medical staff enjoy a very good relationship. One of our domestic staff prepared a magnificent buffet for a ward party recently and they help the patients by friendliness and interest. We are extremely fortunate here in our administrative staff. We know and respect each other and we are not afraid to speak our minds.

In the past the nursing staff were very much under the command of the medical superintendent. I understand that in some hospitals it was he who decided when the nurses would marry. At present we are much more partners and although the medical staff may feel at times irritated by the challenge of the nursing staff about treatment and their conception of responsibility for patients, nevertheless the partnership surely fosters friendship better than autocracy. I owe much to my nursing colleagues and friends.

The needs of the long-stay patients in this hospital concern us all. We are striving here, as I am sure hospitals are elsewhere, to improve the quality of life for those men and women who have been the failures of therapy in the past. Our rehabilitation committee here has stimulated us all.

We are right to assess the type of patient whom the courts wish us to treat. We take a fair share of section 60 patients together with a sprinkling of section 65. The Butler Committee was quite clear in its views that unless individuals would benefit from treatment it was wrong to place them in a mental hospital. The patient with a violent personality disorder is not suitable for a mental hospital as it is organised today. We are right to back up the nursing staff in refusing to admit such people. If some well-known Government figure had a relative in an acute admission unit alongside a difficult aggressive patient there would be fairly prompt action by the Department of Health and Social Security.

Medical staff committees vary in their quality and efficacy. Nevertheless it is a very sound innovation and does ensure thorough ventilation by all, and nobody can make the excuse that they do not know what is being planned.

My main concern is the constant erosion of clinical time by committees. Many days are far too long and I do feel my age on occasions. My own period of duty in the NHS is drawing to a close. I do not feel that I have ceased to perform a worthwhile job and I am conscious of much gratitude to many men and women in various departments of the hospital who have accepted me. I do not think that here there is any parlous state nor do I think that there is any danger of a Normansfield experience. I am sure that the staff of many hospitals could write of similar experiences.

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SIR,—The extremely pertinent remarks your leading article (19 March, p 737) makes on consultant responsibility in mental hospitals can, in my opinion, be applied just as strongly to all our hospitals.

Although mental institutions have been the first to show the cracks and deficiencies of management by a "quasidemocratic, predominantly lay administration," the same potential problems exist in other institutions and are just as dangerous. The standards of medical care and the welfare and happiness of all who work in hospitals demand effective and responsible personal leadership, and it is

this which is so lacking in our present hospital management structure. Whether this leadership should come from within the medical profession or not is largely irrelevant—but at least on historical grounds a strong case can be made for it being so.

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Experiments with computers

SIR,—We would like to throw a little more light on the "acceptable success" of the Stoke computer project which was mentioned by Mr J G Gray and others (5 March, p 637).

The project's first "experiment" was in the central outpatient department. This "experiment" from the start was a fait accompli. Although individual consultants were able to state booking requirements which would subsequently be modified, no attempt had been made at simultaneous comparative studies which would have helped in critical analysis of the two systems. The first 18 months were a nightmare, but slowly its performance has in certain aspects reached standards perhaps marginally better than before computerisation. So far, the one and only important improvement has been to enable quick identification of a patient's unit number if he or she had been registered before. The subsequent chain of events in filing, searching, or collecting notes for the outpatient clinics or wherever required has to be done manually as before. The marginal benefits have been to patients who have lost their outpatient cards and wish to know their next appointment. Also, it is perhaps easier for the staff to read the print-out sheets.

The principal disadvantage is the running costs of the computer complex. Estimates have varied between £150 000 and £275 000 per annum. Costs do not remain static and inflation among other factors will take its toll. What is perhaps not appreciated is the fact that computers have to be replaced every 7-10 years. The spectre of recurring capital expenditure!

Human errors continue to be passed on to the computer and the inevitable delays in big and busy clinics remain. The "lost or difficulty-finding notes" still have to be found manually. There is a significant increase in the number of false registrations in the outpatient department. It is not uncommon for patients to be sent several appointments on different dates. Repeated appointments have been sent to deceased patients from time to time, causing considerable distress to bereaved relatives.

Breakdowns sometimes occur and on one occasion the computer was completely out of action for 48 hours. The outpatient staff managed so satisfactorily during the breakdowns that one was not aware of the computer malfunctioning. Manual systems can function economically, satisfactorily, and independent of the computer. The computer ceases without manual back-up.

