strategy aimed at reducing coronary heart disease. This high risk approach is complementary to the population strategy. More information is needed concerning the best means of identifying men and women who are at high risk of coronary heart disease because of factors that can be usefully modified. The data from Professor Shaper and colleagues could usefully contribute to this discussion if multivariate analysis were performed which examined the effect of such factors rather than one which included several irreversible attributes. In particular it would be helpful to have comparable estimates of the sensitivity of the prediction of coronary heart disease in their data, if cholesterol had been included in the risk score and some irreversible indices had been excluded.

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AUTHORS' REPLY—The scoring system we describe is not intended to identify subjects with very high serum total cholesterol concentrations. It is intended to identify men at high risk of a major coronary heart disease event. Clearly, not all men with high serum total cholesterol concentrations fall into the "high risk" group (our table V), and the whole purpose of our presentation is to emphasise that high levels of any single factor do not necessarily mean that an individual is at high risk. Drs J Mann and K McPherson also consider that widespread cholesterol measurement is necessary to help identify those with inherited hyperlipidaemia, in particular familial hypercholesterolaemia. This is a reasonable objective, but it is not ours. Our concern is with coronary heart disease, and familial hypercholesterolaemia makes a very small contribution to the national mortality from this disease.

The fact that our scoring system contains several irreversible attributes is irrelevant. Our paper is primarily concerned with identification of high risk subjects, and a wide range of actions are then available—many of them not included in the scoring system. These comprise dietary modification, weight reduction, and changes in physical activity in addition to control of cigarette smoking and raised blood pressure. We have recommended measurement of serum total cholesterol in all subjects in the high risk group, if facilities allow, as an aid to individual management. We have also provided a fuller risk score which includes serum total cholesterol and an abnormal electrocardiogram, and such information can be incorporated into a high risk screening programme if resources permit. What we would argue against is any high risk strategy that proposes special emphasis on serum total cholesterol to the exclusion of other valuable and readily obtained information. We need to ensure that prevention strategies take a practical view of the community's real needs. Finally, we have emphasised that our high risk approach is strictly complementary to the health

education inherent in the population approach and cannot be regarded as a sufficient strategy in its own right.

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Spontaneous pneumomediastinum in two stowaways

SIR,—Dr Sylvia M Aldridge and colleagues (26 July, p 243) noted that pneumomediastinum is seen with bronchospasm and has been well documented in asthmatics.¹⁻³ It is notable that the larvae of three of the nematode worms infesting the stowaways migrate through the lung and may be associated with Loeffler's syndrome, characterised by a range of respiratory symptoms including bronchospasm, with transient pulmonary infiltrates and eosinophilia. There is thus a theoretical possibility that Loeffler's syndrome may be associated with pneumomediastinum.

A survey in Fiji documented numerous patients with bronchospasm associated with *Ascaris lumbricoides*.⁴ However, an extensive study of 13 000 patients in Columbia, where the stowaways began their journey, found that Loeffler's syndrome was relatively rare, despite an infection rate with *Ascaris lumbricoides* that could be as high as 90%.⁵ This was explained by the suggestion that populations where nematode infestations are endemic develop tolerance to the effects of the worms. This is supported by work with animals repeatedly infected with ascaris, in whom fewer and fewer larvae were found in the lungs after successive infections.⁶ In addition, non-native workers, previously unexposed to nematodes, developed pronounced respiratory symptoms after ingesting ascaris larvae,^{7,8} in contrast to the Columbian natives, who had only mild symptoms.

The report did not mention whether the stowaways were Columbian inhabitants. Had they been visitors to Columbia, previously unexposed to nematodes, who then developed Loeffler's syndrome their symptoms would have been more severe, making the possibility of bronchospasm and an associated pneumomediastinum more likely. It would have been interesting to examine sputum specimens, if any were produced, for nematode larvae, thus confirming their presence in their lungs.

Ascaris larvae may cause local alveolar wall damage, thus providing a possible pathway for air to travel to the mediastinum via the perivascular sheaths as proposed by Macklin, and evidence for this comes from a postmortem study.⁹ However, I have been unable to find any case reports of pneumomediastinum caused by this mechanism.

Reports of fully grown worms causing respiratory obstruction are rare, but there has been one case of an ascaris worm obstructing an endotracheal tube causing a tension pneumothorax with surgical emphysema during ventilation.¹⁰

In conclusion, apart from the authors' valid suggested explanations for the pneumomediastinum seen in the stowaways, it is worth considering that the nematode worms may at least theoretically have been responsible, in conjunction with the patients' starvation.

