staff training, and an adequate physical environment and is likely to encounter organisational and logistic problems initially. At purchaser level the organisation of funding will need to be considered, along with what further resources will be necessary for assessing and meeting the needs of some of the most vulnerable and disadvantaged members of our society.

The regional directors of public health welcome Smith's contribution to the debate and recognise the magnitude of changes being proposed. We recommend that several pilot schemes should be set up to evaluate further integration of prison health care into the NHS, which may include purchasing as well as provision of services.

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- 1 Smith R. Prison medicine: beginning again. *BMJ* 1992;304:134-5. (18 January.)
2 Directorate of Prison Medical Services. *Contracting for prison medical services: a consultation paper*. London: Home Office, 1991.

SIR,—I was, to say the least, distressed by references to "British prisoners" and "people in custody in the United Kingdom" in Richard Smith's editorial on prison medicine¹ and I A MacFarlane and colleagues' article on diabetes in prison.² I believe that both articles are referring to the prison service of England and Wales, which is of course quite separate from the prison services of Northern Ireland and of Scotland. This is particularly important in the context of Smith's remarks about mental hospitals and their relation to prisons, which would be misleading if taken to apply to the Scottish prison service.

My own prison has been served, on contract, by the partners of one general practice for over 25 years. This practice has been instrumental in medically supporting our non-segregation policy for prisoners seropositive for HIV to the same standard as the one it applies to members of the public who attend the practice in the community. Interestingly, these general practitioners, working with Saughton's newly appointed and first full time medical officer, have been developing a special diabetic clinic within the prison, which is responding to changes in practice in the management of diabetes in the community.

In MacFarlane and colleagues' paper the statement that there are "47 000 prisoners in the United Kingdom" is incorrect. This excludes the prison populations of Scotland and Northern Ireland. Finally, may I also point out that prisoners in Scotland cannot be remanded for "many months," with all the medical problems that they may create. A person remanded in prison for trial cannot be held in custody for more than 110 days, whether the trial is complete or not; and that, as might be expected, is a considerable advantage for this prison.

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- 1 Smith R. Prison medicine: beginning again. *BMJ* 1992;304:134-5. (18 January.)
2 MacFarlane IA, Gill GV, Masson E, Tucker NH. Diabetes in prison: can good diabetic care be achieved? *BMJ* 1992;304:152-5. (18 January.)

SIR,—Richard Smith's editorial discusses the prison medical service.¹ The fact is that two thirds of the medical care in prisons is given by local general practitioners. By what strange metamorphosis do these doctors manage to practise one standard of medicine in their surgeries and then a different standard in the prison down the road, thus causing the chief inspector of prisons to say

that the standard of medical care afforded to prisoners falls far short of that provided in the community?

Smith says that the Home Office is making heavy weather of what is known as the scrutiny report. This report suggests that the senior medical officer in the prison should buy in all the services required from the local NHS and, in particular, the psychiatric services. The Home Office can hardly be blamed for wishing to wash its hands of providing medical services to patients who often have little to do and live in "dirty, cramped, and dispiriting conditions" and of whom it has been reported that 37% have a psychiatric disorder (2% of these have psychosis).

The senior medical officer will hire a psychiatric team to provide a 24 hour service, in particular to deal with remand prisoners. Much of the work with remand prisoners is the wheeling and dealing of obtaining beds in local psychiatric hospitals. Requests for these beds often meet with reluctance or the reply that there is a waiting list. It is hardly surprising that psychiatrists are not queuing up to do this demanding work, even if there was the possibility of there being enough of them to do it. A good prison medical officer is a permanent feature who plays an important part in maintaining morale in the prison hospital. Some of us who visit prisons regularly live in fear that one day the prison medical service will collapse and there will be a dangerous hiatus. It is time that prison medical officers stopped being employed by the Home Office and were employed by the Special Hospital Services Authority, which runs the special hospitals and has much knowledge of mentally abnormal offenders.

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2 Gunn J, Maden A, Swinton M. Treatment needs of prisoners with psychiatric disorders. *BMJ* 1991;303:338-41.

SIR,—The College of Prison Medicine is concerned with standards of health care and with training. Its members are dedicated to the specialty of prison medicine. The college welcomes the scrutiny report for bringing to the public's attention deficiencies in the service that have long been apparent to those in it.¹ But though we welcome the possibility of change for the better, we entertain serious doubts about the validity of some conclusions and the feasibility of others.

Over half of the doctors in the prison medical service are members of one or other of the royal colleges. All will welcome the appointment of Sir Donald Acheson as first chairman of the prison service's health advisory committee. Few could do other than welcome a wider role under conditions akin to those in the NHS—perhaps a special health authority incorporating the prison medical service, forensic psychiatry, consultants working in special hospitals, and forensic medical practitioners (police surgeons). But there are far more contentious recommendations—for example, the suggestions that the prison medical service should shrink to a smaller body of purchasers buying in from a large body of provider general practitioners, that a far greater (even total) distinction should be made between clinical practice and medical management, and that the recruitment of even full time prison medical officers ("prison clinicians") should be achieved by offering contracts.

