

In this scheme a "new" NHS built from the skill and experience of the old one for major conditions and an independent health service for routine conditions would be entirely complementary to each other. Margaret Thatcher has the opportunity, ability, and courage to implement this sort of radical surgery before health care in Britain becomes an incurable lost cause, both for those delivering it and, even worse, for those needing it.

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Easing pain or hastening death?

SIR,—Dr Wilson's enjoyable personal view (17 October, p 994) evoked some familiar memories, but his account of dying Tom was a little disturbing. Presumably Tom's pain had been well controlled on regular oral analgesia, quite probably morphine although not necessarily so. The return of his pain was thus due to his now being too ill to swallow his analgesics, as shown by the advent of the death rattle. This can be expected. Perhaps a supply of oxycodone suppositories in the home would have allowed the family to maintain his comfort, or they might have been asked to telephone when Tom failed to take his medication.

Anyway, Tom was in pain, distressed by retained secretions, and diamorphine and hyoscine by injection were the appropriate response. The role of these drugs, as understood by Tom's wife, should have been that of relieving these symptoms, which they clearly did. But the passage may be read to imply that they also precipitated his death.

Many people need at least one injection before they die and one of these injections will be the last, but if the dose is in proportion to that of the oral drug given previously it should not cause the death. Diamorphine and hyoscine are effective drugs for the control of the symptoms Dr Wilson mentions. They should not be left until the patient is in extremis and clearly should not be given in order to advance the patient's death.

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Haemofiltration as a cause of electrolyte imbalance

SIR,—The report by Dr N D Barber and colleagues of hyponatraemia in patients undergoing haemofiltration (24 October, p 1025) will come as no surprise to those who have used this technique for several years for the treatment of acute renal failure. The loss of sodium and bicarbonate through these filters is very large, and before specially manufactured replacement fluids were available intravenous sodium bicarbonate and twice physiological saline was often necessary. Dr Barber's paper clearly indicates that the use of haemofiltration replacement fluid has not overcome these electrolyte problems, which occur largely as a result of the considerable quantity of fluid removed during continuous haemofiltration. Moreover, the patient reported on was not in renal failure. If haemofiltration is performed because of renal impairment very much larger volumes of fluid (up to 30 litres daily) have to be removed to avoid haemodialysis. Fluid balance and electrolyte problems are therefore commonplace.

Recently, a modification of haemofiltration has been described (N Schneider, R Geronemus, tenth international congress of nephrology, 1987) which prevents these electrolyte fluctuations

Plasma concentrations on final day of treatment

Case No	Sodium (mmol/l)	Bicarbonate (mmol/l)	Creatinine (μ mol/l)
1	140	25	452
2	139	28	702
3	138	22	511
4	142	25	469
5	137	26	314

and also provides a very simple method of dialysis. This consists simply of running peritoneal dialysis fluid through the haemofiltrate compartment of the haemofilter, allowing diffusion of small molecules from the plasma.

We have used this technique on five patients in acute renal failure in the intensive care units of two district general hospitals, neither of which has a renal unit on site. Four patients were in renal failure after major surgery and one had a combination of tubular necrosis with gross myocardial failure. Ages ranged from 65 to 82 and all patients were unstable with low cardiac outputs. A Gambro AV50 haemofilter was used and blood access was obtained by a Scribner shunt in three patients and femoral cannulas in two. Intermittent peritoneal dialysis fluid (Dianal 1.36%, Travenol Ltd; sodium concentration 140 mmol/l) was passed through the haemofiltrate compartment at 1 litre/h and the volume of haemofiltrate removed was adjusted in the usual way according to the patients' needs by subtracting 1 litre from the hourly output from the haemofilter. Haemofiltrated volumes varied from 2 to 6 litres/day. Patients received this treatment for two to 14 days (total 48 days) and the plasma sodium concentration and venous bicarbonate are shown in the table.

This adaptation of continuous arteriovenous haemofiltration has several advantages. Firstly, plasma electrolyte concentration is rapidly equilibrated with that of standard dialysis fluids that are manufactured under a product licence. Moreover, electrolyte and fluid balance fluctuations are much less likely to occur as the total volumes removed are small. Secondly, it provides an extremely simple method of haemodialysis that requires neither nurses trained in dialysis nor renal physicians and can be undertaken in any intensive care unit. Finally, patients can now undergo dialysis without the haemodynamic problems associated with conventional haemodialysis or peritoneal access, which is so often made impossible by recent abdominal surgery.

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The natural course of gold nephropathy

SIR,—In their study on the natural course of gold nephropathy (26 September, p 745) Dr C L Hall and colleagues provided information on duration of proteinuria. Our patients are frequently concerned about this side effect and its slow resolution.

Unfortunately the study did not tell us the criteria for referral to a nephrologist for the problem of proteinuria during gold therapy, and it is therefore difficult to be certain that the data in the study are representative. It is also disappointing that the frequency of alternative diagnoses other than gold nephropathy is not given. In the cases of amyloid, analgesic nephropathy, and systemic lupus erythematosus, these would probably have altered the treatment of the underlying rheumatic problem.