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Morphine intoxication in renal failure: the role of morphine-6-glucuronide

SIR,—It is not accurate of Dr Richard J Osborne and colleagues to imply that because there were no measurable amounts of morphine in the plasma the cause of the narcotic intoxication in these patients was not morphine. The plasma concentration of the drug may not reflect the concentration in the central nervous system.^{1,2} Furthermore, brain concentrations of morphine are likely to have been higher than normal in the patients described because of acidosis³ and changes in plasma protein binding,⁴ and there is some evidence in animals at least that morphine may remain in the brain for some days after only a single dose of the drug.⁵ Finally, appreciable amounts of morphine can be lost if the blood samples are put into glass tubes.

In the three cases described large doses of morphine (in the form of Omnopon) were administered over a short period. A valid assessment depends on establishing how well a control group of patients with similar medical conditions but with normal renal function would tolerate similar doses given over the same period and also whether morphine-6-glucuronide administered alone could cause the clinical picture seen.

It is interesting that no normorphine was detected in the plasma of any of the patients. About 5% of a dose of morphine is metabolised to this substance, and one would expect it to accumulate in the patients described.

The authors also do not consider the importance of the following as causes of the narcotic intoxication: the codeine present in Omnopon; possible alterations in receptor sensitivity to morphine, as occurs for some other drugs in the presence of renal failure⁶; and the fact that morphine-3-glucuronide can cross the blood-brain barrier and may be able to exert an effect after hydrolysis inside the central nervous system, as has been shown for levorphanol-3-glucuronide.⁷

Morphine-6-glucuronide might be the reason why uraemic patients are sensitive to morphine, but the data presented in this paper are insufficient to amount to the "first recognised evidence of the pharmacological effects of morphine-6-glucuronide in man."

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Markers of HTLV-III in patients with end stage renal failure treated by haemodialysis

SIR,—The risk in those undergoing dialysis of acquiring human immunodeficiency virus (HIV) infection is not well defined. Dr Michel Goldman and others (19 July, p 161) reported a 5% incidence of HIV infection in patients undergoing haemodialysis at a centre in Belgium. Neumayer *et al* also reported a 2% incidence of HIV antibodies in patients who had received kidney transplants or were undergoing haemodialysis in centres in West Berlin.¹

We would like to report our data on the incidence of HIV antibodies in the dialysis population of a United Kingdom centre. Antibodies against HIV were measured by Ortho Diagnostic Systems/Litton-Bionetics HTLV-III bioenzymic test and Wellcozyme enzyme linked immunosorbent assay as previously described.² HIV antibodies were not detected in any of the 137 patients who attended our unit regularly. They included 84 patients undergoing haemodialysis and 53 undergoing peritoneal dialysis. The only patient with HIV antibodies was attending our dialysis unit on a temporary basis. He had been receiving home haemodialysis in Hong Kong and came to our centre to seek further medical treatment for aluminium toxicity. He was also an e antigen positive carrier of hepatitis B.

There has been some controversy over whether or not all patients on renal replacement therapy programmes should be tested for HIV antibodies. We think that it is important to establish the true incidence of HIV infection at regular intervals as a means of ensuring that routine infection control procedures are in fact preventing transmission of this virus. Furthermore, the HIV results may have direct implications for the routine management of patients undergoing dialysis and their suitability for renal transplantation.

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Manpower

SIR,—Discussions on manpower within the profession are often divorced from the requirements of patient care. This impression was further enhanced by the batch of letters published in your issue of 16 August (p 448), where only one letter addressed the problems of patient service. Unfortunately the provision of an "adequate" patient service was referred to as the third of the three objectives mentioned.

In the United Kingdom in 1986 we should be aiming to provide the highest standards of patient care within a National Health Service. To provide

the high standards of care required this service needs to be provided by the trained—that is, consultants—part of whose job will be to train their successors.

Anyone considering hospital staffing and manpower problems must start by looking at the needs of our consumers, customers, and eventual paymasters. Consultant practice will undoubtedly undergo considerable changes in the future, with a considerable increase in numbers to provide a good service. The preservation of the status quo should not be allowed to cloud our judgment of what is required. The cost implications are enormous but are not insurmountable. If we compare the United Kingdom with countries whose standards we could perhaps look to as an example, the British public are getting an unsatisfactory service at half price. It beholds us as physicians and surgeons to strive for a first rate service, realistically funded, and to achieve this we must support and develop the proposed changes in our manpower structure.

