Letters

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Reducing error, improving safety

Defensive culture of British medicine needs to change

Editor—It was brave to devote a whole issue to medical error[1]—how to recognise, how to investigate, how to analyse, and how to change systems to improve patient safety.[1] However, we regret that the edition was dominated by American studies, ignoring the British contribution of confidential inquiries and analyses of closed claims, which have significantly improved safety in some well defined areas of medical practice.

In the United States the insurance industry provided the impetus for the study of adverse events,[2] and in Australia the government funded a similar study[3] because it was considering "no fault" compensation.[3] In the United Kingdom, for 25 years the Department of Health has financed all successful claims against NHS hospitals and their staff. As a result the need to take a British study beyond the pilot phase may not be supported.[4]

Be that as it may, an important issue was not addressed in the *BMJ*. Behind each adverse event there is a patient, a doctor, and a doctor-patient relationship. A patient must be told when things have gone wrong. Every effort must be made to minimise the after effects, including financial compensation where necessary. Most patients wish to know in detail what happened and what is being done to reduce the possibility of a recurrence. And members of healthcare teams need mechanisms to come to terms with their fallibility. It is to be hoped that clinical governance will make a difference.

Meanwhile a change in the ethos of medical practice is required, and it is to this end that Action for Victims of Medical Accidents has set up a group for doctors. Action for Victims of Medical Accidents is often regarded as dealing solely with compensation and litigation, but its raison d'être has always been to improve patient care.

In February this year the doctors' group met informally to discuss how best to translate into practice the General Medical Council's requirements of "good medical practice when things go wrong."[5] We are determined to take our discussion forward and would welcome input from others who see the need to change the defensive and exclusive culture of British medicine. Doctors who would like to be involved should contact Dr Anne Savage, who is acting as secretary to the group.

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1 Reducing error, improving safety. *BMJ* 2000;320:725-814. (18 March.)
2 Brennan TA, Leape LL, Laird NM, Herbert L, Localio AR, Lawthers AG, et al. Incidence of adverse events and negligence in hospitalised patients: results of the Harvard Medical Practice study. *N Engl J Med* 1991;324:370-6.
3 Wilson R McL, Runciman WB, Gibberd RW, Harrison BT, Newby L, Hamilton JD. The quality in Australian health care study. *Med J Aust* 1995;170:458-71.
4 Smith J. Study into medical errors planned for the UK. *BMJ* 1999;319:1091.
5 General Medical Council. *Good medical practice*. London: GMC, 1998 (www.gmc-uk.org).

Log of errors is needed

Editor—We welcome the *BMJ*'s contribution to discussions concerning the study of medical error.[1] Of concern, however, is that although most clinical encounters in the health service take place in primary care, almost all deliberations on error to date have focused on delineation of error in the hospital sector. Error in primary care is neither well characterised nor well understood. As far as we are aware, there are few, if any, initiatives designed to document its occurrence or determinants in general practice.

A first step to studying error in this setting would be the creation of a log of errors.[2] If based on a voluntary, confidential, self reporting scheme, akin to logs used by the Federal Aviation Authority, this would enable systematic study of medical error without fear of reprisal.[3 4] Funded and administered at the level of the primary care group, in the context of clinical governance initiatives, such logs would enable patterns of error and latent deficiencies in service organisation and delivery of health care to be identified, including those that put patients at risk of avoidable harm. Although doubtless subject to underreporting, such a move would help to bring error out of the shadows of secrecy and blame and into the light of systematic description and study.

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1 Leape LL, Berwick DM. Safe health care: are we up to it? *BMJ* 2000;320:725-6. (18 March.)
2 Sheikh A, Hurwitz B. A national database of medical error. *J Roy Soc Med* 1999;92:554-5.
3 The Federal Aviation Administration Aviation System. http://nasdac.faa.gov/safety_data (accessed 5 Jun 2000).
4 Cohen MR. Why error reporting systems should be voluntary. *BMJ* 2000;320:728-9. (18 March.)

Relation between reported mishaps and safety is unclear

Editor—The articles from the special issue of the *BMJ* on reducing error rightly point out that mistakes are inevitable and that the way to alleviate their effects is to have an effective reporting system.[1] This is invariably advantageous to the organisation in which reporting is confidential internally and to external assessors.

Publication requires great sensitivity because the good organisation will have fewer mishaps but a greater proportion of them will be reported, and the opposite will apply in the bad organisation. Almost certainly, the organisation with the most

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occurrences of errors will not be the worst either in safety or efficacy, and the one with the fewest occurrences will not be the best. Indeed, these opposing effects may mean that there is no relationship at all between reported mishaps and safety or efficacy. When several units can be compared over time, a benchmark might be established for the optimal level of reporting, which will never be the lowest. Until a benchmark is established, anybody publishing such information should explain prominently in the introduction that there is no standard yet, and the contrary effects on the apparent frequency of incidents of honest reporting and good practice mean that no league tables can be construed.

The problem was well illustrated by the first publication a year or two ago of the Aldermaston risk management reports.[2] These were interpreted by an unsympathetic press as indicating an unsafe organisation. In the absence of any standard by which to judge, the frequency of reported errors could have been seen, with equal justification, as indicating a safety conscious organisation taking every precaution to avoid mishaps.

The medical profession must get this message over if it is to cooperate with the publication of league tables of this nature.

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1 Reducing error, improving safety. *BMJ* 2000;320:725-814. (18 March.)
2 Nuclear Safety Directorate and HM Nuclear Installations Inspectorate. Nominated site inspector's report on Hunting-Brae Limited at AWE Aldermaston and Burghfield, July 1999 to September 1999. www.hse.gov.uk/nsd/llc/1999/llcawe3.htm (accessed 13 Jul 2000).

No fault compensation protects patients in Nordic countries

Editor—Weingart et al reviewed the epidemiology of medical error.[1] We would like to point out additional ways of addressing patient and consumer safety, both analytically and practically.

It is important for healthcare consumers to avoid not only adverse events related to specific medical errors but also adverse outcomes where a causal relation to errors in practice cannot necessarily be established. Clinical decision making is complicated and often includes an element of "normal" risk taking. The level of risk regarded as acceptable depends on the clinical situation and may vary from doctor to doctor, from patient to patient, and between patients and their doctors.[2]

Information about the factual risks associated with clinical interventions is a prerequisite for rational decision making. The possibility of finding facts about the risks of adverse events depends on the features of the healthcare system generating the events. In Sweden a national patient insurance scheme gives financial compensation to patients who have incurred physical or mental injury as a consequence of medical treatment. Compensation is granted regardless of medical responsibility or malpractice. Other Nordic countries have established parallel insurance schemes. Since the Swedish insurance scheme began in the 1970s, more than 100 000 claims have been filed, and about 40% of these patients have been compensated financially. Data about these cases are available in an extensive database.

Although we do not know what proportion of all injuries are reported to the insurance scheme, the vast database offers possibilities to analyse, for example, injury profiles for different types of healthcare units and the severity of consequences of different types of errors. In contrast to studies of hospital data, the database also permits analyses of outpatient care, comparisons between different levels of care, and studies of trends over time.

