

Assessing the Quality of Operative Notes

Meeting the Current Standards

Hira Ali¹, Zubia Masood², Bushra Shirazi³

ABSTRACT

Background: Operative notes are an important element of documentation based quality management for clinical practice. Often narrated by surgeons, they are usually penned by hand and are crucial in case of medical and legal consequences.

Objective: To assess the operative notes at a tertiary care hospital and compare them to the standards set by Royal College of Surgeons of England.

Methods: An observational prospective study carried out in the department of general surgery over a time period of one month from June to July, 2014. Sixty operative notes including general surgery, urology, orthopedics and neurosurgery were included in this study and were assessed according to published guidelines of the Royal College of Surgeons of England.

Results: A total of 60 operative notes were reviewed. All of them were handwritten, out of which 40 (66.7%) were written by the operating surgeon. None of the notes mentioned the time of the surgery and the type of surgery and had no diagrams to illustrate the operative findings. Almost all (96.7%) included the patients name and the procedure performed (95%) and only 66.7% mentioned the operative findings. Incomplete post-operative instructions were present in all the notes that were studied.

Conclusion: Several areas were highlighted, that lacked essential information in the operative notes, including the time of the procedure, type of surgery, instructions for postoperative care, operative diagnosis, findings, and complications during the procedure indicating that the operative notes were incomplete and inadequate in many respects.

KEY WORDS: *Operative Notes, Quality Management, Clinical Practice.*

Cite as: *Ali H, Masood Z, Shirazi B. Assessing the Quality of Operative Notes. Meeting the current standards. Pak J Med Dent 2015; 4(1):54-59.*

¹ Hira Ali

House Officer, Ziauddin University and Hospitals, Karachi.

² Zubia Masood

Assistant Professor, Department of General Surgery, Ziauddin University and Hospitals, Karachi.

³ Bushra Shirazi

Associate Professor, Department of General Surgery, Ziauddin University and Hospitals, Karachi.

INTRODUCTION

Good clinical care means to provide a good standard and practice of care. Amongst the many responsibilities a physician has, the first is to his patients and their health and safety. Another very important part of good clinical care is to maintain patient records. The General Medical Council recommends ensuring that accurate, comprehensive, and legible records are maintained for every patient by the surgeon.¹ These records are generally narrated by the surgeon and are then usually handwritten or typed in a data retrieval system after an operation has taken place. They should be made straightaway after the surgery as they not only serve as important documents for medico-legal disputes, but are also vital for ideal patient care and long term patient follow-up.²⁻⁴ Any error made in any detail during documentation can lead to a widespread possibility of medical and legal consequences.

In order to improve our clinical practice, there is a need to adopt a standardized way to document operative notes so that our records contain all the details necessary to give patients the proper care that they deserve and have a right to have. Although there are no standardized known guidelines in Pakistan, there are many international guidelines which are in use and are well recognized, such as those by the Joint Commission, and also those by the Royal College of Surgeons of England. Clinical education in Pakistan has a major influence of the British; therefore, in this study we assess good clinical practice by comparing the quality of operative notes to the standards set by Royal College of Surgeons of England, in order to improve the quality of operative notes and hence improve patient care

METHODOLOGY

A prospective observational audit was conducted at a tertiary care hospital in Karachi, in the General Surgery department from the month of June to July 2014. All the operative notes during this duration were selected and assessed using "Good Surgical Practice" by the Royal College of Surgeons of England (Figure 1).⁸

The operative notes of General Surgery and its subspecialties (elective & emergency) including urology, orthopedics and neurosurgery were included in this study. A specifically designed proforma was used and the notes compared and analyzed statistically using Statistical Package for the Social Sciences (SPSS) for windows version (17.0).

