AUDIT ARTICLE

Assessing the quality of orthopaedic operation notes: an audit cycle

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Abstract

Objective: Objective: To compare institutional operation notes with the guidelines of the Royal College of Surgeons of England.

Method: The retrospective-prospective, pre-post multi-phase audit was conducted at the Department of Trauma and Orthopaedic, Northwest General Hospital and Research Centre, Peshawar, Pakistan, from August 1 to October 31, 2023. In Phase-I, operation notes were retrospectively reviewed, and the findings were presented in ward meetings with the relevant surgeons. Educational workshops were arranged in Phase-II. In Phase-III, another set of operation notes was evaluated to assess the post-intervention effectiveness across 19 parameters. Data was analysed using SPSS 25.

Results: Of the 128 operation notes reviewed, 64(50%) related to Phase-1. Of them, 45(70%) were typewritten and 19(30%) were handwritten. All the 64(100%) notes showed good compliance for surgeon name, operative procedure, diagnosis, and post-op instructions. The remaining 64(50%) notes related to the post-intervention phase; 50(78%) typewritten and 14(22%) handwritten. There was an average improvement of 40(31.1%), with 17 out of 19 categories showing improvement rate of 115(89.47%). Of the 19 parameters assessed significant progress ($p<0.05$) was noted in 10(52.6%).

Conclusion: Several deficiencies were identified that were addressed during the intervention, which improved adherence to the guidelines of the Royal College of Surgeons of England.

Key Words: Orthopaedic, Operation notes, Royal College of Surgeons, Good surgical practice.

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Introduction

For all practising surgeons, the significance of precise, readable and comprehensive operation notes cannot be overstated. In order to improve patient care and safety, clear communication between the perioperative and postoperative phases is essential. Moreover, it is also helpful for audit, research and medicolegal purposes[1].

Operational notes are frequently presented in legal malpractice cases, and research shows that up to 45% of such notes are not defensible from a medicolegal standpoint. A recurring shortcoming in the surgeons' legal defence is their inability to produce legible and comprehensive notes[2,3].

Therefore, as part of the Good Surgical Practice Guidelines, the General Medical Council (GMC) advises that operative documentation be as precise, thorough and readable as possible[4]. Guidelines for upholding Good Surgical Practice were released by the Royal College of Surgeons England (RCSEng) in 2008 and were updated in 2014[4], emphasising the importance of clear, accurate and timely operative notes to ensure seamless patient care. These notes should detail key aspects of the procedure, including the type of surgery, names of the surgical team, operative findings, any complications, prosthesis details, closure technique, and anticipated blood loss. Postoperative care instructions and the surgeon's signature are also essential. The guide recommends a standardised, preferably typed, format to improve legibility, enhance patient safety, and support effective communication within the healthcare team[4].

These documents should be sent with the patient after surgery to ensure a safe and effective transition of care. These recommendations have given rise to an auditing framework for operational documentation. Numerous institutions' recent publications demonstrate how inadequately these guidelines are being followed even today[1,5,6].

Surgical and critical care teams look at the postoperative notes as their first point of contact with any formal documentation in order to understand the patient they are reviewing. Healthcare providers receive guidance on the specifics of the operation as well as the necessary aftercare that the patient needs. The supervising surgeons make the decisions regarding thromboprophylaxis and antibiotics after surgery. Surgeons make these crucial decisions on an individual basis. In the postoperative notes, the postoperative team frequently looks for direction on this kind of management. Therefore, the efficient management of the surgical patient is directly correlated with the calibre of

the operative notes.

The current study was planned to compare institutional operation notes with RCSEng guidelines. to improve adherence to standardised guidelines, and thereby improve patient care and postoperative management.

Materials and Methods

The retrospective-prospective, pre-post multi-phase audit was conducted at the Department of Trauma and Orthopaedic, Northwest General Hospital and Research Centre, Peshawar, Pakistan, from August 1 to October 31, 2023. After approval from the institutional ethics review committee, a set of operation note were reviewed retrospectively in the first phase related to surgeries performed by consultant orthopaedics. The notes were consecutively included. Each operation note was checked for completeness, accuracy, clarity and adherence to RCSEng guidelines[3] using a checklist that evaluated 19 parameters: Date and time, emergency/elective procedure, surgeon name, assistant name, operative procedure name, incision, diagnosis, findings, complications, extra procedure carried out, tissue details, prosthesis details, closure technique, post-op instructions, estimated blood loss, deep vein thrombosis (DVT) prophylaxis, antibiotics prophylaxis, anaesthetist name and a signature. Minor procedures operated in minor operation theatre or an outpatient department (OPD) basis were excluded.

In the second phase, findings of the first phase were presented in ward meetings to surgeons, residents, medical officers and house officers. An educational workshop was arranged regarding the importance of well-written operation notes, electronic notes, and RCSEng guidelines and templates. After the intervention for one month (September 2023), the audit process was repeated using the same criteria and sample size as in the first phase. In Phase III another set of operation notes were prospectively evaluated to determine the changes following the intervention. The results were compared to determine the effectiveness of the intervention.

Data was analysed using SPSS 25. To check the intervention's effect on documentation quality, chi-square test was used. P≤0.05 was taken as significant.

Results

Of the 128 operation notes reviewed, 64(50%) related to Phase-1. Of them, 45(70%) were typewritten and 19(30%) were handwritten. All the 64(100%) notes showed good compliance for surgeon name, operative procedure, diagnosis, and post-op instructions. The remaining

Figure-1: Comparison of typed and handwritten notes in audit and re-audit cycles.

Table: Comparison of baseline and post-intervention audit.

