency settings were included in the study and operation data were collected. The information from the operative notes of all the patients was collected by authors and formulated for data collection. RCS England, Good Surgical Practice 2014 guidelines on operation note keeping was followed, for completing the components on a checklist. The operative notes were compared against the set data points recommended in the RCS GSP guidelines for various General Surgery Procedures (Table 1). At the conclusion of audit study, the findings were presented in the departmental meeting, where the deficiencies and inadequacies were highlighted to the surgeons in the Department (Fig 1).

Data was entered and analyzed in Microsoft Excel 2016 software, and each item was checked as present or absent. The statistical analysis was carried out with the Statistical Package for Social Science (SPSS) version 20 software, and the results were provided as number or percentage of patients.

Results

A total of 560 operative notes were recruited and audited with 296 (52.86 percent) elective general surgical procedures and 264 (47.14 percent) emergency surgeries. As the ongoing practice of the institute, all the operative notes were hand-written. The majority of the notes did not adhere to the RCS England guidelines for General Surgical Practice. The majority of the handwritten notes lacked one or more important items mentioned in the standard guidelines. The notes were mostly written by postgraduate residents (86%), followed by senior residents (13.5%) and junior residents (0.5%). None of the notes was written by the Consultants. The postoperative care advice, fluid and antibiotic instructions were documented in the finest manner (100%).

Table 1 — *Good Surgical Practice Operation Note Data Points*

Parameters
Patient Name, Gender and Age
Date and Time
Elective/Emergency procedure
Consultant in charge
Names of the operating surgeon and assistant
Scrub assistant
Type of Anaesthesia
Operative procedure carried out
Indication of procedure
Type of Incision
Pre- and postoperative diagnosis
Operative findings
Any problems/complications
Any additional operation performed and the reason why it was performed
Details of tissue removed, added or altered
Any foreign material or prosthesis used
Details of closure technique
Pot operative antibiotics and fluids
Detailed postoperative care advice
Signature

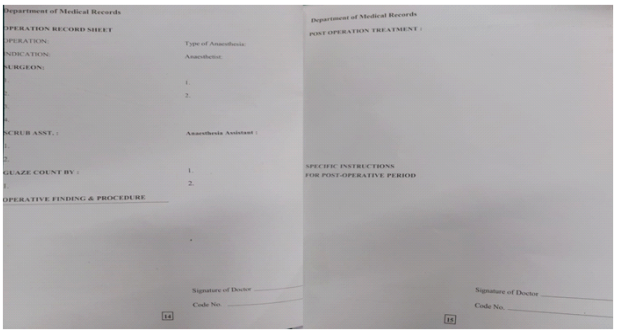
Department of Medical Records
OPERATION RECORD SHEET
OPERATION:
INDICATION:
SURGEON:
SCRUB ASST. :
GLAZE COUNT BY :
OPERATIVE FINDING & PROCEDURE
Type of Anaesthesia:
Anaesthetist:
Anaesthesia Assistant :
Signature of Doctor
Code No.
Department of Medical Records
POST OPERATION TREATMENT :
SPECIFIC INSTRUCTIONS FOR POST-OPERATIVE PERIOD
Signature of Doctor
Code No.

Fig 1 — SKIMS Medical College & Hospital General surgery operation proforma

The Name, Gender and Age of patient were mentioned in only 1% of notes. The date-of-surgery was documented in 95% elective operation notes and 83% in emergency notes. However, time was recorded only in 4% emergency notes and not documented in any of the elective procedures. The duration-of-surgery was documented in 1% emergency operative notes and in none of the elective procedures. The name of the operating surgeon and assistant was documented in all operative notes; 99.34% elective notes and 99.44% in emergency notes. The name of anaesthesiologist was captured in 70% elective cases and only 52% of emergency notes. The name of the scrub assistants was documented in 92% elective and 50% emergency notes. The consultant in-charge was documented in 100% elective procedures and 12% emergency notes. The name of runners (Nursing Orderly) was missing from 100 % notes. The type of anaesthesia was mentioned in 45% of notes. The operative position and type of incision was noted in 1% elective surgical notes and none of the emergency documents. The operative diagnosis and intra-operative finding were mentioned in 99.45% operative notes. The occurrence of any intra-operative complication and any additional operation performed and its reason was inconsistently documented in 12% operative notes. The details of tissue removed, altered or added was mentioned in 8%

notes and only 20% operative notes documented the foreign body or prosthesis used. Notably none of the operative notes mentioned the details of closure techniques; however, 100% notes documented the postoperative care advice, antibiotic and fluids. Almost none of the operative notes in both the emergency and elective records were correctly signed with the resident's name and institutional code.

