**Recording Clinical Data across a Surgical Patient’s Pathway**

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**Aims** – To audit recording of data in medical records, from medicine use & allergy status, to evidencing infection risk discussions & operation notes.

**Methods** – Two retrospective audits, involving 26 and 30 patients who were admitted in 2008/09 and 2011 respectively, for procedures carried out by general surgeons. Parts of guidelines that compliance was measured against included NICE PSG1, medicines reconciliation, NICE CG74, prevention of surgical site infection, and SIGN CG77, post-operative management. A data collection sheet was devised and used for both audits.

**Results** – Improvement in rate of medicines reconciliation, from 81% to 90%, and more doctors conducting them, from 15% to 87%. Deterioration of proof patients have been informed about infection risks of surgery, 85% for pre-2010 patients and 7% for post-2010 patients. Comparable rates of filing of operation notes, 85% and 77% respectively, were found.

**Conclusions** – Implementation of Trust policies and standard operating procedures have improvement medicines reconciliation and allergy status recording. Similar changes need to be made to achieve improved patient education of infection prevention, plus general recording of events throughout a surgical patient’s pathway. Auditing a whole patient pathway can help to identify gaps in practice.

**Introduction**

Recording of events in writing is an essential part of clinical care. This applies to both medical and surgical patients. Both the National Institute for Clinical Excellence (NICE) and the Scottish Intercollegiate Guidelines Network (SIGN) have developed guidelines around recording of patient data and information. NICE published the Patient Safety Guideline, PSG001, on medicines reconciliation in December 2007.1 A year later, in October 2008, it published clinical guideline 74 on prevention and treatment of surgical site infection.2 SIGN published its guideline on postoperative management in adults in August 2004.3

Medicine reconciliation on hospital admission helps to establish that the patient is prescribed the correct medication during a hospital stay, and should establish a patient’s allergy status. Informing a patient about the risk of infection, preparing the incision site appropriately and prophylaxis and treatment of infections with appropriate antibiotics are all important to minimising morbidity, mortality. Correct post-operative management of patients will further reduce such risks.

Whereas often audits concentrate on one part of the surgical patient’s pathway, e.g. medicine reconciliation alone or appropriate antibiotics use, this audit concentrates on the whole surgical patient’s pathway (see Figure 1). Since covering all aspects of the three aforementioned clinical guidelines would be too vast, the reporting here concentrates on recording of information in the medical records. From a litigation point of view it is crucial that doctors record information and patient contact.



**Aims**Conduct two retrospective audits to determine if information and data is recorded in surgical patients’ medical records, which is a key activity for patient safety and ensuring evidence is present in case of litigation. Secondary objective is to ascertain if improvements in practice can be demonstrated when comparing pre-2010 patients with post-2010 patients

**Audit Standards**

Parts of following guidelines used for measuring compliance:

* NICE Patient Safety Guidance 001 : medicine reconciliation
* NICE Clinical Guideline 74 : prevention and treatment of surgical site infection
* SIGN Clinical Guideline 77 : post-operative management in adults

**Methods**

A data collection sheet was designed by author LJ, as part of a larger surgical patient pathway audit that also includes option for collection audit data on prophylactic antibiotics, skin preparation for incision and wound healing. Two audits were conducted in July-December 2011 by authors CC and JMG; one on 26 random patients that had undergone mainly skin graft surgery in 2008 and 2009 (‘pre-2010’), and another on 30 random patients that had undergone keyhole cholecystectomy surgery in 2011 (‘post-2010’). This is therefore strictly speaking not a complete audit cycle; two audits were performed on patients operated on in different years. Although the audits concerned involve different surgical procedures, they can be compared here to measure changes in practice over time for the following reasons: both procedures are classed as clean or clean-contaminated, some of them are done as a day case (see also Results section), it involves the same group of eleven surgeons based at Cumberland Infirmary, Carlisle, UK. Furthermore, all activities audited here apply to any given surgical procedure or patient.

**Results**

The patient cohorts in both retrospective audits were not dissimilar, bar the procedure they underwent and more day cases seen in the pre-2010 sample. A vast improvement was seen in the number of patients’ whose allergy status was recorded. Whereas the allergy status was not known in 50% (13/26) of patients pre-2010, this had gone down to only 3% (1/30) post-2010, see also Table 1. This can partly be explained by the Trust implementing a medicines reconciliation policy in December 2009, which also includes a section on the importance of finding out a patient’s allergy status.

