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Sharing Incident Reports in Anaesthesia

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Critical incident reports are stories of adverse events, used for learning and improvement of practice. There is a strong reporting culture in anaesthesia, where reports are usually encouraged and seen as a positive part of ensuring and improving safety. Reports are collected by an audit manager, and are discussed at regular meetings. Reports from one hospital can often be relevant to another, but they are not usually shared. To address this issue we have created a web-based system for sharing reports. Participative design methods were used to involve anaesthetists from six different departments in the design of the system. Four central requirements for the system were recognised: integration with existing practice, integration with existing reporting systems, support of educational value, and maintenance of trust. This paper discusses those requirements and describes how they are addressed by the system.

Introduction

Incident reporting is a core requirement for NHS (UK National Health Service) organisations in efforts to improve patient safety. Critical incident reporting has its origins in the aviation industry, and is now well established in anaesthesia. Anaesthesia is relatively safe, but incidents do occur, and these usually involve human factors [1]. When such an incident occurs, a report is written which can later be discussed at an audit meeting; the intention being to learn from mistakes. Defining when an incident is critical is a soft issue [2][3], usually concerning circumstances where there is potential for harm rather than actual harm, and combinations of contributing factors rather than one specific cause [4]. Incident reporting schemes are soft

systems and every such scheme is different in implementation and use. In their comprehensive review of the literature surrounding technology related adverse events in healthcare, Balka et al [5] point to the differences between incident reporting schemes, particularly the lack of definition regarding the scope and nature of adverse events, as the major barrier to extrapolating meaningful data from them at a national or international level. They recognise the potential benefits of large-scale analysis of incident data, but point out that in doing so the situatedness of medical practices can be overlooked and incidents wrongly conceptualised as device or user problems. Balka et al suggest "new forms of governance may be required, that place greater emphasis on socio-technical and systems issues" [5].

