

Assessment the of Quality of Discharge Summaries for Elective and Emergency Surgical Procedures at a Government Medical College Hospital in India

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Abstract: Aim: The aim of this study is to evaluate and compare the quality and completeness of handwritten versus electronic discharge summaries and to identify strategies for improving documentation and patient information transfer. Objectives: 1) To assess the quality and completeness of handwritten versus electronic discharge summaries 2) To explore how the format of discharge summaries (handwritten vs. electronic), particularly the use of standardized templates, affects their completeness 3) To propose strategies for enhancing discharge summary practices aimed at improving documentation quality, reducing errors, and ensuring effective patient information transfer. Methods: This 4 - month retrospective comparative study, conducted from June to September 2024, assessed the quality and completeness of handwritten versus electronic discharge summaries (DS) for patients undergoing elective surgeries in a surgical department. A total of 200 DS were analyzed: 100 handwritten and 100 electronic, chosen through random sampling. The analysis included systematic review - based criteria and additional institutional parameters like surgery date, implant status, and intraoperative findings. Data collection involved reviewing handwritten summaries and electronic records from the hospital's system. Inclusion criteria encompassed DS of patients admitted for elective surgeries, including discharges against medical advice. Exclusions included DS for non - specified surgeries and cases of in - hospital deaths. Data were collected from the hospital's electronic health record system and manually reviewed for the handwritten summaries and descriptive and exploratory analysis was done. Results: Both electronic and handwritten discharge summaries (DS) consistently include doctor sign summary, specialty of admission, date of admission/discharge, and procedure treatment at a 100% rate, demonstrating strong documentation practices. However, discharge diagnosis is fully recorded in electronic DS but less so in handwritten DS. The absence of a dedicated heading for ICD - 10 codes in handwritten summaries leads to discrepancies, despite their easy inclusion in electronic templates. The date of surgery, present in electronic DS, is omitted in handwritten DS, affecting overall documentation. Understandability and hospital complications appear at a 76% rate in handwritten DS, while electronic DS achieve 100%. Critical patient details like prognostic information, discharge condition, and follow - up plans are better captured in electronic DS due to structured templates. Elements such as coping support, nursing comments, pain relief, and nutrition, while 100% in electronic DS, are absent in handwritten DS, likely due to missing template headings. Both formats neglect social issues, cultural considerations, and palliative care. Intraoperative findings are comprehensive in electronic DS but lacking in handwritten DS. Finally, implant/stent status is recorded at 45% in handwritten DS compared to 100% in electronic DS, underscoring the importance of structured documentation for complete data capture. Conclusion: This study highlights major documentation differences between handwritten and electronic discharge summaries, underscoring the importance of standardized electronic templates for clarity and patient safety. Recommendations include standardized templates, provider training, automated data integration, regular audits, and support tools. Multidisciplinary involvement and patient education can further improve documentation quality and continuity of care, ensuring better outcomes.

Keywords: Discharge Summary, Documentation Quality, Electronic Health Records (EHR), Patient Safety, Standardized Templates, Continuity of Care

1. Introduction

Discharge summaries provide the most reliable description of the events, consequences and implications of a hospitalization [1, 2, 3]

Accurate and comprehensive discharge summaries provide vital information to post - hospitalization healthcare providers, enabling them to make informed decisions, provide appropriate follow - up care, and prevent adverse events.

There is evidence suggesting significant variability in the quality of discharge summaries across different healthcare settings and providers. This variability can result in incomplete or inaccurate information, leading to potential gaps in patient care and communication breakdowns between hospital teams and primary care providers.

They are essential, and the Joint Commission on Accreditation of Healthcare Organizations mandates that certain components be included in each application for accreditation of a healthcare organization. [4]

Discharge reports currently lack uniformity across institutions, and post - discharge visits do not account for their availability. Various efforts to enhance the quality of discharge summaries have employed more structured forms or computer - generated summaries [5, 6]. However, these efforts have also led to a recurrence of significant errors and omissions [7].

Government Medical College Hospitals, like any healthcare institution, must comply with legal and regulatory requirements regarding the documentation and content of discharge summaries. Assessing the quality of discharge summaries is crucial for ensuring compliance with these standards and guidelines especially in Medicolegal Scenarios.

The quality of discharge summaries has a direct impact on healthcare outcomes, including readmission rates, medication errors, and patient satisfaction. Improving the quality of discharge summaries can help reduce readmissions, enhance medication safety, and improve patient experiences during the transition from hospital to post-discharge care.

In India, limited research has focused on the quality of discharge summaries specifically for elective and emergency surgical procedures. This study aims to fill this gap by evaluating the completeness, accuracy, and timeliness of discharge summaries at a Government Medical College Hospital, shedding light on potential deficiencies and providing valuable insights for enhancing the discharge process and patient outcomes in surgical settings.