Figure 1. Good Surgical Practice, Royal College of Surgeons of England

Essential elements to be included in the Operative Notes issued by RCSE
<ul style="list-style-type: none"> ▪ Date and time ▪ Elective/emergency procedure ▪ The names of the operating surgeon and assistant ▪ The operative procedure carried out ▪ The incision ▪ The operative diagnosis ▪ The operative findings ▪ Any problems/complications ▪ Any extra procedure performed and the reason why it was performed ▪ Details of tissue removed, added or altered ▪ Identification of any prosthesis used, including the serial numbers of prostheses and other implanted materials; ▪ Details of closure technique ▪ Postoperative care instructions ▪ A signature

RESULTS

One A total of 60 operative notes were reviewed, which consisted of general surgery and its subspecialties, including urology, orthopedics and neurosurgery as shown in Table 1.

Table 1. Categorization and incidence of operative notes

Department	Number Present	Percentage
General Surgery	35	58.3
Orthopedics	16	26.7
Neurosurgery	8	13.3
Urology	1	1.7

The operative notes were mostly written by the operating surgeon (66.7%), then by the house officer (30%); only 2 of the notes (3.3%) were written by the registrar.

Patient data, which included the name of the patient, was absent in 2 of the operative notes (3.3%). Similarly, the date of the procedure was not mentioned in 2 of the operative notes. The time of the procedure and the type of surgery (whether elective or emergency) were not mentioned in any record (100%), and none of the operative notes had any diagrams.

The details of the surgical team including the name of the operating surgeon, and the anesthetist were mentioned in 60 (100%), and 57 (90%) operative notes respectively. The name of the assistant was missing in 30 (50%) of the notes, which could have been either because no assistant was present during surgery or it was undocumented.

The operative procedure carried out was missing in only 3 (5%) of the notes. The type of incision (such as whether it was Midline, Kocher's, Gridiron, Cruciate etc) was mentioned in 41 (68.3%) of the notes. The operative diagnosis and operative findings were

mentioned in 47 (78.3%) and 40 (66.7%) of the notes. Problems encountered during the procedure were mentioned in only 2 (3.3%) of the operative notes.

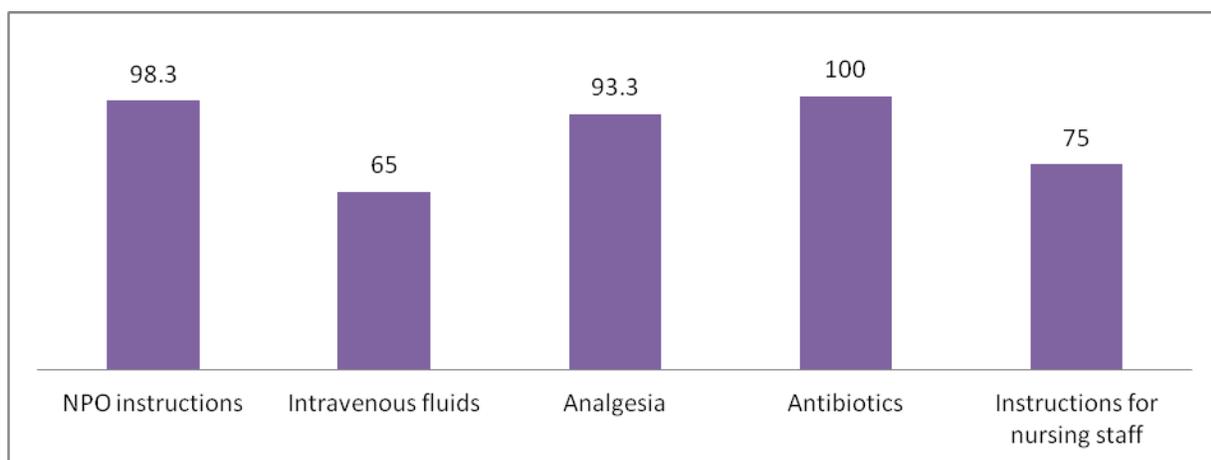
Identification of any prosthesis used was documented in only 2 out of the 15 operative notes (13.3%) where it should have been mentioned. However, none of the notes mentioned any serial numbers of the prosthesis implanted. Prosthetic material considered in this study included surgical mesh implants, joint prosthesis, and orthopedic fixation devices (bone plates, screws, and nails).

