



An Audit of Orthopaedic Surgery Notes: Where Do We Stand Today?

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Abstract

Every surgical specialty recognizes the significance of precise and comprehensive operation notes for ensuring patient care as well as for generating data for research and auditing purpose. Orthopaedic operative notes at the author's institution were audited against guidelines published by the Royal College of Surgeons of England regarding standard of content, completion and legibility. An orthopedic specialty specific template for writing operative notes has been proposed. Also, It has been proposed that all surgical specialty registrar level doctors should undergo training for writing operative notes and aide memoires be placed in the OT complex.

Keywords: Operative Notes; Audit; Orthopaedic Template; Aide Memoires

Abbreviations

OT: Operation Theatre; Pre-op: Preoperative; Post-op: Postoperative; ACL: Anterior Cruciate Ligament; MCL: Medial Collateral Ligament

Introduction

All surgical specialties recognize the value of accurate and thorough operation notes for safeguarding patient care as well as for generating data for research and auditing. The only documentation of surgery is operation notes. The operative findings and post operative plans they contain, serve not only as a vital means of communication between health professionals, but are also the only legal record of a surgery [1]. The General Medical Council [2] acknowledges its significance and claims that good note taking is an essential component of good medical practice, while the British Orthopedic Association states that "good records are a basic tool of clinical practice" [3]. In contrast, it was noted that orthopaedic surgical notes were frequently inadequate by The National Confidential Enquiry into perioperative fatalities in the UK [4].

The literature also shows that a proportion of litigation is against an alleged substandard quality of surgery and that poor operation notes mainly involving incomplete illegible notes and the use of confusing abbreviations are a common source of weakness in the surgeon's defense [5]. A Pubmed search using the aforementioned keywords showed up three important publications.

While formulating this article, all of these articles were taken into consideration [1,6,7]. In 2008, the Royal College of Surgeons of England released the Good Surgical Practice guide [8], which included a section on record keeping. It was revised once again in 2014. This section offers suggestions for information that should be recorded in order to construct thorough and comprehensive operating notes (Figure 1). Therefore, it is essential to take notes that are succinct, clear, and readable after every surgical treatment. With handwritten notes, it is challenging to accomplish this, especially when it comes to legibility. All notes should now, according to the revised 2014 criteria, be typed. At the author's institution, operation notes were assessed according to these standards.

Aims and Objective

The aim of this clinical audit is to review orthopaedic operative notes to see if they adhere and meet recommendations as set out in Good Surgical Practice produced by Royal College of Surgeons, England.⁸

Methodology

A retrospective clinical audit of operation notes including both trauma and elective procedures performed at Sahyadri Hospital, Pune from September 2019 to September 2021 was done. One reviewer audited 510 operation notes in total. The standard printed template for surgeries served as the foundation for all of the operation notes. The operative notes were audited and operation record template included the following subheadings: Patient Details,

Recommendations from Good Surgical Practice - Royal College of Surgeons of England (information to be included in operative notes).

- Date and time
- Elective/emergency
- Names of operating surgeon and assistant
- Operative procedure carried out
- Incision
- Operative diagnosis
- Operative findings
- Any problems/complications
- Extra procedure performed and reason why
- Details of tissue removed, added or altered
- Identification of prosthesis used, including serial numbers of prostheses and other implanted materials
- Details of closure technique
- Postoperative care instructions
- Signature
- Legible operative notes (typed if possible)

Figure 1

Doctor in charge, Date, Pre operative diagnosis, Operation name, Surgeon, Assistant, Anaesthetist, Scrub Nurse, Incision, Findings, Procedure, Closure, Drainage, Blood loss, Urine output, Post operative condition, and Post-op instructions. Operation notes of all inpatients were reviewed. The notes were reviewed by a single observer and matched against criteria as set out in Good Surgical Practice guide produced Royal College of Surgeons, England. In areas of illegibility, the criteria were marked as not filled.

Results

In total, the 510 cases noted had been performed by eight consultant level orthopaedic surgeons. A total of 510 operation notes were reviewed of which 359 (70.39%) were trauma cases, 99 (19.41%) were elective cases, and 52 (10.20%) cases were under others' category respectively (Figure 2). Elective cases were predominantly arthroscopic ACL reconstructions, rotator cuff repairs, knee MCL repair/reconstructions, and arthroplasty of lower extremities while trauma cases were varied. Other cases included implant removal from various sites, wound debridements and amputations. Trauma cases included mainly fracture fixation surgeries for proximal femur, tibia, humerus, metatarsals, clavicle, phalanx, ankle, femur, distal radius, metacarpals, calcaneum, scaphoid, talus, both bones forearm, and tendon repair/reconstructions.