Discussion

The accuracy of operative notes is critical to providing effective patient care in the postoperative care room, general wards and beyond in follow-up. The accurate and comprehensive documentation of the operation is essential for providing safe postoperative patient care and forms an important part of the legal documentation in cases of medico-legal importance. Furthermore, insufficient and unreadable handwritten operative notes may lead to misunderstandings and be the surgeon's Achilles heel in medico-legal issues. An audit done by Lefter, *et al* demonstrated the medico-legal impact of poor operative notes, with 44.73 percent of 190 operative notes judged to be non-defensible after review by a medico-legal counsel[2]. The guidelines already exist for preparation of operative notes updated by RCS England in 2014 as Guidelines for Good Surgical Practice[5]; nonetheless, compliance has been observed to vary amongst institutes and specialties. The overall standard of reporting and documentation in medicine is low, with many reports omitting important and relevant data[6]. There is insufficient time and effort spent on critically and objectively evaluating the outcomes of clinical audits and the audit loop is frequently not completed[7]. In our conflict zone of Kashmir Valley, the rates of litigation in trauma and emergency surgical patients are quite high and rising, making legible and precise documentation even more important. To date, a negligible amount of data has been published and no audit loop study concerning the quality of operative notes from the Kashmir valley has been reported. The audit study was conducted to assess compliance and to identify methods of improving and maintaining the quality of operative notes solely for general surgery procedures, as well as to educate the surgery residents at our tertiary care teaching institute.

The patient identification (name, age and sex) is an essential part of operative notes; however its significance was consistently under estimated in the study and reported in 1% notes. This was found to be remarkably less as compared to other studies reported in literature[8-11]. The patient identification was seen in 28-33% of the operative notes in the study done at a teaching Hospital, in Sudan[8]. As a crucial parameter, the personal identification should be documented in each patient's operation notes. In the event of a lawsuit, operative team members are typically paraded throughout the hearing of proceedings to provide evidence on the events that occurred during the surgery for medical legal clarity. As a result, it is critical to include all of this information in the operative note.

The date-of-surgery was well documented (95 percent in elective operation notes and 83 percent in emergency notes), whereas, time was only recorded in 4 percent of emergency notes and none of the elective procedures. In a study conducted in Sudan[8] the time was documented in 81% of the notes; however, other researchers in Nigeria and Pakistan discovered that the time of surgery was frequently omitted in operative notes[12,13]. Some data points, such as the name of the operating surgeon and the assistant, the operative diagnosis and intra-operative findings, postoperative care advice, antibiotics and fluids, were completed with a high level of accuracy (>95 percent). This may be secondary to the printed parameters and data points included in the current proforma of operative notes at our centre (Fig 1). The advantages of using a proforma have been highlighted in the literature and it has resulted in better completion of detailed notes[14-16]. The use of template operational notes can both reduce the complexity of the task at hand and ensure that no vital details are neglected. The findings of our study were comparable to those of a review study of operation notes from nine UK Hospitals and other published literature[17,18]. The study in UK hospitals revealed a high level of completion (95%) for data points such as the name of the operating surgeon (99.3%), legibility, date, and operation title (99.1 percent)[17].

In this study, the name of the anaesthesiologist was recorded in 52 percent to 70 percent of the notes, the scrub assistant (50-92 percent), the consultant in charge (12-100 percent) and the type of anaesthesia was recorded in 45 percent of the notes. The runners' names (Nursing Orderly) were omitted from 100% of the notes and the operative position and type of incision were poorly documented (1 percent in elective surgical notes only). Other studies[9,19,20] found that the Anaesthesiologist's name, Scrub assistant, Type of anaesthesia, Operative position and Type of incision were all visible in more than 90% of cases. The results of a clinical audit study of operation notes conducted in two different tertiary hospitals in Ethiopia revealed mixed results[19]. The names of anaesthetists, scrub nurses and runners were documented in almost all operation notes from one hospital but were inconsistently documented at another[19].

Despite the fact that there is no formal training for surgical postgraduate residents in our setting for operative note writing, it was discovered that the majority of operative notes were written by Postgraduate Residents (86%), Senior Residents (13.5%), and Junior Residents (0.5 percent). This is quite concerning, as it has been discovered that trainees frequently struggle to produce high-quality notes in the absence of proper guidance[21]. The findings of the study underline the importance of residents receiving mandatory data collecting training as well as training on how to write operative notes in compliance with institutional norms. Additionally, writing operative notes should be included in the early stages of residency training and senior surgeons should invest time in trainees to ensure successful writing of standard operative notes. Also it is recommended that the legibility of signatures should be improved by the use of name-stamps for residents as reported in literature[22].

Conclusion

The quality of the operation notes entered into the patient's case sheets was poor and needed to be much improved. To increase the quality of operative notes, regular auditing and the use of templated operative notes in accordance with RCS England criteria are essential. The findings of the study underline the necessity for residents to receive mandatory training on data collection and how to produce operative notes according to institutional guidelines.

Ethical Issue : None

Financial and competitive interest : None

The authors declare that no financial support was received from any organization for the submitted work.

Other Relationships : The authors declare that there are no other relationships or activities that could appear to have influenced the submitted work.

Conflict of interest : On behalf of all authors, the corresponding author states that there is no conflict of interest.

The authors have no other disclosure.

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