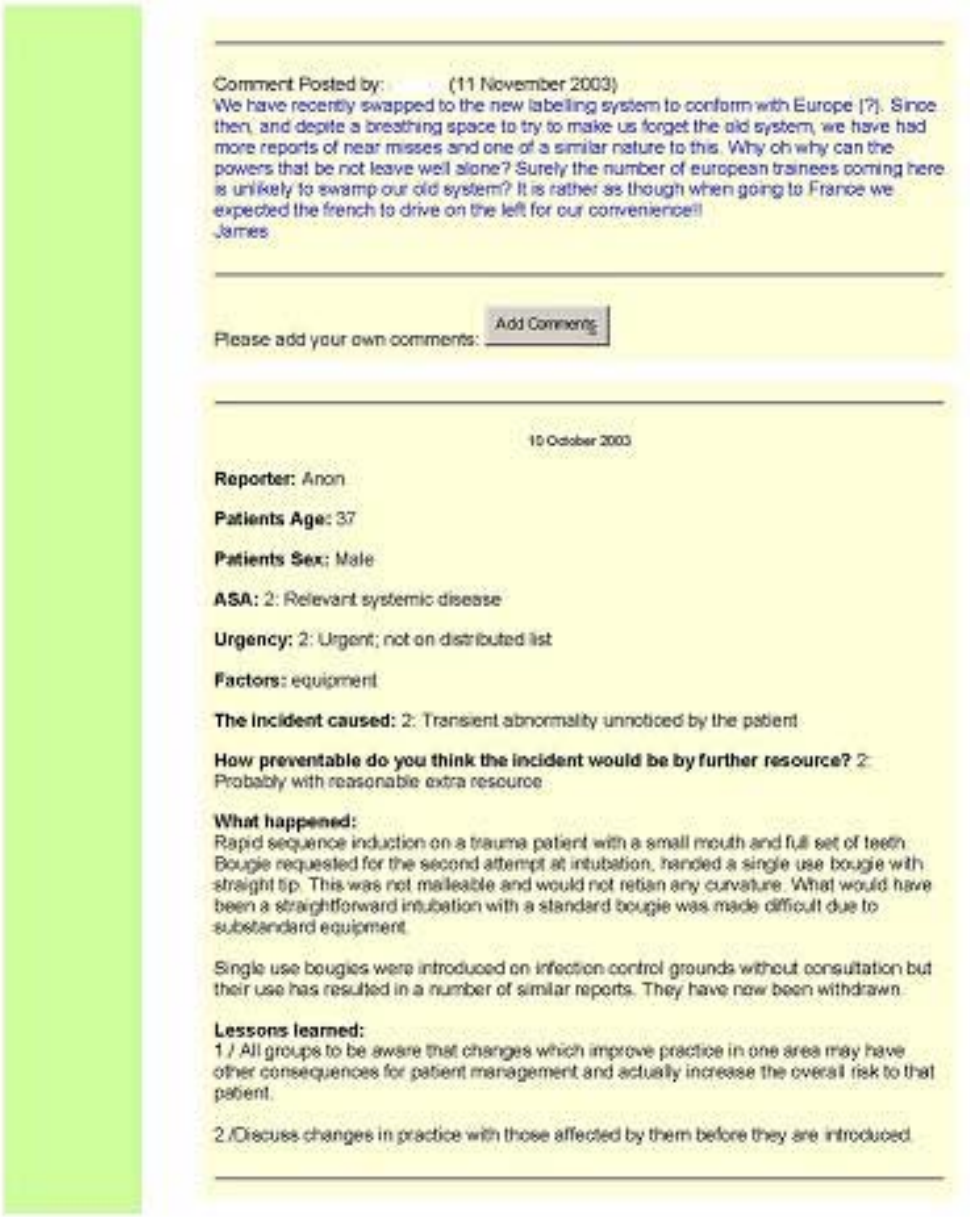
Incident Reporting in Anaesthesia

Incident reporting in the NHS is usually seen as a hospital wide, if not national issue. As such, incident reporting schemes being implemented are hospital wide and national. We acknowledge that large-scale analysis of incident data would be extremely beneficial to the improvement of safety, but our work has not been driven by that goal. In this paper we look directly at incident reporting in Anaesthesia, at the issues that anaesthetists face in reporting and how their reports are used in the small scale to maintain and improve everyday safety. We are interested in the practical aspects of reporting and learning from reports, and thus a focus on the work of clinicians rather than that of their managers and administrators is desirable.

Anaesthesia is the largest single hospital specialty in the NHS, with anaesthetists seeing around two thirds of all admitted patients. Incident reporting has become a contentious issue in anaesthesia. There has been a longstanding tradition of incident reporting in anaesthesia (it being the first profession in healthcare to introduce incident reporting) and attempts to impose new schemes have been disruptive. The older schemes were owned and organised by anaesthetists. Newer schemes have a managerial and legal emphasis and are intended to be standard across hospital departments. By taking incident reporting in anaesthesia as our standpoint we are looking to the expertise and experience anaesthetists have with safety.

A System for Sharing Reports

In the UK, most departments of anaesthesia collect and discuss incident reports but the lessons are not often shared more widely. This paper describes the design of a system for sharing incident reports, which was trailed for use between six hospitals in a northwest region of England [6]. An iterative, multi-round approach was taken to gain a picture of incident



Comment Posted by: (11 November 2003)
We have recently swapped to the new labelling system to conform with Europe [?]. Since then, and depite a breathing space to try to make us forget the old system, we have had more reports of near misses and one of a similar nature to this. Why oh why can the powers that be not leave well alone? Surely the number of european trainees coming here is unlikely to swamp our old system? It is rather as though when going to France we expected the french to drive on the left for our convenience!!
James

Please add your own comments: Add Comments

10 October 2003

Reporter: Anon

Patients Age: 37

Patients Sex: Male

ASA: 2: Relevant systemic disease

Urgency: 2: Urgent; not on distributed list

Factors: equipment

The incident caused: 2: Transient abnormality unnoticed by the patient

How preventable do you think the incident would be by further resource? 2: Probably with reasonable extra resource

What happened:
Rapid sequence induction on a trauma patient with a small mouth and full set of teeth. Bougie requested for the second attempt at intubation, handed a single use bougie with straight tip. This was not malleable and would not retian any curvature. What would have been a straightforward intubation with a standard bougie was made difficult due to substandard equipment.