Previous analyses have addressed a range of topics—for example, specific types of medical error, injuries associated with the use of selected healthcare technologies, and gender disparities in the quality of care.[3–5] A more novel approach is to study reports from patients with selected chronic diseases, such as diabetes, and to use the results to inform and educate practitioners and patients.

As the risk of adverse medical outcomes will never fall to zero, the least we can do for consumers is to provide them with available information about the relative safety of their options in everyday health care.

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1 Weingart SN, Wilson RM, Gibberd RW, Harrison B. Epidemiology of medical error. *BMJ* 2000;320:774-7. (18 March.)
2 Gafni A, Charles C, Whelan T. The physician-patient encounter: the physician as a perfect agent for the patient versus the informed treatment decision-making model. *Soc Sci Med* 1998;47:355-6.
3 Johansson H, Räf L. A compilation of "diagnostic errors" in Swedish health care. Missed diagnosis is most often a fracture. *Lakartidningen* 1997;94:3848-50. (In Swedish.)
4 Räf L, Claes G. Complications are frequent after surgery for excessive hand sweating. Patients should be informed about the risks. *Lakartidningen* 1999;96:930-2. (In Swedish.)
5 Jonsson PM, Räf L. Is quality of health care for women worse than for men? Two out of three insurance claims concern women. *Lakartidningen* 1997;94:865-8. (In Swedish.)

Doctors could certainly take lessons from aviation

Editor—Helmreich's article discussing lessons to be learnt from aviation is useful.[1] The principles outlined are mentioned in several other articles in the same issue of the *BMJ*, but they mainly refer to commercial rather than general aviation (private, small business, aerial photography, medical services, police work, etc).

The fatal accident rate in general aviation perhaps reflects the problems, especially psychological, that affect pilots (often single handed) when they are not protected by the vast machinery of an international flying organisation and cockpit cross checks, etc. The three main causes of death in general aviation are loss of control (in either instrument or visual conditions), "controlled flight into terrain" (flying into a mountain), and fuel starvation.[2]

Many cases of loss of control have been due to failure to recognise lack of ability, being out of current practice, or overconfidence. Controlled flight into terrain occurs in instrument conditions and is usually due to pilots either being lost or failing to obey the rules for terrain clearance, or both. Most engine "failures" caused by running out of fuel defy belief. Yet although each of these groups of error is likely to result in a fatal outcome for the pilot and passengers, they still occur. Clearly the psychological factors involved are complex, but it is unlikely that any pilot set out with the intention of dying.

Airlines now have rigorous psychological assessment before appointing a pilot to training. In light of the accident rate in general aviation, a section on human factors and performance has been introduced to the private pilot syllabus. Whether this will help to reduce the human factors involved in deaths in general aviation remains to be seen, but some will inevitably still occur.[3] Psychological assessment of doctors or medical students, or both, along with training in recognising personality types and error prone situations could be of benefit to both practitioners and patients and help prevent such scenarios as those given in Helmreich's article.

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1 Helmreich RL. On error management: lessons from aviation. *BMJ* 2000;320:781-5. (18 March.)
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3 Beaty D. *The naked pilot*. Shrewsbury: Airlife Publishing, 1995.

"Do all things practicable to reduce risk" should apply in health system

Editor—Frankel et al state, "Even if [formal monitoring of mortality in general practitioners' practices] were restricted to deaths that occurred outside hospital, random variation would mask considerable illegitimate mortality."[1] What about deaths that occur inside the precinct of the practice, or within 24 hours of attending the practice? Would that be a more sensitive measure? After all, aren't deaths that occur within 24 hours of admission to a hospital referred to the coroner in many places?

Suspicion surrounding the high mortality associated with Harold Shipman's practice was raised. However, the health authority's inquiry did not follow up its request for a further five sets of case notes. Was this because doctors are perceived to be immune from the failings of humanity?

The health system must be required, by law, to do everything practicable to reduce the risk to others in the workplace. The airline industry provides a useful model.[2] Captains used to reign supreme; questioning their judgment handicapped career advance-

ment. However, an accident where the co-pilot knew what was about to happen, but did not question the captain, resulted in captain management systems—CMS—becoming cockpit management systems. Then there was an accident where a flight attendant knew that a wing was iced over but said nothing because "who am I to question the judgment of the cockpit?" The "C" then referred to crew. Then came an accident caused by factors outside of the aircraft, so the "C" now stands for corporate. All incidents must now be reported and investigated to see how to further reduce the risks of flying (1 death per 8 million passenger flights).

Requiring employers to take "all practicable steps" to improve safety has reduced workplace deaths by about 30% over the past decade in New Zealand. Why hasn't this happened in medicine?

The "business" model has been imposed on the health system in many countries over the past 15 years, with neither the injection of capital nor the leadership needed to manage change effectively. This has resulted in a focus on economic efficiencies, but organisational objectives such as safety have been forgotten.

A non-punitive systems safety approach is proposed for our healthcare system. All accidents and near misses must, by law, be reported and investigated so that the system can learn what went wrong and change procedures to minimise repeat occurrences. Amputating the wrong limb or giving the wrong drug are unacceptable, and avoidable, errors and should no longer go unchallenged.

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1 Frankel S, Sterne J, Smith GD. Mortality variations as a measure of general practitioner performance: implications of the Shipman case. *BMJ* 2000;320:489. (19 February.)
2 Helmreich RL. On error management: lessons from aviation. *BMJ* 2000;320:781-85. (18 March.)

Health professionals should take responsibility for gross carelessness

EDITOR—Smith says: "The easy, understandable, and completely wrong answer to such an incident [removal of the wrong kidney] is to blame those who made the mistake."[1] However, a perfectly fair consumer perspective is: If you cannot tell left from right then are you fit to practise?

Although I understand all the valid reasons for avoiding a culture of wholesale blame, patients are entitled to require the people whom they trust with their lives to take responsibility and be held accountable for their actions. If the medical profession cannot cope with this reasonable demand, rebuilding public confidence in its trustworthiness will prove more of an uphill struggle than it need be.

It may be hard in so far as scarcely any doctors deliberately damage their patients, but the public expects privileged professionals to accept their obligations, including penalties for inexcusable carelessness. Perhaps readers can explain why health professionals should not suffer the consequences of gross carelessness like employees in every other trade and calling.

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1 Editor's choice. Facing up to medical error. *BMJ* 2000;320. (18 March.)

Blaming individuals is more emotionally satisfying than targeting institutions

EDITOR—The 18 March issue of the *BMJ*, on reducing error, raised some pertinent issues for me as a "second victim,"[1] and it was good to know that I am not alone.

The retraining period that immediately followed my medical accident showed me how blaming individuals is more emotionally satisfying than targeting the institution. The very existence of error seemed to damage my colleagues' professional self image such that they needed to correct and purge the source of the error.

The only way I felt able to protect myself was to maintain professional dignity while my character as well as my competence was being scrutinised. I still break out in a cold sweat when approached by someone saying "Can I have a quick word?"—will it be criticism, judgment, or rebuke?