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SIR,—The consultant staff in the Basildon and Thurrock district debated *Hospital medical staffing—achieving a balance* in mid-August and again in early September, resulting in a rare unanimity of resolve: all 32 staff present (out of a total of 75) rejected the report.

Members were concerned that sections of the document appeared vague on important issues which could turn out to be either a negotiator's dream or a nightmare. We recognise that it goes some way to reducing the bulge in senior registrars in some specialties, and this is warmly welcomed. On the other hand, there are many anxieties and unanswered questions about the scheme in general and the new grades in particular. Colleagues who had made inquiries outside the district had been met with "reassurance" and this has largely been reflected in your journal and the *Lancet*. We fear that silence will be interpreted as acceptance and feel obliged to record our reservations.

"Acute specialties" are not defined. We presume that general medicine, general surgery, and orthopaedics are foremost, yet acute work pervades many other specialties. In our district, with a population of 290 000, there are two main centres of population with two district general hospitals and attempts to reduce junior staffing levels are likely to lead a serious reduction in provision of services. The transfer of the bottleneck at senior registrar/consultant level to SHO/registrar level has some advantages but may prove a further deterrent to junior doctors wishing to remain in hospital practice, especially as junior doctors can now obtain relatively well paid posts in general practice within a few years. This compares with an uncertain and indeterminate hospital career structure with delayed financial reward. The implication of major change in consultant practice in the future, as outlined in the document, will add to the present uncertainty for juniors. There is insufficient detail about how staffing levels will be reviewed. The United Kingdom has long benefited from immigration and there must be ways by which overseas doctors can join our medical establishment. At present the proposals appear to make this much more difficult. While we welcome attempts to introduce rational planning into manpower proposals, we note that within the finite pool of medical graduates there is no control over retirement age in general practice and we believe this to be desirable.

There is inadequate explanation of how early or

partial retirement will be made available to consultants and how health authorities will afford such a programme. The proposed increase in the number of consultant appointments would result in fewer than one additional consultant per district, and makes no mention of the recognised costs of employing consultants, particularly surgeons. In this district all moves to appoint "Short" types of consultants will be opposed. We seek assurance that senior registrars will rotate to district general hospitals as well as teaching hospitals so that they have appropriate experience in a setting in which most of them will perform their lifetime's work.

We believe that the proposals to reduce the number of registrar posts will mean that SHOs will perform registrar duties for less pay. We will accept the concept of regional and district registrars only if there is at least one regional registrar post in each specialty in each district and district registrars are distributed equitably between teaching and non-teaching hospitals. The district registrar's training must be seen to be useful for that overseas individual and related to the setting to which he will return. If inadequate attention is given to this there is little likelihood that there will be many applicants. There must also be measures that ensure that applicants are of adequate calibre.

The proposals for an intermediate level service grade caused considerable anxiety. Looking at the bright able individuals in, and emerging from, medical schools we found it difficult to see who would wish to enter such a grade. The level of remuneration is indeterminate between SHO and consultant levels and thus gives no guide.

In the next few months we will look with interest at the districts selected to pilot the proposals, but for the time being as a group we remain unconvinced and withhold our support.

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SIR,—It is interesting to read the consultative document *Hospital Medical Staffing—achieving a balance* in conjunction with Dr Eva Lester's plea for more flexibility in attitudes to part time medical work (2 August, p 331).

Nowhere in this official document is the concept of part time work or job sharing even acknowledged. Its concern that the number of training posts should more closely relate to the number of consultant posts available is obviously justified and welcome. However, the two tier system which it proposes, with a clear distinction between the single higher training grade and the new non-training intermediate level service grade, has serious implications.

Would it be too cynical to suggest that this latter scheme is being offered as a substitute for a scheme of part time training posts? That the underlying attitude is that women and men not able or wanting to take up full time training posts would and should be satisfied with such an arrangement? It would be reassuring to believe that the higher training grade posts are not intended solely for strictly full time workers.

Much prejudice exists towards part time medical work. A recent survey of part time registrars and senior registrars in community medicine (6.5% of the total) found that fewer than half were satisfied with the training¹ and that negative attitudes towards part time work were common. The fact that only 12% of consultants in obstetrics and gynaecology are women is a result of such attitudes. Only by integrating provision for part time work in overall manpower planning will attitudes change.