Details of closure technique were absent in 26 (43.3%) of the operative notes. Only 7 (11.7%) of the operative notes had the signature of the writer of the operative notes missing.

The instructions for post-operative care were complete in only 50% of the operative notes and included instructions to the nursing staff, antibiotics, analgesia, NPO instructions, and intravenous fluid needed; the details are shown in Figure 2.

Abbreviations were used in 34 (56.7%) of operative notes, the most common being AAAM (After all Aseptic Measures).

Figure 2. Percentage of instructions for post-operative care present in the Operative notes



DISCUSSION

The importance or pertinence of operative notes are never challenged for many reasons; the matter written in the notes affect patient care, are important in record keeping, are valuable in

research, innovative strategies and lastly imperative for legal matters. It is because of this emphasis that in the last few years, there have been many researches where operative reports have been scrutinized and they have shown to be inconsistent, deficient in quality or are

incomplete.⁴⁻⁷ In Pakistan we usually see notes are written by hand, that are often narrated; internationally, handwritten notes are known to lead to numerous mistakes and confusion with regards to patient care and further follow up.¹⁰ They are difficult to read, contain illegible sentences and comprise of abbreviations that are ambiguous, especially when written in a hurry. If they are narrated, they usually provide incomplete information and are of poor quality.²⁴ In our study, like hamza et al¹⁴, all the operative notes were hand written, majority of which were easy to decipher and the investigators had no issues in reading them. In another study where operative notes were hand written, 70% of the operative notes were incomprehensible or the procedure itself was hard to decipher.⁶ When comparing computerized operative notes with predesigned templates to those written by hand, several studies have shown that they are legible, better in quality, more accurate, include more details with respect to the parameters in the RCSE guidelines, and their data can easily be used in audits and researches. Even though many believe that computers add to cost and time consumption, literature shows despite the initial cost of placing computers in the operating theaters and training the staff²⁰⁻²³, the use of computerized operative notes is still more advantageous than handwritten notes.

The operative sheets used in this study comprised of patients name and room/bed number; our results show the entry of only the name (96.7%) with no other bio-data like 'wife/husband of' or 'son/daughter of' on the sheet. Patient identification is very important, not only for operative notes, but for all medical records and must be written as part of good clinical practice.⁸ In a study conducted in Gwagwalada, Nigeria, patients' names were missing in 26 (21.7%) case notes⁹, and in another study conducted in Tasmania, Australia patient identification was missing in 12 (6.8%) of notes.¹⁰ Lack of patient identification in the notes show that they may get misplaced³, in addition, possibilities of being placed in the wrong file leading to medical errors can occur.

In our study, which is similar to a study from Nepal, the date of surgery was mentioned in almost all the operative notes, except 2 (3.3%) compared to the 100% present in the audit conducted in Nepal.¹¹ Furthermore, the time of the surgery appears to have less importance for it was devoid in our research; similar finding in

other researches was also seen.^{9,12} The type of surgery (elective or emergency procedures) was not mentioned in any of the operative notes (100%), which again is similar to a research conducted in the UK.¹³ These details are significant, especially with regards to patient follow up care. The author proposes that if the date, time and type of surgery are mentioned, it is easier to recall the procedure and assess whether the surgery was complicated or not; this influences the treatment plan and the follow-up care the patient will receive.

The operating surgeon's name is generally documented; this is demonstrated in our study (present in 100% of the notes) as well as a study coming from Ashford, UK¹³, while the anesthetist was named in 95% of records, which was much higher than the 13.9% mentioned in a study from Omdurman Teaching Hospital in Sudan; however the operating assistant was mentioned in only 50% of our cases to the 92.6% from the above mentioned study.¹⁴

The procedure conducted was mentioned in majority (95%) of the operative notes. The notes regarding the type of incision made, operative diagnosis, operative findings, and details of closure technique were quite insufficient at 68.3%, 78.3%, 66.7%, and 56.7% respectively. The variation in records of many of these variables was found in a number of other studies.^{3,9,11-13} The intraoperative complications/problems were documented in only 2 of the operative notes; this was similar to findings in other researches, such as one conducted in Nigeria where only 3 notes (2.5%) included complications.⁹ As most of the procedures looked at were elective procedures therefore the incidence of complications would be low, hence the author cannot be sure whether it is lack of documentation or otherwise.

