lowest saralasin infusion rate. At the higher infusion rates blood pressure decreased continuously to a minimum of 75/55 mm Hg at the end of the infusion period. At that moment the patient felt seriously ill, had a pale complexion, and vomited several times. After the infusion was stopped the blood pressure reached its preinfusion level within 30 min. Plasma renin activity (PRA) was measured at the beginning and the end of each infusion (see table).

	PRA ($\mu\text{g/l/3 h}$)	
	Before saralasin	After saralasin
Moderate sodium intake	10	6.3
After six days' chlorthalidone 100 mg/day	40	> 125

The findings in this patient show firstly that saralasin infusion may lead to a potentially hazardous initial rise in blood pressure when PRA is low, as has been demonstrated by others,² and secondly that saralasin infused after severe sodium depletion with chlorthiazide diuretics and vigorously stimulated PRA may cause severe hypotension even at low-dose infusion rates.

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¹ Streeten, D H P, et al, *Circulation Research*, 1975, **36**, suppl 1, p 125.

² Case, D B, et al, *American Journal of Medicine*, 1976, **60**, 825.

There's slow release and slow release

SIR,—In recent years several papers and letters have appeared in your columns¹⁻³ warning against the hazards of sustained-release oral preparations, the latest being that of Dr I P Carne-Ross (11 September, p 642). We are dismayed to see that the importance of the pharmaceutical formulation of such products is never stressed, and we feel that the time has come to draw attention to the matter.

To achieve controlled release, including slow release, of an orally administered drug at least two essentially different principles may be employed: the one-unit dose (for example, matrix tablets) and the multiple-units dose (for example, pellets or individually coated crystals distributed in capsules or tablets). The most importance distinction between these two principles lies in the fact that while a matrix tablet travels through the entire gastrointestinal tract remaining one non-disintegrated unit, the pellets or coated crystals are dispersed from the moment the capsule or tablet disintegrates, and x-ray studies^{4,5} indicate that the spreading throughout the gastrointestinal tract is a function of time only.

Apart from carrying an almost negligible risk of the drug depot being trapped and causing local irritation and/or ulceration, the multiple-units dose possesses further advantages: the optimal absorption sites—generally localised in the small intestine—are reached earlier and better utilised because the emptying rate of the stomach is not a limiting factor for the onset of absorption from the small intestine, as in general is the case with a large compact unit, the effect of which must await its passage through the pylorus. Thus the importance of individual variations in stomach emptying rate

and transit time as a whole is diminished and the predictability of the effect of a given dose is therefore increased.

In conclusion, we submit that when a controlled-release preparation of a drug is needed more care should be taken to secure that the formulation prescribed is in fact appropriate.

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¹ Spiegelman, M, and McNabb, R W, *British Medical Journal*, 1971, **2**, 534.

² Alaily, A B, *British Medical Journal*, 1974, **1**, 103.

³ Howie, A D, and Strachan, R W, *British Medical Journal*, 1975, **2**, 176.

⁴ Green, M A, *Annals of Allergy*, 1954, **12**, 273.

⁵ Feinblatt, T M, and Ferguson, E A, *New England Journal of Medicine*, 1956, **254**, 940.

Prematurity and neonatal death

SIR,—Mr R M Rush and his colleagues (23 October, p 965) have pointed out the relationship between preterm delivery and neonatal mortality. This is certainly in keeping with our experience. They state that prediction of preterm delivery is very difficult. Unfortunately, they have not reviewed previous obstetric history in their study.

During 1975 15 neonates died in this hospital, largely as a consequence of preterm delivery. Five of their mothers admitted to previous terminations; three were unmarried at the time of delivery; two were under the age of 16 and one over 40; two had had previous spontaneous abortions; three had a previous history of infant death; three were para 5 or more; one had had no antenatal care; two had had previous serious subfertility; two were delivered before arrival; two had had previous low-birth-weight preterm infants; one had had a previous infant with severe rhesus disease.

Only two of the 15 mothers had no adverse obstetric factors and were married girls in their early 20s. In contrast, preterm deliveries without these adverse factors (the vast majority) seem to have a good outcome in our experience.

Legal termination is followed by greatly increased fetal loss¹ from all causes, including neonatal death and preterm delivery, especially when cervical laceration has occurred.

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¹ Richardson, J A, and Dixon, G, *British Medical Journal*, 1976, **1**, 1303.

