Safer cut: revelations of surgical harm through a national database

It is over a decade since the sentinel patient safety report 'To Err is Human: Building a Safer Health System' highlighted the large number of medical errors occurring within health care, many of which are preventable (Kohn et al, 1999). This has, in part, heightened the public and clinical awareness of errors that had previously been limited to a few anecdotal cases reported in the newspapers. Patient safety is an increasing priority within the NHS, highlighted by the Health Select Committee report on Patient Safety which cited significant deficiencies in current policy to tackle unsafe care (House of Commons Health Committee, 2009). Surgical specialities still have high levels of adverse events resulting in mortality, morbidity and financial cost.

Health care continues to lag behind other high-risk industries in its approach to improving customer safety. While civil aviation, railways and nuclear power have a death rate of less than 1 per million exposures the rate of fatalities in surgery is 1 per 10 000 (Amalberti et al, 2005). In the United States more people die each year from medical errors than from human immunodeficiency virus (HIV)-related illnesses, breast cancer or road traffic accidents (Kohn et al, 1999).

The success of surgery depends on factors other than patient fitness and the technical skills of the surgeon. Many adverse events classified as 'operative' are found on closer analysis to be caused by problems in ward management rather than intraoperative care. In looking at the cause of errors in two London hospitals, Neale et al (2001) identified that less than 20% of preventable adverse events were directly related to surgical operations or invasive procedures; pressure ulcers, chest infections and falls on the wards together with a variety of drug administration errors played a large part. Wrong-site or wrong-procedure surgeries, retained sponges or needles, unchecked blood transfusions and unidentified patient allergies are not uncommon. Many such events could be prevented by improved communication and safer hospital systems.

The National Reporting and Learning System

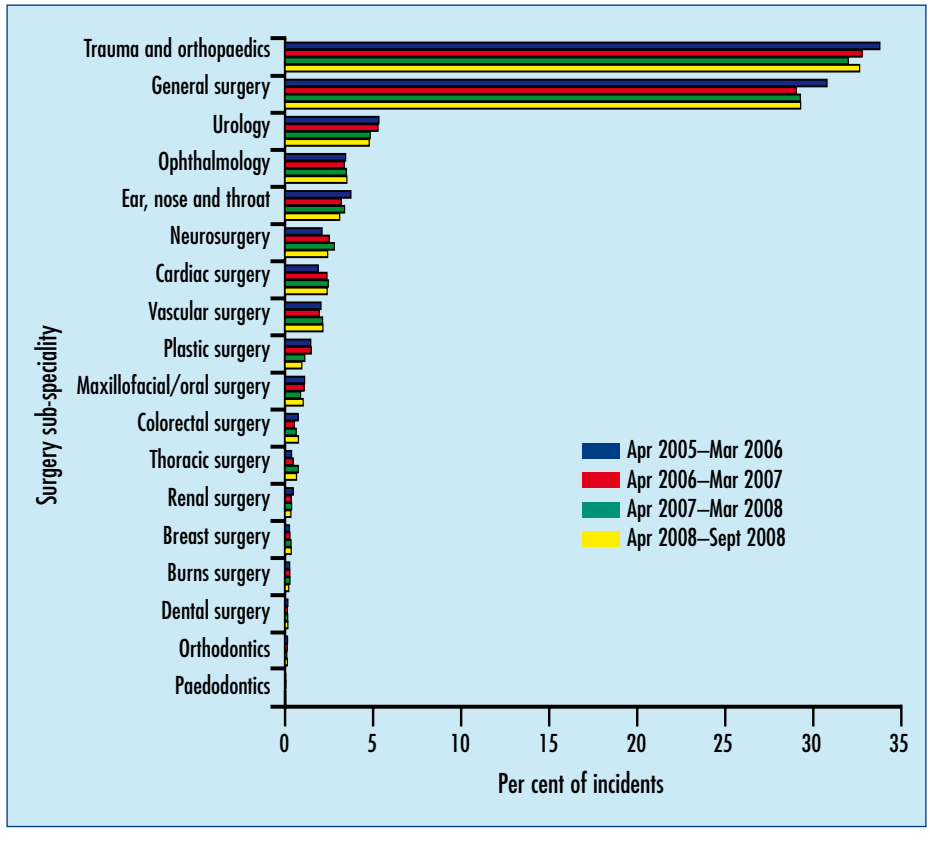
In order to understand the epidemiology of iatrogenic harm within the different specialties of medicine the National Patient Safety Agency developed a patient safety incident reporting database – the National Reporting and Learning System. It is now the largest database of its kind in the world with over 4 million incidents reported per year.