Single use bougies were introduced on infection control grounds without consultation but their use has resulted in a number of similar reports. They have now been withdrawn.

Lessons learned:
1./ All groups to be aware that changes which improve practice in one area may have other consequences for patient management and actually increase the overall risk to that patient.

2./Discuss changes in practice with those affected by them before they are introduced.

Figure1: View of the Notice Board

reporting and to involve the anaesthetists closely in the design of the prototype, which was designed to suit their requirements. The system we produced is lightweight, web-based software, intentionally kept simple to use. Any anaesthetist with a username and password can access the system via their web browser. There are five main options: write reports, read reports, view participants, help and exit. Of concern to this paper are the first three.

The first option, write reports, leads to an input form to allow critical incident reports to be entered into the system. There are ten fields in this form, the most important of which being (the only compulsory field) “please describe what happened”. The second option, read reports, displays reports as a ‘notice board’. All reports from the current month are listed, and users may look at notice boards from previous months or perform searches through all reports. Users may also leave comments beneath any report. Figure 1 gives a view of a notice board. At the end of each month, a copy of the reports posted to the notice board that month is emailed to each user. The third option, participants, lists the name and affiliation of everyone with access to the system.

The system was in trial use over a six-month period. Seven reports were posted to the system, and all posts were made over the first five months of the trial. Most anaesthetists posted one report each. Anaesthetists, in follow up interviews claimed that they liked the system and were generally happy with it. In short, we produced a system that anaesthetists liked but that did not see much general use. As to why people didn't use the system, a number of reasons were given: 1. The small user base; 2. Mostly experienced anaesthetists were involved, who were less likely to suffer from incidents and so there was nothing 'significant' to report during the trial; 3. Role changes occurred during the study, so during the trial the anaesthetists involved were no longer directly responsible for incident coordination at their department; 4. lost passwords and web links. Interestingly, whilst the number of reports was low, nobody stated that they felt the system was a failure. In fact most deemed it to be a success. Volume is a normal measure for success of a web based system, both volume of information and volume of traffic to this information. However, whether volume is the correct criteria for success in this case is debatable. In our follow up interviews we found that most anaesthetists had read reports posted to the system and had found at least one of the reports useful. Anaesthetists that had not read all the reports were shown them in interview, and all found at least one to be useful. Some anaesthetists singled out a particular report as not being useful (to them personally), it referring to specialised equipment.

If not in terms of volume, but of quality, we can say the system was a success. What we have shown in this work is that sharing reports is useful and viable. However, more work is needed on making the system usable and sustainable. These issues will be discussed in the following section

Requirements For Successfully Sharing Reports

As part of this study, we recognised four central requirements for a shared reporting system. Here we discuss those requirements and how they are met by the system. This work is driven by anaesthetists' desire to learn from mistakes and purposefully sidesteps the more bureaucratic and legal emphasis of recent reporting schemes. The four requirements are: 1: Integrate with existing practice, 2: Integrate with existing reporting schemes, 3: Maintain educational value, 4: Maintain trust within the user community.

Requirement 1: Integrate with Existing Practice

In most cases, paper is the anaesthetists' favoured medium for reporting. Until recently, most successful incident reporting schemes have been paper based; a computer is intrusive in theatre, both in presence and in drawing the anaesthetist's attention away from the patient. It is ideal to report soon after the incident, and unlike paper, practicality precludes using a desktop computer to do so. Computers were however perceived as a good way of communicating reports, and so reports were often typed up or summarised before discussion at meetings. There are existing computerised reporting schemes but these are often difficult to access and use. In particular a system from the RCoA implements commonly used paper forms, but has an interface that is difficult to use. Anaesthetists also found themselves unable to extract data for analysis and distribution. It was also noted that there was a mixed level of computer facilities and access at the different departments.

