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Operative note quality and surgical success: An in-depth analysis of standardization practices

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Abstract
In contemporary medical record-keeping, operative notes are crucial in patient care, encompassing economic and medicolegal ramifications. This study evaluates the quality of hand-written operative notes in a surgical unit, employing Royal College of Surgeons of England (RCS eng) guidelines as benchmarks. A meticulous analysis of 284 notes reveals a substantial deficit in compliance, averaging 61.5%. While certain standards, including names of the operating team and post-operative care instructions, achieved commendable compliance, others, such as anticipated blood loss and prosthesis identification, exhibited notable shortcomings. Discussion highlights the significance of standardized documentation, identifies potential causes for non-compliance, and underscores the need for continuous education. This study underscores the pivotal role of adherence to RCSEng standards in enhancing operative note quality and, consequently, patient care.

Keywords: Operative notes, documentation, surgical quality, RCSEng guidelines, medical record-keeping

Introduction

In medical record-keeping, surgical operation notes are pivotal in ensuring immediate and long-term patient care [1]. Beyond their evident medical implications, these documents bear economic and medicolegal significance [1–3]. Well-maintained records support internal audits and quality improvements and contribute to retrospective research projects, fostering advancements in future care delivery [1, 2, 4]. Operating as the recognized standard for documenting operative details, these notes facilitate communication among healthcare professionals, influencing subsequent clinical decisions and procedures [4]. Accurate documentation has been linked to high-quality clinical care, while the medicolegal importance of operative reports cannot be understated [3].

Despite their critical role, the quality of operative reports often falls short, with crucial procedural aspects frequently omitted. The Royal College of Surgeons (RCS) has established guidelines to address this issue, emphasizing the necessity of procedure-specific operation notes. Additionally, the Good Surgical Practice guidelines by the Royal College of Surgeons of England (RCSEng) serve as a benchmark for clear and assessable standards in surgical documentation [5].

Accurate and detailed operative notes are indispensable for post-operative care, research, academic endeavours, and medicolegal clarity [1, 2]. In the context of the increasingly litigious nature of the medical practice, errors in documentation can have far-reaching consequences across medical specialities. Despite guidelines, studies worldwide have identified deficiencies in operative note quality, consistently cited as a weakness in medical-legal cases [3].

Operative notes, often presented as documentary evidence in legal proceedings, carry significant weight in influencing patient safety, care efficiency, and litigation outcomes. The overall standard of reporting and documentation in medicine is notably inadequate, with reports frequently lacking essential data. Insufficient attention is directed towards critically evaluating clinical audits, and the audit loop is frequently left incomplete [1].

This study endeavours to assess the quality of hand-written operative notes in a surgical unit at KVG Medical College and Hospital, Sullia, Dakshina Kannada, utilizing the RCSEng guidelines as a benchmark. By shedding light on operative note quality and its correlation with surgical success, this research aims to contribute valuable insights to the broader medical community, fostering improvements in documentation practices and ultimately enhancing patient care.

