doctor has passed this test he or she is accepted to have the equivalent experience of a senior house officer who qualified in Britain. In fact, even before 1975 such doctors had to be assessed for professional competence and skill and English language by designated regional assessors for overseas medical graduates. Moreover, no such doctor would be accepted for any form of registration by the General Medical Council unless his parent medical school was recognised by the council.

The very fact that the same problem is now being faced by such doctors who are trained wholly in Britain, and that the ability to speak good English is not a condition for doctors who come from European countries, tends to suggest that the problem is discrimination because of prejudice and nothing else. Indeed, only when the medical profession accepts that such discrimination exists will the necessary steps be taken to eradicate it.

M SHAUKAT ALI

Greenwich District Hospital,
London SE10 9HE

Potentially dangerous ampoule confusion

SIR,—Dr Clifford Hawkins's letter (3 January, p 54) prompts me to mention another potentially lethal similarity between ampoules.

Atropine is often required during anaesthesia to correct a bradycardia. Multiple doses of suxamethonium, heavy hyoscine premedication followed by halothane anaesthesia, the oculocardiac reflex, or the use of vecuronium or atracurium may all cause a bradycardia of less than 40 beats/min, when rapid treatment with atropine 0·3-0·6 mg intravenously may be indicated.

Most anaesthetic drug cupboards are arranged alphabetically, and thus atropine 0·5 or 0·6 mg/ml and adrenaline 1 in 1000, 1 ml tend to be close neighbours.

In my experience of 15 hospitals these drugs have come in identically styled beige packaging and identical glass ampoules. The printing on the ampoules is black in both cases, although the style is different. In an emergency it is still all too easy to pick up the wrong box and inject the wrong drug, with probable dire results.

In these circumstances a different printing style is insufficient safeguard. At present we decorate the adrenaline boxes copiously with red ink, but could not the labelling on the ampoules or, even better, the glass itself be coloured red? Such a precaution would not obviate the responsibility of the doctor to check the label but merely provide additional security in emergencies.

W F HUTCHINSON

Anaesthetic Department,
Royal National Throat, Nose, and Ear Hospital,
London WC1X 8DA

Cost of anaesthetic drugs and clinical budgeting

SIR,—Drs J R Lethbridge and J Secker Walker underestimate the nature of the problems facing an anaesthetist managing a clinical budget today (13 December, p 1587).

They say that the cost of some anaesthetic drugs has risen at a faster rate than inflation, yet at the time the paper was being prepared for publication the cost of what has now become the standard inhalational anaesthetic agent in the United Kingdom, enflurane, has doubled, as has the price of the more rarely used agent isoflurane, resulting in a very large increase in our department's expenditure on volatile agents.

Secondly, they point out that newer relaxants are more expensive than their older equivalents, but they have ignored the potential change in practice resulting from the introduction of a new intravenous induction agent. Studies undertaken at Lewisham Hospital when propofol was being evaluated for clinical use indicated that this was a unique induction agent, and after its release for general use it has become our preferred induction agent for day care. On a dose for dose basis it is roughly twice the price of thiopentone sodium.

Lewisham University Hospital has pursued a policy of maximum effective monitoring of patients during anaesthesia and now provides endtidal monitoring, blood pressure monitoring, and electrocardiographic monitoring at all anaesthetic sites in the hospital. However, pulse oximeter monitoring demonstrations have indicated that pulse oximetry is now mandatory for anaesthetic practice since it provides, non-invasively, an accurate analogue for arterial oxygen tension and arterial blood flow. To equip our department with satisfactory ear oximeters will require £30 000. We are undertaking a study on budgeting techniques (PACTS) because we believe that clinical activities must be budgeted if the level of service provided is to be known and defended. Our administrative colleagues are strongly resisting the provision of a capital element in the "zero based" budget we are trying to develop.

If anaesthetic departments are to be strictly held to budgets and allowances not made for pharmacological, technological, and commercial "drift" then inevitably basic services to patients will have to be sacrificed since our ability to control these three variables is limited.

