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Editorial II

Confidential enquiries into anaesthetic deaths

The purpose of confidential enquiries into anaesthetic deaths has been to identify the cause of death and find areas of substandard care that might be amenable to correction. The enquiries with which anaesthetists in the UK have been most familiar with are the Confidential Enquiries into Maternal and Child Health (CEMACH) which additionally has the role of looking at health issues related to these groups.

Repeated audits of deaths have a monitoring role as to whether the number of deaths are increasing or decreasing and whether new or different causes of death assume prominence with a need to address the cause.

CEMD has been producing triennial reports since 1952 classifying deaths directly due to pregnancy according to cause, such as haemorrhage, hypertensive diseases, thromboembolism, anaesthesia, etc. Achieving this level of information requires a detailed report on each death and interpretation by a series of assessors. The report celebrating 50 yr of these enquiries gives a potted history of
events relevant to each cause of death.\textsuperscript{1} Gratifyingly, the prominence of anaesthetic deaths has reduced from the third most common cause of maternal death in the 1960s to an uncommon event in the 1990s. This has been highlighted as an example of the beneficial effects of such reports. There has been an assumption that better staffing by consultant anaesthetists, improved training, and more use of regional anaesthesia have been important factors in achieving this greater degree of safety.

CESDI has had a different approach, in that the numbers of deaths involved are much larger, and thus individual deaths cannot be examined in detail. Currently, perinatal mortality reports are made annually. In 2005, there were 668,681 live births notified to the Office for National Statistics and there were 7225 death notifications to CEMACH.\textsuperscript{2} Of these deaths, 1193 were late fetal deaths. This compares with fewer than 200 maternal deaths annually in the UK. Individual trusts receive information as to how their perinatal mortality compares with other hospitals, but the hospitals are not named individually. CESDI has also had focus groups examining in more depth certain aspects of care. The most recent one, involving delays and complications in obstetric anaesthesia that contributed to perinatal mortality, was in the year 2000 and identified 25 anaesthetic incidents; 76\% were associated with general anaesthesia.\textsuperscript{3}

The approach of NCEPOD is different, in that it does not give continuous data on deaths from surgery but concentrates on individual topics, such as aortic aneurysm surgery,\textsuperscript{4} or endoscopy,\textsuperscript{5} or concentrates on the method of delivery of care such as in the two reports ‘Who Operates When’.\textsuperscript{6} Of note in that report is the fact that emergency procedures performed during weekend daytime increased from 37\% in 1997 to 60\% in 2003, also accompanied by increases in numbers of operations performed by consultant surgeons and anaesthetized by consultant anaesthetists.

Throughout all mortality reports, from whatever medical subspecialty, there is an emphasis on the importance of teamwork.

Effecting change in clinical practice is always a challenge. The confidential enquiries aim to do it through publication of reports that are made widely available, both through hard copy and on the internet. When a new report is available, there is media coverage of the main findings alerting clinicians and the public alike to the key findings. Adherence to the recommendations within the reports is encouraged by their inclusion in the CNST standards, thus reducing insurance premiums for those who follow safer practice.

Cat lovers will welcome the first Confidential Enquiry into anaesthetic-related deaths in cats since the 1980s in this issue of the British Journal of Anaesthesia.\textsuperscript{7} The good news is that in the intervening quarter century, anaesthesia has apparently become safer. The project was an ambitious one looking at anaesthetics given over a 2 yr period from 2002 to 2004 in 117 UK centres. One hundred and seventy-five anaesthetic- and sedation-related deaths were found in 79,198 procedures. This gives a mortality of 0.24\% or 1 in 453 anaesthetics. Although this has improved from a rate of 0.29\% in the 1980s, it is still up to 10 times that found in human studies. In common with human anaesthetic practice, some of the factors associated with death were unsurprising: poor health status, increasing age, extremes of weight, and increasing procedural urgency and complexity. However, of particular note was that endotracheal intubation and fluid therapy were also implicated. It is worrying that veterinary surgeons too may become less good at airway management, as has been found with trainee anaesthetists in maternal\textsuperscript{1} and general\textsuperscript{8} anaesthesia.

