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Rectification in Urological Operation Theatre Notes and Documentation at a Public Sector Hospital and Implementing the Changes: A Closed-Loop Audit

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Disclaimers

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Abstract

Background: Clinical audits are essential for ensuring high-quality healthcare delivery, especially in surgical settings. Operation theater notes in urological surgeries are crucial for patient safety, postoperative care, and medico-legal purposes. However, their quality is often suboptimal.

Objective: This study aimed to assess and improve the quality of urological operation theater notes through a closed-loop audit at a public sector hospital.

Methods: A two-cycle audit was conducted at Benazir Bhutto Hospital, Rawalpindi. The first cycle involved a retrospective review of 100 urological operation theater notes against predefined criteria, including patient identification, preoperative diagnosis, intraoperative findings, and postoperative instructions. Following this, interventions such as educational workshops, standardized templates, and a checklist system were implemented. A second audit cycle evaluated the impact of these interventions on documentation quality.

Results: In the first cycle, compliance rates were 95% for patient identification, 80% for preoperative diagnosis, 70% for intraoperative findings, and 75% for postoperative instructions. After interventions, the second cycle showed improved compliance rates of 100% for patient identification, 95% for preoperative diagnosis, 90% for intraoperative findings, and 90% for postoperative instructions.

Conclusion: The closed-loop audit significantly improved the quality of urological operation theater notes. Implementing educational sessions, standardized templates, and checklists effectively enhanced documentation, underscoring the importance of structured approaches in healthcare quality improvement.

INTRODUCTION

Clinical audits are essential for enhancing the standard and consistency of healthcare services. They provide a framework for evaluating current practices against best practices, pinpointing areas for quality improvement, and implementing changes to boost patient outcomes. Among various urological operations, the documentation of theater notes is particularly crucial. These notes serve multiple essential functions: they set a standard of care that might be compromised without proper documentation of the procedures conducted. They are also vital for postoperative care, as intra-operative dictations inform the surgeries performed and the subsequent treatment course (1, 2). Moreover, operation theater notes hold significant medico-legal importance, as they represent formal records that can be legally referenced in case of any disputes or queries. Recognizing their critical role, we designed an audit to evaluate and improve the quality of urological operation theater notes in our hospital using a closed-loop system (3, 4).

The main aim of this audit was to assess the quality and accuracy of operation theater notes to identify existing problems or deficiencies that could be addressed through corrective actions, followed by reevaluation to ensure improvements were sustained. This cyclical auditing process, known as a closed-loop audit, serves as an iterative feedback mechanism to facilitate ongoing improvements in documentation practices. The first step involved establishing explicit requirements and benchmarks for evaluating surgical theater notes, including patient identification information, surgical date and time, preoperative diagnosis related to the procedure, surgeon details, anesthesia, intraoperative findings, procedural steps, postoperative instructions, and the operating surgeon's signature. By doing so, we aimed to gain a comprehensive understanding of the state of documentation practices (5, 6).

For this audit, data were collected retrospectively by reviewing 100 urological operation theater notes from the previous six months. This involved analyzing each note to

determine whether it adhered to the established criteria, employing a quantitative approach to identify areas where documentation could potentially be improved or was inconsistent. The first audit cycle provided a benchmark assessment, highlighting strengths and weaknesses. For instance, high compliance was observed in recording patient identification and procedure details, while lower compliance was noted in documenting intraoperative findings or postoperative instructions. These insights informed targeted interventions aimed at enhancing the overall quality of the notes (7, 8).

Based on the findings from the first cycle, iterative changes were implemented to address identified issues. One of the primary interventions was conducting educational and training sessions for surgical staff, emphasizing the importance of thorough documentation and providing guidance on meeting each criterion. The aim was to cultivate an environment of meticulous and complete documentation by improving the surgical team's understanding and skills. Another crucial intervention involved standardizing operation theater notes using inbuilt templates designed to ensure consistent collection of necessary information, thus reducing variability and the risk of omissions. Checklists further supported this goal by providing a straightforward means of verifying that all essential components had been documented before finalizing the notes (9, 10).

The second audit cycle replicated the process to assess the effectiveness of the interventions, gathering data to evaluate progress and identify remaining areas for improvement. The findings from the second cycle indicated an increase in compliance with documenting intraoperative occurrences and postoperative instructions, suggesting the positive impact of the changes implemented. The closed-loop audit ensured this was a continuous effort rather than a one-time event, establishing routine audit and feedback loops to maintain documentation rigor and address any emerging issues promptly (11, 12).

The closed-loop audit process resulted in measurable improvements in the quality of urological operation theater notes at our center. The introduction of standardized templates, educational initiatives, and a checklist system addressed identified weaknesses, leading to improved documentation. Ongoing monitoring and feedback mechanisms confirmed the sustained nature of these improvements, contributing to enhanced patient care and more robust medico-legal documentation. This audit underscores the importance of organized and methodological approaches to quality improvement in healthcare, highlighting the necessity of consistent monitoring and intervention to achieve clinical care excellence.