Materials and Methods

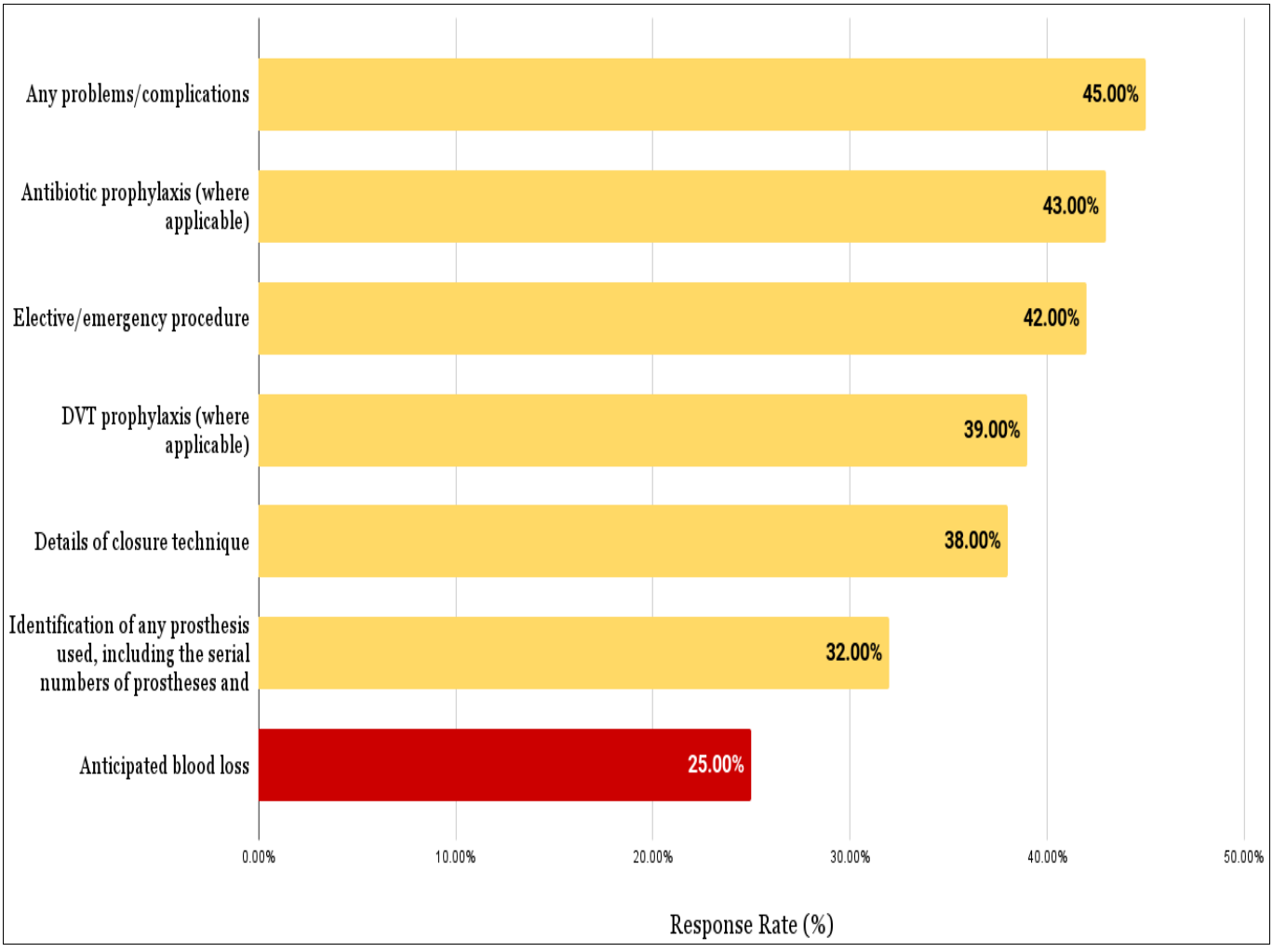
Following approval from the Institutional Ethics Committee, a surgical audit scrutinized hand-written Operative notes authored by junior doctors across diverse surgical specialities at a tertiary teaching hospital in Dakshina Kannada. Spanning January to March 2023, this three-month audit evaluated note quality based on criteria stipulated by the Royal College of Surgeons of England [5]. These guidelines advocate the inclusion of 'standard attributes' aligned with Good Surgical Practice, encompassing essential details such as date, time, elective or emergency nature of the procedure, names of operating surgeon and assistant, theatre anaesthetist's name, operative procedure, incision, operation diagnosis, operative findings, encountered problems/complications, additional procedures with justifications, details of manipulated tissues, identification of prostheses with serial numbers, closure technique specifics, anticipated blood loss, antibiotic and venous thromboembolism prophylaxis, and comprehensive post-operative care instructions, culminating with a signature [6].

Originating in 1990, the Royal College of Surgeons of England guidelines have undergone multiple revisions [5]. A retrospective review of operative notes for completeness ensued, with an independent observer assessing the presence or absence of specified information. Data collection employed Microsoft Excel, facilitating subsequent statistical analysis.

