heart disease (about 7% in our study¹), it is more statistically sensitive to do so indirectly by considering the separate associations of blood cholesterol concentration with particular causes of death, taking into account any confounding by other variables. In our study there was no significant association between cholesterol concentration and total mortality from cancer but there was a significant inverse association between serum cholesterol concentration and liver cancer ($2p < 0.05$). Deaths from chronic non-malignant liver disease were also found to be significantly inversely associated with serum cholesterol concentration. After deaths from coronary heart disease and from liver diseases were excluded, no significant association remained.

In our study the difference in mean cholesterol concentration between those who died of liver disease and those who did not was 0.35 mmol/l (95% confidence interval 0.12 to 0.58 mmol/l). In China 10-15% of the population have lifelong hepatitis B virus infection, which accounts for most of the liver cancer and chronic liver disease.² A recent study among 3000 adults in Taiwan has shown that cholesterol concentration is significantly lower (by 0.21 mmol/l, $2p < 0.001$) among people who are carriers of hepatitis B virus than among those who are not (W H Pan, personal communication). So this apparent inverse association between serum cholesterol concentration and deaths from liver disease may be due to prolonged hepatitis B virus infection causing both low cholesterol concentration and deaths from liver disease.

In conclusion, there is no consistent evidence that lower cholesterol concentration causes any material increase in deaths from any particular causes. But there is strong evidence that higher cholesterol concentration causes deaths from coronary heart disease without any evidence of a threshold at what would, by Western standards, be a "low" cholesterol concentration.^{1,3} This indicates that, especially in populations in which coronary heart disease is common, the development of practicable methods to reduce cholesterol concentration on a population basis would indeed reduce overall mortality.

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- Chen Z, Peto R, Collins R, MacMahon S, Lu J, Li W. Serum cholesterol concentration and coronary heart disease in population with low cholesterol concentrations. *BMJ* 1991;303:276-82. (3 August.)
- Beasley RP, Lin CC, Hwang LY, Chien CS. Hepatocellular carcinoma and hepatitis B virus. A prospective study of 22,707 men in Taiwan. *Lancet* 1981;ii:1129-32.
- Relationship of blood pressure, serum cholesterol, smoking habits, relative weight and ECG abnormalities to incidence of major coronary events: final report of the pooling project. *J Chronic Dis* 1978;31:201-306.
- Stamler J, Wentworth D, Neaton J. Is the relationship between serum cholesterol and risk of death from coronary heart disease continuous and graded? Findings on 356,222 primary screenees of the multiple risk factor intervention trial (MRFIT). *JAMA* 1986;256:2823-8.

Hearing loss in adults with learning disabilities

SIR,—In her editorial Dr Sybil Yeates detailed the challenges presented by adults with learning disabilities who also suffer from loss of hearing.¹

In our service, for the past two years, we have held quarterly joint ear, nose, and throat and learning disabilities clinics at the sensory handicap department at Bromham Hospital for both inpatients and outpatients. The clinic is attended by the ear, nose, and throat consultant and an audiometrician, both of whom have developed an interest in learning disabilities; the consultant in

mental handicap; a speech therapist; and the clinical specialist nurse and her team. Though this may seem a large concentration of professionals, it allows all the relevant assessments to take place in surroundings that are both suitable and familiar to the patient. Communication is facilitated by the key worker and other relevant carer being readily available. This model of care has been most effective in both identifying and treating hearing loss in this group of patients and is, in my opinion, an example of how specialist health services may develop in the future for people with particular needs—needs that tend not to be met in the "normalised" general hospital service.

I recommend to other services that they should speak with their local ear, nose, and throat services with a view to establishing a similar model of service as its effectiveness has been beyond our expectations.

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- Yeates S. Hearing loss in adults with learning disabilities. *BMJ* 1991;303:427-8. (24 August.)

Madura foot: a surgical cure

SIR,—Mr A R Naylor and colleagues report a case of Madura foot.¹ Contrary to the authors' belief, this condition may be cured provided the diseased tissue is dissected down to the tendo-osseous plane and removed en bloc.² The newer antifungal agents clotrimazole and ketoconazole have shown promise in effecting a cure,³ particularly in combination with surgical excision.^{4,5}

The absence of bony involvement, as in the case described, increases the cure rate after all granulation tissue and affected skin has been removed. When the mycosis affects the metatarsus it is still possible to remove the diseased bone and surrounding tissue, reconstruct the foot, and achieve a cure.