The computerised "inpatient system" providing continuous responsibility for 35 000 patient admissions annually" is a grandiose term for a simple system of registering inpatients and making outpatient appointments. It is also a cumbersome method of transferring patients. Very much simpler and more effective systems existed before. Regarding the com-

puterised waiting-list system, its usefulness and popularity can best be judged by the fact that only seven out of 27 surgeons use it. It is labour-intensive and time-consuming without any particular benefits.

In summary, we would say that computerisation of the central outpatient system has achieved something although at an astronomical cost, but illusions continue to be built about the computer's performance. It is not difficult to be brainwashed slowly over a period of time, and a senior colleague compared the computer to the "Emperor's new clothes." The point will soon be reached where patients and consultant staff will be strictly subject to its limitations, and the versatility and economy of the pre-existing manual systems will be lost for ever. Furthermore, there will then be total commitment to the expense of retaining the computer. It may not be particularly important at present to worry about the finances of the computer programme, but when the Department of Health and Social Security decides to stop central funding and the burden falls on the regional or area health authority the uncritical euphoria may disappear. The general acceptance of the computer for providing a comprehensive hospital service will be an unmitigated financial burden on the NHS already groaning under the weight of bureaucracy and inflation.

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High serum thyroxine concentrations in the elderly: possible causes

SIR,—Britton *et al*¹ have drawn attention to the common finding of an elevated thyroxine (T4) index in euthyroid elderly female hospital patients and used the term "T4 toxicosis" (a misleading term, since these patients are not toxic, being clinically euthyroid). Burrows *et al*² found raised levels of serum T4 in 12% and 30% of euthyroid geriatric in- and out-patients respectively, suggesting the term "T4 euthyroidism." Baruch *et al*³ reported that the range of the free thyroxine index (FTI) had a substantially higher upper limit among elderly euthyroid inpatients than in healthy elderly volunteers. They suggested that drug effects accounted for these higher values and noted a highly significant excess of digitalis users in the higher-FTI group compared with the normal-FTI group.

We have measured total serum T4 concentrations as a routine in 528 outpatients aged 66 or more. Murphy's isotope dilution method⁴ was used. We found that values obtained in men corresponded to the expected frequency distribution, whereas values obtained in

Digoxin therapy in patients with serum T4 concentrations above and below the upper limit of reference values (140 nmol/l)

Serum T4 concentration (nmol/l)	No of patients		
	Digoxin	No digoxin	Total
< 140	69	413	482
> 140	6	40	46
Total	75	453	528

Conversion: SI to traditional units—serum T4: 1 nmol/l $\approx$ 0.08 μ g/100 ml.

women were significantly higher. Only 4% of the men had raised serum T4 levels compared with 11% of the women.⁵ These observations demonstrate once more that raised serum T4 concentrations are common in female geriatric patients. We cannot, however, lend support to the suggestion of Baruch *et al* that digitalis therapy underlies this phenomenon. As illustrated by the accompanying table, the proportion of digoxin users was similar among patients with serum T4 concentrations above the upper limit of reference values (13%, 95% confidence limits 5-28%) and those with serum T4 concentrations below this limit (14, 3%, 95% confidence limits 11-17%).

An alternative explanatory theory is based on the observation of low levels of triiodothyronine (T3) in the serum in the elderly,⁶ and on the findings of Azizi *et al*,¹ who demonstrated well-preserved pituitary-thyroid responsiveness to thyrotrophin-releasing hormone in elderly women but lowered responsiveness in elderly men. If the feed-back response of the pituitary to lowered levels of T3 is similarly affected in elderly men, this would explain why raised serum T4 levels are more common in elderly women than in elderly men.

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¹ Britton, K E, *et al*, *Lancet*, 1975, 2, 141.

² Burrows, A W, *et al*, *British Medical Journal*, 1975, 2, 437.

³ Baruch, A L H, Davis, C, and Hodgkinson, H M, *Age and Ageing*, 1976, 5, 224.

⁴ Murphy, B P, *Journal of Laboratory and Clinical Medicine*, 1965, 66, 161.

⁵ Krakauer, R, Lauritzen, M, and Thorner-Andersen, B, *Ugeskrift for Læger*. In press.

⁶ Azizi, F, *et al*, *New England Journal of Medicine*, 1975, 292, 273.

Radiation-induced lesions of the aorta

SIR,—In a recent short report (23 October 1976, p 977) Dr L P Ormerod reports a case of acquired coarctation of the aorta in a 35-year-old man who, 15 years earlier, had received 3000 rads to a mantle field for the treatment of Hodgkin's disease. A cause-and-effect relationship between radiotherapy and the changes found on aortography is suggested.