I do not know how someone without a caring partner could cope. I vividly remember mine (non-medical) spending four hours trying to write an essay set by my retraining supervisor on the causes of medical error. They say that the road to hell is paved with good intentions. That was four hours of hell—tears, grief, helplessness, and the torment of "What if?" and "Why?"

I can identify with the possible need for confession, restitution, and absolution, or at least resolution. Unfortunately, restitution for me was delayed for 18 months and came in the form of the coroner stating that "responsible" did not mean "negligent" in this case. It was too late in some respects, as this sensitive and reflective person, now deeply wounded, was burnt out.

Of course, this is all yesterday's news for some. I have learnt to live with it—the error, the fallout, the burn-out. As Reason stated, "It is often the best people who make the worst mistakes."[2] This is comforting. Someone else said, "Father forgive them."[3] This is challenging. If I can forgive myself, and then those who reacted as though they were beyond fallibility, I suppose this would be resolution?

1 Wu AW. Medical error: the second victim. *BMJ* 2000; 320:726-7. (18 March.)
2 Reason J. Human error: models and management. *BMJ* 2000;320:768-70. (18 March.)
3 *Holy Bible*. Luke xxiii, 34.

Medical errors must be discussed during medical education

EDITOR—The profession has an opportunity to improve medical education, using the momentum generated by the Institute of Medicine's report on medical errors[1] and by general raising of awareness as in the *BMJ* of 18 March.[2] We used personal examples to increase awareness of the significance of errors.

We showed a videotape on errors in medicine to a graduating class of medical students. After they had viewed the tape we asked them to close their eyes (both to maintain anonymity and to increase response) and to raise their hands if they had been exposed to medical errors. We asked three questions.

- In your experience, have you seen a medical error that resulted in anything, from no harm to death? All 67 had.
- How many of those resulted in major harm or death? Thirty (45%) of the 67 indicated that it had done (95% confidence interval 33% to 57%).
- How many of those have you been personally involved with or have first hand information about? The response was 6/67 (9%; 2% to 16%).

Students were then asked to describe an error that resulted in death or major harm. Sixty two did so. We typed all comments and found that the errors fell into five categories: decision making, drugs, procedural, system, and others. The interrater agreement for the type of error was moderate ($\kappa = 0.55$, $P < 0.001$).[3]

Errors in decision making were noted in 12 responses (for example, wrong diagnosis; a pregnant patient sent home after abdominal trauma). Drug errors accounted for 18 responses (a switch of drugs with similar brand names (analgesic instead of antidepressant); a long acting drug crushed). Procedural errors accounted for seven responses (an error due to insufficient training; pneumothorax due to inadequate technique). System errors accounted for 15 responses (inability to obtain medical records; staffing shortage). Finally, other errors accounted for 10 responses (fear of correcting a superior; inadequate blood sampling). We further categorised the written comments as indicating errors that resulted in death (nine cases; moderate agreement, $\kappa = 0.57$, $P < 0.001$) and errors that we deemed preventable (43; fair agreement, $\kappa = 0.38$, $P = 0.003$).

How do we interpret the finding that 45% of graduating students are aware of an incident that has resulted in major harm or death, yet 9% had first hand information? If such estimates are accurate and representative they are astounding. We all face the challenge to change the culture of blame and to provide a safe forum for discussion among medical students.

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1 Kohn LT, Corrigan JM, Donaldson MS, eds. *To err is human; building a safer health system.* Washington, DC: National Academy Press; 1999.
2 Wu A. Medical error: the second victim. *BMJ* 2000;320:726-7. (18 March.)
3 Sackett DL, Haynes RB, Guyatt GH, Tugwell P. *Clinical epidemiology: a basic science for clinical medicine.* 2nd ed. Boston, MA: Little, Brown, 1991.

Safety of systems can often be improved

EDITOR—We agree with the findings of Espinosa and Nolan's study on reducing errors made by emergency physicians in reporting radiographs.[1] We work at a district general hospital's accident and emergency department that has operated an almost identical system for over 10 years, in accordance with the British Association of Accident and Emergency's guidelines.[2]

Key points in our department are the rapid return of all radiographs to the requesting physician; the reporting of the radiographs by consultant radiologists within 24 hours; the recall of any patients with errors made in interpreting radiographs by telephone; and the use of any such radiographs as a teaching exercise for all staff. Differences in the systems include reporting of plain radiographs within 24 hours in our institution rather than 12 hours, and an additional level of input in the marking of radiographs as abnormal by radiographers.

Using the experience of the radiographers adds another tier of safety to the system. The radiographer marks all abnormal radiographs with a red dot. This part of the system is audited regularly (last audit: sensitivity 93%, specificity 97%; audit period two weeks, 449 radiographs; true positive results 80, false positive results 6, false negative results 9, true negative results 354).

Having such a fail safe system has several effects: patient satisfaction is subjectively better, with the knowledge that all radiographs are reported; few complaints are made about misinterpretation; and a culture of learning and cooperation exists among junior staff.

Continuous audit data show a remarkably low rate of clinically important misinterpretation: 0.64% of plain radiographs per month (mean 6.84 events per month, mean 1069 radiographs per month; range 0% (0/1049) to 1.4% (16/1151) per month, data from 90 consecutive months). This compares with the rate of false negative errors of 0.3% (0.26% to 0.34%) in Espinosa and Nolan's study.

This is an excellent systematic approach to what is an error prone activity, reducing mistakes by accident and emergency staff (often junior), increasing patient satisfaction, and reducing long term patient morbidity and litigation. We think that this is the type of approach alluded to in another article in the same issue, by Barach and Small, applied in a medical context.[3]

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1 Espinosa J, Nolan T. Reducing errors made by emergency physicians in interpreting radiographs: longitudinal study. *BMJ* 2000;320:737-40. (18 March.)
2 Clinical Services Committee, British Association for Accident and Emergency Medicine. *X-ray reporting for accident and emergency departments.* London: BAEM, 1983. (Currently under revision.)
3 Barach P, Small S. Reporting and preventing medical mishaps: lessons from non-medical near miss reporting systems. *BMJ* 2000;320:759-63. (18 March.)

Systems approach to intrapartum risk management is important

EDITOR—The *BMJ* of 18 March highlighted the issue of medical error, the subject of our own programme of research. We fully endorse the strategy of viewing medical error as a system failure and the importance of seeking the full range of root causes underlying particular incidents.[1 2] This strategy supports prevention rather than the apportioning of blame to individuals.

Our current research in the labour ward has been stimulated by observational studies that reported higher rates of error and injury than might be expected.[3] Our research entails analysing the system of care in labour wards in each of seven maternity units in the north west of England. Additionally, we will be studying five adverse incidents in each unit. Staff will be interviewed to ascertain the sequence of events. We will use the cognitive interview technique, which can elicit nearly 50% more information than traditional interviewing techniques.[4] We will then analyse the findings using the prevention and recovery system for monitoring and analysis to try to establish the root causes.[5] The results will be compared with the analysed system of care for the individual unit to provide evidence based risk management data.

