

Research Article**Evaluating the Operative Notes of Patients Undergoing Surgery at Omdurman Teaching Hospital, Sudan**Aamir A Hamza^{1*}, Hulla M Abdalrahim², Saadeldin A Idris³, Osama M Ahmed⁴¹Associate professor, Department of General Surgery, College of Medicine and Health Sciences, Bahri University, Khartoum, Sudan.²Assistant professor, Department of General Surgery, College of Medicine, Ahfad University, Khartoum, Sudan.³Associate professor, Department of Surgery, Faculty of Medicine, Alzaeim Al-Azhari University, Khartoum, Sudan.⁴Consultant Plastic Surgeon, Department of Plastic and Reconstructive Surgery, Omdurman Teaching Hospital, Khartoum, Sudan.***Corresponding author**

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Abstract: Operation notes writing is one of the fundamental parts of the surgical practice. It should be accurate, clear, and informative and contains all the events and steps in the surgical procedure, to be of value when used in further follow up or in medico legal conditions. The objective of this study was to compare the quality of operative notes at Omdurman Teaching Hospital, Khartoum, Sudan, with the standard set by the Royal College of Surgeons, England 2008. A one month retrospective, descriptive study (2013 Jan.1st to 31st) evaluated the operative notes of patients whom had moderate to major surgical procedures. The collected data was analyzed using the SPSS version 20. The study included 216 operative notes. Patient identification (name, age) was absent in more than 60%. Operating surgeon and assistant names were present in more than 90%. In only 3.2%, the procedure was categorized as an elective or emergency. Surgical incision, description of operative findings, operative complications (if any), and details of closure were mentioned in 63.9%, 69.4%, 37.5%, 26.9% respectively. In conclusion, there is significant deficiency in the contents and missing of vital and crucial information may lead to difficulty in further patients' management and weakness in doctor defense in medico-legal cases.

Keywords: Audit; Operative notes; Operative records; Quality.

INTRODUCTION

Good surgical practice of the Royal college of surgeons of England "RCSE", section 1.6 record keeping; Ensure that there are legible operative notes (typed if possible) for every operative procedure. The notes should accompany the patient into recovery and to the ward and should be in sufficient detail to enable continuity of care by another doctor [1]. A record of the operation should be made immediately following surgery [2]. Traditionally, operative notes have been written by one of the junior members of the scrubbed team, often supervised by a senior surgeon, considered as an essential part of training [3]. However, operative notes are often incomplete, impeding the patient's postoperative management [4]. Furthermore as operative notes are often used for research purposes, audits, and medicolegal/risk management, including all the items detailed in the guideline is important [4]. Help planning future operative procedures and serve as a vital means of communication between health professionals. Maintaining a full and proper record is a professional responsibility of every surgeon [5, 6].

METHODOLOGY

It is retrospective observational, hospital-based audit, conducted at Omdurman Teaching Hospital, General surgery department. Conducted over a period of one

month from, 2013 Jan.1st to 31st. Included were the operative notes of general surgery and it is specialties (elective & emergency). Excluded were the notes of patients treated conservatively. The operation notes were assessed and reviewed by two members of the surgical team (consultant and specialist surgeons). Non-probability sampling was used with total coverage during the study period. Predesigned questionnaire according to standards prescribed by Royal College of Surgeon of England (RCS Eng.) to obtain data from operative notes was used. The variables included presence or absence of information regarding patients' data, date and time of surgery, surgeon's name, assistant's name, procedure done, type of incision made, suture material used, operative diagnosis, preoperative findings, complications during the procedure (if any), details of tissue removed, closure technique, type of sutures used in closure, estimated blood loss, post-operative instructions including oral intake, intravenous fluids, analgesia, antibiotics and instructions for the nursing staff. Each item is checked as present or absent. The statistical analysis was performed using Statistical Package for Social Science (SPSS) version 20. The results were provided as number (percentage) of patients. Hospital administration ethical approval obtained and the confidentiality of the units and operators were kept.

RESULTS

During the study period, medical records of 216 operative notes were recruited and reviewed for their quality. It includes moderate and major surgical procedures, in general surgery and its subspecialties. General surgery constituted half of the notes, plastic and reconstructive surgery one quarter, the remaining notes were from (urology, orthopaedic and neurosurgery), with varying percentage as shown in (Figure 1).

All of the operative notes were hand written, there were frequent use of abbreviation in most of them. The majority of the notes did not conform to that in the RCSE guidelines. There were variations in the quality of the hand written notes as well as the deficiencies in some important items which were revealed in this study. Most cases had no diagram included.