MATERIAL AND METHODS

This study employed a closed-loop audit design to assess and enhance the quality of urological operation theater notes. The audit was conducted in a public sector hospital and consisted of two cycles aimed at identifying deficiencies in documentation practices, implementing targeted interventions, and evaluating the effectiveness of these interventions through re-audit.

The audit was conducted from June 1, 2023, to June 30, 2024, and involved setting up specific criteria and standards to measure the quality of the operation theater notes. These criteria included patient identification details, the date and time of surgery, preoperative diagnosis, procedure performed, names of the surgeon and assistant, anesthesia details, intraoperative findings, details of the surgical procedure, postoperative instructions, and the signature of the operating surgeon. This comprehensive framework ensured a thorough evaluation of documentation practices against predetermined benchmarks (5, 6).

Data collection was carried out retrospectively by reviewing 100 urological operation theater notes from the first audit cycle, covering the period from June 1, 2023, to December 31, 2023. Notes were sampled randomly to ensure a representative audit, and each note was assessed for completeness and accuracy based on the established criteria. Data were recorded in a systematic and structured format to facilitate analysis. The data collected provided a baseline measurement of compliance rates for each criterion and identified areas of deficiency requiring targeted interventions (7, 8).

Following the first audit cycle, several interventions were implemented to address the identified deficiencies. Educational workshops and training sessions were conducted for surgical staff, emphasizing the importance of thorough documentation and providing guidance on how to meet each criterion. Standardized templates for operation theater notes were introduced to ensure consistency in the collection of necessary information, reducing variability and the risk of omissions. A checklist system was also implemented, serving as a straightforward means of verifying that all essential components had been documented before finalizing the notes (9, 10).

The second audit cycle was conducted from January 1, 2024, to June 30, 2024, following the same methodology to maintain consistency and comparability of results. Another set of 100 operation theater notes was reviewed using the same criteria to evaluate the impact of the implemented interventions. The data collected during the second cycle were analyzed to uncover improvements made and to compare the performance with the first audit cycle. The effectiveness of the interventions was assessed by measuring the average percentage improvement in compliance rates for each criterion.

Data analysis was conducted using the Statistical Package for the Social Sciences (SPSS) version 25. Descriptive statistics were used to calculate compliance rates for each criterion in both audit cycles, and improvements were quantified by comparing the results from the second cycle with the baseline data from the first cycle. Statistical tests

were performed to determine the significance of the improvements observed.

Ethical approval for the study was obtained from the institutional review board, and the study was conducted in accordance with the ethical principles outlined in the Declaration of Helsinki. All data collected were anonymized to protect patient confidentiality, and the audit was conducted with the aim of improving the quality of clinical documentation to enhance patient care and medico-legal documentation (11, 12). This comprehensive approach, utilizing a closed-loop audit design, ensured that the interventions were effective in improving the quality of urological operation theater notes, ultimately contributing to better patient outcomes and more robust documentation practices.The iterative process of assessment, intervention, and re-evaluation provided a framework for continuous quality improvement within the healthcare setting.

RESULTS

The closed-loop audit aimed to evaluate and enhance the quality of urological operation theater notes through two audit cycles.

The results of each cycle are summarized in tabulated formats, demonstrating improvements in compliance rates following targeted interventions.

The initial audit cycle reviewed 100 urological operation theater notes, assessing compliance with established documentation criteria.

The compliance rates for each criterion are presented in Table 1. The first cycle highlighted strengths in documenting the procedure performed (100%), patient identification details (95%), and the surgeon's signature (98%).

However, it revealed weaknesses in documenting intraoperative findings (70%), postoperative instructions (75%), and preoperative diagnoses (80%). These areas were identified as targets for improvement through specific interventions (7, 8)

Table 1 Compliance Rates in First Audit Cycle

Criterion	Compliance Rate (%)
Patient identification details	95%
Date and time of surgery	88%
Preoperative diagnosis	80%
Procedure performed	100%
Surgeon and assistant names	90%
Anesthesia details	85%
Intraoperative findings	70%
Details of surgical procedure	95%
Postoperative instructions	75%
Signature of the operating surgeon	98%

Based on the results from the first cycle, interventions were implemented to address the deficiencies. Educational workshops were conducted for surgical staff to emphasize the importance of comprehensive documentation. Standardized templates were introduced to ensure consistency and completeness in documenting operation theater notes. A checklist system was also implemented to verify that all required elements were documented before completing the notes.

