Introduction

Medical records are fundamental for clinical care and audit of surgical services. Accurate and detailed documentation of surgical operation notes is crucial; for post-operative care, research and academic purposes, and medicolegal clarity16. With the increasing litigious nature of medical practices, accurate documentation is critical. Errors and omissions in the recording or interpretation of operative data can result in malpractice and patient harm. Medical students, residents, and attending surgeons are at risk for litigation16. Errors such as transcription errors, spelling mistakes, or omissions in documentation are known to occur in all medical specialties and can result in legal consequences associated with possible range of clinical implications and medicolegal consequences16. Studies worldwide have demonstrated deficiencies in the quality of operative notes 

The quality of hand-written operative notes in a surgical unit at Queen Elizabeth Central Hospital (QECH), Malawi: A prospective completed audit loop study

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Abstract

The study identifies significant deficiencies in our operative note writing. Surgeon’s education, use of detailed pro formas with heading and 11% respectively. The results improved significantly to 62%, 84%, 62%, 70% and 32% respectively \(p<0.05\) in the second audit.

Methods

Sixty-seven percent of the notes were written by trainees in both audits. Key areas of missing data were on time of performing the operation, urgency, estimated blood loss, complications and extra procedure in the first audit, with a frequency of 0%, 2%, 14%, 38% and 11% respectively. The results improved significantly to 62%, 84%, 62%, 70% and 32% respectively \(p<0.05\) in the second audit.

Half of the postoperative care instructions were inadequate with 29% of the notes partially illegible or completely illegible. The auditloop was completed after adoption of new interventions.

Conclusion

The study identifies significant deficiencies in our operative note writing. Surgeon’s education, use of detailed pro formas with heading and type of suture used, estimated blood loss, complications encountered, extra procedure performed, postoperative care instructions, signature, and cadre of personnel writing the operative note i.e. surgeon or trainee. Each component was checked as ‘present/indicate’ or ‘absent/not indicated’ and presented as a proportion or frequency of the total number of operative notes assessed for the two audits respectively. Further assessment of the details of the postoperative care instructions was done using a pre-defined assessment scale that was devised based on eight common and general postoperative instruction parameters, namely: antibiotic prescription, analgesic prescription, monitoring instructions, postoperative investigations, fluid prescription, feeding instructions, mobilization and rehabilitation and wound care.

The rating system used for postoperative instructions detail assessment was as follows: Absent (No instructions present, incomplete and unclear instructions e.g. ‘continue management’, ‘back to the wards’); present but inadequate (clear with <90% of expected details); and present and satisfactory (clear instructions with >90% of expected detail). Legibility of the hand-written operative notes was assessed using a checklist method for the total number of illegible words per operative note. The assessment was based on a pre-defined scale adopted from a previous study16.

The rating system used for legibility assessment was as follows: Illigible (More than 3 illegible words); partially illegible (1-3 illegible words) and Legible (Zero illegible words).

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The grading of performance of operative notes quality is as shown in Table 1.

Table 1: Grading of performance of operative notes quality

<table>
<thead>
<tr>
<th>Class</th>
<th>% of Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor</td>
<td>Below 69</td>
</tr>
<tr>
<td>Below Par</td>
<td>70-79</td>
</tr>
</tbody>
</table>

Table 2: Comparative analysis of the frequency of indication of basic operation details

<table>
<thead>
<tr>
<th>Class</th>
<th>Initial audit operative notes compliance (%)</th>
<th>Re-audit operative notes compliance (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Age</td>
<td>77</td>
<td>84</td>
</tr>
<tr>
<td>Sex</td>
<td>66</td>
<td>68</td>
</tr>
<tr>
<td>Date</td>
<td>70</td>
<td>79</td>
</tr>
<tr>
<td>Time of the day</td>
<td>62</td>
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Result

A total of 563 operative notes were recruited and reviewed for their quality in the whole audit cycle: 291 in the initial
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Quality of operative notes in a surgical unit

EBL = estimated blood loss

Comparative analysis of the frequency of indication of components of operative procedure details based on RCSEng guidelines showed that the difference between initial audit and re-audit was statistically significant for urgency of operation, antibiotic prophylaxis, incision made, closure technique, estimated blood loss, complications and extra procedure done (Figure 1).

Comparative analysis of the postoperative care instructions showed that the difference was statistically significant for all the three components assessed (Figure 2). Comparative analysis of the performance of legibility of operative notes showed that the difference was statistically significant for partially legible notes (Figure 3).

Discussion

In this study, the majority (67%) of the operative notes were written by trainees in the initial audit. For a training institute this is commendable and the results are similar to previous studies. However, there is no formal training for trainees in our setting on operative note writing according to standard guidelines. The results highlight the need for formal training for trainees on how to write operative notes in accordance to departmental and standard guidelines.

Assessment of basic operation details

In the initial audit, only two components had a 100% rate of completion, namely: name of patient and name of surgeon. There were significant deficiencies in the completion of details for all the other components on assessment such as age, sex, date of operation, time of operation, name of assistant, name of scrub nurse and name of theatre anesthetist. The completion rate was low in comparison to other studies. Clinical audits and comparative studies are governed by availability of good quality study designs and adequate detailed information. With missing of vital information, it is difficult to conduct such audits or studies.

Personal identification is very essential and should be written in the operative notes of every patient. In cases of litigation, team members are usually paraded during the hearing of proceedings to provide evidence on the events that transpired during the operation for medical legal clarity. It is therefore important to have all this information indicated in the operative note. In the re-audit, the expected standard was set at 100% adherence. It was only the two components – indication of name of patient and operating surgeon as in the initial audit – that achieved the target adherence of 100%. There was a remarkable deficiency in the frequency of indication of the age and sex of the patients. The change in the completion of the operative notes was, however, statistically significant.

We recommend frequent education and simultaneous assessment of the operative notes to open up analytical biasness.

The audit cycle improved the knowledge of surgeons and the majority (61%) of the notes were either legible or illegible, which is in agreement with previous studies. The future of the operative note format is envisaged to be an electronic one. Many electronic health systems enforce compliance by using a pro forma, which is conformed to commonly performed procedures with common postoperative care instructions, can improve the quality of operative notes further.

Assessment of legibility of the operative notes

A third of the notes were either partially legible or illegible. The RCSEng guidelines recommend legible operative notes (preferably typed) for every operative procedure with all steps and actions recorded. Incomplete and illegible Handwritten notes often weaken the doctor’s defense; there is an improvement in both the completion of indication of standard components and, obviously, the legibility with electronic health systems.

Many electronic health systems enforce compliance by using drop down selections with failure to close pop our windows if incompletely filled. Introduction of an electronic based template improves the standards of documentation and education of surgeons. The major limitation of this study is that, although the operative notes written by the authors were excluded to counteract and eliminate bias, the unavailability of a second independent assessor for collateral and simultaneous assessment of the operative notes opens to analytical biasness.

The audit cycle improved the knowledge of surgeons and the key areas in documentation of the operative notes. Regular quality control audits should be performed to further improve the standard of the operative notes as per the targeted adherence levels set based on the RCSEng guidelines. Formal teaching sessions on how to write operative records will be helpful. The use of dedicated pro forma and aide memoirs has a role in improving the quality of operative notes. The future of the operative note format is envisaged to be an electronic one.

References


11. http://www.uhbbristol.nhs.uk, last accessed 01 August 2016, 08:18hrs


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