In view of the serious hazards in this specialty, we believe that we should report our initial investigations. These suggest hypotheses about the sources of risk in current practice in the labour ward:

- Lack of formal training and updating on interpretation of cardiotocographs for midwifery and medical staff
- Inappropriate deployment of midwifery staff because of the team midwifery system, with the least experienced midwives being assigned to the highest risk patients
- Dilution of labour ward skills through use of rotational team midwives, who lack consolidation of skills and confidence
- Reduced familiarity with protocols, including emergency strategies, because midwives rotate to labour wards as teams
- Reliance being placed on bank midwives to maintain adequate staffing levels
- Increased rates of elective procedures, especially caesarean section, which can result in extra workload where there are tight staffing levels
- Inadequate or no supervision of junior medical staff during emergency procedures
- Transfer of asphyxiated infants before resuscitation can be started because resuscitation apparatus is sited centrally
- Increased time constraints through the duplication of written records on to computerised systems and correction of malfunctioning equipment.

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1 Vincent C, Taylor-Adams S, Chapman EJ, Hewett D, Prior S, Strange P, et al. How to investigate and analyse clinical incidents: Clinical Risk Unit and Association of Litigation and Risk Management protocol. *BMJ* 2000;320:777-81. (18 March.)
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5 Shea C. The organisation of work in a complex and dynamic environment: the accident and emergency department. Manchester: Human Factors Research Group, Faculty of Education, University of Manchester, 1996. (PhD thesis.)

Crew resource management training should be mandatory in anaesthesia

EDITOR—The recent papers by both Helmreich and Gaba concerned the similarities between anaesthesia and aviation in terms of the performance standards of staffpersonnel.[1 2] I have attended both anaesthesia crew resource management simulator training and aviation crew resource management training in the United Kingdom and Australia, and I can confirm that the models are indeed similar.

Furthermore, I have taken the training into the operating theatre and also into the air (as part of an aeromedical rescue team), and can I can also testify as to the value of such training, in its application to the working environment for which it is intended. The recognition that errors occur and the need to move away from a culture of blame have been highlighted before in anaesthesia.[3] The confidential critical incident reporting system set up by the Royal College of Anaesthetists has gone some way towards recognising the need to mirror such systems in the aviation industry. However, it has also been noted that extensive professional training, as undertaken by doctors, and experience on the job generally ensure that errors caused by failures of understanding are rare and that task overload is not at the root of mistakes. This is achieved by making some processes relatively automatic and unconscious. As such, most mishaps are caused by errors in carrying out rather simple tasks, which would usually demand little attention. This implies that the more experienced operator is more likely to make such errors.[4]

With the advent of recertification for hospital doctors and the obvious implications for clinical governance, and given the availability of anaesthesia simulators in Stirling, Bristol, and London, surely it is sensible

that all anaesthetic staff regularly undergo this training, as is expected of our counterparts in the aviation industry?

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1 Helmreich RL. On error management: lessons from aviation. *BMJ* 2000;320:781-5. (18 March.)
2 Gaba DM. Anaesthesiology as a model for patient safety in health care. *BMJ* 2000;320:785-8. (18 March.)
3 Allnutt MF. Human factors in accidents. *Br J Anaesth* 1987;59:856-64.
4 Chappelow J. The psychology of safety. *Br J Clin Psychol* 1988;2:108-25.

Anaesthesia is different from anaesthesiology

Editor—We agree with Gaba that anaesthesia has embraced the issues of patient safety.[1] However, there are significant important differences (other than spelling) between anaesthesia in the United Kingdom and anaesthesiology in the United States.

In the United Kingdom all anaesthetics are given by medically qualified anaesthetists, who not only fulfil their traditional roles in the operating theatres but are also heavily involved in trauma, resuscitation, pain management, and intensive care medicine (93% of sessions in intensive care medicine are done by anaesthetists). By contrast, in the United States there are a substantial number of nurse anaesthetists as well as medically qualified anaesthesiologists, and their involvement in intensive care medicine is often limited.

The imperative for the change in attitude to safety in the United States was severe medicolegal pressure. Although there is such pressure in the United Kingdom, our indemnity arrangements are not the same as those in the United States. Nevertheless, patient safety is a high priority for anaesthetists in the United Kingdom. This is due to the roles of the Royal College of Anaesthetists and the Association of Anaesthetists of Great Britain and Ireland, through whom patient safety issues have long been brought to the attention of all anaesthetists. Further information can be found on websites www.rca.co.uk and www.aagbi.org.

The United States does not have a national health service or national organisations with the power and influence of the college and the association. Therefore the solution for promoting patient safety in the United States was to set up the Anesthesia Safety Foundation. This is a voluntary body, however, and it does not have access to all parts of health care in the United States—as the college and the association do in the United Kingdom.

Anaesthesia in the United Kingdom, as in the United States, seems safer than ever. Nevertheless, things still go wrong and may cause significant considerable harm to patients. However, we do not think we need a separate patient safety foundation in the United Kingdom. Although it is currently fashionable to decry organisations such as colleges and associations in the rush to "modernisation," our track record needs no defence, and we have committed leadership and an excellent framework for the future. However, we are not complacent and agree that "the price of patient safety is eternal vigilance."

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Technology cannot replace healthcare workers

Editor—We have seen incredible advances in technology, and more are likely to come. I welcome these changes, as long as we keep technology in perspective. We need to look at each system carefully to avoid unrealistic expectations and get the best (and safest) result out of it.

The media are fascinated by new technologies, especially in health care. Furthermore, anything that smacks of an opportunity to reduce the costs of healthcare staff (regardless of any proved track record) immediately gains their attention. However, technology is all too often touted as a complete replacement for doctors, nurses, and other healthcare workers.

Contrary to promotional claims, technology is not always less expensive, or even more efficient, than having a job done by people. Technology has given us all those great voicemail phone trees that more often prevent us from resolving problems that would take only a couple of minutes if we could actually speak with a person in charge directly.

Robotic drug dispensing machines can be useful in reducing rates of medication errors in hospitals,[1] but they entail an intricate system of complex electronics and hydraulics. They do not handle all drugs, they can be quite sensitive, and someone has to load and maintain them constantly. Furthermore, backup systems have to be available when breakdowns occur and extensive repairs are required.

Using technologies to improve the quality of information provided to doctors and other healthcare providers is one thing. Assuring that the information is reliable, up to date, and used correctly for an individual patient and particular circumstance is a separate issue. Interaction between pharmacists, nurses, and physicians regarding each patient's drug treatment provides a critical triad of safety for patients admitted to hospital. This is planned redundancy versus unnecessary duplication, and if one or more of these elements are taken out of the loop, patients are at increased risk of adverse drug events.

I have seen this work successfully over and over again throughout my 24 years in practice as a clinical pharmacist. Again, technology is helpful and can make some tasks more efficient, but it should not be seen as a complete replacement for critical interaction between pharmacists, nurses, and doctors.

