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**ORIGINAL RESEARCH**

# Audit of operation theatre notes for laparoscopic cholecystectomy

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## ABSTRACT

**Background**: Operative notes are an important medical record that give a detailed account of surgical procedures. They are indispensable tools for patient care continuity, legal documentation, and quality improvement. Despite their importance, operative notes are often incomplete or illegible when handwritten. In laparoscopic cholecystectomy-one of the most common surgical procedures-inefficient documentation can compromise patient safety and pose medico-legal challenges. This audit sought to assess the quality of handwritten operative notes for laparoscopic cholecystectomy by comparing them against the RCS Good Surgical Practice Guidelines. **Methods**: A retrospective audit was carried out in the Department of Surgery at a teaching hospital over six months. A sample of 300 operative notes for elective laparoscopic cholecystectomy was randomly selected. Each note was assessed for presence or absence of specific documentation parameters recommended by the RCS. Data was analyzed using SPSS (version 21.0) and presented as percentages. **Results**: Key findings revealed that the time of surgery was recorded in only 16% of notes, while assistants' names and anesthetists' names were documented in 94% and 66% of cases, respectively. Operative findings were present in 86% of notes. Notably, essential details like complications (37%), closure techniques (47%), and estimated blood loss (33%) were frequently missing. DVT prophylaxis was recorded in only 27% of cases, underscoring a gap in adherence to standard recommendations. **Conclusion**: The audit highlights significant deficiencies in the completeness of operative notes for laparoscopic cholecystectomy. Poor compliance with RCS guidelines exposes patients to potential risks and compromises medico-legal safeguards. Implementing digital documentation systems, standardized templates, regular audits, and consultant verification could substantially improve the accuracy and reliability of these critical records.

**Keywords:** Laparoscopic cholecystectomy, Operative notes, Surgical documentation, Quality audit, Good Surgical Practice Guidelines



## INTRODUCTION

Operative notes are the spine of surgical documentation. Detailed summaries of operative findings, intervention procedures, and complications within the intraoperative period are provided by operative notes. Main reasons for the documentation include continuity of care for the patient, medico-legal documentation, and clinical governance auditing [1]. With an overall volume of one of the most commonly performed general surgery procedures worldwide, which is laparoscopic cholecystectomy, the accuracy of operative notes will indeed impact decisions related to postoperative care, risk management, and possible future legal actions [2]. So regarding the concept, many hospitals still rely on handwritten operative notes, which, on a primary level, are susceptible to omissions, inconsistencies, and illegibility [3].

The Royal College of Surgeons of England has published Good Surgical Practice Guidelines, detailing the essential items that should be recorded in an operative note [3]. The guidelines comprise explicit documentation of patient demographics, date

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and time of surgery, surgical team including the anesthetist, operative findings, complications that occurred during surgery, and postoperative care. These guidelines will allow the operative note to act as a detailed chart that could drive future clinical action and further safe-guard patients through the medical establishment [4].

Despite these set standards, reviews of operative note quality across almost all surgical fields reveal some consistency in their weakness. Center audit reports reveal consistently high percentages with missing entries; these often are estimated blood loss, prophylactic, postoperative instructions to name a few [5]. The use of abbreviations and illegible handwriting worsens the interpretability of these notes and may lead to clinical misjudgments [6]. This is particularly alarming in laparoscopic procedures where specific technical details, like the number of ports used, the instruments utilized, and the findings in the gallbladder bed, need careful documentation [7].

Standardized and comprehensive operative notes are important beyond improving clinical outcomes. In medico-legal cases, thorough and legible documentation forms a critical component of a robust defense for surgical practitioners [2]. Consequently, the onus is on healthcare institutions to foster a culture of compliance with best practice guidelines, regularly auditing and updating their documentation processes. Strategies like digital documentation, standardized templates, and periodic feedback have been shown to substantially enhance the quality of operative notes [3,8].

Given this background, the present audit was carried out to assess the quality of hand-written operative notes for laparoscopic cholecystectomy within a teaching hospital. We compared the documentation parameters with the RCS Good Surgical Practice Guidelines, to identify specific areas for improvement and recommend pragmatic solutions. The ultimate goal is optimizing patient care and safety while providing robust medico-legal protection as well as professional standards [9].

