sound recommendations may be modified by recent events in the United States.

The US Senate Select Committee on Nutrition and Human Needs reported last February.¹ It had been taking evidence from doctors at public sessions since July 1976.² The committee has recommended many dietary changes. In order of priority these changes are: (1) increase consumption of starchy carbohydrates, called complex carbohydrates, from 22% of energy intake at present to 40-45% and increase consumption of whole grain products and also of fruit and vegetables, for the fibre from both is "important in nutrition"; (2) decrease sugar consumption from 24% to 15% of energy intake; (3) decrease consumption of total fats from 42% to 30%, saturated fats from 16% to 10%, and polyunsaturated and monounsaturated from 26% to 20%; (4) protein no change at 12%.

The evidence²⁻⁴ to support this enormous and difficult dietary change has been implemented by legislation on 31 March to create a new Bureau of Human Development.⁵ It has been funded by hundreds of millions of dollars. The committee is continuing to hold sessions and another report, this time on dietary fibre and health, has been promised.⁶

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¹ US Senate Select Committee on Nutrition and Human Needs. *Dietary Goals for the United States*. US Government Printing Office, Washington, 1977.

² US Senate Select Committee on Nutrition and Human Needs. *Diet and Killer Diseases with Press Reaction and Additional Information*. US Government Printing Office, Washington, 1977.

³ *Hearings before the US Senate Select Committee on Nutrition and Human Needs. Part 1. Cardiovascular Disease*. US Government Printing Office, Washington, 1977.

⁴ *Hearings before the US Senate Select Committee on Nutrition and Human Needs. Part 2. Obesity*. US Government Printing Office, Washington, 1977.

⁵ A Bill to amend the Public Health Service Act to establish a Bureau of Human Development. *US Congressional Record*, vol 123, No 57, 31 March, 1977.

⁶ Senator George McGovern, personal communication, 1977.

Mycoplasma and encephalitis

SIR,—I was interested in the report of meningo-encephalitis associated with *Mycoplasma pneumoniae* infection (by Dr P Kopelman (2 April, p 881)) and the author's remarks concerning pathogenesis. It is relevant that sera of patients infected with *M. pneumoniae* show IgM antibodies that react with brain, since there are common glycolipid antigens.¹

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¹ Kaplan, M H, and Rapaport, F T, *Proceedings of the First International Congress of Immunology*, p 1153. London, Academic Press, 1971.

Management of childhood epilepsy

SIR,—To manage means to control. As every schoolboy knows, drugs do not control childhood epilepsy, so one hoped that your leading article under the above title (16 April, p 986) would have been about something other than them. The control of the household, for instance, and of going to school, of climbing trees and swimming and of lighting fires and going camping; and of the prospect of marriage and pregnancy and rearing a family and

eugenics. All this was left out, and instead we had a little cliché about sympathetic advice.

That epileptics fall in the fire and char their limbs away; that by even lying on hot piping for an hour they can irretrievably damage them; that they drown in a bath three inches deep; that it is impossible, when swimming out of your depth, to support a child above water level for the duration of a major fit and that inhalation of river water is fatal: none of these was mentioned. No fire guards, no protection of staircases, no removal of bathroom locks, but only sadly ineffective, and sadly poisonous, drugs were discussed. It is as if your expert on epilepsy saw patients only in a hospital clinic, left the clinic only to go to the laboratory, and never saw the results in the home, in plastic surgery wards, and in the cemeteries, of such neglect of management.

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Methadone: evidence of accumulation

SIR,—Arising from the letter of Mr D M Rutherford and Dr K Raymond (19th March, p 774) we would firstly like to apologise for our inadvertent solecism in misspelling Mr Rutherford's name on two occasions in our previous letter (5 February, p 375).

We were most interested in their finding that the half life of methadone was 12-30 h. This would appear to bear out our comments on the variability which occurs in the published figures for this value.

It is of course well known that if a drug is administered repeatedly at constant time intervals it will accumulate until a "plateau level" is reached, when the concentrations fluctuate between a maximum and minimum level which can be calculated with precision by the method of Dost.¹ We would therefore agree with their introductory comments. However, we cannot accept their comments on the methadone blood levels which may originate from a misinterpretation of the graph published in our letter: If the whole-blood methadone concentrations of the three subjects are considered from the time of peaking over the longer 12-h period assessed on day 1 of the study the figures shown in the table are

Whole-blood methadone levels (ng/ml) after administration of one controlled-release tablet containing 10 mg of methadone

Time (hours)	Subject 1	Subject 2	Subject 3
1	—	—	58
2	54	89	34
3	48	60	27
6	44	55	25
8	41	50	23
12	32	33	18

obtained. Although the idealised flat blood concentration curves were not attained, as indeed they rarely are in practice, the results after peaking were very close to this theoretical concept. The release mechanism of the tablet was in fact designed to produce rapid analgesic activity through a measured loading dose and also to complement these initial levels by a further controlled release of methadone.