Recently we have seen a fatal case of acute myocardial infarction in a 21-year-old man 16 months after a dose of 3696 rads to a mantle field for Hodgkin's disease confined to the midcervical lymph nodes on the left side of the neck. Approximately 60% of the heart and the entire thoracic aorta was within the field.¹ Histological examination of the exposed part of the aortic arch showed the wall to be focally

thickened owing to a pronounced fibrosis of the luminal third of the wall. The elastic lamellae in this area were reduced in number, broken up, and haphazardly arranged. The intima appeared normal. There was no leucocytic infiltration, no proliferation of vasa vasorum, and no significant adventitial fibrosis (see figure).

Dr Ormerod correctly points to the fact that alleged radiation-induced lesions of the great vessels have occasionally been described and that there is often a prolonged period between irradiation and clinical manifestations.² Lindsay *et al*³ studied lesions of the aorta in dogs after localised irradiation and found consistent changes consisting in fragmentation and reduplication of the internal elastic membranes together with deposits of mucopolysaccharides, formation of intimal plaques, and later fibroelastic proliferation leading to diffuse intimal fibrosis or localised fibrotic plaques—changes resembling natural occurring arteriosclerosis.

Thomas and Forbus⁴ have described the histological changes in the aorta of a 29-year-old man who, during the last year of his disease, was exposed to three separate courses of x-ray treatment—to an unknown total dose—and one course of cytostatic therapy for a lymphomatous tumour of the mediastinum and neck discovered 2½ years before his death. They found necrosis of all layers of the aortic wall, fibrous hyperplasia of the intima and adventitia, and round cell infiltration about the vasa vasorum. Some fragmentation of the elastic tissue was noted. These findings differ somewhat from those described in the present case and in the animal studies mentioned above, while others have reported similar findings in the coronary arteries.⁴

We suggest that the noncharacteristic changes in the aorta in the present case may have been early radiation-induced lesions which later might induce fibrotic scarring with perhaps clinically evident disease.

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¹ Rasmussen, S, Døssing, M, and Walbom-Jørgensen, S, unpublished observations.

² Benson, E P, *Radiology*, 1973, 106, 195.

³ Lindsay, S, *et al*, *Circulation Research*, 1962, 10, 51.

⁴ Thomas, E, and Forbus, W D, *Archives of Pathology*, 1959, 67, 256.

⁵ McReynolds, R A, Gold, L G, and Roberts, W C, *American Journal of Medicine*, 1976, 60, 39.

Drug compliance in the elderly

SIR,—In reply to the letter from Dr H G Nicol (5 March, p 644), apparent truths are not established facts and, as we mentioned (5 February, p 359), other workers¹ have previously shown that planned instructions do not necessarily improve drug compliance. We feel that we have indicated two methods of instruction which may improve drug compliance, but even so one of our methods was better than the other.

Going on to one of the other points made, from our experience both in hospital and in general practice we have the impression that very few of the elderly population here, "in almshouses, garrets, and council flats," to quote Dr Nicol, have any form of written instruction about their tablets other than that on their bottles.

There are many people better qualified than ourselves to take up the issue of trade names versus proper names. Suffice it to say that in our paper, clearly printed on the instruction card, is a "translation" of frusemide to the term "water tablet," a term which our patients use and appear to understand. We have tried to be realistic and hence the use of the name Slow K rather than "slow-release potassium chloride." This brings us to Dr Crawford's comment (26 February, p 578). We appreciate the ambiguity of the term "salt tablet," but the purpose of each kind of tablet was very carefully explained to the patient in the course of the standard verbal instructions, including, where appropriate, the purpose and nature of Slow K "salt tablets."

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¹ Malahy, B, *American Journal of Hospital Pharmacy*, 1966, 23, 283.

Multiple authorship

SIR,—Further to your footnote to the letter from Dr R E G Sloan (26 March, 838), it may reduce confusion to point out that the *Index Medicus* has from January 1977 begun to list all authors in its author section, but continues to cite only one *et al* in its subject section. Its own introduction, incidentally, caught up with this only in March.

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*.*We must admit to having been caught napping by this change of policy on the part of *Index Medicus*. Our own policy will, however, remain the same.—ED, *BMJ*.

Keep on taking the tablets

SIR,—Your leading article under this title (26 March, p 793) prompts me to recall a special study conducted by myself and others¹ on patients with ankylosing spondylitis. In a group of 15 patients receiving phenylbutazone and flufenamic acid under crossover conditions an observation of capsule consumption was

Luminal half of aortic wall without pathological changes (left), and from adjacent area (right) showing increase in depth due to localised fibrosis with destruction of the elastic lamellae. (Verhoeff's elastica-Van Gieson stain, $\times 39$.)