## MATERIALS AND METHODS

### Study Design and Setting

This retrospective clinical audit was conducted in the Department of Surgery at SMS&R, Sharda University, over a six-month period. The audit focused on handwritten operative notes for elective laparoscopic cholecystectomies performed by various surgical units within the department.

### Sampling

A total of 300 case records were randomly selected from the hospital archives. Inclusion criteria comprised adult patients undergoing elective laparoscopic cholecystectomy regardless of gender or ASA classification. Exclusion criteria included emergency conversions to open cholecystectomy and patients with incomplete case files, such as missing or illegible operative notes entirely.

### Data Collection

1. A standardized checklist was designed using the guidelines of the Royal College of Surgeons (RCS) Good Surgical Practice Guidelines [3]. The checklist used included the following parameters:
2. **Basic Operative Information**
- Date and time of surgery
- Elective or emergency status
- Name(s) of the operating surgeon and assistant
- Name of the anesthetist

3. **Surgical Procedure Details**
- Preoperative diagnosis
- Procedure performed (laparoscopic cholecystectomy)
- Operative findings (e.g., gallbladder appearance, adhesions)
- Use of additional procedures or techniques

4. **Intraoperative Considerations**
- Any complications encountered
- Estimated blood loss (EBL)
- Specific instruments or prostheses used

5. **Closure and Postoperative Details**
- Closure technique (port site closure details)
- Postoperative instructions (analgesia, antibiotics)
- Deep vein thrombosis (DVT) prophylaxis documentation
- Surgeon’s signature

Each operative note was reviewed by a surgical resident and then confirmed by a consultant surgeon to ensure that the data was extracted consistently. In cases of ambiguity, for example, where the handwriting is not legible, the note was marked as "not documented" to remain objective.

### Data Analysis

Data were entered into a spreadsheet and later analyzed using SPSS software version 21.0.Descriptive statistics (frequency and percentage) were utilized to represent the presence or absence of each documentation parameter [4]. No patient identifiers were included in the final dataset to maintain confidentiality.

Ethical clearance was obtained from the Institutional Review Board (IRB), and the audit adhered to the principles outlined in the Declaration of Helsinki. The primary outcome was the percentage compliance with each parameter recommended by the RCS guidelines.

## RESULTS

### Overall Findings

A total of 300 handwritten operative notes for laparoscopic cholecystectomy were audited. Each note was evaluated against multiple documentation parameters, revealing significant variability in completeness. While some parameters, such as the

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name of the assistant surgeon, were consistently recorded, others—like the time of surgery and estimated blood loss—were frequently omitted.

**Descriptive Overview**

Below is a summarized descriptive overview of the compliance rates:

**Table 1.Compliance rates for selected RCS-based parameters.**

| Parameter | Number of Cases Documented (n=300) | Percentage |
|---|---|---|
| Time of Surgery | 48 | 16% |
| Assistant Surgeon's Name | 282 | 94% |
| Anesthetist's Name | 200 | 66% |
| Operative Findings | 258 | 86% |
| Complications Recorded | 110 | 37% |
| Closure Technique | 140 | 47% |
| Estimated Blood Loss (EBL) | 100 | 33% |
| DVT Prophylaxis Documented | 80 | 27% |
| Postoperative Instructions | 230 | 77% |

From this initial analysis, it is evident that certain fields (e.g., time of surgery) were particularly poorly documented, potentially reflecting a lack of standardized templates or oversight.

**Documentation of Specific Operative Details**

Among the 300 notes, 258 (86%) included at least some mention of intraoperative findings (e.g., gallbladder inflammation, adhesions, or anatomical anomalies). However, the descriptions ranged from detailed narratives to single-line statements.

