tion should be made for every patient admitted to hospital,[1] we do not believe that the absence of documentation of that decision necessarily implies that the issue has been overlooked or deferred.

We recently studied "Do not resuscitate" decisions for patients in two acute geriatric wards in a district general hospital. There were 49 patients aged 66 to 93 (median age 83) who had been in hospital for between one and 60 days (median 11 days). Senior house officers and senior ward nurses responsible for each patient's care were asked independently whether they considered each patient to be a candidate for resuscitation in the event of a cardiac arrest. The responses of doctors and nurses were compared.

A "Do not resuscitate" decision was recorded in only four of the patients' case notes and in none of the nursing notes. But senior house officers considered 25 of the 49 patients to be unsuitable for resuscitation, and the nursing staff stated that they would not institute resuscitation in 22 cases. There was agreement in 42 cases, in 20 of which the patients were considered unsuitable for resuscitation.

Patients considered by doctors and nurses to be suitable for resuscitation

	Nurses	
Doctors	Yes	No
Yes	22	2
No	5	20

This high concordance among doctors and nurses in the absence of a written decision was a result of informal discussion. Decisions were instigated generally by nursing staff, who commented that they felt responsible because they usually made the decision whether to alert a cardiac arrest team or call a doctor to certify a patient's death.

Although this informal system seemed to be working well in practice, those using it considered that when relatively inexperienced nurses were in charge of wards inappropriate decisions might be made.

We believe that the suitability of a patient for resuscitation should be decided after full discussion among nursing staff and medical staff, both junior and senior. The decision should be recorded by a doctor in the nursing notes, where it is most accessible to those who need it.

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Patterns of disease activity in multiple sclerosis

SIR,—In their recent paper on disease activity in multiple sclerosis Dr A J Thompson and colleagues found no correlation between the degree of clinical disability and the abnormalities shown by magnetic resonance imaging of the brain.[1] In a recent study we found a highly significant correlation between degree of clinical disability and abnormalities shown by magnetic resonance imaging ($r=0{\cdot}66$, $p=0{\cdot}0001$)[2] using an extensive standardised magnetic resonance imaging examination in patients with clinically definite multiple sclerosis as defined by Poser *et al.*[3]

Several factors may contribute to this discrepancy. Firstly, Thompson and colleagues did not use a clearly defined protocol—for example, sagittal T_1 and T_2 weighted images were obtained in "most" of the patients. When studies of this kind are performed we feel that a routinely used, standardised imaging protocol is mandatory.

Secondly, the study depended on interpretation of axial images. It is well known that sagittal images provide better visualisation of the corpus callosum and infratentorial structures, regions where lesions are often suspected on clinical grounds. The addition of sagittal proton density and T_2 weighted images significantly improves the sensitivity of magnetic resonance imaging in the infratentorial region, as we showed in a previous study.[4]

Thirdly, the images were examined by two observers who were blinded for the clinical state of the patients. In the paper there is no reference to interobserver or intraobserver variability. Previous studies have shown that when using scoring systems the interobserver variability is greater than intraobserver variability. Were all of the examinations scored by both observers or did each of them score half?

We agree with the authors that any correlation found between abnormalities shown by magnetic resonance imaging of the brain and clinical state in a group of patients cannot be extrapolated to an individual. It is important, however, to have a more objective measure than clinical examination when assessing the efficacy of treatment in clinical trials, and we believe that extensive standardised magnetic resonance imaging could fulfil this role.

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Private inpatient psychiatric care

SIR,—Correspondence[1] about our leader on private inpatient psychiatric care[2] reinforces our point that a two tier system is developing in Britain. We measure the quality of a service by its accessibility, acceptability, and cost effectiveness.

Accessibility to private inpatient psychiatric care is restricted mainly, as the replies show, to the minority which has private insurance or can pay for itself. Moreover, most private hospitals are in or near London and hard to reach for most people living elsewhere.

Acceptability of care encompasses two issues. Firstly, the "hotel" aspects are claimed to be better in private than in public care. If true, would this continue to be so if private care had to serve all patients who need treatment rather than a privileged few who demand help? Secondly, acceptability reflects the quality of information given to patients about diagnosis, and efficacy and adverse effects of treatment. This information is often inadequate in the NHS[3] but there are no data to indicate that it is any better in the private sector.

