

CLINICAL PRACTICE

Adverse events in anaesthetic practice: qualitative study of definition, discussion and reporting

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Background. This study aimed to explore how critical and acceptable practice are defined in anaesthesia and how this influences the discussion and reporting of adverse incidents.

Method. We conducted workplace observations of, and interviews with, anaesthetists and anaesthetic staff. Transcripts were analysed qualitatively for recurrent themes and quantitatively for adverse events in anaesthetic process witnessed. We also observed departmental audit meetings and analysed meeting minutes and report forms.

Results. The educational value of discussing events was well-recognized; 28 events were discussed at departmental meetings, of which 5 (18%) were presented as 'critical incidents'. However, only one incident was reported formally. Our observations of anaesthetic practice revealed 103 minor events during the course of over 50 anaesthetic procedures, but none were acknowledged as offering the potential to improve safety, although some were direct violations of 'acceptable' practice. Formal reporting appears to be constrained by changing boundaries of what might be considered 'critical', by concerns of loss of control over formally reported incidents and by the perception that reporting schemes outside anaesthesia have purposes other than education.

Conclusions. Despite clear official definitions of criticality in anaesthesia, there is ambiguity in how these are applied in practice. Many educationally useful events fall outside critical incident reporting schemes. Professional expertise in anaesthesia brings its own implicit safety culture but the reluctance to adopt a more explicit 'systems approach' to adverse events may impede further gains in patient safety in anaesthesia.

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The specialty of anaesthesia pioneered incident reporting in healthcare, transferring the concept from other high-risk industries such as aviation.¹ In the UK, the Royal College of Anaesthetists (RCA) has both provided a widely used working definition of a critical incident ('*a critical incident is one which could have led to harm; it could have been prevented by a change of process*') and endorsed a reporting template.² Incident reporting is now being more widely promoted. Many hospitals have had generic 'clinical incident reporting schemes' in operation for some years and now a national system for reporting of adverse incidents and near misses has been established by the National Patient Safety Agency (NPSA).^{3,4} Despite this widespread promotion of incident reporting, little attention has been paid to how

potential threats to patient safety are recognized, defined, discussed and reported in actual clinical practice. If incident reporting is to achieve the same potential in healthcare as it has in other industries, the professional cultural factors affecting the use of such systems must be understood⁵ but these have hitherto not been widely explored. We aimed to describe the factors affecting these practices within the specialty of anaesthesia.

Methods

Approval for the project from which these data are drawn⁶ was granted by two local Research Ethics Committees. The

study was conducted principally in one English district general hospital, with shorter periods of observation at a second English hospital. We used an ethnographic approach, grounded in detailed observation,⁷ followed by a series of in-depth interviews. Ethnography is a form of social research carried out in everyday settings, using a range of methods to focus on the *meanings* of individuals' actions and explanations rather than their quantification.⁸ The aim is to build up a picture of the phenomena under study which 'makes sense' to those who are being studied but which also allows, along with other qualitative approaches, for the inductive development of more general theories.⁹ The study focused mainly on the operating theatre environment, and included observation of, and interviews with, anaesthetists, operating department practitioners (ODPs), theatre and recovery nurses. Participants were recruited from the anaesthetic staff in the study hospital through a series of presentations to the anaesthetic department and theatre staff, outlining the aims of the research and inviting clinicians to take part. Regular meetings were held thereafter to inform all staff of progress of the study and to secure their continued co-operation. For comparative purposes a shorter period of observation was undertaken at a second site.

The staff participating in the study did so freely. Anaesthetists were asked well in advance of proposed observation sessions if we might observe them at work. At the time of the study, the UK research governance regulations requiring written consent from NHS staff taking part in research had not yet come into force. Patients on the operating lists were informed orally and in writing of the study and their written consent obtained.

Observation was performed without audio or video recording. Detailed contemporaneous notes were obtained during the observation period and transcribed immediately afterwards. Observations were performed principally by the research associate D.G. (a former anaesthetic nurse). C.P. (a medical sociologist) and M.M. (a sociologist of science and technology) performed two and five observations respectively 'in tandem' with D.G. to allow comparisons and internal validity checks on the data collection. Most of the observation took place in the operating theatre, starting when anaesthetists began their work in the anaesthetic room, although some observations were made of anaesthetists performing preoperative assessment. As the principal researcher had been an anaesthetic nurse in the department where she conducted the observations, staff were used to her presence and she was also able to position herself where she could note what was happening without being in the way. We were also able to observe two departmental audit meetings and gain access both to departmental critical incident reports and to the minutes of the remaining 10 meetings.

In our early interviews, to help participants describe how they used and acquired anaesthetic knowledge (the focus of the main study⁶), we asked them to recount a recent case, or on-call period. We also invited anaesthetists involved in

critical incidents taking place during the study period to talk in more detail about them to our researcher. Interviews were tape-recorded and transcribed.

The qualitative analysis began with individual close readings and annotations of the observational and interview transcripts by each member of the research team. This was followed by collective discussions and comparison of the various readings of the data, from which our analytical themes and categories emerged.¹⁰ Four anaesthetists were involved in respondent validation¹¹ of themes arising from project data. Documentary analysis of audit meeting minutes and critical incident forms was also undertaken.

Results

We have data from 19 interviews and over 130 h of observation of anaesthetic practice, gathered at the rate of approximately three sessions per month over a year. Although two of our interviews were 'debriefing' interviews, where anaesthetists were questioned about their work immediately after being observed, most interviews were unconnected with a specific theatre session. At the time of our study there were 13 consultant anaesthetists and 10 trainees at the principal study site. None declined to be observed, although two did not wish to be interviewed when invited. We interviewed 12 anaesthetists (7 consultants and 5 trainees), 4 ODPs and 3 nurses (2 working in the recovery room and 1 in anaesthesia). Observation included 31 operating theatre sessions of a variety of different types of surgery and a mixture of practitioners of varying experience. During these we observed 53 anaesthetics.

What is a critical incident?

Our interview data show that respondents were aware of the official definition. However, they had personal, working interpretations of this official statement. One working definition related to speed of onset and potential severity. Hence, a recovery sister described an incident where a patient, who had had an epidural injection performed by an orthopaedic surgeon, rapidly became bradycardic and hypotensive. The patient had no i.v. cannula to enable resuscitation and the recovery staff asked urgently for help from an anaesthetist in another theatre. Another factor bearing on definition, related to the feeling of control over a given situation. In one interview extract (see Supplementary data for Appendix 1), a senior house officer (SHO) talks of situations becoming critical when he is unable to cope on his own, where the patient's condition was deteriorating beyond his control. He also recounts an incident that had occurred earlier on the day of interview, where a leak had developed in the breathing system. He and his supervising consultant had rapidly detected and corrected the problem. The SHO comments: '*We were just doing our job and being observant*', suggesting that such events are an integral part of

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