However, our main object in replying is not to argue the minutiae of the bioavailability pattern of our controlled-release methadone tablet but to highlight the problems of

accumulation occurring with methadone whether in a controlled, non-controlled, or liquid form. We found that the accumulation that occurred even during our short study gave rise to considerable side effects in the young, healthy volunteers. This accumulation, even if not indefinitely progressive, can thus give rise to problems even before a steady state is reached. Obviously this could be dangerous in elderly patients—as exemplified by Dr Paul Symonds's patient (19 February, p 512) who became unconscious with symptoms of narcotic overdose after the administration of 5 mg of methadone three times a day for two days. Such patients, often additionally exhausted by unrelieved pain or severe coughing, are vastly different from either healthy volunteers or young addicts, whom they also vastly exceed in number. In these elderly patients the risk of methadone accumulation and toxicity represents a substantial hazard.

We are aware that other physicians have encountered problems with methadone accumulation and may wish to comment in your columns.

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¹ Dost, F H, *Grundlagen der Pharmakokinetik*, Stuttgart, Georg Thieme, 1968.

Hospitable Trinidad

SIR,—Recently we three, all final-year medical students, spent elective periods attached to the University of the West Indies based in Port of Spain, Trinidad. We were all able to choose the departments in the hospital, health service, or research centre in which we wished to study. The many members of the medical services we met spent a great deal of time and effort teaching us and seeing to our general welfare. We are very grateful to them all. Our time in Trinidad proved an extremely valuable experience.

Arranging such elective studies is an obvious financial strain on any medical student. Our problems were greatly lessened by the fact that we were provided with rooms and meals at Port of Spain General Hospital free of charge. We would like to urge all British medical schools to extend similar hospitality (as we believe some already do) to University of the West Indies students and others on electives so that more medical students may have the chance of an experience such as ours. Our thanks to all in Britain and Trinidad who made our electives possible.

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Visual and manual examination of whole stools in plastic bags

SIR,—We should like to draw attention to a simple method for visual as well as tactile examination of faeces which we developed several years ago in order to detect remainders from oxytetracycline capsule medication. The

method will doubtlessly lend itself to locating almost all other types of coarse particle in faecal material. It proved very helpful in the development of formulations of completely disintegrating oxytetracycline capsules.

The faecal material was collected freshly by its producer in a large transparent plastic bag which was suspended in the toilet with its edges spread over the toilet seat. The collected material was transported to and handed over at the laboratory as an odourless sausage rolled up in the many layers of plastic that the large size of the bag allowed for. On reception the bag was unrolled and sealed by heat at the opening and the faeces were spread and flattened to a thin film by manual pressure and/or a household roller.

Inspection and palpation were carried out in front of a back-lighted panel and chemical or other analysis performed on punched-out samples. Remains of the contents of oxytetracycline capsules were felt and, on crushing, seen as larger or smaller deep-yellow spots which fluoresced in ultraviolet light; chemical analysis of punched-out material removed any doubts that might have existed as to its nature. Many undigested food residues were clearly visible and/or palpable (for example, pieces of peanut). The pancake-like flattened faeces in the sealed plastic bag can be stored as such in a refrigerator or freezer.

Whenever the need arises to examine stools, preferably in toto, in order to find non-dispersed objects, the method described should offer an efficient, acceptable, and hygienic means of doing so.

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Partial floral suppression

SIR,—The article by Dr H F L Guiot and Professor R van Furth on "Partial antibiotic decontamination" (26 March, p 800) was of particular interest to me, being an extension and modification of my own approach.

In 1967 I started using three agents together orally, aiming at a sustained suppression of alimentary floral growth. Vancomycin was originally selected as one of the trio, fulfilling the criteria of non-absorption plus the requisite antibacterial spectrum, but had to be discarded on grounds of cost. The three drugs finally chosen were paromomycin 500 mg plus cloxacillin 250 mg thrice daily—taken with food further to limit its absorption—and nystatin 500 000 U thrice daily. Tolerance has proved excellent, without a single instance of frank steatorrhoea. Serial stool cultures and subcultures, done twice weekly during the first month of therapy, presented uniformly pathogen-free results but for the occasional isolate, as of paracolic bacilli. Even interrupted therapy, on just one day a fortnight, posed problems of floral culture and subculture for the laboratory, this restraint on growth spanning the full fortnight.

Paromomycin reduces colonic bacterial counts, aerobic and even anaerobic, to very low levels with the exception of enterococci and *Staphylococcus aureus*, which remain essentially unchanged.¹ Vancomycin or, in the event, cloxacillin was chosen to suppress the

spared species, known to be sensitive to these antibiotics. The nystatin that completed the trio was, like paromomycin, unabsorbed and was aimed at limiting monilial growth. Bacterial superinfection or recolonisation are not favoured, in theory or in practice, by this combination of drugs. The discontinuation of Humatin by Parke Davis and Co two years ago resulted in the substitution for it of gentamicin 80 mg orally, greatly diluted, taken over the course of one day.