For the patient once the anxiety about a renal

abnormality is overcome, the main problem is usually the loss of therapeutic efficacy. If the histological examination suggests a non-progressive renal lesion it would seem reasonable to start alternative treatment, penicillamine for instance, with regular urinary protein measurements. Other renal disease, as noted above, may cause changes in urinary protein indistinguishable from those related to drug toxicity. We therefore feel that the approach towards biopsy one year after development of proteinuria while taking gold might not always be in the patient's best interests and are surprised that the leading article by Dr A J Collins (26 September, p 739) on the subject omits any mention of biopsy.

Finally we are concerned about the unreferenced support in this leading article for systemic steroid treatment for heavy proteinuria in gold nephropathy. While steroids are used in nephrotic syndrome from other causes, this is to the best of our knowledge not the practice of most rheumatologists. Indeed steroid treatment may, in itself, produce locomotor problems—for example, avascular necrosis or osteoporosis—and there would need to be good evidence to justify high dose corticosteroid prescription in a self limiting condition.

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Measuring performance or balancing the budget

SIR,—We fear that both Dr John Wattis and Dr Nigel Tyre (17 October, p 1000) understate the hazards that are contained in the performance indicators currently proposed for the NHS.¹ Psychogeriatrics will be lost without trace. The issues are given cursory attention in a single paragraph which is common to both consultation papers 7 and 8.

Firstly, the very existence of special services is denied: "Psychogeriatric does not describe a speciality recognised by the Royal College of Psychiatrists... Without the boundary of a recognised speciality it is difficult to focus on this aspect of service." It may be difficult, but surely it is not impossible. Every week job descriptions are issued requiring psychiatrists to take responsibility for psychogeriatric services, and more than 150 now devote themselves to this work.²

Secondly, the major elements of our activity are ignored. Good and effective psychogeriatric practice is characterised by liaison with other hospital specialists and involvement with patients in their own homes, rest homes, and so forth, alongside primary health care workers, social services, voluntary organisations, and families.³ During 1986 we were responsible for 251 liaison consultations, 543 home assessments, and 2731 follow up visits (including regular follow up visits to part III homes).

This information is not required by the Körner data set and thus will not be used to assess or describe our performance. Yet these activities are better measures of our service to patients than is the rate of admission to our beds, which is what Körner will provide. The interpretation of admission rates is difficult; more so when there is no information about liaison and community activity. Does a high rate indicate industry or failure to provide alternative services? Does a low rate reflect stouthead indifference or success in providing alternatives?

Thirdly, the age and diagnostic characteristics of patients reviewed by psychogeriatric services are restricted: most services accept patients over 65

years of age and sometimes younger, in addition to those aged over 75 years who are mentioned in the discussion papers. The diagnostic range includes the whole range of psychiatric morbidity, not only the demented.³

Here is a hot spot of new and worthwhile activity, the very essence of the flexible responsive approach health services require. Performance indicators that cannot identify or monitor its dimensions will lead to the withdrawal of resources and the activity will cease.

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- 1 Performance Indicator Group. *Performance indicators for the NHS*. London: DHSS, 1987.
- 2 Wattis J, Arie T. Further developments in psychogeriatrics in Britain. *Br Med J* 1984;289:778.
- 3 Arie T, Jolley D. Making services work: organisation and style of psychogeriatric services. In: Levy R, Post F, eds. *The psychiatry of late life*. Oxford: Blackwell Publications, 1982: 221-51.

Reviewing RAWP

SIR,—The articles by Mr Bevan and Mr Brazier (3, 10, 17 October, p 836, 898, 989) raise the question of how many beds teaching hospitals need. If we assume that regional specialities and centre of excellence referrals can be identified separately then three bed requirements remain—for teaching, research, and local population needs. Obviously each may overlap with some of the others. One may assume that research needs can be met from the other functions. A further confounding factor (partly dealt with in the previous articles) is any excess or unmet need associated with the urban deprivation which is common around many teaching hospitals.

The Resource Allocation Working Party (RAWP) formula assumes that resources for the population can be equated with money, whereas most authorities are looking at ways of keeping a particular service running. When the bulk of the RAWP money comes from the population part of the formula the two things come together.

Many teaching districts have more beds than their population needs and thus they are dependent on a trading position to maintain their beds. Mr Bevan and Mr Brazier have shown that this can lead to some absurd situations and suggest that juggling the formula is unlikely to work and hence seem to imply that the current unsatisfactory situation must continue. An alternative suggestion is to look more closely at why teaching hospitals have all these beds.

Let us assume a separate mechanism in RAWP to fund regional specialities and centre of excellence referrals and also assume that we know the case mix and bed numbers required for these patients. We then have to ask, What is the epidemiology of the medical curriculum? How many cases of what should the average medical student see? What level of certainty is needed on these estimates and hence what size population would produce that many cases for any given number of medical students? From that we could estimate the required number of beds by a simple multiplication of case numbers by length of stay, corrected for occupancy levels and subtracting any beds already filled by suitable regional specialty or centre of excellence patients. Each region then has to find a way of protecting that number of beds for teaching and making sure that a suitable population can get into those beds. Once those calculations are made teaching could be taken off the front end of RAWP. Such a process

could be conducted nationally or within regions and could be done fairly quickly provided everyone remembered that a fairly crude solution is probably all that is needed.