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Crisis in the air

Account is misleading and condescending

Editor—Dunea's account of a "crisis in the air" makes slightly disturbing reading.[1] He describes a scene surrounding the collapse of a young woman on an aeroplane, who appears pale, "dead, or dying," with dilated pupils. A dentist is organising cardiac massage, elevation of the legs, and facemask oxygen while personally attending to the patient's airway. Whatever the cause of the collapse, this represents an admirable ABC approach to the problem in difficult circumstances. However, Dunea goes on to describe how he instructed various individuals to discontinue their efforts, ascribing the whole incident to an atropine-induced bradycardia and faint.

This uncomplimentary account of the dentist's management is both condescending and misleading. If the woman did indeed suffer a vasovagal syncopal attack (atropine is an anticholinergic agent more likely to cause a tachycardia than a bradycardia), then the prompt intervention by this resuscitation team in a partially pressurised and relatively hypoxic air cabin should be praised, not subjected to scorn.

Faced with the prospect of being resuscitated by the physician or the dentist, I think I would opt for the latter.

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1 Dunea G. Crisis in the air. *BMJ* 2000;320:813. (18 March.)

Automated defibrillators are safer than levitating dentists or horizontal internists

Editor—Much as I usually enjoy George Dunea's perceptiveness, I have to take issue with his assessment of the role of automated defibrillators.[1]

The case he outlines is the perfect testimony as to why automated defibrillators are potentially useful. The machines currently available analyse rhythms and give verbal instructions to bystanders. They are likely to perform better than the levitating dentist portrayed.

Parenthetically, although low doses of atropine that have been administered slowly can cause paradoxical bradycardia, tachycardia is more usual. Many remedies for motion sickness contain antihistamines, which can be associated with atrioventricular and bundle branch blocks as well as

tachycardia, and the common "cure-all" Donnatol contains barbituate, atropine, scopolamine, and hyoscine.

All the more reason for the elegant simplicity and safety offered by automated defibrillators.

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Cost effectiveness of sildenafil calls for political discussion

EDITOR—Freemantle comments on our analysis of the cost effectiveness of sildenafil.[1 2] He argues that the validity of quality adjusted life year (QALY) measures is based on strong assumptions and the measures are therefore insufficient for political decision making. Given that our analysis takes a conservative approach towards the cost effectiveness of sildenafil, however, these arguments cannot affect the conclusion that sildenafil is a highly cost effective drug.

Freemantle recognises the assumptions of classical welfare theory on which QALY analyses can be based. This is not the only interpretation of QALYs. There is the extra-welfarist approach, in which QALYs are a measure of health gain, not just a decision rule, and they simply quantify health, but the distribution of health—for example, QALYs—is based on a different set of rules. Freemantle assumes incorrectly that two patients who gain 0.5 QALYs are always valued equal to one patient who gains 1.0 QALY. In practice, additional distribution rules could favour one of the two patient groups. In this way, solidarity with those who are worst off could influence the distribution of health gains expressed in QALY terms.

His second criticism is that it would be more appropriate to use patients' values. This is not recommended in the usual guidelines of health economics. Nevertheless, we shared his concern whether the general public could imagine being affected with erectile dysfunction. We have also collected patients' values (available at www.imta.nl). This report shows that according to the patients the quality of life gain attributable to sildenafil is larger than it is according to the general public. Thus, the cost effectiveness of sildenafil would be even more favourable using patients' values.

Whenever assumptions had to be made in our analysis, we chose the least favourable assumption for sildenafil. We also assumed that the effects of injection treatment would be as favourable as the effects of sildenafil, which they are not, given the invasive method of administration. It is therefore likely that when more data become available the conclusions will change in favour of sildenafil. This means that methodological flaws cannot affect the conclusion that sildenafil is a highly cost effective drug.

Perhaps the reservation of Freemantle towards the favourable cost effectiveness of sildenafil originates from his political and ethical thoughts. We disapprove of making political arguments technical ones. The discussion should be clarified instead of technically mystified. Sildenafil is a cost effective drug. The challenge is now to develop a decision making framework in which economic considerations are used besides ethical, distributional, or political arguments.

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Competing interests: This research project was undertaken in support of the economic report requested by the Dutch Health Authorities to inform their decisions regarding the reimbursement of sildenafil. The research was supported by an unrestricted grant from Pfizer BV in the Netherlands. All authors have received reimbursements from Pfizer for attending symposia or fees for consultancy and speaking, or both.

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Debate about medical treatment of life prisoners

EDITOR—Dyer has written of Mr Justice Kay's decision that Ian Brady—the murderer who has been in prison for over 30 years and has been on hunger strike since last October—should not be allowed to stop doctors force feeding him.[1]

In a series of cases concerning the right to give food and hydration to non-consenting patients with anorexia nervosa the courts have reasoned as follows. An acute diminution of autonomy is characteristic of (indeed, a symptom of) anorexia nervosa; restoration of autonomy is part of the required treatment, in so far as proper nourishment is important for people to have the capacity to make autonomous judgments and being autonomous is part of what it means to be healthy. Therefore, as the provision of nourishment is required for the restoration of autonomy, force feeding is a legitimate basic treatment for patients with anorexia nervosa. Failure to feed such patients could attract tortious liability: such a failure would be grossly negligent. This argument was also used in a case concerning treatment of a patient with a compulsion to inflict self harm.[2]

It strikes me as paradoxical that, in his effort to articulate the legal basis for the only decision that could be called just, Mr Justice Kay has extended the scope of a philosophically (and jurisprudentially) dubious precedent. Why did he not simply declare that the community was entitled to its pound of flesh and that Brady should not be allowed to frustrate its reasonable expectations by being his own warden?

This case throws into bold relief the issue of how far the community must go in its efforts to maintain the health of moribund prisoners serving a life term. Suppose Brady was diagnosed with terminal cancer. Would the community be justified in giving him aggressive treatment lest the disease should rob it of its right to exact a few more years of punishment from him?

At what point is the life of a prisoner serving a life term naturally over as opposed to judicially over? And how can anyone ever be sure that the motive for providing any such prisoner with lifesaving treatment is a genuine concern for his or her best interests as opposed to the interests of the (vengeful?) community?

Brady has complained that his new confines rob him of any intellectual challenges. Perhaps these and similar questions will give him something to mull over.

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General practitioners have important roles in cancer

EDITOR—Summerton rightly states that general practitioners have an important role in cancer care, emphasising the issue of early detection by screening and the prompt recognition of specific symptoms.[1] It is important, however, to ensure that work on cancer care and primary care does not become dominated by referral guidelines and pathways or by the medical model of care.

In 1998 I was a member of a multidisciplinary working group on cancer and primary care set up by the Department of Health. The group considered the role of primary care in its broader context and made 19 recommendations; those relating to referral formed only a small, though important, subset. Unfortunately, the report, which was completed last year, has not been published.

Several key recommendations may be lost if attention is deflected to the production of new referral guidance.

