time to take effect. Our patients described their recovery in terms of a "cracked mirror" 10-15 minutes after the injection. Angiography was performed 60 minutes after injection and showed complete reopening.

With regard to the adverse side effects mentioned by Pandit and Tiamiyu, cardiac arrhythmias were reported after longer administration of higher doses of steroids (4×30 mg/kg daily),⁴ not after a single 1000 mg bolus, which is not a massive dose. Steroids are an effective measure against anaphylactic shock.^{4,5} Are anaphylactoid reactions to steroids really common?

We tried to show the effect of steroids on vessel walls and offered angiographic evidence that occluded vessels became completely perfused 60 minutes later. A steroid bolus seems to us to be a suitable emergency treatment that does not interfere with other drugs for this condition. Any other treatment may be given simultaneously or afterwards.

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Side of origin of epithelial ovarian cancer

SIR,—Two studies published in the *BMJ* have been designed to test Fathalla's hypothesis that repeated trauma to ovarian epithelium caused by incessant ovulation increases the risk of ovarian cancer.¹ As ovulation reportedly occurs more often on the right side the authors hypothesised that ovarian tumours would occur more frequently in the right ovary. In one study the results were significant, with 59% of tumours occurring on the right side.² In the other study the results were not significant, with 53% of tumours occurring on the right side.³

The original report that ovulation occurs more commonly from the right ovary was based on a study of only 16 women.⁴ Moreover, it conflicted with a previous report that ovulation alternated between ovaries in 80% of cycles.⁵ Thus the premise that ovulation occurs more often on the right side may itself not always be correct, at least for those patients at risk of ovarian cancer.

Fathalla's hypothesis is based on much broader evidence, including both clinical and epidemiological studies. This work has been reviewed elsewhere.⁶ More recently we have provided a molecular basis to support the hypothesis.⁷ Studies in our department have detected loss of alleles on the long arm of chromosome 17 in specimens of ovarian tumour.⁸ This loss of genetic material is thought to represent inactivation of an important tumour suppressor gene, and extensive studies are now under way to identify its precise location.

Pathologists have long recognised that most ovarian cancers arise on the surface of the ovary, not in the ovary itself. After the epithelial surface of the ovary has ruptured to release the ovum at ovulation the traumatic tears are repaired by repeated cell division. The loss of a tumour suppressor gene in a single epithelial cell may allow mitotic division to continue uncontrolled, leading to malignant change. Incessant ovulation increases the risk of promoting such malignant transformation. None the less, the main initiating event in malignancy is a sporadic or inherited mutation, not

ovulation. Mutations have an equal chance of occurring on either side. Thus laterality in ovarian cancer is unlikely to emerge as a significant factor unless very large numbers of cases are analysed.

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Octreotide and Graves' ophthalmopathy

SIR,—T C Chang and colleagues claim that octreotide is effective in Graves' ophthalmopathy.¹ Although there are theoretical grounds why octreotide may have a place in the treatment of this disease, the question whether it is effective remains unanswered as spontaneous improvement of Graves' ophthalmopathy is common and can occur rapidly.² The authors might have been more convincing in their claim had they at least shown a reduction in circulating insulin-like growth factor-1 concentrations as a result of treatment.

The idea is interesting, and octreotide may indeed be useful. But only a properly controlled trial is sufficient to assess the usefulness of such an expensive drug in treating Graves' ophthalmopathy.

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Genitourinary tract infections in pregnancy and low birth weight

SIR,—We thank Fiona Smaill¹ for referring to additional reports that support the findings of our case-control study of genitourinary infections in pregnancy and low birth weight in Australian Aboriginal women.² We agree that a randomised controlled trial is not required. Although there have been no randomised controlled trials in our population of Australian Aboriginal women, such a trial would not be appropriate because of difficulties with follow up and compliance and for ethical reasons.

The programme we are planning is a pragmatic attempt to instigate screening and treatment of genitourinary tract infections during pregnancy

in this population. The effectiveness of such a programme in reducing the incidence of preterm birth and low birth weight will be evaluated. This should indicate whether there is a preventable relation between infection and preterm birth and low birth weight in this population of disadvantaged women, many of whom experience living conditions akin to those of less developed countries.

The results of the randomised trials conducted in other populations that Smaill cites add urgency to our proposed programme.