**Table 2: Demographics of patient population**

|  |  |  |
| --- | --- | --- |
|  | **Patients pre-2010** | **Patients post-2010** |
| Number of patients | 26 | 30 |
| Patient age (mean) | 65 | 57 |
| Patient gender | 10 female / 16 male | 19 female / 11 male |
| Average LOS (mean) | 9 | 2 |
| Average LOS (median) | 0 | 1 |
| Number of day cases | 15 | 8 |
| Type of admissions | 6 emergency / 20 planned | 8 emergency / 22 planned |
| Number of different medicines per patient (mean) | 3 | 3 |
| Allergy status recorded | 13 Yes / 13 No | 29 Yes / 1 No |

**Medicines Reconciliation**

The audit of the post-2010 patient sample shows an improvement in the number of patients whose medicines were checked, from 81% (21/26) for the pre-2010 patients to 90% (27/30). Figure 2 shows that introduction of the medicines reconciliation policy and SOP, and subsequent medicines reconciliation in pre-assessment clinics, has brought about an improvement in the right professionals undertaking this activity. The follow-up double-checking with GPs, care homes or carers has not improved as much. For pre-2010 patients this was done in 35% (9/26) of cases, whereas for post-2010 patients the percentage has improved only marginally to 43% (13/30). In both cases the verification process was undertaken almost exclusively by doctors and pharmacists. In 13 out of 30 cases the medicines were verified with primary care records. It should be noted here that not all patients took medicines and therefore verification was not always required.

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**Infection prevention**

The type of surgery reviewed in this audit is classed as clean or clean-contaminated surgery only, rather than contaminated surgery. NICE CG74 covers antibiotic prophylaxis and the data was recorded for both audits. However, because administration of antibiotics depends very much on each patient’s circumstances and the surgical procedure, the results are not reported here. However, there is still a risk of infection with surgery and NICE recommends that patients are informed about:

* the risk of infection
* what is done to minimise risk
* what would be done if an infection was to occur

Figure 3 demonstrates that written evidence of a doctor having informed the patient about the risk of infection with surgery was present in medical records for the pre-2010 cohort (22 out of 26 informed), but that this had worsened dramatically for the post-2010 cohort (2/30). In either audit there was very little written evidence that patients had been informed about what is done to minimise the risk of infection or what would be done if an infection occurred (only recorded in 1/26 and 2/30 of all patients for either audit). This information may have been relayed to the patient verbally but it is not documented in the medical records.

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**Post-operative patient management**

Certain events after surgery should be recorded in the medical records, including date & time of a patient’s return to the ward, date & time a patient was first seen by the doctor and the circumstances surrounding this (ward round or doctor asked to see patient by patient or clinical team), and date & time patient seen by doctor before discharge. Recording of patients’ return to the wards was not always possible because day cases were included in both audits. However, for those that were seen by a doctor, both the date and time of patient contact should be recorded. Figure 4 shows that improvements have been made in recording date and time between pre-2010 and post-2010 cohorts.

Each patient should be accompanied by an operation note and post-operative instructions. Figure 5 shows that on average about 80% of medical records contain an operation note; this percentage is near identical for presence of post-operative instructions, pre-2010, 21/26 (81%) and post-2010, 23/30 (77%) respectively.





**Discussion**

Implementation and adoption of a NICE guideline, in the case of NICE PSG001 for medicines reconciliation, and reconfiguration of a patient pathway can have a positive effect on exercising best clinical practice. Whereas a few years ago patients’ medication was reconciled by inappropriate staff, now this is done by doctors and verification by doctors and pharmacists has also improved. Possibly as a result of the above changes, with the policy also mentioning it, allergy status recording has also improved dramatically. All these positive results will benefit patient care and reduce risks and delays in appropriate treatment of patients.

On the other hand, the level of recording of some other key information, not driven by policy implementation or service reconfiguration, has not changed or actually deteriorated. Examples are evidencing patient education before surgery about the risks of infection associated with infection, and potential steps to treat infection, and updating medical records with operation notes and post-operative instructions. Although compliance with dating and timing entries in the medical records during post-operative patient care is still not 100%, at least improvements have been made between 2008/09 and 2011. As mentioned, these are changes in compliance that have happened over the years without active input from clinical teams, governance or other support personnel.

**Conclusions & Recommendations**

This project shows that combining different national clinical guidelines for a patient pathway audit can be used to pinpoint where patient care - or in this instance data recording – is optimal or suboptimal. The introduction of a medicines reconciliation policy and SOP has clearly had a positive impact. However, there is room for improvement in other aspects of e.g. patient education and event recording by doctors.

Educational activities, aided by sharing collated audit data, should help to highlight where best practice is not applied. Opportunities for this are induction days, audit meetings and consultant & trainee doctor 1:1 meetings.

Improving patient awareness and recording that this patient contact has taken place could be incorporated into admission procedures for surgical patients to formalise this activity. An (bi-)annual re-audit of the surgical patient pathway would retain the clinical teams’ focus on this subject.

**References**

1. NICE Patient Safety Guidance 001: medicine reconciliation, <http://guidance.nice.org.uk/PSG001> (last accessed online 15 February 2012)
2. NICE Clinical Guideline 74 : prevention and treatment of surgical site infection, <http://publications.nice.org.uk/surgical-site-infection-cg74/> (last accessed online 15 February 2012)
3. SIGN Clinical Guideline 77 : post-operative management in adults, <http://www.sign.ac.uk/guidelines/fulltext/77/index.html> (last accessed online 15 February 2012)