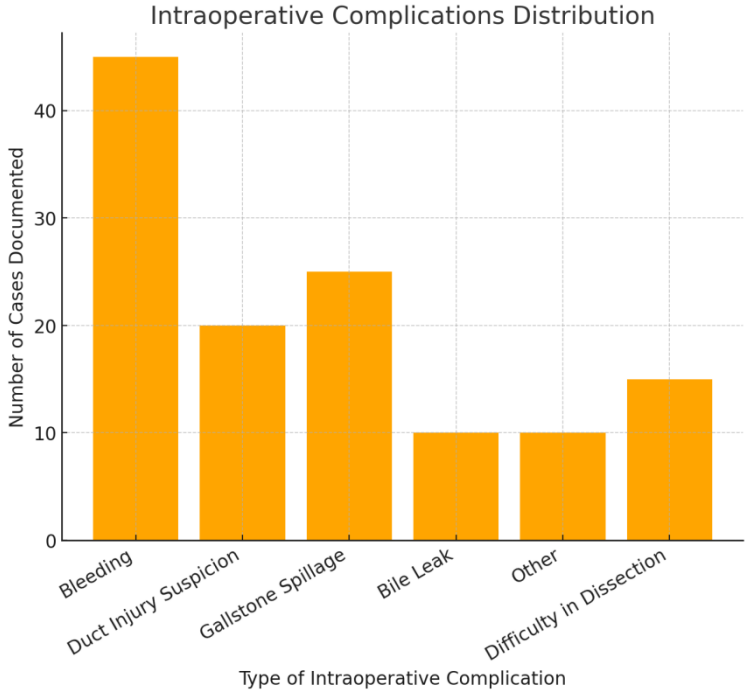
**Table 2.Frequency of Specific Operative Findings Documented**

| Operative Finding | Mentioned | Not Mentioned | Percentage Mentioned |
|---|---|---|---|
| Inflammation of Gallbladder | 210 | 90 | 70% |
| Adhesions | 140 | 160 | 47% |
| Anatomical Variations (e.g., duct) | 60 | 240 | 20% |

**Recording of Intraoperative Complications**

Of the 110 cases (37%) that documented complications, the most commonly noted were bleeding from the liver bed or gallstone spillage. None of the notes provided a standardized scale for grading complications, and most were described in free text.

**Figure 1below demonstrates the types of intraoperative complications mentioned:**



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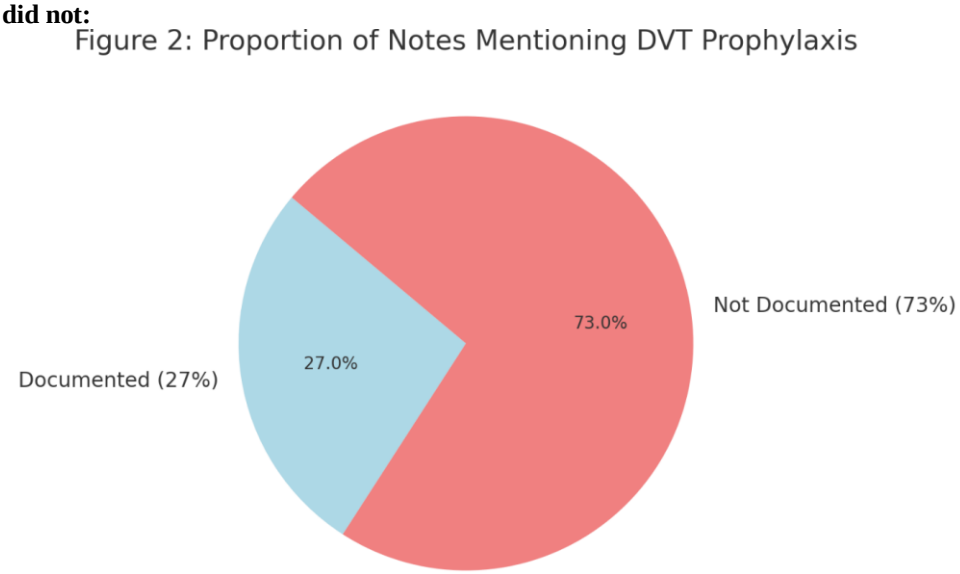
[Figure 1: A bar chart illustrating the distribution of documented intraoperative complications, e.g., bleeding, duct injury suspicion, spillage of gallstones, etc.]

**Postoperative Instructions and DVT Prophylaxis**

Postoperative instructions were documented in 230 notes (77%), whereas DVT prophylaxis was only recorded in 80 notes (27%). This discrepancy signals a gap in comprehensive postoperative planning documentation.

**Figure 2 presents a pie chart showing the proportion of notes mentioning DVT prophylaxis compared to those that did not:**




[Figure 2: A pie chart comparing documented vs. not documented DVT prophylaxis. 27% documented, 73% not documented.]