The cost effectiveness of private care compared with that of public care is as yet unresearched. Private services take mainly acute and moderately disturbed patients although a few exceptionally disturbed patients are taken on. Proper comparison could be made only if the private service aimed to meet the full range of psychiatric needs within a given local area. Defining a catchment area fixes with one authority the responsibility to target care for relatively expensive groups, such as the seriously mentally ill, who are least able to compete for services. Such patients may need frequent contact over many years—for example, repeated home visits. It is unrealistic to expect them to receive integrated long term care from services that are distant and fragmented. The value of catchment areas is noted in both recent white papers: a quote in *Caring for People*[4] states that "*Working for Patients*[5] explained that it would be the responsibility of health authorities to ensure that the health needs of the population for which they are responsible are met."

Some private psychiatric hospitals offer research and training but do so on a scale that is negligible, given the investment made for training in mental health services as a whole. Careful evaluation of the effectiveness of treatment is rare in the private sector and uncommon in the public one. The proportion of NHS funds spent on research and development is less than 1%, a risible figure for such a large organisation. It is a small wonder that the shortcomings of the NHS are so stark.

The comments on our paper add to our concern that although the hotel aspects of private inpatient psychiatric care may be more acceptable to the few who can afford it, such care is less accessible and no more cost effective for the population as a whole than that offered by NHS facilities.

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Cryptosporidiosis in England and Wales

SIR,—In its paper on cryptosporidiosis in England and Wales the Public Health Laboratory Service Study Group encouraged laboratories investigating acute infectious diarrhoea to look for cryptosporidium.[1] We would support this opinion but urge laboratories to look for cryptosporidium also in chronic diarrhoea. In 1984 only two clinical presentations of cryptosporidiosis were recognised: acute self limiting diarrhoea in immunocompetent patients and chronic life threatening diarrhoea in the immunocompromised.[2]

We reviewed 92 patients with cryptosporidiosis attending Queen Elizabeth Hospital for Children and found that 49 had chronic diarrhoea—that is, diarrhoea persisting for at least two weeks. In all, 36% (33 children) had diarrhoea for at least 21 days compared with 4% in the Public Health Laboratory Service Study Group's report. Factors associated with persistence of diarrhoea included infection with additional organisms (14 out of 20, leaving 35 out of 72 with cryptosporidium alone and chronic diarrhoea), age under 2 (35 out of 45), recent travel abroad (13 out of 17), and travelling families living mainly on caravan sites (13 out of 17).

Severe loss of weight was a feature in many cases. Of nine patients who underwent biopsy of the proximal small intestine, all had enteropathy including villous atrophy, reduced disaccharidases, increased cellularity of the lamina propria, and

increased intraepithelial lymphocytes. Enteropathy due to cows' milk sensitivity has been associated with post-enteritis syndrome—that is, chronic diarrhoea after infection. Most cases in our study resolved spontaneously despite the children continuing with a normal diet, and three children given a milk free diet showed no obvious benefit.

Thus in immunocompetent children cryptosporidium seems to be an important cause of chronic, as well as acute, diarrhoea. It is associated with enteropathy of the small intestine and with severe failure to thrive, which add to the urgent need for effective treatment.

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Minitracheotomy

SIR,—Dr D W Ryan's review of minitracheotomies[1] merits further comment on contraindications and complications. The intensive care staff at The London Hospital have performed over 200 minitracheotomies in the past three years. Complications are often referred to the ear, nose, and throat department and so come to our attention.

In most cases the indication for minitracheotomy is retained sputum in the lower respiratory tract after operation. Only a small bore catheter can be inserted through a minitracheotomy and this limits suction of thick secretions. The stimulation of the carina resulting from suction often provokes a most efficient cough reflex, however, and may account for much of its benefit.

Careful patient selection is essential to avoid problems. In addition to patients with a coagulopathy, the following patients should be excluded: the elderly (who often have calcification of the cricothyroid membrane), the obese, patients with short necks or poor neck extension, and those who are already hypoxic.

As Dr Ryan comments, the incidence of complications remains unknown and warrants further study. Certainly, however, in our hands major problems have been infrequent, probably less than 2%. Two cases of troublesome complications come to mind. The first was one of uncontrolled haemorrhage in a patient with abnormal clotting. The second occurred in a 62 year old woman with mild obstructive airways disease who underwent a left hemicolectomy for a large bowel adenocarcinoma. After operation she developed left lower and middle lobe consolidation with hypoxia. She did not improve on vigorous medical treatments and in view of retained secretions a minitracheotomy was performed under local anaesthesia, without difficulty. She recovered well and the cannula was removed after 10 days. Three weeks later she presented with inspiratory stridor and dyspnoea, and examination showed a subglottic granuloma. This was removed at rigid endoscopy; she settled on steroids, antibiotics, and humidification and was discharged. One month later she was readmitted with acute stridor caused by a major subglottic mass necessitating emergency tracheostomy. This was followed by a laryngofissure with complete excision of the minitracheotomy tract and granuloma. Her subsequent recovery was uneventful with satisfactory decannulation, and endoscopic follow up showed complete healing with a good voice and no further subglottic recurrence at two months.