Orthopaedic specialty registrars had manually written the operation notes in each case. As such, a total of five specialist registrar level orthopaedic surgeons with varied levels of experience had authored the audited operation notes. Electronic notes were also generated in the indoor patient profile section post surgery through the hospital server system. 19 cases (3.72%) had no documentation of date, while only 94 cases (18.43%) had documented time. All cases (100%) clearly documented consultant's name. However, 7(1.37%) cases, in which at least one surgical assistant would normally be required, had no documentation of an assistant's name. Good compliance was found for documentation of procedure

(100%), stating elective or emergency procedure (100%), incision (93%), diagnosis (97%), operative findings (91%), intra operative complications (92%), closure (100%), postoperative instructions (100%), name with signature (95%), and producing electronic notes (100%) respectively (Figure 3). Prosthesis/implant identification information is normally stated on the same page, near the end of the notes, but not in the pro forma provided. Of concern, in the handwritten notes, 8.23% (42 cases) had areas that were not legible.

ORTHOPAEDIC PROCEDURES DONE BETWEEN 01/09/2019 TO 01/09/2021

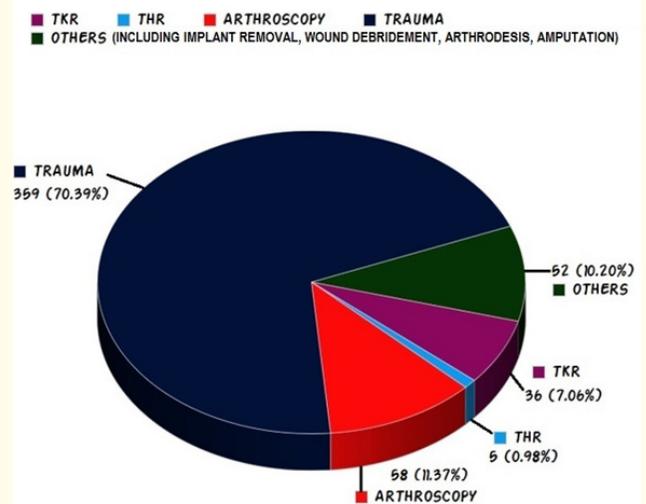


Figure 2

Percentage of cases in which the specified information had been recorded in the operation notes.

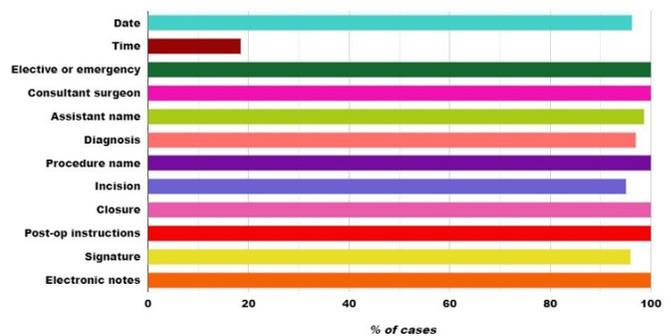


Figure 3

Discussion

The operation notes reviewed provided a good spectrum as the types of surgeries and the experience of the surgeon writing the operation notes was significantly varied. Although generally of good standard, there is room for improvement in operation notes writing as in few cases important information is being missed. Also of concern, it is evident that a number of handwritten notes had

passages that were deemed illegible. Areas in which standards can be improved include time and date of surgery, implant details, intra-operative complications, surgical position of the patient, and tourniquet details (if applicable). Although there is no perfect pro forma for producing flawless operative notes, however, strategies to improve note writing can be devised by judiciously utilizing the specialty specific aide memoires [7,8].

Aide memoires help in reinforcing and is also a very inexpensive way of training the future surgeons.

According to a study done by Din., *et al.* [7]. attaching an aide-memoire at the front of an operation sheet can substantially increase the quality of surgical notes (Figure 4). The author's institution follows the protocol of compulsory submission of post-operative electronic notes by the assistant surgeon (specialty registrar) before shifting the patient to ward. Electronic notes are advantageous in a plethora of ways since they can be accessed easily and remotely through a centralized server system. The notes are considerably more comprehensive and legible; as a result, the possibility of an operative note being lost or destroyed is completely eliminated [9]. Since all the surgical specialties at Sahyadri Hospital utilize common operation sheets, it is not possible to include details relevant to each specialty. With the addition of distinct headers for tourniquet details as well as a separate heading for details of implants utilized, orthopaedic specific operation details could be enhanced. The headings used in the notes not only can be standardized, but also can be edited to suit individual specialties. For common procedures, specialty-specific procedure templates can also be incorporated to save time when creating an operation note and to help trainees understand how a particular surgeon approaches a case or prefers to write their operation notes and what information each note should contain [10,11-15].