To integrate with existing practices, it was seen as inappropriate to expect primary reporting to be done on the new system, but rather that reports could later be typed up or cut and pasted into it, perhaps after presentation and discussion at a meeting. It was also noted that web and email use by anaesthetists was occasional, so a lightweight notice board rather than a discussion forum was the most suitable style of presenting reports.

Requirement 2: Integrate with Existing Reporting Schemes

At each department, there is both an internal reporting scheme based on recommendations by the RCoA and a trust-wide reporting scheme based upon requirements of the CNST (Clinical Negligence Scheme for Trusts). The two schemes are fairly incompatible, the first being anaesthetist led, the second having a more bureaucratic and legal emphasis. Reports often have to be written twice, and anaesthetists were reluctant to consider yet another scheme and would prefer a system that integrates with existing schemes.

This requirement is related to the first, and was also met by designing the system to be used for presenting incidents originally reported by other means. The system in no way seeks to replace either of the existing systems, but to complement them. The reports posted on this system are summarisations or re-presentations of existing reports. It is technically possible to use the system as an interface to the existing college system.

Requirement 3: Maintain Educational Value

There is large educational value in the feedback and discussion of reports at departmental meetings. Feedback from the CNST required scheme is often slow and often overly summarised.

This requirement relates to a central motivation for reporting, to improve safety of practice by learning from mistakes. It is an ambiguous requirement and it is only after an extended period of running the system that we will be able to investigate whether anaesthetists are improving safety by using it. At this stage we address the requirement in terms of providing a means for writing and reading reports that anaesthetists think will be useful as learning points. We briefly discuss the design of the options to write reports and read reports.

To write reports, most anaesthetists wanted a familiar looking form and pointed to the one designed by the RCoA. There was support for having as little as possible to fill in beyond a free text area for reports, and general support for keeping the form simple. However there was also a desire for search and summarisation functions, which entailed having standardised categories on each form. The RCoA form was considered too detailed for the needs of this system, but used as a starting point. The decision was also made to make no part of the form compulsory except for the free text of the report itself, aiding ease of input (but to the detriment of searching and summarisation). The decision was made to favour simplicity of reporting over that of searching and summarisation because, for the early life of the system at least, anaesthetists are more likely just to read reports rather than perform searches or summarisations. The ability to search and summarise was seen as desirable by the interviewees, but each with differing opinions on how. We feel that it will only be when the software is used over an extended period that the specific needs, if any, will be realised. Currently, the read reports option lists reports by month and allows a simple, free text search. Beneath each report is the option to leave a comment, the intention being to promote discussion.

Requirement 4: Maintain Trust Within the User Community

Anaesthetists felt that where incident reports are seen as a positive resource departmentally, externally they could be perceived as negative. As critical incidents often result from combinations of factors it is often inappropriate to shame and blame 'the last person who touched the patient' [4]. Anaesthetists often prefer to report anonymously.

The reporter can remain anonymous when entering a report into the system. In addition, to strengthen confidence in the system, the participants option has been created to list the name and affiliation of every person with access.

Discussion

In this paper we have given an overview of a system for sharing critical incident reports between anaesthetic departments. We have described the methods used in design and have described four central requirements and how the system addresses these.

There are many issues surrounding reporting, and we have addressed those of what makes a good report, and how ease of reporting can be achieved. Reporting had different characteristics and levels of success at different sites, and we have not attempted to address that diversity in this paper. Critical incident reporting is an organisational issue, and while a well designed technical system can be of great benefit, it is the willingness of anaesthetists to report and discuss reports that is important. We have been careful to listen to and address anaesthetists' requirements, but there must also be maintenance of an educational and trustworthy atmosphere for it to meet its potential.

The criteria for success for a system such as this is ambiguous, and it is perhaps better if we do not talk about success or failure in terms of volume. Rather it is the quality and usefulness of the information that is of issue here. Anaesthetists found reports useful and so we can conclude that sharing reports in this way has been a success. However, improvements to the means by which reports are shared can be made, improvements that better meet the requirements outlined in this paper.

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