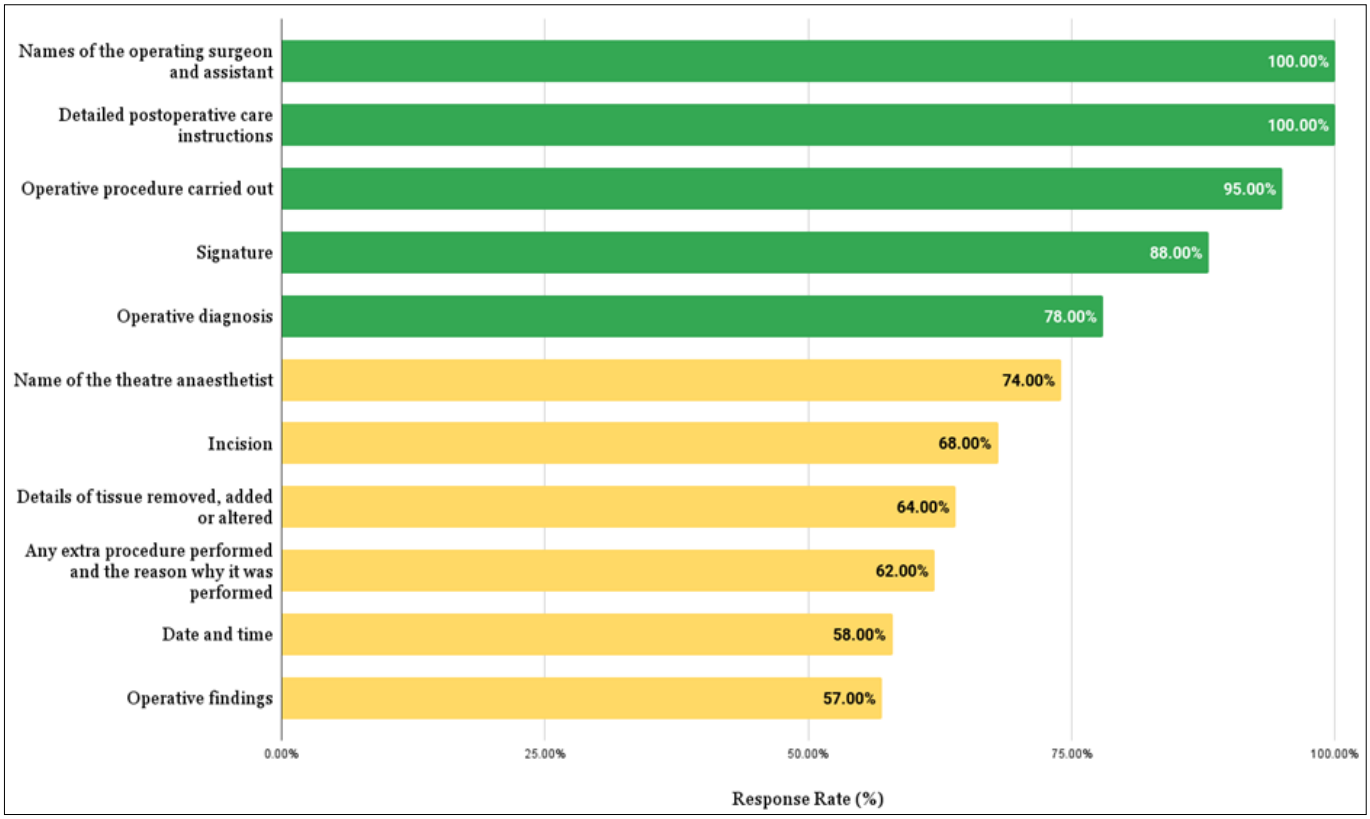
Results

Table 1: Compliance with the standards of the RCSEng Guidelines

Standards of RCSEng Guidelines	Adherence to the guidelines (in percentages)
Date and Time	58
Elective/Emergency Procedure	42
Names of the operating surgeon and assistant	100
Name of the theatre anaesthetist	74
Operative procedure carried out	95
Incision	68
Operative diagnosis	78
Operative findings	57
Any problems/ Complications	45
Any extra procedure performed and the reason why it was performed	62
Details of tissue removed, added or altered	64
Identification of any prosthesis used, including the serial number of the prostheses used	32
Details of closure technique	38
Anticipated blood loss	25
Antibiotic prophylaxis	43
DVT Prophylaxis	39
Detailed post-operative care instructions	100
Signature	88



Graph 1: Standards with a response rate of less than 50%



Graph 2: Standards with a response rate of more than 50%

A comprehensive analysis of 284 operative notes was conducted to assess compliance with RCSEng guidelines. The study revealed notable variations in adherence to established standards, as shown in Table 1. Notably, the majority of operative notes fell short of meeting key guidelines, with more than 50% non-compliance observed for anticipated blood loss (25%), identification of prosthesis and serial numbers (32%), closure technique details (38%), DVT prophylaxis (39%), elective/emergency procedure notation (42%), antibiotic prophylaxis (43%), and documentation of problems/complications (45%) which is depicted in graph 1.