Patient safety incidents in surgery contribute to about a fifth of the database. Of all the surgical incidents, the largest proportion of patient safety incidents were reported in trauma and orthopaedics (145 743/446 184 (32.6%)), followed by general surgery 132 388 (29.7%). Urology, ophthalmology, ear, nose and throat, neurosurgery and cardiac surgery reported 22 649 (5%), 15 311 (3.4%), 15 086 (3.3%), 11 119 (2.4%) and 10 264 (2.3%) incidents respectively (Catchpole et al, 2009) (*Figure 1*).

Common barriers to reporting incidents include time constraints, unsatisfactory processes, deficiencies in knowledge, cultural norms, inadequate feedback, fear of personal risk, a perceived lack of value and misgivings about their contribution to service improvement.

Research by Kreckler et al (2009) suggests that surgical complications are often not perceived to be 'reportable incidents' so are addressed locally in mortality and morbidity meetings rather than reported

Figure 1. Patient safety incident reports successfully submitted to the National Reporting and Learning System where the incident occurred in an acute setting within the surgical specialities during the period 1 April 2005 to 30 September 2008.



to a national database. However, Lawton and Parker (2002) state that it is a mixture of ingrained medical culture and fear of blame that prevents reporting:

> **'The culture of medicine – with its emphasis on professional autonomy, collegiality, and self-regulation – is unlikely to foster the reporting of mistakes. Moreover, the organizational culture of the NHS, with its emphasis on blame, and an increasingly litigious public may only serve to exacerbate the problem.' (Lawton and Parker, 2002)**

However, a general increase in frequency of reporting to the National Reporting and Learning System from 2005–8 indicates that there may be a small cultural change to report and learn from errors within surgical specialties. There is a belief that more reporting indicates poorer patient safety but this is not the case; safer organizations tend to show high levels of reporting near misses.

Using tools to improve patient safety

Improved and increased reporting by surgical teams is one route to enhancing patient safety but there are other tools that can be used in daily practice. One such tool is the World Health Organization (2008) Surgical Safety Checklist. This originated from an initiative entitled Safe Surgery Saves Lives and is currently being promulgated through the National Patient Safety Agency.

The checklist is intended to promote communication and teamwork between members of the surgical team including the surgeon, anaesthetist, scrub nurses and all other theatre staff, and thereby prevent problems during and after the operation. It is designed to be used for all surgical procedures, in every specialty, at three stages perioperatively: before anaesthesia (sign in), before skin incision (time out), and just after wound closure (sign out). For maximum benefit it should be combined with briefings and debriefings by the surgical team before and after the procedure or list (National Patient Safety Agency, 2009).

Discussion of the items on the checklist by the whole team encourages all members of the team, including juniors, to speak up and highlight potential problems with a patient's care before they occur. As a result, errors such as wrong-side or wrong-procedure surgery become less prevalent and foreseeable events such as excessive blood loss or intubation difficulty can be managed more effectively. Pilot studies in eight cities across the world demonstrated that the use of a simple surgical checklist during major operations can lower the incidence of surgery-related deaths and complications by one third and reduce inpatient deaths following major operations by more than 40% (National Patient Safety Agency, 2009).

Conclusions

Patient safety is not a by-product of good intentions. Its success is dependent on the application of technical skills in the context of safe systems with effective teamwork and communication by all members of medical and surgical teams. Recognizing and reporting potential sources of error and harm and the promotion of non-technical skills is crucial if surgical teams are to continue delivering the highest quality of care to the patient. In tandem, better use must be made of incident reporting systems; reports must be adequately investigated and the results fed back so that changes can be made to systems and practices.

A successful incident reporting system within health-care organizations has the ability to alleviate the epidemic of patient harm associated with medical errors. By sharing experiences nationally, teams can learn from each other, thereby identifying and avoiding errors on an individual and institutional level within their own clinical environment. In smaller specialities such as ophthalmology and otolaryngology where incidents appear to be less frequent, learning from others' experiences has even more importance and value. It is vital that the quality and quantity of reporting in surgical specialties continues to improve thereby increasing patient safety both locally and nationally. BJHM

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KEY POINTS

- Surgery is high risk but many errors within surgery are preventable.
- The National Patient Safety Agency's database of errors can offer some insight into the epidemiology of surgical errors.
- The World Health Organization surgical checklist offers a tool to potentially minimize these errors.