Objectives

- To assess the quality and completeness of handwritten versus electronic discharge summaries
- To explore how the format of discharge summaries (handwritten vs. electronic), particularly the use of standardized templates, affects their completeness
- To propose strategies for enhancing discharge summary practices aimed at improving documentation quality, reducing errors, and ensuring effective patient information transfer.

2. Methods

Duration of study: 4 months

Study Design: Retrospective Comparative study

Sample size: 200

Methodology:

This retrospective comparative study was conducted from June 2024 to September 2024 to evaluate the quality and completeness of discharge summaries (DS) in patients admitted to the surgical department and undergoing elective surgeries. The study aimed to compare handwritten discharge

summaries (HDS) with electronic discharge summaries (EDS) following the introduction of an electronic system on September 1, 2024.

A total of 200 discharge summaries were analyzed during the study period, consisting of 100 handwritten and 100 electronic summaries. The selection of cases was made using a random sampling method, ensuring a representative sample of patients who underwent elective surgeries in the surgical department. The criteria for evaluation were based on a systematic review referenced in the study, focusing on key elements necessary for effective discharge communication. [8]

In addition to the systematic review criteria [8], several additional parameters were included for evaluation to align with the institution's provided discharge templates. These parameters included the date of surgery, the status of any implants in situ, and relevant intraoperative findings. This comprehensive approach ensured a thorough assessment of the discharge summaries, allowing for the identification of strengths and weaknesses in both handwritten and electronic formats.

Data were collected from the hospital's electronic health record system and manually reviewed for the handwritten summaries and descriptive and exploratory analysis was done.

Inclusion Criteria: discharge summaries of patients who have been admitted for elective general surgeries during the period of study including those discharged against medical advice, chosen by the random sampling method

Exclusion Criteria:

- Discharge summaries of patients undergoing surgeries other than those mentioned above
- Deceased during hospital stay

3. Results

Parameter	Handwritten DS	Electronic DS
Doctor sign summary	100	100
Specialty of admission	100	100
Date of admission/discharge	100	100
Procedure treatment at the hospital	100	100
Discharge diagnosis	94	100
ICD-10 code	0	100
Patient/physician details	76	100
Days of admission	0	100
Physical examination findings	63	100
Discharge medications	93	100
Follow-up plan	59	100
Admission diagnosis	0	100
Investigations and results	88	100
Allergies	12	93
Understandability	76	100
Complications in hospital	90	100
Information given to the patient	30	96
Prognostic details	34	72
Condition at discharge	94	100
Contact information	0	100
Problem list/issues pending	30	100
Coping support	0	12
Reminder to bring the documentation next time	11	70
Optional nursing comments	0	0
Resuscitation status	0	100
Pain relief	0	100
Complementary and alternative medicine use	0	56
Nutrition	74	96
Patient sign	0	89
Social issues relevant to management	18	34
Religious/cultural concepts	0	100
Support to relatives	54	100
Palliative care information	27	32
Discharge destination	29	100
Clinical trial involvement	0	0
Sick note	18	23
Date of surgery	72	100
Intra Operative Findings	21	100
Implant/Stent In Situ Status	45	100

Doctor sign summary, specialty of admission, date of admission/discharge, and procedure treatment at the hospital have a 100% rate for both electronic and handwritten discharge summaries (DS), indicating that they are well documented.

The mention of discharge diagnosis is recorded at a 100% rate for electronic DS, while adherence in handwritten DS is notably lower. Although ICD - 10 codes can be easily selected from an online database in electronic templates, they lack a designated heading in handwritten summaries, contributing to the discrepancies observed. Additionally, while the date of surgery is included in electronic summaries, it is absent in handwritten formats, further affecting documentation quality.

Understandability and complications in the hospital are recorded at a 76% rate in handwritten DS, while electronic DS maintain a 100% rate, emphasizing the deficiencies in handwritten documentation.

The information given to the patient, prognostic details, condition at discharge, contact information, and problem list/issues pending, while not reaching 100%, are better represented in electronic DS compared to handwritten DS. This reflects the influence of comprehensive electronic templates in ensuring that critical patient information is captured effectively.

Coping support, a reminder to bring the documentation next time, optional nursing comments, resuscitation status, pain relief, complementary and alternative medicine use, nutrition,

and patient sign are all at a 100% rate in electronic DS but recorded at 0% in handwritten DS. This indicates that these important elements are not routinely included in handwritten formats probably due to the absence of dedicated headings in the templates.

Furthermore, social issues relevant to management, religious/cultural concepts, support to relatives, palliative care information, and discharge destination show a rate of 0% for both handwritten and electronic DS, suggesting that these critical aspects are not routinely documented regardless of the format.