Details about the procedure and any complications faced are vital, especially if another doctor is to evaluate the care of the patient, and even for legal issues. They allow the healthcare provider to assess the condition of the patient and provide effective and appropriate treatment on follow up.

Instructions for the nursing staff and junior doctors after an operative procedure is carried out are very important for the proper care, well-being, and treatment of the patient. In a study conducted at the ENT department at Hull Royal

Infirmery, UK, postoperative instructions were clearly written in 94% of the operative notes.¹⁵⁻¹⁷

Kawu et al⁹ found in their audit that post-operative instructions were written in 73.3% of their operative notes, whereas in our study, all of the operative notes had post-operative instructions. 69.2% mentioned post-operative antibiotics, which was much lower than the 100% present in our study; Analgesics were given in 73.3% of the cases, also much lower than the 93.3% mentioned in our study; 70% had instructions for intravenous fluids, comparable to the 65% stated in our study, whilst only 35% of their notes had instructions for the nursing staff, our study showed much higher values at 75%. Although our study showed that all of the operative notes had post-operative instructions, 30 (50%) were incomplete. This can be unsafe for the patient, as once the patient is sent to the ward post-operatively, he is under the care of another junior doctor and the staff, and without thorough notes, the patient might receive inadequate and improper care which could even be deadly in situations where drug names or dosages are not mentioned or calculated.^{12,18,19}

Abbreviations were used in only 20% of the operative notes in a study by Rogers et al⁷ as compared to 56.7% used in this study. The use of abbreviations has been discouraged as they can lead to mistakes in clinical practice by causing confusion.^{18,19}

The areas which are lacking essential information in the operative notes that could be improved include: mentioning the time of the procedure, type of surgery, operative diagnosis, operative findings, any complications during the procedure and complete instructions for postoperative care; avoiding the use of abbreviations and encouraging the use of diagrams for easier interpretation would also improve the quality of operative notes.⁷

The limitations of this study include:

- Small study conducted at one institute
- Small sample size
- Duration of the study was limited
- Lack of random selection of the operative notes and therefore they were subject to bias.
- There were no Post graduates in the general surgery department for its duration.

Quality of operative notes can be improved by implementing the following:

- A standardized proforma should be applied or an aide-memoire should be used to significantly improve record keeping
- A computer-based system with preformed templates and mandatory fields should be used to make operative notes instead of writing them by hand to ensure complete documentation.
- Surgeons undergoing training and senior staff should be taught how to dictate or write operative notes as part of their teaching.
- Encouraging the use of diagrams to allow easier interpretation of the operative notes by the reader.
- Periodic audits should be conducted regularly to assess any changes or improvements required to be made.
- Avoiding the use of abbreviations altogether, or making a list of acceptable abbreviations in the operation sheet to avoid confusion; another way to tackle the issue could be to list the explanatory decoding words in the article where it is easy for the reader to find.

CONCLUSION

This research pinpoints those areas which are missing important details in the operative notes, and tells us that the operative notes were, in general, incomplete and do not meet the current standards of operative note writing and good clinical practice.

REFERENCES

-
- ¹ General Medical Council. Good Medical Practice. London: GMC; 2013.
 - ² The Royal College of Surgeons of England. Guidelines for clinicians on medical records and notes. RCEng - Professional Standards and Regulation; 1994.
 - ³ Jawaid M, Askari R, Qureshi MA. Quality of operative notes. J Postgrad Med Inst. 2008; 22: 274–276.
 - ⁴ Wauben LSGL, Goossens RH, Lange JF. Evaluation of Operative Notes Concerning Laparoscopic Cholecystectomy: Are Standards Being Met? World J Surg 2010; 34(5): 903-909.
 - ⁵ Ma GW, Pooni A, Forbes SS, Eskicioglu C, Pearsall E, Breneman FD, McLeod RS. Quality of Inguinal Hernia Operative Reports: Room for Improvement. Can J Surg 2013 Dec; 56(6): 393–397.