Conversely, certain standards exhibited high compliance rates, surpassing the 75% threshold. Specifically, the names of the operating surgeon and assistant, detailed post-operative care instructions, the operative procedure carried out, signature, and operative diagnosis achieved compliance rates exceeding 75%. Notably, full compliance (100%) was observed for the operating surgeon and assistant's names and detailed post-operative care instructions. Furthermore, 95% compliance was noted for the operative procedure, with an 88% compliance rate for signature and 78% for operative diagnosis, shown in Graph 2.

In the overall assessment of adherence to standards, more than 75% compliance was achieved for five out of the 18 standards evaluated, with only two standards attaining 100% compliance. The remaining standards demonstrated compliance rates ranging from 50% to 75%.

Discussion

In medical documentation, precision, conciseness, and accuracy carry paramount significance [7]. The operative note, a pivotal component of the medical record and a legal document assumes a dual role as a communicative tool among healthcare professionals [2, 4]. Standardization of operative notes is imperative, and the RCSEng has established guidelines delineating essential information to be included [5].

Our investigation reveals noteworthy deficiencies in operative notes drafted by junior doctors, with an average compliance of 61.5% with RCSEng guidelines, which aligns with previous studies [8–10]. Two standards, namely identifying the operating surgeon and assistant (100%) and providing detailed post-operative care instructions (100%), exhibited the highest compliance. Conversely, compliance with the standard of anticipated blood loss was notably low (25%), potentially attributed to the non-routine measurement of blood loss during procedures. Additional areas of inadequate compliance included the identification of prostheses (32%), closure technique details (38%), DVT prophylaxis (39%), and specification of the procedure's nature (42%). The observed low compliance may stem from a lack of awareness or a failure to document details among surgeons cognizant of RCSEng guidelines consistently.

Effective surgical documentation includes recording relevant surgery details, additional procedures, and complications. Comprehensive documentation serves as a preventive measure against financial losses and medicolegal ramifications [3, 7]. Enhanced systems, aligned with established guidelines such as those articulated by the RCOS, can augment overall quality and compliance. Continuous education is imperative for junior medical staff, and the implementation of procedure-specific proformas, guided by established protocols, facilitates the creation of comprehensive and legally robust operative notes [1].

Also, hand-written operative notes, susceptible to errors and confusion, can be mitigated using electronic operative notes [7, 11]. This transition enhances note quality, reduces errors, and improves compliance with RCSEng guidelines. The meticulous documentation of surgical details, additional

procedures, and complications remains pivotal for assessing surgery quality and outcomes. Thorough documentation serves as a protective shield against financial and medicolegal pitfalls, and the integration of improved systems, adherence to guidelines, ongoing education, and procedure-specific proformas collectively contribute to the generation of comprehensive and legally sound operative notes [1, 2, 7].

This study's scope is confined to junior doctors at one institution, potentially limiting generalizability. It lacks speciality-specific insights, relies on retrospective data susceptible to recall bias, and offers limited qualitative analysis. The absence of electronic notes comparison and the study's focus on compliance, without exploring direct impacts on outcomes or medicolegal scenarios, necessitate caution in interpreting broader implications. Future research should address these limitations for a more comprehensive understanding of operative note quality and its impact on surgical success.

Conclusion

In conclusion, adherence to the standard outlined in the RCOS guidelines demonstrates a feasible avenue for achieving noteworthy enhancements in operative note documentation. This standardized approach facilitates the inclusion of essential and pertinent information, serving as a valuable guide for clinicians. Recognizing the pivotal role of residents in training, emphasis on the importance of documentation within the surgical curriculum becomes imperative. Additionally, fostering leadership among senior staff is vital to elevating the overall quality of surgical operation notes. A sustained commitment to ongoing audit practices and implementing improved systems is crucial for continuous advancement. It is essential to underscore that while a comprehensive operative note is integral, ensuring quality and safety in surgical care necessitates broader elements such as effective teamwork, communication channels, resource allocation, and a structured feedback and audit framework.

Statements and Declarations

a. **Competing Interests:** The authors have no relevant financial or non-financial interests to disclose.

b. **Funding:** No funding was received to assist with the preparation of this manuscript.

c. **Ethical Approval:** Approval was obtained from the Institutional Ethics Committee. The procedures used in this study adhere to the tenets of the Declaration of Helsinki.

d. **Data Availability:** This study encompasses all data generated or scrutinized within its scope, comprehensively integrated within this article.

e. **Consent to participate:** Written informed consent was obtained from the participants.

f. **Consent to publish:** The participants have consented to the submission of this research to the journal.

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