- Available evidence on the community epidemiology of symptoms potentially related to cancer should be reviewed, with primary research being commissioned where evidence is lacking
- Existing local referral guidelines for rapid access clinics for suspected cancer should be evaluated
- Nationally produced referral guidelines should indicate the appropriateness of preliminary investigation in primary care
- Commissioners of cancer services should incorporate quality standards for communication between primary and secondary care into service agreements with cancer units and centres
- A strategy for palliative care should be formally discussed and agreed at health authority level in the context of the health improvement programme

- Local directories of cancer and palliative care services should be compiled and disseminated
- Primary care teams should have 24 hour access to specialist advice and to admission to a specialist palliative care unit
- There should be access to 24 hour community nursing care
- Palliative care should be a core element of staff training in residential and nursing homes.

Primary care teams have essential parts to play when a patient has cancer. The Calman-Hine report noted that "the primary care team is a central and continuing element in cancer care, for both the patient and his or her family, from primary prevention, pre-symptomatic screening, initial diagnosis, through to care and follow-up or, in some cases, death and bereavement."[2] Excessive emphasis on early detection may undermine the development of the other elements of high quality care.

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Reviving academic medicine in Britain

Research and education must be given equal weight

Editor—The discussion on the malaise affecting academic medicine is welcome and timely, but I am disappointed by the emphasis of the articles.[1–3] Although Catto and Tomlinson both refer to teaching, the evident focus, as highlighted in the editorial,[4] is on research. I accept the need for a sound training in research, but I am concerned by the implication that if an academic has a sound clinical and research training then teaching will follow naturally.

Teaching is a fundamental part of being a doctor,[5] but, as with the other skills that are needed, it must be learnt. At the most basic level, anyone who is going to teach medical students must understand the basic concepts of setting objectives for the session and preparing a teaching plan. The medical education is, however, more than an agglomeration of individual teaching episodes. Curriculum planning, assessment of students, and programme evaluation are all professional activities with their own well developed scholarship. Many of my colleagues, who are excellent scientists within their own field, accept the status quo in medical education without question rather than examining the evidence for their presuppositions.

There is a need for medical academics whose main contribution to scholarship is in the field of education rather than research. Medical educators will take time to review what the educational process is trying to achieve. They will, in cooperation with non-medically qualified educators and experts from other cognate disciplines, evaluate developments in education from a broad field of study and will adapt and apply them to medicine. They will help to disseminate good educational practice among their clinical and academic colleagues. Obviously, they will have to be aware of developments in the field of clinical medicine, and their teaching will be informed by research. Equally, researchers will have to learn from educators how best to pass on the insights they have acquired.

If medical academia is to flourish research and education must be given equal weight. Individuals may choose to specialise in one or the other, but the medical school must encourage both and make it easy for them to interact. Consideration must be given to developing appropriate training and career paths for the educators as well as for the researchers with equal opportunities for promotion being open to both.

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More honorary chairs are needed

Editor—I agree with much of what has been published about the sickness affecting academic medicine in Britain, in particular the need to change the narrow research assessment exercise.[1–4] The definitions of academic medicine and clinician-researcher should be broadened, with the aim of systematically harnessing the academic talents of teaching hospital consultants.

Doctors often choose a post as a teaching hospital consultant instead of a university position, believing that it will allow them to remain involved in research while providing the possibility of an income outside the NHS. However, the pressures on time have detrimental effects on research. The amount of clinical and managerial work carried out by teaching hospital consultants has increased, and their clinical activity is usually comparable to that carried out by consultants at district general hospitals. The apparent advantage of having junior doctors is not the perk it was once perceived to be, since Calman trainees require much more hands-on teaching than in the past. In addition, the system of discretionary points seems to give more weight to involvement in management within a hospital trust than to research and other academic activities, such as teaching and writing books, book chapters, and review articles.

All consultants should relish the thought of teaching undergraduates, but this role should not be taken for granted by the universities. Teaching hospital consultants should be encouraged by the universities to take a more active part in research, collaborating with non-clinical and clinical colleagues employed by the university in integrated research programmes rather than working in isolation. Selected consultants who can demonstrate appropriate research training should be given time to apply a professional approach to research by limiting the number of their clinical sessions. This shortfall in clinical work would then need to be provided by other staff. People work better with incentives, and the universities should draw up and publicise standardised objective criteria by which teaching hospital consultants could be assessed for higher honorary academic status. Income from research grants and journal impact factors are important criteria by which to assess academics employed by universities, but there should be a broader remit when assessing the academic contribution of NHS colleagues.

The establishment of more honorary chairs, which would allow more flexibility for universities with the research assessment exercise, would be one way of providing an incentive for teaching hospital consultants to continue participating in strategic research programmes rather than "dabbling in clinical research." This already happens to an extent in the United States, with clinical professors and basic science professors working alongside each other.

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Improving education for senior house officers

Editor—Paice has shown an improvement in specialist registrar training after the Calman reforms, and Catto asks what are we doing to help senior house officers.[1 2] At Portsmouth, since 1994, we have studied the problems faced by senior house officers during their training.[3 4]

We have standardised, six monthly, questionnaire data that compare posts with each other and examine changes in posts over time. With these data and structured interviews with and feedback from senior house officers, consultants, and educationalists we have looked both at interventions to improve senior house officers' education and at blocks to improvements.

The main issues we identified include a need for consistency and clarity over what is required for senior house officer training and also a need for local feedback to demonstrate that improvements have occurred. *The Early Years* goes some way to address the issue of what is required, but it

has not reached the daily working interface of senior house officers and consultants.[5] The Calman reforms achieved uniformity and consistency of aims and were associated with increased monitoring of their implementation.

We believe that this is one reason why they have been successful. Questionnaire surveys demonstrate the problems, but the issue faced by consultants is how to introduce educational improvements within limited resources.

We conclude that there are four steps to introducing educational initiatives. The first, and most often missed, is the coordination and organisation of meetings such as appraisals, inductions, or periods of ward based teaching. The second is to ensure regular input from senior experienced staff for the meetings. The third is to address the quality of that input. The fourth step is to have a system of internal monitoring within the post that checks the first three steps are in place.

Specific tasking for each of these stages and explicit setting aside of time has achieved change at Portsmouth with limited additional resources in time or funding. A department that has organised, regular, high quality, educational initiatives, which it audits internally, does well, and this has been associated with increased the satisfaction of its senior house officers.

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Preventive home visits to elderly people in the community

Visits are most useful for people aged ⩾75

Editor—The systematic review by van Haastregt et al of trials of preventive home visits for people aged 65 or over reported that "no clear evidence was found in favour" of such visits.[1] Some of the trials reviewed showed favourable effects in some of the five main outcome measures (physical functioning, psychosocial functioning, falls, admissions to institutions, and mortality), but most found no effect. However, the review shows that favourable outcomes were more prevalent in studies conducted in older subjects (⩾75), although it does not comment on this. The table is constructed from the analysis they report.

Outcomes of physical functioning are the exception, with only one of the five favourable studies being in people aged 75 and over. This is not unexpected. It may be easier to improve physical functioning in the group aged 65 or over generally than in the group aged 75 or over specifically.