This debate could also open up some useful discussion about why medical students have to learn so much of their craft around beds when it is quite clear that much of the medicine of the next century will be practised in outpatients and in the community and, if the World Health Organisation is to be believed, will have a greater emphasis on prevention.

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Achieving a balance

SIR,—The right way to “achieve a balance” is not that endorsed by the BMA (31 October, p 1152). It is, of course, mathematically obvious that feeding a pool of consultants with average tenure 30 years from a registrar/senior house officer pool occupied for only 10 years will necessarily result in an imbalance between them, which could be corrected within the present constraints only by curtailing the former or expanding the latter—that is, lengthening the training period or shortening the period of service as a consultant, neither of which is desirable.

We should begin by asking what kind of a service is needed for patients before working out a scheme catering for the career aspirations of doctors. The health service suffers from a paucity of ranks (how would an army function that consisted only of lieutenants and generals?), from the pretence that these two ranks represent the trained and the trainees, and from the equation of tenure with the achievement of consultant status with the divide at an age when insecurity usually affects a whole family.

We could reorder the hospital hierarchy into ranks occupied roughly for a decade at each level—10-12 years as senior house officer and registrar, 10-12 years as senior registrar or junior specialist, 10-12 years as senior specialist, and, for some only, a final decade as chef de service or his deputy (the rest retiring or changing roles). It would do no harm if each change of status was sometimes accompanied by a change of health authority; and there would be circumstances in which promotion was not seen as automatic and possibly secured by election.

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Self experimentation in medicine

SIR,—Dr Stephen Lock in his review of a recent book *Who Goes First? The Story of Self Experimentation in Medicine* (17 October, p 968) describes astonishing feats of both courage and recklessness.

We are told that Purkinje performed 35 experiments on himself and Murrell took nitroglycerin some 40 times. While a student in Edinburgh my great grandfather, Dr John Webb Watkins, offered himself to Sir James Young Simpson, who described the anaesthetic properties of chloroform, for “the purpose of experiment, and was the first person to whom he (Simpson) administered it” (Obituary, *Lancet*, 14 February 1903). In his graduation thesis (“A Dissertation upon Anaesthesia in Natural and Morbid Parturition,” 1865) he presented a vivid description of sensations experienced during anaesthesia which he observed

“when I have been anaesthetised—now forty or fifty times.” Is this a record?

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Living with one eye

SIR,—Professor Calbert I Phillips's entertaining Personal View (31 October, p 1133) incidentally confirmed a long held personal suspicion that few ophthalmologists know the full consequences of total loss of vision in one eye. It is true that “Nature gave us two eyes, so there is one to spare,” for the loss of an eye is not disabling, as I found out 68 years ago. But the sudden change from binocular to monocular vision does demand a number of adjustments, on which, I suspect, little advice is given. So one learns the hard way how to surmount the real, if small, obstacles now suddenly placed in one's path.

There are several simple things one learns to do and a few one learns not to attempt. Those learning processes must be easier for an 11 year old than they are for individuals in their 70s, but both would be much helped by a little guidance. The loss of visual field is enough to demand extra care crossing the road and to increase the risk of turning into an obstacle on one's blind side—especially a half open door. That loss is immediately increased if spectacles are worn; even the change from a monocle to spectacles as one's aging skin fails to hold the monocle reliably is a limitation.

But Professor Phillips's remark “Stereoscopic vision is of little consequence” makes me wonder if he knows how the one eyed individual gets round the difficulty: reaching nearly to an object quickly, but feeling for the last few inches; always touching the cup or glass rim before pouring into it; constantly turning one's head and watching for kerb edges or raised paving stones; always feeling with one's foot for the height of the first step down; never hitting across the line of a moving ball, whether at cricket, tennis, or squash. To the one eyed golfer all greens are flat. The special requirements of the one eyed driver are more easily appreciated, but the paramount consideration is that he cannot estimate the distance from his near side wing accurately by looking at it. I commend to Professor Phillips F B Brady's little book *A Singular View*. He had to learn the hard way too.

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Drug points

Angiotensin converting enzyme inhibitors and diuretics

Dr BRIAN COOK (Ninewells Hospital and Medical School, Dundee DD1 9SY) writes: With reference to Mr J S Budd's and Dr M A R Houghton's report of an interaction of captopril and dyazide causing hypotension and abdominal pain (5 September, p 612), I would like to draw attention to another drug interaction associated with captopril and combined preparations of potassium sparing and losing diuretics.

We admitted an 85 year old man with painful muscle cramps and dehydration which had confined him to bed for two days. He had longstanding mild congestive cardiac failure and a minor degree of chronic renal failure. He had been treated with Frusene (frusemide 40 mg plus triamterene 50 mg) one tablet a day for some months, but because of worsening of his ankle oedema this had been increased to three tablets and he had been given captopril 25 mg/day some two weeks previously. On admission his