Palindromic rheumatism

SIR,—The short report by Dr E C Huskisson (23 October, p 979) is important for two main reasons. The first is that although palindromic rheumatism is a loose, ill-defined entity, in Britain it would appear to be often due to rheumatoid arthritis in episodic recurrent form, sometimes subsiding spontaneously, sometimes turning out to be a manifestation of some other disorder such as a reticulosis, but not infrequently gradually evolving into the clinical pattern of classical rheumatoid arthritis. In the past 30 years I have seen six such patients who in time became manifestly cases of rheumatoid arthritis, one remarkable in that for 20 years he suffered typical intermittent

attacks of arthritis, with episodes of pain, stiffness, and swelling occurring for two or three days every few weeks or months and resolving completely each time until finally he was admitted to hospital with classical sero-positive rheumatoid arthritis. What the original condition was that was described under the title of "palindromic rheumatism" by Hench and Rosenberg¹ is uncertain. Their cases were observed in military personnel in the USA during the last world war and do not seem to be the same disorders that we see in Britain today. Whatever palindromic rheumatism is will vary with the country from which it is described and the different infective and rheumatic processes prevalent at the time in that area. But the treatment of the different non-infective inflammatory arthropathies does not differ very greatly. In the absence of a known aetiology treatment is essentially symptomatic and palliative.

The second reason for emphasising the importance of palindromic rheumatism is that here we have an inflammatory polyarthritic process spontaneously switching on and off. Whatever factors or therapeutic agents will influence this disorder may well give us a lead to future therapeutic advances. In the past 30 years we have not infrequently seen the development of effective new drugs alter our ideas as to aetiology and pathological mechanisms in the arthritic disorders. Given a form of therapy which manifestly has positive action there will be no shortage of theories to explain that therapeutic effect. In medical therapeutics the cart has pulled the horse as often as not. So this small series of cases of a rare disorder and the effect on them of D-penicillamine described by Dr Huskisson is of particular interest and of some importance.

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¹ Hench, P S, and Rosenberg, E F, *Archives of Internal Medicine*, 1944, **73**, 293.

Comparative diagnostic accuracy of barium meal and endoscopy

SIR,—In commenting on the study by Dr G W Stevenson and others (25 September, p 723), Dr M W Dronfield and his colleagues make some remarkable statements (23 October, p 1010). Surely a department of radiologists is entitled to be interested in diagnostic accuracy? The quality of their study adds considerable weight to the results of many others (including Dr Dronfield's) and to the increasing clinical consensus that endoscopy has greater potential than radiology in acute bleeding. In many hospitals the urgent barium meal has virtually been forgotten. Many comparative studies have been stopped, like that of Dr Stevenson and his colleagues, when "the physicians' preference for endoscopic demonstration of the bleeding site became too strong for random allocation to continue." Have not Dr Dronfield and his colleagues encountered similar problems in their randomised study? Are Nottingham physicians and surgeons really prepared to treat patients on the basis of an equivocal or negative barium meal when presumably expert endoscopy is available?

Dr Dronfield's letter suggests that Dr Stevenson's study was irrelevant. While I agree that the diagnostic argument can reasonably be closed, I believe that Dr Dronfield and his colleagues are also doing

the wrong study. The crucial question is not whether improving diagnostic accuracy helps the patient, but whether it *can* help the patient. This is a nice but important distinction. The assessment of clinical benefit in gastrointestinal haemorrhage is already difficult. Lesions of varying importance occur in patients of varying quality. Mortality is already quite low and many deaths are entirely unavoidable. Looking at overall mortality across the whole spectrum may well obscure improvements in one area and, indeed, adverse trends in another. If our current treatment for a particular lesion is wrong, then diagnosing more of those lesions will be positively harmful.

At last we have an accurate method of diagnosis which gives us the opportunity to assess different treatment protocols within identifiable patient groups. We can, for instance, take all patients bleeding from gastric ulcers and clarify by suitable trials the correct selection and timing for surgery, the role of new acid-blocking drugs, etc. We can assess the efficacy of new forms of treatment for oesophageal varices. We can assess whether some patients with surface lesions such as gastric erosions or oesophagitis can be safely and cheaply treated at home. If we take seriously Dr Dronfield's analogy of the intravenous pyelogram in hypertension and make no attempt at an accurate diagnosis we can do none of these things.

If the Nottingham letter is intended to provoke controversy it may well have succeeded. Unfortunately many will take it to suggest that accurate diagnosis is indeed unnecessary. For a university department of therapeutics to make suggestions which will effectively stifle future therapeutic trials and progress is surprising and, indeed, "retrospective"—in their sense of the word.

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Professions and government

SIR,—I would be grateful if I might be allowed to carry a stage further the argument I put forward in my letter which you were kind enough to publish (2 October, p 820). It suggested that the health services needed support from other sources over and above those provided by professions based on medical teaching. The Royal Commission will be looking at all the elements that compose the NHS and may extend their inquiries over a wide range of professions and technology not previously the concern of such a powerful body. The NHS, measured by the demands made on it, affects every individual in Britain and the contribution made by science and industry is equally essential to its effectiveness.