S. No	Parameter	Audit n(%)	Re-Audit n(%)	Absolute Difference (%)	P value
1	Date/time	61(95%)	64(100%)	5%	N/A
2	Emergency/Elective Surgery	0(0%)	64(100%)	100%	N/A
3	Surgeon Name	64(100%)	64(100%)	0%	N/A
4	Assistant Name	44(69%)	65(92%)	23%	.002
5	Procedure	64(100%)	64(100%)	0%	N/A
6	Incision	32(50%)	51(80%)	20%	<0.0001
7	Diagnosis	55(86%)	62(97%)	11%	.020

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8	Findings	20(31.3%)	55(86%)	54.7%	.026
9	Complications	0(0%)	29(45%)	45%	N/A
10	Extra Procedure	0(0%)	16(25%)	25%	N/A
11	Tissue Details	7(11%)	44(68%)	57%	.062
12	Prosthesis Details	5(8%)	58(91%)	83%	.060
13	Closure Technique	40(62.50%)	61(95%)	32.50%	.000
14	Post-Op instructions	64(100%)	64(100%)	0%	N/A
15	Anticipated Blood Loss	25(39%)	58(91%)	52%	.044
16	antibiotic Prophylaxis	0(0%)	19(30%)	30%	.000
17	DVT Prophylaxis	0(0%)	29(45%)	45%	.000
18	Anaesthetist	61(95%)	64(100%)	5%	N/A
19	Signature	62(97%)	64(100%)	3%	N/A

DVT: Deep vein thrombosis, N/A: Not applicable.

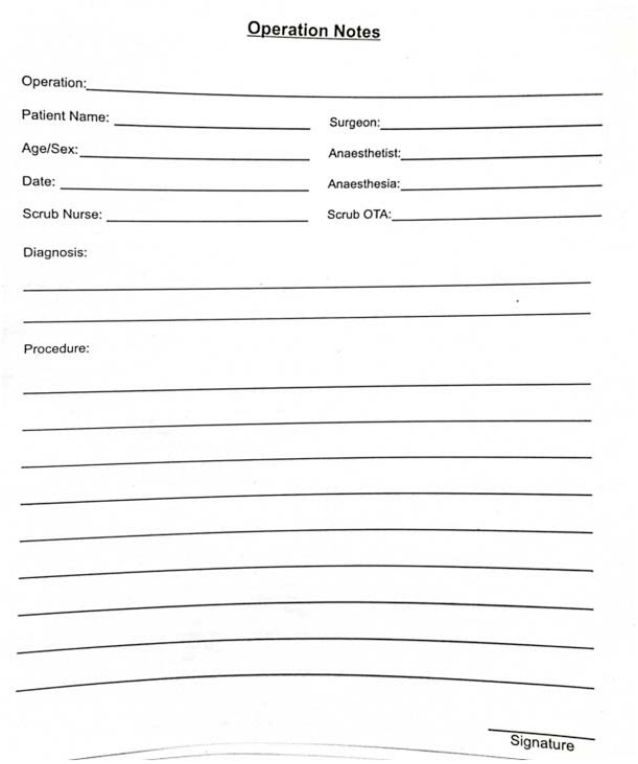

Figure-2: Freehand notes proforma for handwritten operation notes.

64(50%) notes related to the post-intervention phase; 50(78%) typewritten and 14(22%) handwritten (Figure 1).

Of the 19 parameters assessed significant progress ($p<0.05$) was noted in 10(52.6%) (Table). The average improvement across all the 19 parameters was 40(31.1%), with improvement in 17 parameters adding up to 115(89.47%).

Discussion

As advised by the RCSEng, maintaining precise, readable and comprehensive medical records is essential to good

Figure-3: Electronic proforma for typed operation notes.

surgical practice[4]. The rise in medicolegal cases over the past few years has brought attention to its significance, as accurate and readable documentation during the perioperative period is necessary to provide a precise description of the events[7]. Furthermore, to ensure continuity of care between the peri and postoperative phases, it is critical that all personnel involved in patient care have access to clear perioperative documentation. This documentation ought to make it easier to communicate events and the ongoing management strategy in an understandable manner. According to the current study, using formatted electronic operation sheets greatly enhanced postoperative documentation and compliance with RCSEng guidelines.

Two forms of operational documentation notes are used at the study site; freehand notes (Figure 2) and pre-templated proformas (Figure 3).

Many points are mentioned in the electronic operation notes proforma as per the RCSEng guidelines, while others not mentioned as tick boxes are written in the body of the operation notes. Signature is generated after the completion of operation notes, and signed after printing the operation notes. As a result, when a pre-templated format is used, surgical documentation enhances for all orthopaedic procedures. Previous research from various institutions and specialties has demonstrated the benefits of such compliance[8,9].

Many institutions continue to struggle with accurate and legible documentation of operative procedures, and tend to miss important details[1,5,6]. Operation notes should ideally be typewritten[4]. Although the notes examined in the current study did not contain any instance of illegible handwriting, using typed notes can increase legibility, which can lead to better communication and increased medicolegal integrity. One study used memory aid in the operation theatre which improved compliance results[10]. In another study, memory aid was used which improved the quality of operation notes from 90% to 97.1%[11].

The current study has the limitations of a retrospective design and a single-centre dataset, but the results are significant enough to suggest using pre-templated operation notes. Using standardised templates will facilitate comprehensive documentation and also streamline the recording process, ensuring consistency across surgical specialties.

Conclusion

Several deficiencies were identified that were addressed during the intervention, which improved adherence to the RCSEng guidelines.

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WK, FS, HB, HN, HW & RH: Final approval and agreement to be accountable for all aspects of the work.