The intraoperative findings are well - documented in electronic DS (100%), while this detail is not captured adequately in handwritten DS, underscoring the need for better documentation practices in traditional formats where relevant headings are not specified.

Finally, the documentation of implant/stent in situ status shows a significant discrepancy, with a 45% adherence rate in handwritten DS compared to 100% in electronic DS, highlighting the importance of having structured templates to capture vital clinical data effectively.

4. Discussion

Beyond their crucial role in patient care, discharge summaries (DS) are vital for teaching and research purposes. With the rise in medical negligence and malpractice claims, meticulous documentation of patient notes has become essential. This audit examined one of the key documents in general medical practice, particularly in surgical treatment.

Many errors not only compromise the accuracy of local and national audit data but also have serious clinical implications that can adversely affect patient care. Furthermore, these inaccuracies lead to financial and legal consequences for healthcare providers. The quality of DS also contributes to an institution's reputation; poor summaries and mistakes can tarnish the image of the organization that produced them.

Incorrect identification of the treatment unit and department made follow - up plans unnecessarily complicated. Inadequate prescription guidance can be fatal, especially concerning critical medications. Moreover, the absence of an emergency contact number on handwritten summaries hindered patients' access to timely emergency care.

A study by Callen et al. [9] found a 10% rate of medication errors in discharge summaries (DS), a result comparable to our study's findings on discharge medications. Research [10 - 12] suggests that these errors are often associated with junior staff. Wilson et al. [11] reported that 10.4% of DS lacked the primary diagnosis, 18.7% omitted the patient's presenting issue, 41.6% failed to include allergies or adverse reactions, 64.8% missed results - pending information, 44.2% omitted operations or procedures, 44.2% failed to list complications, and 20.7% did not mention discharge medications. Compared to these findings, our audit revealed significantly higher omission rates in the handwritten DS group.

The timely communication of accurate diagnostic results, treatment plans, complications, pending tests, and post - discharge follow - up preparations is essential for improving handoff consistency, as noted by Alpers et al. [16] and Goldman et al. [17]. Delays or inaccuracies in communication among healthcare providers following a patient's discharge can adversely affect treatment continuity, patient safety, clinician satisfaction, and resource utilization. Primary care physicians may remain unaware of a patient's hospitalization and necessary follow - up, hindering timely post - discharge care for complex medical issues. Additionally, Kripalani et al. highlight that the dissemination of prescription information poses significant challenges, with inadequate transfer of medical information at transition points potentially leading to adverse drug events and medication errors [19]. Various initiatives have been implemented to enhance these processes [18]. Numerous efforts have aimed to elevate the quality of discharge summaries (DS) through structured formats or computer - generated templates. While some of these efforts have improved thoroughness, clarity, and clinician satisfaction [13,14], serious errors and omissions persist [15], resulting in poor - quality DS and limited accessibility at the point of care [19].

When case notes are poorly organized and contain numerous entries, locating relevant material for investigations becomes challenging. Such issues could be mitigated if a standardized form, which serves as the summary's foundation, were utilized.

Additionally, when faced with a high volume of discharges, individuals may be reluctant to invest the time needed to find the correct code. Handwritten codes are particularly prone to errors. Accurate patient details and departmental accountability could be ensured by retrieving information from the hospital's main patient administration system.

Discharge summaries should be written by someone familiar with the patient, ideally the attending consultant for complex cases. Moreover, surgical residents should receive training on utilizing the electronic database and the benefits of structured discharge summaries.

This study has several limitations. Firstly, it was conducted at a government hospital, which may limit the generalizability of the results to other private tertiary care hospitals with more advanced IT services. Additionally, being a retrospective review introduces the potential for selection bias, despite efforts to ensure unbiased evaluation of the discharge summaries. Another limitation is that the duration between handwritten and typed discharge summaries was not measured in this audit, which could be explored in future research to determine if time constraints affect surgeons' ability to complete DS, particularly for those less proficient in typing. Furthermore, the reliance on subjective assessments for readability and clarity may introduce variability, and the study did not account for the impact of staff workload on documentation quality. Future audits could also benefit from a larger sample size to enhance the robustness of the findings.

5. Conclusion

In conclusion, this study reveals significant discrepancies in the documentation quality of handwritten versus electronic discharge summaries. The study findings emphasize the need for improved documentation practices, particularly through standardized electronic templates to enhance clarity and patient safety. However, limitations, including the study's single - centre design and the potential for selection bias, suggest that further research is necessary to generalize these results and fully understand the impact on patient outcomes.

To improve discharge summaries, we recommend the implementation of standardized electronic templates, providing training for healthcare providers, and integration of automated data retrieval. Regular audits, decision support tools, streamlined communication, patient education material, and involvement of multidisciplinary teams [pharmacist, social worker etc.] can enhance documentation quality and patient outcomes, ensuring comprehensive care and continuity post - discharge.

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