Like human anaesthesia, safety was improved with monitoring, particularly pulse oximetry. However, capnography was used rarely and it is unclear whether the deaths associated with endotracheal intubation were from misplaced tubes or from laryngeal trauma, spasm, or oedema. Many of the deaths occurred after operation, presumably when the cats were in cages and unmonitored.

One might imagine that airway problems, either intra-operative or postoperative, would be more common in breeds of cat with flatter faces and squashed noses, but there were no breed associations with likelihood of death. As the owner of two cats, I am concerned to find that both are at greater anaesthetic risk, should the need arise. One is very underweight and the other is grossly overweight. Sadly, I have been unsuccessful in persuading the thin one to eat more, or been strict enough with the diet of the fat one—or taken him to exercise classes as suggested on one visit to the vet.

Another lesson for possible translation to the human arena is that there was no association of death with any particular drug, in contrast to the authors’ expectation that there might be with medetomidine. This therefore supports the philosophy of ‘it is not what you do, but how you do it’.

The challenge for the authors of this paper will be dissemination of their findings and its ability to alter practice. Cost implications will be an issue in the provision of monitoring and these costs will be passed on to the owners. It is also essential that this exercise is repeated regularly, as with the human confidential enquiries described earlier, in order to check that lessons have been learned and improvements in practice made.

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We now use the internet as a source of ready information. We are a broadband society and for many of us, access to the web is so simple that we go there the drop of a hat. Searches for health information, done by ‘consumers’, usually take about 5 min. How do these searches work? Search engines such as Google and Yahoo are searchable databases of ‘snapshots’ of websites and other internet resources. These databases are topped up by ‘spiders’ (really just a software program) that follow the links from one page to another, sending home the snapshot of each new page that they link to. This accumulation of websites for the search engine database does not involve any quality control, and often means that the database is a little out of date as web pages are updated. The way these search engines work means that if a website is not linked with any other site, then it is unlikely to be found. Search engines do not have much access to the ‘deep web’ (such as subscription-based databases or full-text materials) which is of greater interest to clinicians and researchers. However, this problem is being eroded by search engines such as Google Scholar (http://scholar.google.com/) and Scirus (http://www.scirus.com/). These incorporate free databases such as PubMed and harvest data from publisher catalogues and full-text electronic journals and books. Search Engine Showdown (http://searchengineshowdown.com/) gives a useful summary of the relative strengths and weaknesses of the different search engines.

Most professionals keep a high level of suspicion about the information gleaned from searches. So, how do we know what to trust, and what to discard? When we reach for a textbook, we may not expect something that is up to date, but we have been there before, and have formed an opinion of what it may hold. There are unlikely to be surprises. Websites are not like that and instead they ask things like ‘are you feeling lucky?’ Is the biggest hit the best? Relevance is affected by ‘conventional’ factors such as the specificity and number of terms used in a search, but search engine results are also ranked by other means. For example, a prime method of ranking is by the position of the searched terms in a website (e.g. title; early in the body of text). Another is the number of times the terms appear in the website. The more often a term appears, and the closer it is to the headline, the higher the ranking of the page in the results list. Google adds a sort of ‘popular vote’ factor, in that the more frequently a website is linked to by other websites, the higher it appears in the results list. Ask.com (www.ask.com) takes the popular vote factor one step further and focuses on how frequently a site is linked to by sites in the same subject area. Naturally, these ranking rules are frequently exploited and subverted by web content creators, using methods such as Google bombing and spamdexing, but these methods are recognized and countered, in a dynamic balance.

Some websites follow guidelines, user guides, or codes of conduct, and some sites carry ‘approved’ information. These features might give us hope we can trust what we find. But in truth, as Caron and colleagues point out in their recent article in the British Journal of Anaesthesia, these safeguards merely indicate that the sources meet a relatively arbitrary set of criteria that are intended to filter the reasonable from the possibly unreliable, in a similar way that the Cochrane criteria or other guideline criteria attempt to set apart the rigorous studies from the slapdash. We know the methods may have gained a seal of approval, but we still cannot be sure the results will be useful. We also know examples of how dubious studies slip through approval processes. A problem with quality markers like the Health on the Net (http://www.hon.ch/) is