The purchaser-provider concept will lead to fragmentation of care, management, and responsibility. The cost of employing such a workforce of general practitioners is likely to be prohibitive. Part time general practitioners must always prioritise their time in favour of their main commitment—their NHS patients—and cannot be expected to sustain the detailed knowledge of the whole prison and its inmates that enables the

prison doctor to work with the governor to run a safe and happy prison. The managerial and clinical roles of the prison doctor cannot be clearly differentiated. And the concept of limited contracts as applied to full time prison doctors will be a considerable disincentive to most of those who, already well qualified and experienced in medicine, have good reason when considering work of such a demanding nature to expect permanent superannuable employment.

The scrutiny has cast its shadow over the future of those of us who work in this service, but we are determined to maintain morale and continue to deliver good medical care.

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Antidiarrhoeal drugs for acute diarrhoea in children

SIR,—In their review of antidiarrhoeal drugs in diarrhoea Anthony M de L Costello and Tariq Iqbal Bhutta conclude the "More objective information on the rational use of drugs is needed in all countries, . . . and consumers need to have direct access to it."¹

Dialogue on Diarrhoea is an international quarterly newsletter that has been published continuously since 1980; a version in English is available free to readers in developing countries from Appropriate Health Resources and Technologies Action Group, 1 London Bridge Street, London SE1 9SG, United Kingdom. For the past 15 months the newsletter has been running a series on drugs in childhood diarrhoea. This series is partly based on the World Health Organisation's programmes for rational use of drugs and controlling diarrhoeal diseases.² The series has considered not only antidiarrhoeal drugs and antibiotics but also the behaviour of doctors in prescribing drugs, methods of promoting better prescribing practices, reviews of publications about medicine and prescribing, and reports on programmes promoting appropriate drug use in different countries. This is a major educational effort as *Dialogue on Diarrhoea* has a circulation of over 170 000 copies in English and over 100 000 in other languages, including Spanish, French, Portuguese, Chinese, Tamil, Bangla, and Nepali.

The perceptions and demands of the public, as well as prescribing practices, are important in determining the types of treatment that are acceptable. The largest review of mothers' beliefs about, and practices in, diarrhoeal disease and its management was conducted in India for Unicef by the Indian Marketing Research Bureau.^{3,4} Almost 10 000 mothers with children under 5 were scientifically selected from 34 sociocultural regions and were interviewed. In 65% of all diarrhoeal episodes the mothers consulted health professionals, and over 80% of these professionals were "private practitioners." Although 60% of the "doctors" knew about oral rehydration therapy, the first response of 80% was to give medicine or injections. Drug treatment not only delays oral rehydration therapy but can displace it from the treatment routine. In India the mother and families expected to pay for medicine and were willing to do so. The average cost of treatment per episode was 45 rupees (£1.75 at that time) when the monthly expenditure per person was 213 rupees (£8.19).

The task of informing and educating is one thing. Changing perceptions, expectations, and prescribing habits is another and will require a sustained programme over many years. This is a worthwhile effort because of the high incidence of,

and appreciable fatality rate from, diarrhoeal disease. Moreover, continuing an active promotional programme for oral rehydration therapy rather than antidiarrhoeal agents will have useful benefits: domestic and national costs will be reduced and lives saved.

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SIR,—Anthony M de L Costello and Tariq Iqbal Bhutta's arguments against using antidiarrhoeal drugs for children with acute diarrhoea in developing countries are correct.¹ What may not be generally appreciated, however, is the frequency of use of these drugs in so called developed countries and the potential hazards associated with them. The central nervous system manifestations of intoxication with antidiarrhoeal agents continue to be reported in the West.² My experience of patients suffering from verotoxigenic *Escherichia coli* infections in western Canada is that the frequency of use of pharmacological agents is not much different from that reported a decade ago in patients with gastroenteritis.³

In addition to direct toxicity on the central nervous system I have been concerned about the potential ability of some antidiarrhoeal agents to complicate the outcome of acute bacterial gastrointestinal infection.^{4,5} Although there is precedent for associating some antimotility agents with a poor outcome of gastrointestinal disease, colleagues and I have found a strong association between their use in verotoxigenic *E coli* infection and its progression to the haemolytic-uraemic syndrome.⁴

We have extended our studies to examine risk factors for the central nervous system manifestations of the haemolytic-uraemic syndrome and have found a strong association between prolonged use of an antidiarrhoeal agent and such manifestations (odds ratio 7.5; 95% confidence interval 1.5 to 37.8) (unpublished findings). Though this association leads us to hypothesise that an indirect cause and effect relation exists whereby the use of pharmacological agents enhances absorption of toxins after bowel immotility (that is, toxin mediated damage), we are also concerned that some of the neurological effects may be a direct result of the drugs themselves. The excretion of some of these agents is probably impaired in patients with the nephropathy of the haemolytic-uraemic syndrome.