Over the past decade I have used this therapy (more recently with the modification just described and incorporating the thrice-daily application chlorhexidine neomycin cream (Naseptin) to the anterior nares) in patients with aplastic anaemia (2), acute myeloblastic leukaemia (4), chronic myeloid leukaemia in the myeloblastic crisis phase (1), and multiple sclerosis during therapy with antilymphocytic globulin together with corticosteroids and azathioprine (1). Bone marrow transplantation was never done and formal isolation not attempted. All patients presented intense granulocytopenia, but failure of the prophylactic regimen declared itself in one patient only, her oral moniliasis progressing to systemic infection and controlled only by amphotericin B given intravenously. Clearly mycotic prophylaxis employing this agent orally represents an advance over nystatin therapy. Instances have been cited of oral moniliasis (candidiasis) that fail to improve when treated with nystatin, applying especially to those cases appearing as superinfections during the exhibition of an antibacterial agent.²

Control of alimentary flora disposes of most of the hazard of renal infections, these arising either via haematogenous spread, itself chiefly of colonic derivation (when invasive procedures are fastidious and few), or by ascending urinary tract infection from the same alimentary source. Since in situations of immunological incompetence in general and of organ transplantation in particular it appears that rather more than half of the patient's infections are of endogenous origin a bacteriostatic approach has always commended itself to me in meeting some of the prophylactic requirements that were highlighted a decade ago with the first allogeneic heart transplant.

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¹ *Pharmacological Basis of Therapeutics*, ed L S Goodman and A Gilman, 3rd edn, p 1276. New York, Macmillan, 1965.

² *Pharmacological Basis of Therapeutics*, ed L S Goodman and A Gilman, 5th edn, p 1236. New York, Macmillan, 1975.

Inactivation of penicillins and cephalosporins by enzymes

SIR,—I would like to comment on two recent papers. First the paper by Dr P Barnes and Pamela M Waterworth (16 April, p 991), who describe probable enzymic inactivation of penicillins and cephalosporins in streptococcal pus. Your related leading article (p 986) misquotes their findings in that you state that seven cephalosporins were inactivated. In fact only five were, the two surviving drugs being cephalixin and cephradine. This may be important in the location of the origin of the apparent enzyme, as both cephalixin and cephradine are more resistant than the other cephalosporins to bacterial lactamase.¹ Therefore I would favour the origin of the enzyme being bacterial, which may not have been

detected in vitro for a variety of reasons (for example, owing to loss of plasmid or R factors during plating, the presence of specific enzyme inducers present in vivo but not in vitro, and death of the enzyme-producing bacteria before examination).

In the paper by Dr E J L Lowbury and others (23 April, p 1054), a controlled trial investigating so-called "methicillin-resistant" staphylococci is extremely welcome. It must surely be time to drop this label. Perhaps the explanation for the apparent inferiority of flucloxacillin when compared with cloxacillin in a previous trial is that flucloxacillin is more vulnerable to penicillinase.¹

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¹ Lacey, R W, and Stokes, A, *Journal of Clinical Pathology*, 1977, 30, 35.

Morale and management in general practice

SIR,—The evidence on morale in general practice (5 February, p 401) makes depressing reading, the more so when read in conjunction with Dr Ian Capstick's Personal View (p 373).

Some members of the Royal College of General Practitioners have in recent years stressed the importance of the psychosocial aspect of general practice and Dr H W Ashworth (22 January, p 226) has given a graphic account of a course on non-directive counselling which he found to be anxiety-provoking. Could it be that this type of approach, which is eminently suitable as an educational tool, has in some instances been inappropriately carried over into practice management? The draft memorandum of evidence to the Royal Commission (29 January, p 299) raises the question of health teams and condemns the consensus approach to decision-making. As long as the leaderless-group approach of the behavioural scientist is permitted to influence practice management, then we may also expect the anxiety-provoking situations which affect the morale of general practice.

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Bed occupancy: misleading figures

SIR,—Bed occupancy statistics are being increasingly used by the Department of Health and Social Security and hospital administrators as evidence that beds in a particular department are under-used. For various reasons occupancy at midnight is thought to give the best indication of actual bed use in a normal 24 hours and these are the figures used by the authorities. This method takes no account of the manner in which the weekly pattern of work in our hospitals has changed during the past 20 years. This change has been particularly marked in the surgical specialties, in which day surgery and outpatient surgery are being increasingly practised. In addition, no longer is there any routine Saturday morning operating because theatre staff, nurses, technicians, and porters have their weekly work patterns rationalised. Thus patients booked for operation on a Monday morning have their