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Parent support groups

SIR,—P Morris Jones raises anxieties that "bitter and angry" parents may dominate parent support groups and so undermine their value unless a professional keeps an eye on them.¹

From time to time Action for Sick Children receives telephone calls and letters from such parents; in most cases these parents believe that no one is listening to them and they are being labelled as difficult or hysterical. Sometimes the reality is that no one can help, but in our experience the tolerance and emotional reinforcement provided by other parents can be an important factor in coming to terms with the unacceptable—namely, having a child with severe or life threatening illness. However sensitive professionals are to the intense distress that often underlines aggression, shared experience, parent to parent, is without parallel.

For this reason we are seeking to expand our advice and support to parents. This will often be in partnership with professionals, complementing and supporting their role by providing non-clinical information and an ear to listen, but above all by providing a point of contact with our local branches and specialist groups, such as those covered in the valuable directory compiled by Contact a Family.²

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Bone banks

SIR,—I agree with H I Atrah that bone banking should be organised on a professional basis to the highest standards and that some blood transfusion laboratories would be well placed to provide this service and should be encouraged.¹ It is essential, however, that agreed minimum quality standards are adopted, and to this end the British Orthopaedic Association has, at the request of the Department of Health, formed an allograft bone working party to establish guidelines. The current advice from the Department of Health, in contrast to that given by Atrah, is that serum from all donors (living and cadaver) must be tested for HIV antibody at donation. Subsequent testing is required for living donors except women aged over 70. For fresh stored (4°C) or frozen bone bacteriological analysis of the bone surface or bone tissue is also considered to be essential.

Contrary to what Atrah says, cadaver bone can be rendered free from infection by using a combination of serological examination at donation and terminal sterilisation. This allows cancellous implants of weightbearing quality to be prepared from young cadaver donors. In other countries this technique is also used for femoral heads found to be contaminated with bacteria. In addition, the bone can be cut to the required shapes and sizes and washed free of marrow and fat, which obviates immune responses and improves incorporation.² The bone may be freeze dried to simplify storage (that is, shelf storage at room temperature) and transportation. After packaging, sterilisation may be achieved with either ethylene oxide gas or irradiation. This technique has been used in the Yorkshire Regional Tissue Bank for 27 years with excellent clinical results, and the service is available to other units if required.

To ensure that common principles are applied to the banking of all tissue grafts and implants within Britain it has been proposed that a British Association of Tissue Banks should be established, details of which are available from the address below.

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1 Atrah HI. Bone banks. *BMJ* 1992;304:68. (11 January.)
2 Aspenberg P, Thorén K. Lipid extraction enhances bank bone incorporation. *Acta Orthop Scand* 1990;61:546-8.

Randomised clinical trials in general practice

SIR,—Like G Tognoni and colleagues¹ and Viv Peto and Angela Coulter² we have experience of clinical studies in general practice that fall short of expectations regarding recruitment.

In a postmarketing surveillance study (of treatment of reflux oesophagitis) 457 general practitioners said that they were prepared to recruit at least three patients. After one year some doctors had been successful in recruiting but many had not recruited any patients. Recruitment increased sharply after we took two actions: we sent a personal letter relating actual to planned numbers of patients, and we subsequently visited each general practitioner to discuss possible issues regarding recruitment. This resulted in just over 1100 patients. We acknowledge that the yield may have been less if changes to clinical practice had been required. Still, 88 doctors failed to recruit patients despite our—and their—efforts.

We are convinced that it is essential that every trialist is visited regularly. At every visit the clinical record forms should be checked and compliance with the protocol discussed. The doctors should also be encouraged to continue recruitment (a simple flow chart summarising the criteria for eligibility and actions necessary at recruitment may help). We have found that this attention is a strong incentive in itself, probably as powerful as financial compensation.

Many of the studies for which general practitioners' cooperation is sought do not meet the essential criteria of a medically interesting question (the most powerful built in incentive), a sound but simple methodology, and an easy to use case record form. We do not see any incentive that could compensate for participation in such a study. Many doctors who do cooperate will be discouraged from doing so again, especially if additionally the study is criticised by colleagues or peers.

We agree with both Tognoni and colleagues and Peto and Coulter that financial incentives risk being counterproductive and may even induce scientific fraud, as recently highlighted in the lay press and the *BMJ*.^{3,4} Fees are meant to compensate for costs and to be a reasonable payment for

invested time. Every award beyond that should be strongly discouraged.