These concerns should lead to a reassessment of our own practices in addition to those of developing countries.

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SIR,—In their editorial Anthony M de L Costello and Tariq Iqbal Bhutta point out that an important reason for prescribing antidiarrhoeal drugs is that glucose and electrolyte based oral rehydration solution does not reduce the number of stools so parents do not consider that the diarrhoea is getting better.¹ This was true even of some developed countries until a few years ago, and it is only continuing education that has produced a remarkable change.

In 1985, 41 216 patients attended this accident and emergency department. A total of 246 general practitioners had been responsible for their care. Ninety one of these patients were children with acute diarrhoea, who had been prescribed antidiarrhoeal drugs by 67 general practitioners. Each of these attendances was followed up by a questionnaire, a telephone call, and a home visit to inquire about the reason for prescribing antidiarrhoeal drugs. Sufficient information was obtained on 89 children, who had been prescribed antidiarrhoeal drugs by 65 general practitioners.

When asked the reasons for prescribing the drugs, 11 general practitioners, who had prescribed them for 14 patients, did not know the dangers. Ten general practitioners, who had prescribed the drugs for 13 patients, said that they were aware of the dangers but still thought that there was a place for antidiarrhoeal drugs. Thirty general practitioners prescribed oral rehydration therapy but submitted to parental demands for antidiarrhoeal drugs. Fourteen general practitioners continued to prescribe antidiarrhoeal drugs for 21 patients because they had stopped explaining to patients the reason for oral rehydration on its own.

A programme of education through lectures and newsletters resulted in a dramatic reduction in the number of general practitioners prescribing antidiarrhoeal drugs and an understanding by the community of the dangers of such agents.² An audit of the 109 children who presented with acute diarrhoea in 1991 showed that only two of them had been prescribed antidiarrhoeal drugs.

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Homozygous haemoglobin O Arab disease and conjugated hyperbilirubinaemia

SIR,—S A Ibrahim and colleagues' findings of familial cases of homozygous haemoglobin O Arab (Hb O Arab) and a close association with conjugated hyperbilirubinaemia (Dubin-Johnson type) in Sudan is interesting.¹

Dubin-Johnson syndrome has been reported to be relatively common in Papua New Guinea.^{2,3} Furthermore, I showed that 15% of patients suffering from an infective disease at Port Moresby possess a defect in bromsulphthalein excretion (resulting from regurgitation of bromsulphthalein conjugates from liver to plasma) after an intravenous load (which is similar to that observed in Dubin-Johnson syndrome), although the characteristic pigment is not present in a liver biopsy specimen.⁴ I hypothesised that these people might possess a forme fruste of this disease which is overtly displayed during stress (resulting, for example, from an infection). Clusters of the Dubin-Johnson syndrome polymorphism have also been

recorded in Iranian Jews and Indian, Pakistani, Japanese, Chinese, and Hong Kong populations.^{3,4} The selective advantage of this gene is obscure, but one suggestion is that it confers a protective effect against falciparum malaria,² the milieu within the hepatocyte being unsatisfactory for schizogony to take place.¹

Hb O Arab has been documented in Israel, Kenya, Jamaica, the United States, and Bulgaria as well as Sudan⁵; a hypothesis has been proposed that this haemoglobinopathy was carried from Bulgaria (where the highest prevalence has so far been recorded) to the northern parts of east and west Africa during the days of the Ottoman empire. If Hb O Arab is protective against falciparum malaria, as Ibrahim and colleagues claim, it would seem worth while to look for it in people in Papua New Guinea, where it might also be associated with Dubin-Johnson syndrome. Its presence would be of considerable interest in the context of geographical (and ethnic) drift of the Dubin-Johnson syndrome and Hb O Arab genes and hence to biological anthropologists with an interest in the Pacific area.

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SIR,—Cases of the homozygous state of haemoglobin O Arab (Hb O Arab) such as that reported by S A Ibrahim and colleagues are uncommon but have been reported previously, although not in association with Dubin-Johnson syndrome.

People with the homozygous state seem to fall into two distinct groups. One group suffers symptomatic recurrent anaemia and jaundice, such as described in Bulgaria,¹ Yugoslavia,² and Turkey³; the second group is made up of asymptomatic people in whom the finding is incidental, such as a Moroccan patient⁴ and a pregnant Tunisian woman reported on recently by this department.⁵ There seems to be no particular laboratory marker for the disparity between the two groups, which may be attributable to other factors such as intercurrent illness or environmental effects.

The distribution of the Hb O Arab gene among the populations of north Africa, Palestine, and eastern Europe is of anthropological interest and has led to speculation about its origin; correlation with other genetic markers such as blood groups suggests that it is of African origin,⁷ although some suggest that it originated in East Thrace (Bulgaria).² The gene's geographic distribution seems to be related to the extent of the Ottoman empire; spread was facilitated by the Turkish army recruiting the natives of occupied areas and deploying them elsewhere.

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