injury the neck must be immobilised and an x ray film obtained.

Several guidelines are now available for use in accident and emergency departments—for example, on advanced cardiac life support, paracetamol poisoning, and asthma. Unfortunately, the more posters that adorn the walls of the department the less will be their individual impact. Great care needs to be exercised in drawing them up, especially as there is an increasing fear that they will also end up adorning the walls of lawyers' offices.

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Authors' reply

EDITOR,—The aim of our study was to propose a method of reinforcing clinical guidelines. The outcome that was measured showed a significant change in referral patterns and supports the conclusion that carefully designed posters are effective in reinforcing guidelines. Reductions of 75% for abdominal radiographs and 50% for skull radiographs were achieved. Data on the overall change in referral patterns (that is, for all four areas combined) were not presented as we regarded this statistic as meaningless.

Several other possible reasons for the reduction in referral for radiography were considered, including the experience of the doctors and changes in staff. No other guidelines, including the Royal College of Radiologists' booklet, were used during the period studied. No request was refused because it fell outside the guidelines. Editorial limitations on the length of our paper precluded a full discussion of these issues.

We agree with R D Hardern and D W Hamer that this should not necessarily be regarded as a study of outcome. Clearly, if guidelines are poor and based on dubious evidence then the outcome in patients may well be adversely affected, particularly if the method of reinforcing the guidelines is as successful as in this study. Our guidelines were devised, after an extensive analysis of the literature, in conjunction with local clinicians.

We agree with Mr Dudley that the presence of a vault fracture is associated with an increased risk of intracranial injury. What Dudley does not make clear is that the figure of 1 in 4 refers to adults with both a skull fracture and an altered level of consciousness. In patients with skull fracture who are oriented the incidence of intracranial abnormality is eight times less.¹ Furthermore, as many as 60% of patients with intracranial abnormality after head injury will not have a fracture.² The important finding, the intracranial lesion, may be overlooked if focus is put on skull radiographs. For these reasons, there is now an extensive literature arguing against routine skull radiography after admission in favour of a more open policy of using computed tomography.^{3,4} The advanced trauma life support guidelines, mentioned by Dudley, also support this view. Used correctly, this policy can be cost effective,⁵ but, clearly, local modifications will be necessary where computed tomography and neurosurgical advice are not available.

Patients who cannot be adequately assessed, whether because of unconsciousness or diminished

consciousness or after severe head injury, should be assumed to have a cervical spine injury until proved otherwise. This point is adequately covered in our guidelines.

Devising guidelines alone is insufficient; the real challenge is making them work. Dudley expresses concern regarding the increasing trend towards use of clinical guidelines. We trust that Dudley does not regard the challenge of devising and testing methods for ensuring that policies for good practice are implemented as one to be resisted and use this as an excuse for doing nothing.

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Genetic testing in the classroom

EDITOR,—Recent advances in molecular genetics permit simple genetic testing; this has raised the possibility that such testing may be used to show genetic techniques as part of medical education. Indeed, in a biochemistry class in one medical school first year medical students have undergone collective testing for the most common genetic defect causing cystic fibrosis ($\Delta F-508$). The results were presented collectively, not individually, so the anonymity of carriers of the mutation will probably have been preserved. However, little genetic counselling was offered about the implications of testing. No student objected to the testing, but the students were not told that they had a choice.

Given that anonymity must be difficult to ensure in a classroom and that the stringent quality controls practised in service laboratories would not apply, serious problems could arise. What if no one in a class was found to have the mutation? Should the students rely on this finding if they (or a partner) had a family history of cystic fibrosis? This procedure comes close to breaching the guidelines laid down by the Nuffield Council on Bioethics, which recommend that "adequately informed consent should be a requirement for all genetic screening programmes."¹

A similar situation might easily have arisen in another postgraduate course with which one of us has been involved. In this course a class carried out tests for apolipoprotein E, which could produce results with serious implications for susceptibility to ischaemic heart disease or Alzheimer's disease. During discussions some members of the class expressed a strong desire to know their individual results of the test, though this option was not offered.

We wonder whether other medical schools or teaching institutions carry out classroom testing on their students that could elicit medically important information for which the students have not been prepared. We are disturbed by both the lack of pretest counselling and the potential lack of confidentiality in this context. It would be unfortunate

if testing of students for genetic disorders becomes widespread in the classroom because a potentially powerful opportunity to promote careful thought about the ethical issues will have been lost. Furthermore, students may be encouraged by such experiences to trivialise these issues, and they may then fail to recognise their importance in clinical practice.

Perhaps this example has wide implications for the organisation of teaching about laboratory studies of inherited disease. In such classes should not anonymous DNA samples be used rather than samples from members of the class? Are guidelines required?

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Medical audiovisual organisation continues

EDITOR,—Minerva's comment on the future of Graves Medical Audiovisual Library is ill informed.¹ In 1993 Graves Educational Resources transferred its audiovisual distribution services to Concord Video and Film Council, based in Ipswich, from where the Graves medical audiovisual programmes are still available. The national medical slide bank, which was established by Graves in 1988, is now housed at the Wellcome Trust and is being further developed to meet wider needs for high quality pictures in all branches of medicine. The curator of the bank can be contacted at the Wellcome Centre Medical Photographic Library, 210 Euston Road, London NW1 2BE (telephone 0171 611 8746).

The savings from winding up the base in Chelmsford have been placed by the University of Wales College of Medicine in a special fund known as the Graves Educational Resources Development Fund, which will be used to support pioneering work in computer based learning in medicine. The important contribution that John and Valerie Graves made to medical education will be perpetuated.

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- Minerva. *BMJ* 1995;310:1342. (20 May.)

Haemophilus influenzae vaccines for infants in Spain

EDITOR,—*Neisseria meningitidis* is the commonest cause of bacterial meningitis in Spain. The overall ratio of meningococcal meningitis due to *Haemophilus influenzae* type b in children aged 0-15 in the past 15 years was 10:1. Many doctors in Spain believe that *H influenzae* type b is a rare or minor pathogen because of the high incidence of invasive disease due to *N meningitidis*. They also believe that invasive disease due to *H influenzae* type b is less prevalent in Spain than in other European countries that have licensed a vaccine against the organism. Until now, *H influenzae* type b vaccine has not been included in any immunisation programme in Spain.

The Basque region in northern Spain has a