This is an important landmark in the development of society and its wellbeing and possibly a historical one. The constitution under which the country is governed has given prominence to the Church and the Law for reasons which have proved sound and valid. This is reflected in spiritual and temporal terms in the House of Lords and the Privy Council, where their representation is automatic. It is probable that since the mid-18th century their influence, honourable and well intentioned, has not made so much impact on the lives of all individuals as the advances of industry, science, and medicine. The latter have, for constitutional reasons, remained in an advisory capacity to government without

representation in the executive. No doubt they will continue to be so until the constitution is revised, but until now no single body powerful enough to suggest a revision has been instituted or given authority to comment.

It is possible that with so much factual information before them the Royal Commission may point to the absence of an element in government of a factor which could exert a powerful influence for good in the future.

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Staffing problems in nephrology

SIR,—The survey by the Renal Association (16 October, p 903) provides important information on the current state of the specialty of nephrology. It was compiled by asking doctors rather than administrators about staffing and work load. The discrepancy between the Renal Association's information on consultant staffing in England and Wales (75 consultants involved in nephrology with a further 19 honorary consultants in university departments) contrasts with that from the DHSS manpower planning subcommittee (33 in nephrology). These facts create concern about the ability of the latter body to make good plans if they are using such incomplete information. The discrepancy may be due to a failure to consider physicians "with a nephrology interest" in the manpower statistics, although it is clear that they are relevant to manpower planning.

The association's survey did not investigate the staffing plans of the units providing information. The DHSS has not published any facts or opinions other than classifying prospects in the specialty as "one star"—that is, poor—in the most recent *Health Trends* chart (1974). Information on future staffing is very important for those in training for nephrology, those planning training programmes including nephrology, and those considering joining such programmes. The survey shows that there were only 107 consultants in the United Kingdom at the start of 1976 but 33 senior registrars or lecturers in the specialty. Almost no nephrologists are close to retirement. If the doctors in training are to obtain consultant posts in the specialty the consultant establishment will have to increase by nearly one-third in the next few years. A staffing crisis in nephrology at senior registrar level has been avoided so far only by the large numbers of young nephrologists emigrating (I have personal knowledge of 10). This may well continue but will be a less than satisfactory solution to the problem.

In order to obtain information on plans for nephrology staffing as seen by my nephrology colleagues I have obtained information from those who provided it to the Renal Association (only four units have not replied). Only 13 new consultant appointments were considered to be "probable" in the next three years, contrasting with the 33 individuals in training posts. Eleven units indicated that they hoped to create a new senior registrar appointment. The answers may have been influenced by the difficulties of creating new posts in the Health Service. They may not indicate optimum expansion as seen by nephrologists, nor does the "probability" of a post make it certain that the appointment will be approved and funded. It is important that the majority of the new

posts were expected to be as "physician with an interest in nephrology," with only three consultant nephrologists hoped for. It will be interesting to know how these figures compare with those being used by the manpower committees that consider senior registrar appointments or by the multiple committees that are involved in planning new consultant appointments.

This survey did not sample the opinions of those district general hospitals which do not have a consultant known to have an interest in nephrology. It may be that this is where much of the expansion in nephrology will take place as the potential contribution of a nephrologically trained physician, even in the absence of dialysis and transplant facilities, becomes increasingly realised. Training of the next generation of consultants will need to take this possibility into account, although a reduction in "training" posts in the established centres would create a need for consultants in these centres in excess of that already anticipated, as senior registrars currently make an important contribution.

My survey provides further evidence that manpower planning in the Health Service is failing to provide a satisfactory balance between training posts and consultant openings. This planning cannot be successful unless correct information on requirements is collected.

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Industrial action and the Royal Commission

SIR,—Many doctors look on their profession as a vocation. This sense of calling starts among those who enter medical school and by their late thirties most doctors are convinced of the vocational nature of their work. Most doctors, too, think that they are privileged to be able to help the sick and to maintain healthy life, and very few would consider acting intentionally against the interests of their patients. The doctor who looks on medicine solely as a means of earning a living and as a technology loses a great deal of the potential satisfaction of his occupation.

Within the greater medical profession registered medical practitioners are recognised as a profession apart and have been accorded considerable privileges and responsibilities. The setting up of the NHS had little effect on the vocational sense of doctors. In the early days a few were embarrassed by the alleged interposition of the State employer in the patient/doctor relationship. Nevertheless, many doctors consider that the NHS has helped this relationship by removing financial and economic hurdles.

Recently the NHS has placed doctors in a moral dilemma because of the strain on their sense of vocation and their heavy and increasing work load. Until recently it was assumed that doctors would always put their patients' interests before their own and would always respect fully their patients' trust. But industrial action has now extended into medical practice. Strikes, working to rule, and other industrial action by some doctors have undoubtedly caused much discomfort and inconvenience to patients, exposing many of them to unnecessary and unwarranted risk and even endangering life and health. Anxiety and uncertainty were common among elderly patients, many of whom began to lose their faith in the medical profession.

Many doctors taking part in such action have been embarrassed. They were conscious of their position as members of a dedicated profession and