This is an example of a late complication which, although uncommon, carries high morbidity and about which the surgeons who performed the original minitracheotomy are hardly aware.

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SIR,—Following Dr D W Ryan's informative editorial on the use and applications of minitracheotomies[1] I would like to recommend a few additional points.

Firstly, insertion is very much facilitated by infiltrating skin and subcutaneous tissue with lignocaine combined with adrenaline. The reduction in venous oozing, which can be distressing to both patient and operator, is dramatic. This will not, unfortunately, have much effect on haemostasis if an aberrant thyroid artery is hit by a scalpel blade or minitracheotomy tube and this must be borne in mind when considering hazards of the technique. Secondly, it is very helpful when teaching someone to perform the procedure to highlight how superficial the trachea is since the tendency is to insert the tube too deeply and hit the posterior wall of the trachea without realising that one has already entered it. Finally, minitracheotomy has been used to aid difficult endotracheal intubation by passing a wire through the tube once it has been inserted into the trachea in a cephalad direction. The oroendotracheal or nasal endotracheal tube can then be railroaded down the wire, the minitracheotomy tube removed, and the endotracheal tube advanced further down the tracheal tree.

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Varicose veins

SIR,—We enjoyed the editorial by Mr W Bruce Campbell on varicose vein surgery[1] but would like to take issue with his statement that bilateral varicose vein operations are not operations for a solo surgical trainee. We suggest that a bilateral procedure entailing high saphenous ligation or proximal stripping with avulsions, or both, is not a suitable operation for any surgeon.

Both procedures were performed bilaterally on a 38 year old man with extensive varicosities, one patient in a series of 65 undergoing varicose vein operations. Prophylaxis against deep vein thrombosis comprised subcutaneous heparin 5000 units three times a day, elastic stockings, and mobilisation in hospital for 48 hours before discharge. On the tenth day after operation he was readmitted, gravely ill with massive pulmonary embolism. No underlying thrombotic disorder was detected. He recovered, fortunately, after a period of intensive care.

Alarmed by this event, we reassessed our management of varicose veins. We no longer perform bilateral varicose vein procedures at the same time. This is because bilateral surgery takes longer, reduces patients' mobility for several days in the immediate period after operation, and may predispose to deep vein thrombosis. In contrast, after a unilateral procedure patients recover quickly, mobilise within 24 hours, and usually exercise normally within two weeks.

We have no scientific evidence to support our impression that the risk of thrombosis is increased in patients undergoing bilateral surgery: this is a subject which requires investigation. We can, however, comment on patients' comfort after operation. Several patients with bilateral veins were disappointed to learn that two operations would be required. But after the first operation, without exception, they were relieved that a bilateral operation had not been performed because they felt that bilateral discomfort, especially in the groins, would have limited their mobility after surgery.

We would be interested to know the views of other surgeons on this subject as we suspect that we are out of line with many of our colleagues.

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1 Campbell WB. Varicose veins. *Br Med J* 1990;**300**:763-4. (24 March.)

The toxic shock syndrome

SIR,—Your editorial on the toxic shock syndrome states that the usefulness of treatment with antitoxin has not yet been determined.[1] Nevertheless, 95% of healthy adults have antibody to toxic shock syndrome toxin-1, whereas only 18% of acute phase sera and 20-30% of convalescent sera of patients with toxic shock syndrome show the antibody.[2-4] This greater serosusceptibility of patients with toxic shock syndrome is further shown by the high rates of recurrence of the syndrome that have been reported.[4]

Considerable antibody titres are present in both intravenous and intramuscular gammaglobulin, and, although of untested benefit in clinical trials, such sources of antitoxin should be considered as an additional option in treating life threatening episodes of toxic shock syndrome.[5]

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Consultant based service in obstetrics and neonatal paediatrics

SIR,—I enjoyed the article by Mr M J Hare and colleagues on five years' experience in a consultant based obstetric service.[1] We have decided recently to convert the Maidstone obstetrics unit to a three tier structure after 15 years with only a consultant and a senior house officer, usually a vocational trainee, on duty.

The decision to change was partly due to workload. When the number of deliveries each year reaches about 2500 events requiring the presence of a doctor at the unit tend to occur simultaneously. With sufficient good will such a challenge is not insurmountable but I have concluded that most of the profession would not countenance continuing a two tier scheme, and a recent meeting at the Royal College of Obstetricians and Gynaecologists verified this.

This is a pity in many ways. The two tier unit gives the only opportunity for consultants to use and improve their obstetric skills; the current system is like learning to play a violin, only to