**Additional Observations**

Despite the generally high compliance in recording the assistant's name (94%), the same consistency did not apply to the operating surgeon's name in about 10% of the cases, where only initials or unclear signatures were provided. Similarly, 16% of notes lacked a clear mention of whether the procedure was elective or involved a potential need for extended intervention.

**Table 3.Auxiliary Compliance Indicators**

| Indicator | Percentage Documented |
|---|---|
| Surgeon's Full Name and Signature | 90% |
| Elective vs. Emergency Procedure Status Mentioned | 84% |
| Use of Antibiotic Prophylaxis | 60% |

Overall, the audit underscored major inconsistencies and gaps in the quality of operative documentation, highlighting the urgent need for systemic improvements to align with RCS guidelines.

## DISCUSSION

The results of this review highlight grave inadequacies in the quality of handwritten operative reports for laparoscopic cholecystectomy. In more detail, time of surgery (16%), closure method (47%), and blood loss estimated during the operation (33%) were significantly deficient compared to the requirements outlined in the RCS Good Surgical Practice Guidelines [3]. Such absent details undermine the credibility of the surgical case history, with consequences ranging from clinical, through administrative, to medico-legal implications [1,2].

**Clinical Implications**

From a clinical standpoint, incomplete operative notes create a gap in the smooth transition of patient care because subsequent care teams depend on these records for postoperative decision-making. For example, failure to document the closure technique may raise questions about the type of sutures used or whether additional reinforcement was applied, thus creating a potential risk for wound-related complications [5]. In the same way, inconsistent reporting of intraoperative complications may delay the recognition and management of postoperative sequelae [2].

**Standardization and Legibility**

It is evident throughout the literature that standardizing the operative note helps in achieving consistency and readability [3,6]. Handwritten notes are frequently found to contain variable structures and

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abbreviations that make the writing less clear to the multidisciplinary teams deciphering critical information [6]. The use of standardized or electronic templates can solve these problems since a pre-defined structure is being followed for entering data [8].

**Medico-Legal Issues**

A comprehensive operative note can be a crucial piece of evidence in medico-legal disputes, thus proving the best practice and proper intraoperative care [7]. On the other hand, an incomplete or illegible note may provide weaknesses in legal defense, especially when postoperative complications are involved [2]. The audit's conclusion that only 37% of notes had clearly documented complications indicate a gap with serious medico-legal implications.

**Improving the Gap in Prophylaxis Documentation**

A key deficiency was that the rate of documented DVT prophylaxis was only 27%. Laparoscopic cholecystectomy is generally associated with a somewhat lower risk for thromboembolic events compared to major open surgeries, but prophylaxis is an important component of current perioperative care [7]. Failure to document such measures is not only a clinical concern but also indicates poor adherence to safety protocols for the patient.

**Recommendations**

**Electronic Medical Records (EMRs):** Change from paper to EMRs is likely to increase readability and comprehensiveness [9].

**Standardized Templates:** The use of standardized templates prompts the surgeon to fill in all fields, hence reducing omission errors [3,6].

**Ongoing Audits:** Ongoing audits can identify improvements over time and maintain compliance [4].

**Verification by Consultants:** Verification and co-signing by senior surgeons or consultants increases accuracy and accountability [2].

**Education and Training:** Workshops on record-keeping and adherence to RCS guidelines can help inculcate a culture of quality documentation [5].

In summary, this audit highlights the critical need for systematic reforms in operative note-taking practices. By adopting targeted strategies like digital documentation, standardized templates, and continuous auditing, healthcare institutions can substantially improve the clarity, completeness, and medico-legal robustness of these vital clinical records [3,8].

## CONCLUSION

This audit discovered that operative notes for laparoscopic cholecystectomy often do not meet the standards put forward by the Royal College of Surgeons. Key information such as time of surgery, complications, closure techniques, and estimated blood loss was usually incomplete or unavailable. These gaps in documentation are compromising patient safety, poor postoperative care provision, and medico-legally liable surgeons. In the future, electronic documentation, uniform templates, and frequency of audits are a must. By strengthening the quality and consistency of operative records, institutions can fortify clinical outcomes, improve medico-legal protection, and uphold tenets of good surgical practice.

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