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- Naylor AR, Fox C, Walker PA, Buchanan RC. Minerva. *BMJ* 1991;303:530. (31 August.)
- Visvanathan R. Surgical treatment of fungal mycetoma. *Can J Surg* 1989;32:74-6.
- Mahgoub ES, Gumaa SA. Ketoconazole in the treatment of eumycetoma due to *Madurella mycetomii*. *Trans R Soc Trop Med Hyg* 1984;78:376-9.
- Andreu JM. Traitement actuel des mycetomes fungiques: interet du ketoconazole associe a la chirurgie conservatrice. [Actual treatment of fungus mycetoma: interest in associating ketoconazole and conservative surgery.] *Med Trop (Mars)* 1986;46:293-7.
- Audoin J, Romanet JP, Rusterholtz B. Therapeutique chirurgicale dans les mycetomes africains. Indications a propos de 160 cas personnels. [Surgical therapy in African mycetoma. Indications a propos of 160 cases.] *Med Trop (Mars)* 1986;46:283-92.

Measurement of central venous pressure

SIR,—In their short report Dr G A Haywood and colleagues state that there are many reasons for the variation in the measured central venous pressure when a patient changes from the supine to the sitting position, including thoracic morphology, the compliance of the perivascular tissues, and venous tone.¹ They do not, however, comment on the clinical state of hydration of their patients or on the diagnosis of autonomic neuropathy due to, for example, diabetes mellitus, both of which would influence the results in their elderly study population (mean age 65).

In circulatory volume depletion, defined by a postural drop in blood pressure with a concomitant rise in heart rate, sitting the patient up from

the lying position results in a significant fall in central venous pressure.² Correction of dehydration results in a much smaller variation in central venous pressure measured at the standard reference points in the absence of autonomic neuropathy.² Failure to rehydrate the patients (when indicated) in the present study suggests that some of the authors' observations could be explained by volume depletion.

The authors conclude that the same method of measurement should be used for each recording of central venous pressure. They do not, however, encourage measurement in both the lying and sitting positions. This yields valuable additional information about the state of hydration of the patient and is to be recommended whenever possible.

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- Haywood GA, Joy MD, Camm AJ. Influence of posture and reference point on central venous pressure measurement. *BMJ* 1991;303:626. (14 September.)
- Amoroso P, Greenwood RN. Posture and central venous pressure measurement in circulatory volume depletion. *Lancet* 1989;ii:258-60.

Markets and clinical practice

SIR,—As a member of a fundholding practice I was interested to read Dr Trisha Greenhalgh's article on "the market."¹ She states that "until 1 April 1991 the overwhelming majority of medical decisions were made on the grounds of clinical need, patient preference, and safety." I hasten to reassure her that *all* such decisions in our practice are still made on those grounds. Our local colleagues and our patients know this. There is, in fact, no need whatsoever for fundholders to change their way of clinical practice, and very few, I imagine, have done so.

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- Greenhalgh T. Let's stop calling it a market. *BMJ* 1991;303:791. (28 September.)

Canadian Medicare

SIR,—As a Canadian physician educated in Britain I was interested in Professor Donald W Light's comment on the prohibition in Canada of commercial insurance coverage for services provided under the health plan financed by the government, which we generally term Medicare (realising that this term has quite a different meaning in the United States).

The sole reason that Canada has been able to do this is the existence of free and easy access to the commercial marketed medicine in the United States. If anyone wants a service more quickly or that is, as they perceive it, better it can be bought just south of the border: the premier of Quebec recently set us an example. Deficiencies in Canadian Medicare that become too great for public acceptance can be remedied in this way—for example, by the government of British Columbia financing cardiac surgery in Washington state for its citizens.

I suggest that if this market did not exist a Canadian government would not be able to ban private alternative insurance coverage. It is its existence that permits us to exercise our national hypocrisy in this way. So long as most people regard medical care as something that they have a right to buy with discretionary income, like food or education, they will demand the right to do so—either within a country, as in Britain, or in what is effectively a common market, as in Canada and the United States.