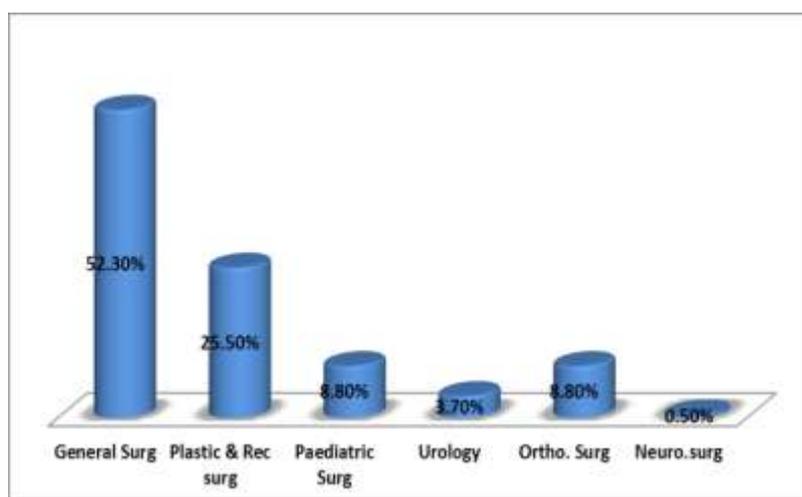


Fig. 1: Operative notes from different surgical departments included in the study

Personal data including; patient name, gender and age were seen between 28% - 33% of the operative notes. Date and time of surgery were documented well in 98% and 81% respectively. The names of the

operator and his assistants were written in over 90% of the occasions, but of anaesthetists and theatre attendant were missing in over 80% (Table 1).

Table 1: Basic characteristic of the operative notes in the study (n=216)

	Stated	Unstated
Personal data		
Name	071 (32.9%)	145 (67.1%)
Age	064 (29.6%)	152 (70.1%)
Gender	061 (28.2%)	155 (71.8%)
Date and time of surgery		
Date of surgery	212 (98.1%)	004 (01.9%)
Time of surgery	175 (81.0%)	041 (19.0%)
Names of the surgical teams		
Operating surgeon	209 (96.8%)	007 (03.2%)
Assistant (s)	200 (92.6%)	016 (07.4%)
Anesthetist	030 (13.9%)	186 (86.1%)
Scrub nurse	002 (00.9%)	214 (99.1%)

The name of the operation to be conducted was documented in 92%, preoperative diagnosis in 25% and the actual operative diagnosis in 23%. The category of the operation whether elective or emergency was stated in 3.2% and the type of anaesthesia used, in 94%. The type of the skin incision (Kocher, Medline, etc.) and

details of operative findings were identified in 63% and 69% respectively. Information about tissues removed was written in 47% and the notes were signed in 58% of the time. Problem encountered during the operation, extra procedure needed and details of closure were seen with varying percentage, (Figure 2).

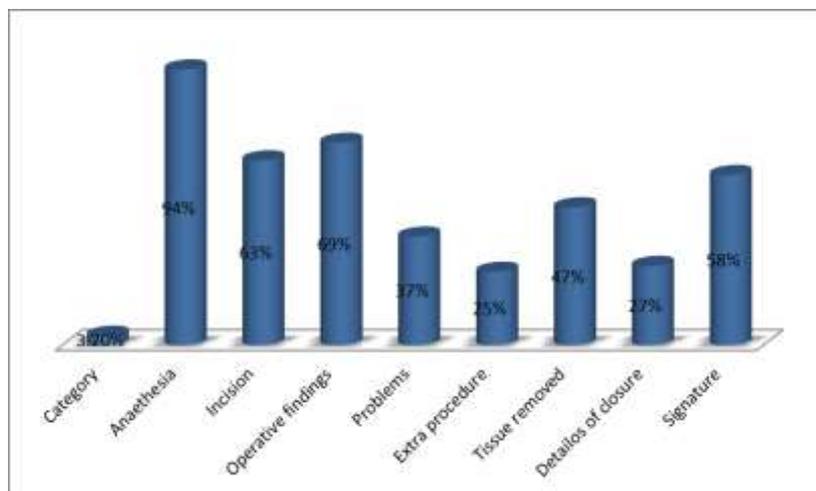


Fig. 2: Elements of the operation clearly stated in the operative notes

Postoperative care instructions

Regarding antibiotics, analgesia, whether and when the patient should start to take by mouth and the

intravenous fluid needed, were clearly written in 90%, 90%, 78% and 63% respectively (Table 2).

Table 2: Post-operative instruction documented in the operative notes

Post-operative instruction	Stated	Not stated
Post-operative instructions	150 (69.4%)	66 (30.6%)
NPO Instructions	168 (77.8%)	48 (22.2%)
Intravenous fluids	138 (63.9%)	78 (36.1%)
Antibiotics	196 (90.7%)	20 (9.3%)
Post-operative analgesia	195 (90.3%)	21 (9.7%)
Instruction for nursing staff	120 (55.6%)	96 (44.4%)

DISCUSSION

Very little has been published concerning the quality of operative notes and no studies were found in the literature regarding operative notes in Sudan. Our observation has brought to light several inadequacies in the record keeping of surgical procedures. In reality the standard is often poor which has several serious implications; for patient care, medico legal/risk management and audit [7]. Therefore operative note writing should be taught as part of surgical training, to improve the quality of the operative notes and their use to improve patient safety [4].