- ⁶ Baigrie RJ, Dowling BL, Birch D, Dehn TC. An audit of the quality of operation notes in two district general hospitals. Are we following the Royal College guidelines? *Ann R Coll Surg Engl* 1994 Jan; 76(1): suppl, 8-10.
- ⁷ Rogers A, Bunting M, Atherstone A. The quality of operative notes at a general surgery unit. *S Afr Med J* 2008; 98: 726-728.
- ⁸ Royal College of Surgeons of England. Good surgical practice. RCEng -Professional Standards and Regulation; 2008 Feb.
- ⁹ Kawu AA, Sha DG, Salami OOA, Olawepo A, Kuranga SA, Jeje EA. Operative notes in orthopaedic surgical care in Nigeria. *Int J Biol Med Res*. 2011; 2(3): 668-670.
- ¹⁰ Lefter LP, Walker SR, Dewhurst F, Turner RWL. An audit of operative notes: facts and ways to improve. *ANZ J Surg* 2008; 78: 800-802.
- ¹¹ Shah S, Dangol B, Kumari S, Guragain RP. An audit of operative notes at TUTH. *Nepalese J ENT Head Neck Surg* 2011; 2(2): 25-26.
- ¹² Khan MUR, Ahmed S, Shamim MS, Azhar M, Rehman SU. Operative notes at surgical units of a tertiary care hospital. *J Surg Pakistan* 2010; 15(1): 57-59.
- ¹³ Ghosh AK. An audit of orthopedic operation notes: what are we missing? *Clinical Audit* 2010; (2): 37-40.
- ¹⁴ Hamza AA, Abdalrahim HM, Idris AS, Ahmed OM; Evaluating the Operative Notes of Patients Undergoing Surgery at Omdurman Teaching Hospital, Sudan. *Sch J App Med Sci* 2013; 1(6): 668-672.
- ¹⁵ Shayah A, Agada FO, Gunasekaran S, Jassar P, England RJA. The quality of operative note taking: an audit using the Royal College of Surgeons Guidelines as the gold standard. *Int J ClinPract* 2007; 61: 677-679.
- ¹⁶ Din R, Jena D, Muddu BN, Jenna D. The use of an aide-memoire to improve the quality of operation notes in an orthopaedic unit. *Ann R Coll Surg Engl* 2001; 83: 319-320.
- ¹⁷ Rhodes ND, Southern SJ. Digital operation notes: A useful addition to the written record. *Ann Plast Surg* 2002; 48(6): 571-573.
- ¹⁸ Lesar TS, Briceland L, Stein DS. Factors relating to errors in medication prescribing. *JAMA* 1997; 277: 312-317.
- ¹⁹ Shocket E. Frequency of uncommon abbreviations in medical journals. *South Med J* 1995 Mar; 88(3): 315-319.
- ²⁰ O'Bichere A, Sellu D. The quality of operation notes: can simple word processors help. *Ann R Coll Surg Engl* 1997; 79(5 Suppl): 204-209.
- ²¹ Dale RF, Midwinter MJ. Use of database management system by surgeons to produce operation notes. *Ann R Coll Surg Engl* 1996 Nov; 78(6 Suppl):272-275
- ²² Currall VA, Chesser TJ. Computer generated operation notes. *Stud Health Technol Inform* 2008;137:51-55.
- ²³ Barritt AW, Clark L, Cohen AM, Hosangadi-Jayedev N, Gibb PA. Improving the quality of procedure-specific operation reports in orthopaedic surgery. *Ann R Coll Surg Engl* 2010 Mar; 92(2): 159-162.
- ²⁴ Wiebe ME, Sandhu L, Kennedy ED, Baxter NN, Gagliardi AR, Urbach DR, et al. Quality of narrative operative reports in pancreatic surgery. *Can J Surg Oct* 2013; 56(5): E121-E127.