Table 2 Compliance Rates in Second Audit Cycle

Criterion	Compliance Rate (%)
Patient identification details	100%
Date and time of surgery	95%
Preoperative diagnosis	95%
Procedure performed	100%
Surgeon and assistant names	98%
Anesthesia details	95%
Intraoperative findings	90%
Details of surgical procedure	100%
Postoperative instructions	90%
Signature of the operating surgeon	100%

The second audit cycle, conducted three months after implementing the interventions, involved reviewing another set of 100 urological operation theater notes. The compliance rates for each criterion are presented in Table 2. Significant improvements were observed in documenting patient identification details (100%), preoperative diagnoses (95%), date and time of surgery (95%), intraoperative findings (90%), and postoperative instructions (90%). High compliance rates were sustained for documenting the procedure performed, surgical details,

and the surgeon's signature (100%). The comparison between the first and second audit cycles is summarized in Table 3, highlighting the improvements in compliance rates for each criterion.

Overall, there was a marked improvement in the completeness and accuracy of operation theater notes following the implementation of targeted interventions. Compliance with documentation standards improved across all criteria, with significant gains observed in areas initially identified as weak. The results underscore the effectiveness of educational initiatives, standardized templates, and checklists in enhancing clinical documentation practices (9, 10).

Table 3 Comparison of Compliance Rates Between First and Second Audit Cycles

Criterion	First Cycle (%)	Second Cycle (%)	Improvement (%)
Patient identification details	95%	100%	+5%
Date and time of surgery	88%	95%	+7%
Preoperative diagnosis	80%	95%	+15%
Procedure performed	100%	100%	0%
Surgeon and assistant names	90%	98%	+8%
Anesthesia details	85%	95%	+10%
Intraoperative findings	70%	90%	+20%
Details of surgical procedure	95%	100%	+5%
Postoperative instructions	75%	90%	+15%
Signature of the operating surgeon	98%	100%	+2%

DISCUSSION

The audit demonstrated significant improvements in the quality of urological operation theater notes through targeted interventions, underscoring the efficacy of a closed-loop audit system. The initial audit cycle identified key deficiencies in documentation, particularly in areas such as intraoperative findings, postoperative instructions, and preoperative diagnoses. The interventions implemented, which included educational workshops, standardized templates, and checklists, resulted in marked improvements in compliance rates across all criteria during the second audit cycle.

These findings are consistent with previous studies that have shown the benefits of structured interventions in improving clinical documentation. For instance, Smith and colleagues found that the introduction of standardized templates in orthopedic surgery notes significantly improved the comprehensiveness of documentation (4). Similarly, Johnson et al. reported that educational interventions and checklist systems enhanced compliance rates in documenting postoperative instructions in general surgery notes (7). The results of the current audit align with these studies, demonstrating that combining educational efforts with standardized documentation tools can lead to substantial improvements in documentation practices.

One of the strengths of this audit was the comprehensive approach taken to identify and address deficiencies in documentation. By utilizing a closed-loop audit design, the study effectively established baseline performance, implemented targeted interventions, and reevaluated the impact of these changes. This iterative process allowed for continuous quality improvement and ensured that the interventions were effective in addressing identified weaknesses. Additionally, the use of standardized templates and checklists provided a consistent framework for documenting essential information, reducing variability and the risk of omissions.

Despite these strengths, the study had some limitations. The audit was conducted in a single institution, which may limit the generalizability of the findings to other clinical settings. Furthermore, the study focused solely on urological operation theater notes, and the results may not be applicable to other surgical specialties. Future research could expand the scope of the audit to include multiple institutions and a broader range of surgical specialties to validate the findings and assess the long-term impact of the interventions on patient outcomes.

The improvements observed in this audit have important clinical implications. High-quality operation theater notes are crucial for patient safety, postoperative care, and medico-legal documentation. By ensuring that critical information is consistently recorded, the interventions implemented in this audit have the potential to enhance continuity of care and reduce the likelihood of medical errors. Moreover, detailed and accurate documentation can serve as a valuable legal record, protecting both patients and healthcare providers in case of disputes.

The results of this audit suggest that a system-level approach, incorporating standardized templates and checklists, is effective in improving documentation practices. These tools not only facilitate the comprehensive recording of information but also simplify the documentation process, making it more efficient for healthcare providers. To further enhance documentation quality, future studies could explore the integration of electronic health record (EHR) systems with built-in templates and real-time feedback mechanisms, which may provide additional benefits in maintaining high standards of documentation.

CONCLUSION

In conclusion, the closed-loop audit of urological operation theater notes led to significant improvements in documentation quality through targeted interventions. The study highlights the importance of structured educational initiatives, standardized templates, and checklist systems in enhancing clinical documentation practices. By addressing documentation deficiencies, healthcare institutions can improve patient care and ensure robust medico-legal documentation. Although the study was limited to a single institution, the findings provide valuable insights into effective strategies for improving documentation practices, with potential applicability to other clinical settings and specialties. Future research should focus on expanding the scope of audits and exploring the integration of advanced technologies to further enhance documentation quality and patient outcomes.

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