Patient data

Personal identification is very essential to be written in the operative notes of every patient. In our study (patient name, age and gender) were under-estimated, as being documented in less than 32% of the occasions. This was found far less than 54.5-100%, stated in other studies reviewed [6, 8-10]. Patients' names were

missing in 67.1% in the current study, whereas in other studies this vital point was missed in 21.7%- 45.9% of case notes [10, 11]. This assumes importance as there are chances of operative notes getting lost / misplaced due to lack of patient identification [6].

Date & time of surgery

The date of the operation was one important element of the operative notes that being documented well in our study, 98.1%, comparable to the reported 92.6-99% [5, 6, 13], and higher than other studies reporting 77.5-87% [11, 12]. The time of operation was clearly written in 81% of our operative notes and this is better than the reported value of 36%-69.2% in the literature [5, 6, 10, 12]. However, the time of surgery was missing in all notes in other studies [3, 11].

Names of the surgical team

In 96.8% of our operative notes, operating surgeons name had been mentioned and this is similar to others,

who reported 90-100% [3, 4, 6, 9, 13, 14]. However fair percentage of the operative notes contained satisfactory information as name of surgeon was seen in 88.7% in KSA study [10]. Post-surgical notes had the name of operating assistant in 92.6% and this in agreement with 99% documented by other workers [3, 14]. However, Linda SGL *et al.* [4], stated 84% and Singh R *et al.*, 87% [12]. One of the weakest areas in the current study that didn't complied with the guidelines in most cases was the anaesthetist name (13.9%), which was written in more than 90% in other studies [4, 6]. In addition to the name of the scrub nurse, this was recorded in only two notes (0.9%) in our study whereas it was given in most notes in the literature [4, 6].

Diagnosis

Good compliance was found for a record of the operation to be conducted, was documented in 92%, this remained similar to 99-100% described in the literature [3, 5, 13]. Nevertheless post-surgical notes had the operative procedure carried out in 73.3% cases in Kawu DS *et al.* study in orthopaedic surgical care in Nigeria [11]. The actual operative diagnosis was missing in 77% and this is another substandard area in the present study, though the omission in other studies was reported to be 0.0% in Shah S *et al.* [8], 8% in Muhammad Umar *et al.* [3], 15.5% in Elbagir Ali A Elfaki and Abdulkhalig HE [10], 30% in Kawu DS *et al.* [11] and 100% in Natnita Mattawanon *et al.* [13].

The operation

A lack of formal education on operative note writing might account for the large gaps in reporting noted and most senior physicians have never received such training [4]. In the current study only 3.2% of the cases, the documentation whether the operation in question had been performed as an elective or emergency was seen, although this could be differentiated from type of operation in most of the occasions. This varies among other series from 0.0 - 97.8% [5, 6, 10, 12, 13].

The type of anaesthesia used was documented well in this study (94%), contrast to other series 68% [4], 79.3% [10] and 80.5% [6]. The type of the skin incision made was outlined accurately in only in 63%, compared to 50% - 95% in the literature [3, 5, 11, 14, 15].

While details of operative findings, any problems/complications, extra procedure performed and reason why, details of tissue removed, and details of closure technique & sutures used were likewise identified in varying percentage in different studies [3, 4, 8, 10, 11, 13, 15]. Not all of the notes were of the required standard. Further improvements may be made by continued surgeon education, attaching the checklist to the note or producing a template operation note with the required fields left blank for the surgeon to complete [6]. Areas in which standards could be improved include meticulous scripting of all surgeons'

names, operative diagnosis, findings, and mentioning of complications/problems (if relevant) [5].

Postoperative care instructions

Regarding antibiotics, analgesia, whether and when the patient should start to take by mouth and the intravenous fluid needed, were clearly written in a range of 63-90%. This was comparable to other series [3, 10-13,15]. There were 42% of the operation notes missing signature in our study in contrast to 1.6% [6], 03% [14], 5.6% [13], yet in a single study the missing rate was 60.5% [10].

Aide-mémoire

To improve the situation, simple addition of an aide-memoire to the operation sheet affords significantly superior documentation of the surgical procedure [7]. The addition of prescribed headings to act as aide-mémoire would reduce the likelihood of the operative surgeon not including detailed information about wound closure, suture type and postoperative instructions [15].

CONCLUSION

This study identifies key areas of weakness in our operative note-keeping as compared to GSP guidelines 2008 however few elements appear to be favorable. To be improved, periodic audit is required to assure that these standards are maintained. Formal teaching session in writing operative records will be helpful to improve the quality; supervision of the assistants by the operating surgeons would improve documentation following surgery and should be used as a teaching tool for the trainee. Diagrams should be used wherever possible.

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