General practitioners in Australia have recently been funded for "75+ health assessments." We have just concluded a randomised controlled trial of these assessments. A nurse visited 100 elderly people who were living in the community on two occasions, one year apart (50 control, 50 intervention). No interval assessment nor reminder was included in the protocol.[2] Initial analysis found:

- Fewer people reported falls in the intervention group in the study year (12 *v* 22, P = 0.055)
- Fewer people died in the intervention group (1 *v* 5, P = 0.2)
- Physical functioning did not change (measured using Barthel index of activities of daily living)
- Psychosocial functioning improved (geriatric depression scale 15, Wilcoxon scores (rank sums) P = 0.09).

Our study is consistent with the other published trials, showing modest improvement in the measured outcomes in the group aged 75 or over.

Van Haastregt et al call for either improved effectiveness of preventive home visits or their discontinuation. Their data, and our initial results, indicate that annual preventive home visits are most useful in the group aged 75 or over. An editorial in the *BMJ* 12 years ago also made the point that 65 year olds are too young to receive preventive home visits.[3] Evaluation of the Australian 75+ health assessments will establish whether they have a beneficial effect on outcome.

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Studies reviewed have methodical flaws

Editor—Van Haastregt et al rightly point out that a formal pooling of the results of the randomised controlled trials on preventive home visits was not appropriate given the "considerable heterogeneity of the interventions."[1] However, the information they provide is uninformative: they present the results for selected outcomes only in terms of being "significant" or "non-significant," with no information on the estimates of effect or the confidence intervals. This information is essential for understanding the magnitude of possible benefits and the precision of estimates of benefit. Lack of power is one of the major limitations of most of the studies reviewed, especially for mortality outcomes.

Their review also misses some other important methodological problems.[2] The studies in general practice used within-practice individual randomisation, and this may have resulted in contamination of the control group. Most European trials suffered from "black box" interventions. The American trials had low rates of participation, and the proportion of fit elderly people with a high income was overrepresented. In none of the trials was there adequate information regarding the cost effectiveness of multidimensional assessment.

We agree with van Haastregt et al's conclusions that there is limited evidence that multidimensional assessment is beneficial for older people. These concerns are more than "academic," as regular health checks for people over 75 were introduced by the UK Department of Health in 1990 as a contractual obligation of general practitioners. Not surprisingly, most general practitioners view the policy unfavourably, whereas nurses and elderly people are enthusiastic about the health checks and consider them to be valuable.[3–5]

The situation is unsatisfactory, but abandoning the health checks is not a sensible option at present. In the United Kingdom there are some models of good practice and ongoing research. A large trial is in progress, which will provide important data on the cost effectiveness of different methods of assessment and management of elderly people in the context of the 1990 contract of service. The trial, funded by the Medical Research Council and Department of Health, has been designed to have adequate power to detect benefits in mortality, hospital admissions, and quality of life. Some 106 general practices and 33 000 elderly people from the Medical Research Council's GP research framework are participating, with results expected in 2001.

There are strong arguments for regular assessment of elderly people on the basis of their special needs. The policy in the United Kingdom was introduced prematurely in the absence of evidence of benefit. It would be equally premature to withdraw the policy on the basis of the results of the small, low powered studies, with a mixed and uncertain bag of interventions, described in this review.

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On behalf of the MRC trial of assessment and management of elderly people in the community

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Further research is needed

Editor—Van Haastregt et al conclude that there is little evidence supporting the effectiveness of preventive home visits to elderly people living in the community.[1] Their review is timely, but methodological shortcomings limit its usefulness.

The principal method of analysis consisted of "vote counting": adding up the number of studies showing statistically significant effects. This procedure is a sad relic from the times of unsystematic, narrative reviews, ignoring sample size, effect size, type of intervention, and methodological quality.[2] For example, it is important to distinguish between preventive home visits that included multidimensional geriatric assessment with follow up and interventions that did not.[3]

Assessment of the quality of trials was also problematic. Empirical research has shown that the scale used by van Haastregt et al, and scales in general, may produce misleading results.[4] Rather than researchers calculating a summary score, the methodological aspects that are important in a given context should be identified and assessed individually.

Three of us (AS, JCB, CEM) were involved in a randomised trial of preventive home visits conducted in Berne, Switzerland.[5] The findings from this trial, which was published after the review by van Haastregt et al appeared, showed that preventive home visits can reduce disability, which in a three year period may save up to $1400 (£933) per person a year.[5] In a planned subgroup analysis we found that the effect of the intervention depended on the baseline risk status of trial participants (disability was reduced among people at low risk at baseline but not among participants at high risk). In addition, the professional experience of the person visiting was an important factor in determining the efficacy of the programme.

These findings indicate that the composition of the study population and the type and quality of the intervention are important factors that may explain the discrepant results obtained from previous trials of preventive home visits. Although results from individual trials of preventive home visits conflict, some trials clearly show that home visits can substantially reduce or delay the onset of disability. Thus, research is needed to define explicitly the conditions for cost effective programmes for reducing disability among older people.

We agree with Haastregt et al that it is often inappropriate to combine a heterogeneous set of trials. However, counting votes cannot identify the factors introducing heterogeneity. Further meta-analyses and trials are needed to clarify what components of this complex intervention work in which population groups.

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Author's reply

Editor—The respondents to our review of preventive home visits to elderly people living in the community criticise several aspects of our study.[1] Newbury and Marley criticise the fact that we did not discuss the relation between favourable outcomes and age. We agree that there are indeed (slight) indications that favourable outcomes are more prevalent in studies conducted among people aged 75 years and over. However, on the basis of the slender evidence, we do not think that the conclusion can be justified that preventive home visits are likely to be more effective among older people (≥75).

Fletcher and Bulpitt state that lack of power is one of the major limitations of most of the trials included in our review. It should be noted, however, that 10 of the 15 studies we reviewed included 200-700 subjects per group. This makes it highly unlikely that the results of these studies could have been seriously influenced by a lack of power. Moreover, when we analyse the results of these 10 large studies separately, we still arrive at the same conclusion: no clear evidence exists in favour of the effectiveness of preventive home visits to elderly people living in the community.

Stuck et al discuss our method of analysis, which they consider to be inadequate. As we reported in our paper, we seriously considered statistical pooling of the data of the trials. However, owing to the large (clinical) heterogeneity of our set of trials, the statistical pooling of the data of these 15 trials is hazardous and, in our opinion, inappropriate. Only if it had been possible to generate more homogeneous subsets from this set of trials could data pooling have been justified and potentially useful.[2] In our opinion, it is not possible to distinguish such homogeneous subsets, owing to the large heterogeneity of the interventions and the considerable differences that exist between subjects, outcome measures, timing of outcome measurement, and the healthcare setting in which the interventions were performed. We therefore decided to adopt a more generic approach by performing a detailed qualitative systematic review of the effects of this diverse set of preventive home visit programmes.

At the moment, it is not possible to single out the active components adequately from the total set of components of preventive home visit programmes, primarily because of the "black box" character of the intervention programmes. However, with regard to future research we certainly agree with Stuck et al that researchers should aim to clarify what components of preventive home visits work in which population groups. This could probably improve consensus in this field of study and may result in the development of more effective interventions.