Even if a trial fulfils all the criteria we often find that general practitioners have little training in methodology in general. It is difficult for these general practitioners to understand the relevance of (in their view) small deviations from the protocol. We would welcome better education, both in universities and after qualification, and are considering supporting postgraduate education on this subject.

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Cost effectiveness of magnetic resonance imaging

SIR,—Anthony Stevens¹ identifies our study on the cost effectiveness of magnetic resonance imaging in the neurosciences² as one that establishes a more rational basis on which decisions about the purchase and use of magnetic resonance imagers can now be made. We accept his point that the cost per patient imaged will be sensitive to throughput, but the situation is more complex than he suggests.³ Firstly, a clear distinction needs to be made between patients and examinations; several examinations may be needed per patient, depending on case mix. Furthermore, our high level of measured benefit relates to the mix of cases scanned in a specialty NHS centre such as that at Coventry; benefit levels cannot be applied pro rata if case mix changes.

Stevens's model predicts a throughput of 3840 patients for a 12 hour day. In reality, Coventry, which does operate a 12 hour day, averaged 3082 examinations last year (but only 2480 patients). A cautionary note also needs to be sounded over the much higher throughput (5760) that Stevens predicts for high field systems. Throughputs for mid-field and high field scanners in specialty units seem to be similar, although improved throughput has been reported with high field machines after recent upgrading of software.⁴ We do not think that even the most sophisticated magnetic resonance imaging unit would be able to examine four sites on one patient with changes of surface coil in 30 minutes as Stevens predicts. Units report similar "patient time in room" for different types of equipment, with only 11% of scans being completed in 30 minutes or less.⁵ Finally, Stevens makes no allowance for other factors such as non-attendance of patients (10% in Coventry), non-completion of the scan (due to non-compliance or movement by the patient), equipment downtime, preventive maintenance, and research and development work (eight hours a week in Coventry).³

Nevertheless, Coventry has recently shown (as part of the waiting list initiative) that high throughputs can be achieved under certain conditions. A mobile scanner (0.5 T) was hired and 225 patients examined in 10 days (equivalent to 5400 patients a year). These patients, however, were hand picked with the expectation that imaging would be straightforward (they required examinations at single sites); non-attendance was low (5%) and downtime only 1.5 hours. The impact of magnetic resonance imaging on management in this select group of patients is unclear.

Finally, we question certain costs used in Stevens's model. Firstly, service and cryogen costs (£65 000-85 000) seem low; the costs in Coventry are £96 600 (£65 000 for maintenance alone). Secondly, staffing costs are incorrectly modelled as a linear function of operating hours; in fact, workload is partially patient related (processing requests, consultation, producing reports, etc) and, too, an increase to 12 hours a day means higher out of hours staffing costs. Finally, although Stevens minimises cost by excluding upgrading of the system (and also contrast agents), we believe that any well managed service should budget for both of these.

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Wasted drugs in HIV infection and AIDS

SIR,—Sharon Steel and Rob George discuss the potential wastage of expensive drugs used to treat HIV infection.¹ In Riverside East drugs for patients with HIV infection are estimated to account for over 60% of the total drug budget. To assess whether stockpiling of drugs occurs we conducted a survey of outpatients attending the genitourinary medicine clinic at Westminster Hospital.

We asked 30 consecutive patients who were positive for HIV and taking zidovudine to complete a short questionnaire; 20 questionnaires were returned. Patients were required to count the number of tablets remaining in their possession (not including the most recent prescription). The table shows the number of weeks' supply of each drug patients had in reserve. Seven of the 20 patients had at least three weeks' supply of zidovudine stockpiled.

Number of weeks' supply of various drugs retained by 20 patients with HIV infection

	No of weeks in reserve					
	≤1	1-2	2-3	3-4	4-5	>5
Zidovudine (n=20)	9	4		4	1	2
Co-trimoxazole (n=7)	4	2			1	
Dapsone (n=2)	1			1		
Fansidar (n=2)	1			1		
Acyclovir (n=5)	3		2			
Gluconazole (n=1)	1					
Ketoconazole (n=1)	1					

We studied patients taking zidovudine because this drug accounts for over half of the outpatient drug costs for HIV positive patients. If we extrapolate our findings to our total population of patients (600 taking zidovudine with a mean two weeks' supply in reserve) over £50 000 worth of this drug may lie unused in patients' homes (and £100 000 worth of all drugs, if zidovudine is used as a marker for these other drugs).

Multiple causes of stockpiling are likely. The nature of HIV infection often necessitates frequent