Recommendation of attaching Aide-memoire to the operation sheet by Din *et al*

Have you included the following in your operation note?		Please tick
1. The patient's details, date, ward and department	Yes	<input type="checkbox"/>
2. The name of the surgeon	Yes	<input type="checkbox"/>
3. The tourniquet time and pressure if applicable	Yes	<input type="checkbox"/>
4. The operative steps	Yes	<input type="checkbox"/>
5. Postoperative instructions	Yes	<input type="checkbox"/>
6. Only acceptable abbreviations	Yes	<input type="checkbox"/>

Please be legible

acceptable abbreviations: MUA, EUA, POP, ORIF, K wire, #.

MUA: Manipulation under anesthesia
POP: Plaster of Paris
K wire: Kirschner wire

EUA: Examination under anesthesia
ORIF: Open reduction and internal fixation
#: Fracture

Figure 4

Conclusion

Although generally of high standard, the department's operative notes might be strengthened by utilizing an orthopaedic specific pro forma/ template with aide memoires in the OT complex.

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Disclosure

The author reports no conflicts of interest in this work.

About author

Dr Rohil Singh Kakkar is a board-certified Orthopaedic surgeon with a special interest in complex trauma surgery, arthroplasty and limb reconstruction surgery. He is professionally attached with Royal College of Surgeons, England as an overseas faculty member since 2021 and a proud alumnus of Royal College of Surgeons of Edinburgh since 2020. His primary research interests include trauma surgery, biomechanics, lower limb arthroplasty, and limb reconstruction surgery.

Bibliography

1. Al Hussainy H., *et al.* "Improving the standard of operation notes in orthopaedic and trauma surgery: the value of a pro-forma". *Injury* 35.11 (2004): 1102-116.
2. General Medical Council. "Good Medical Practice". 3rd edition. London, UK. GMC (2001).
3. Basad E. "The importance of computer-based procedures for planning and documentation of orthopaedic surgery". *Orthopaede* 28.3 (1999): 277-284.
4. Whitehead-Clarke T., *et al.* "Improving Operation Notes and Postoperative Care: An Audit of Current Practice". *Journal of Perioperative Practice* 25.5 (2015): 107-111.
5. Bateman ND., *et al.* "An audit of the quality of operation notes in an otolaryngology unit". *Journal of the Royal College of Surgeons of Edinburgh* 44.2 (1999): 94-95.
6. Morgan D., *et al.* "Improving operation notes to meet British Orthopedic Association guidelines". *The Annals of The Royal College of Surgeons of England* 91 (2009): 217-219.
7. Din R., *et al.* "The use of an aide-memoire to improve the quality of operation notes in an orthopaedic unit". *Annals of The Royal College of Surgeons of England* 83.5 (2001): 319-320.
8. The Royal College of Surgeons of England. "Good Surgical Practice". London, UK: RCSENG - Professional Standards and Regulation (2008).

9. Y Ghani, *et al.* "Smart' electronic operation notes in surgery: an innovative way to improve patient care". *International Journal of Surgery* 12.1 (2014): 30-32.
10. Fionn Coughlan, *et al.* "Audit of Orthopaedic Surgical Documentation". Hindawi Publishing Corporation, surgery Research and Practice (2015).
11. Mustafa MKE, *et al.* "Assessing the Quality of Orthopaedic Operation Notes in Accordance with the Royal College of Surgeons Guidelines: An Audit Cycle". *Cureus* 12.8 (2020): e9707.
12. Anazor F, *et al.* "A Closed-Loop Audit for Orthopedic Trauma Operation Notes Comparing Typed Electronic Notes with Handwritten Notes". *Cureus* 14.7 (2022): e26808.
13. Sweed TA, *et al.* "Audit of operation notes in an orthopaedic unit". *Journal of Orthopaedic Surgery (Hong Kong)* 22 (2014): 218-2020.
14. Parth Arvind Shah, *et al.* "Improving the quality of orthopaedic elective and trauma operative notes: A completed audit loop study". *International Journal of Surgery Open* (2016): 14-17.
15. Severn Audit and Research Collaborative in Orthopaedics (SARCO). "Assessing the quality of operation notes: a review of 1092 operation notes in 9 UK hospitals". *Patient Safety in Surgery* 10 (2016): 5.