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Ethnicity and analgesia in accident departments

Authors did not exclude type II error or perform power calculation

Editor—Choi et al investigated whether ethnicity had any bearing on the prescription of analgesia in their accident and emergency department.[1] Unfortunately, they have failed to answer the question adequately. By failing to reject the null hypothesis (that ethnicity has no effect on prescribing of analgesia in accident and emergency departments) they allow the possibility of a type II error. They did not perform a power calculation, and hence their conclusion that ethnicity is not a risk factor lacks validity.

To detect a difference of 10% (say 80% *v* 70%) in prescribing rates between two groups, with a ratio of 5:1 recruitment to the study, the significance level set at 5%, and power of 90%, they would need 255 patients in the Bangladeshi group to show such a difference if it existed. The published study would seem to have a 90% power to detect a significant difference (at the 5% level) in proportions in the Bangladeshi group compared with the white group only if the Bangladeshi group had a prescribing rate of $<55.3\%$ or $>94.8\%$.[2] The published study, with an expected prescribing rate of 78.5% in the white group, has less than 30% power to detect a clinically important variation in

prescribing of 10%; thus the type II error rate is too high (>70%) to allow any valid conclusions to be drawn.

The possibility of selection bias must also be considered. The small number of patients in the Bangladeshi group does not reflect well the local population distribution (14% of the study population *v* >25% of the local population). Additionally, no explanation is offered for the lack of age comparability between the two groups (mean age 33.8 years for the white patients *v* 25.9 years for the Bangladeshi patients, P<0.05)).

Thus these groups may have other differences besides ethnicity. The authors state that no attempt was made to adjust for potential confounding factors (although some were measured), and a more robust logistical regression model may allow greater interpretation of the data.

In summary, the authors' contention that ethnicity does not affect analgesic prescribing in their hospital has yet to be proved. Communication with patients in accident and emergency departments, particularly those who do not speak English, can be difficult.[3] I would like to see the authors show more robustly how communication with all ethnic groups in their department has no impact on patient care as this is an important and growing issue and may affect our prescribing habits.

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1 Choi DMA, Yate P, Coats T, Kalinda P, Paul EA. Ethnicity and prescription of analgesia in an accident and emergency department: cross sectional study. *BMJ* 2000;320:980-1. (8 April.)
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Authors' reply

EDITOR—We were motivated in our study by the report of Todd et al, who found that, compared with non-Hispanic white patients, Hispanic patients had a relative risk of 2.12 (P=0.003) of not receiving analgesia for long bone fracture.[1] They investigated 139 patients, of whom about a quarter were Hispanic. We investigated 307 patients to see if there was a similar association in Bangladeshi patients in our hospital.

Given that our sample was about double that of Todd et al, it seemed reasonable that there would be adequate power to detect a similar risk in our population. The relative risk in our study was 0.87 (95% confidence interval 0.45 to 1.70), so it seems unlikely that the relative risk for Bangladeshi patients in our population would be as high as 2.12. We agree with Leman that larger studies are needed to estimate the population risk with more confidence.

The mean age was almost identical in the patients who had analgesia and those who did not (32.6 *v* 32.3 years, P=0.46), and the proportions of male and female patients who had analgesia were similar (79.2% male *v* 79.5% female patients). We therefore did not consider age and sex to be confounders in the relation between ethnicity and analgesia. With respect to other potential confounders, there were no significant differences between the white and Bangladeshi patients in bone fractures, reduction needed, admissions, or sex.

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1 Todd KH, Samaroo N, Hoffman JR. Ethnicity as a risk factor for inadequate emergency department analgesia. *JAMA* 1993;269:1537-9.

Why I am not a pretentious pseudo-intellectual

EDITOR—As Chapman's anti-Christian diatribe contains no discernible connection to the practice of medicine I have to wonder why it was published in a medical journal.[1] Chapman may think his article daring, but it represents only the latest in an ever increasing tide of abuse to which Christianity is subjected daily. It deserves to be challenged.

Chapman brings out the old chestnut about "the horrors wrought in the name of religion." The great atheistic tyrannies of the 20th century—communism and Nazism—slaughtered many millions more than the Conquistadors could ever have dreamed of. That some rulers and politicians have used Christianity as a convenient cloak to disguise their wrongdoing shows only how some people behave. Tony Blair claims to be a Christian, and Bill Clinton will readily go to a prayer breakfast to seek forgiveness for his latest transgression.

Presumably Chapman thinks that I, and all other Christians, should shoulder responsibility for the bombing of a Belgrade television station or a Sudanese pharmaceutical plant or for the deaths of a quarter of a million Iraqi children since United Nations sanctions began. The horrors of history have all been wrought in the name of politics.

The writings of Bertrand Russell and other philosophers differ from the Bible not only in their rejection of God but also in the fact that they remain largely unread—I suspect because they are virtually unreadable. It is noteworthy that Russell entitled his book *Why I am not a Christian*. This shows one of the most depressing things about atheism, which is that it can define itself only by what it is not. It is a philosophy based on a negative: there is no God; there is no hereafter; there is no point; there is no hope.

I take some comfort from the fact that Chapman works in public health and is therefore unlikely to come into contact with "mostly aged" patients. It is too much to bear the thought of him stalking an oncology ward, a geriatric ward, or, God forbid, a hospice, cheerily disabusing his patients of their "anthropocentric wish fulfilment" and reassuring them that all that awaits them once the suffering is over is the promise of eternal nothingness.

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1 Chapman S. Why I am not a Christian. *BMJ* 2000;320:1152. (22 April.)

Magnets and children—an attractive combination?

EDITOR—We would like to remind clinicians of the problems that can be caused by magnets when children play with them, especially with the newer type of bonded magnet that is extremely small, is powerful enough to attract across pieces of the body, and allows children to imitate nose, tongue, and genital piercing. We have seen an epidemic of problems related to magnets—13 cases in three days at its height—which has raised several issues.

The commonest presentation was magnets stuck together across the nasal septum, usually after imitating nose piercing. These were difficult to remove because of their magnetic attraction for each other and for the instruments. Small areas of pressure necrosis were visible at the sites of impaction once the objects were removed. At least one child required a general anaesthetic to allow removal.

Other magnets have been placed across the foreskin or the shaft of the penis and caused extreme pain. One child required sedation to allow the magnets to be removed.

Ingestion of the magnets caused a number of problems unique to their properties. Localisation with a metal detector was impossible, and we had to resort to radiography.

Magnets may obstruct, perforate, or form fistulas in the bowel, as has been reported previously, because they can attract across loops of bowel.[1] We saw a case of perforation that required surgery and admission to intensive care, although it was probably a result of the sheer weight of magnets ingested.

We suggest that any child being seen with a magnet related ingestion should have radiography to localise the object, and great care should be taken to ensure further investigation if he or she subsequently develops any abdominal pain or upset.

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1 Suk-Koo Lee, Nam-seon Beck, Hyun-Hahk Kim. Mischievous magnets: unexpected health hazard in children. *J Paediatr Surg* 1996;31:1694-5.