J M CUNDY

Department of Anaesthesia,
Lewisham Hospital,
London SE13 6LH

SIR,—Dr J W O'Higgins (10 January, p 124) points out that while the total caseload in 1979-80 and 1984-5 remained about the same, we bought more halothane and suxamethonium in real terms (13 December, p 124). As he points out, one explanation is that stocks bought do not necessarily relate exactly to financial years. Suxamethonium is bought in batches of 1000 ampoules (200×5) and halothane in quantities of 144 bottles. Hence a purchase of halothane on 30 March would show as belonging to the previous 12 months.

Another major factor is undoubtedly that, although the total number of cases was about the same in the period studied, the case mix altered quite considerably. There was a reduction in the number of chair dental cases and an increase in general surgical throughput.

J R LETHBRIDGE

Guy's Hospital,
London SE1

J SECKER WALKER

University College Hospital,
London WC1E 6AU

Adverse reaction monitoring using cohort identification

SIR,—The spontaneous adverse reaction reporting scheme using yellow cards sent to the Committee on Safety of Medicines (CSM) is generally accepted to be an effective and inexpensive method of surveillance. The scheme is essentially an early warning system which generates evidence that needs corroborating. Although more reports are being sent year by year, the use of the scheme by doctors still needs to be improved, as does the quality of the reports they submit. These reports provide the only realistic way of monitoring the entire range of medicines throughout their market lives.

Nevertheless, there is a real need for cost effective postmarketing surveillance schemes to augment the yellow card system. Such a scheme could, for example, be established within the health service by introducing integrated patient record linkage regionally or nationally; observers at any point within such a system could then relate the use of a medicine to one or more aspect of a patient's history—and this would certainly enhance the value of the yellow cards.

Other proposals have been suggested by the Grahame-Smith Working Party, including postmarketing surveillance of cohorts of 10 000 patients. This does not go far enough, however, as such numbers could detect a risk only of the order of 1 in 1000. As most product licence applications for new chemical entities are already supported by data on about 3000 patients, the working party recommendations would be unlikely to increase the chance of detecting new hazards and certainly not by the order of sensitivity needed. Recent adverse reactions judged sufficient to cause the withdrawal of products have had considerably lower incidences than 1 in 10 000 patients treated. Furthermore, the development of the Grahame-Smith postmarketing surveillance proposals would be expensive and so serve to divert resources away from the ultimate goal of record linkage, which admittedly would itself be expensive.

I suggest, therefore, the introduction of a cheaper interim measure which would involve the identifying of FP10 prescription forms for all marketed new chemical entities relating to, say, 50 000 to 100 000 patients. This would not be difficult as all such forms are sent to the Prescription Pricing Authority. Then, if the yellow card reports from doctors showed an association between an adverse reaction and a new chemical entity a special follow up form could be sent to all the doctors who had prescribed this particular drug. Information would be requested on whether any of these patients had experienced the specific adverse reaction.

The use of this scheme of "cohort identification" would enable both the numerator and denominator to be obtained for any adverse reaction which the CSM chose to pursue. The sensitivity of the method would depend solely on the size of the cohort initially identified and the response of the prescribing doctors to the questions sent to them.

The scheme does not introduce any new ethical problems; prescriptions are already identified at the Prescription Pricing Authority for the prescription event monitoring scheme operated by Professor W H W Inman at Southampton and the two systems should exist side by side. Although they both use FP10 data, they are different: prescription event monitoring is proactive and geared to identifying unexpected events, while cohort identification would be reactive, geared to determining the incidence of an identified adverse drug reaction and covering a much larger number of patients receiving the medicine under surveillance.

J P GRIFFIN

Association of the British Pharmaceutical Industry,
London SW1A 2DY

Adverse drug reactions checklist

SIR,—The checklist you published (3 January, p 38) requires something more than simple coincidence in time to make an adverse reaction probable: rechallenge or immunological investigations. The ethics of rechallenge, however, need thorough discussion.

When a side effect of a drug is suspected an adverse reaction after rechallenge is probable. The