psychiatric morbidity looming large on the horizon.

A comprehensive psychiatric assessment and management at this point of crisis in a patient's life can have a very important preventive role, as well as providing for early detection of psychiatric illness in the making before the prognosis becomes unfavourable and unnecessary demands are made on psychiatric services, including long-term care.

R K BRAHMA

Whipps Cross Hospital,
London E11

¹ Kreitman, N (editor), *Parasuicide*. New York, Wiley, 1977.

² Kreitman, N, *British Journal of Psychiatry*, 1979, **135**, 275.

Carbon monoxide poisoning

SIR,—I was interested to read the timely warning by Drs A J Crisp and K M Sherry (1 December, p 1438) regarding poisoning by carbon monoxide. It should be remembered that carbon monoxide is produced by the incomplete combustion of any of the common fuels, and that such incomplete combustion is likely to be due, in the domestic scene, to insufficient ventilation.

May I add a rider to the warning from Drs Crisp and Sherry? I am concerned that cases of subacute or chronic carbon monoxide poisoning may be going undetected. The symptoms—"headache, nausea, want of energy, a tired feeling, lack of concentration, irritability, breathlessness, tachycardia, giddiness, gastrointestinal disturbances, and ataxia"¹—are so all-embracing that patients presenting with this type of picture are likely to be regarded as neurotic and receive short shrift at the hands of casualty officers and others.

I would recommend inquiry about fires and other heating appliances in such cases. The diagnosis is easily made today by the use of the Dräger respiratory carbon monoxide test tube to analyse the patient's exhaled air. This device will give an instant, accurate estimation of the carbon monoxide content of exhaled air, from which the percentage of carboxyhaemoglobin in the blood can be derived. It is accurate over the range 2-35%—and it is also remarkably helpful in educating smokers.

NEVILLE DAVIS

Brownlow Medical Centre,
London N11 2BD

¹ *British Encyclopaedia of Medical Practice*, 1953, **12**, 126.

Carbon monoxide yield of cigarettes

SIR,—Dr Keith Ball's (22 September, p 731) suggestion that the Government should publish carbon monoxide (CO) yields of individual brands of cigarettes is based on three conclusions of doubtful validity.

Firstly, in stating that the evidence on CO as an important health hazard for smokers is growing he ignores the recent important retraction by Astrup¹ of his earlier studies² of the effect of CO exposure on normolipidaemic rabbits. Though there is evidence that CO can increase the severity of coronary artery disease in cholesterol-fed pigeons, rabbits, and monkeys, there is now no evidence that CO exposure in animals or birds fed on normal diets has any effect.³

Secondly, Dr Ball's conclusion that CO

levels have increased owing to the switch to filter cigarettes, which occurred mainly in the 1960s,⁴ is based on comparisons of yields of filter and plain cigarettes made much more recently and is in fact likely to be incorrect. The CO yield of unventilated cigarettes is strongly related to the permeability of the cigarette paper⁵ (and also to the size of the cigarette), and cigarette paper used currently in either filter or plain cigarettes is much more permeable than that of the typical old plain cigarette of 20 or more years ago. Gori⁶ has recently concluded that CO yields in US brands appear to have declined and it seems likely that considerable reductions have occurred in UK brands also—a view strengthened by the observation that a brand manufactured in 1937 delivered over 43 mg CO per cigarette, more than twice that delivered by present-day cigarettes.⁶ Dr Ball's fears that the "higher" CO levels may have led to more deaths from coronary heart disease are in any case at variance with the epidemiological evidence, which shows a reduced risk of coronary heart disease in smokers of cigarettes with reduced tar and nicotine levels⁷ and in smokers of filter rather than plain cigarettes.⁸

Finally, Dr Ball's statement that the publication of the tar tables stimulated the industry to lower tar levels of cigarettes ignores the fact that by far the major part of the tar reduction occurred *before* the publication of the first tar table in 1973 on the industry's own initiative. Average tar levels were 31.4 mg in 1965, 18.7 mg in 1973, and 17.4 mg in 1978.

There seems no strong case for publication of CO yields.

PETER N LEE

Cheam, Surrey SM3 8PY

¹ Stender, S, *et al*, *Atherosclerosis*, 1977, **28**, 357.

² Astrup, P, *British Medical Journal*, 1972, **1**, 447.

³ Turner, D M, *et al*, *Atherosclerosis*, in press.

⁴ Lee, P N, *TRC Research Paper No 1*. London, Tobacco Research Council, 1976.

⁵ Gori, G, and Ellis, R L, *Preventive Medicine*, 1979, **8**, 358.

⁶ Spincer, D, and Evans, N, Imperial Tobacco Limited Report No R417, August 1976.

⁷ Hammond, E C, *et al*, *Environmental Research*, 1976, **12**, 263.

⁸ Dean, G, *et al*, *TRC Research Paper No 14*, part I. London, Tobacco Research Council, 1976.

Rectal dosage of metronidazole

SIR,—May I draw the attention of your readers to an error in the ninth edition of *A Paediatric Vade-mecum*¹?

The rectal dose of metronidazole is incorrectly given (on p 191) as 500 mg three times daily for ages 2 weeks to 7 years. This is a toxic dose at the lower age range and should not be given. The May and Baker data sheet states that under 1 year the dose should be 125 mg (a quarter of a suppository), from 1 to 5 years 250 mg (half a suppository), and from 5 to 12 years 500 mg (1 suppository) eight hourly.

The suppositories are difficult to subdivide accurately and there is probably a need for lower-dose suppositories to be made available.

I am very grateful to Dr J Goulton of Messrs May and Baker for drawing my attention to this error and apologise to readers for its occurrence.

BEN WOOD

Department of Child Health,
Southampton General Hospital,
Southampton SO9 4XY

¹ Wood, B (editor), *A Paediatric Vade-mecum*, 9th edn, p 191. London, Lloyd-Luke, 1977.

Addiction to smoking and drinking—our most serious preventable diseases

SIR,—Smoking and drinking give rise to poisoning of the organism by tobacco and alcohol. Poisoning of the organism constitutes a disease: a "morbid condition" of the body (Oxford English Dictionary). And because of their prevalence the addictions to tobacco and alcohol are by far the most serious avoidable diseases in the Western world—for both are preventable and curable. Yet we continue to evade taking effective action, on the misconception that they are merely habits and not addictive diseases. We accept unquestioningly as diseases their several complications, such as bronchial carcinoma and cirrhosis, but still fail to indict and control the primary addictive conditions.

LENNOX JOHNSTON

Lymington, Hants

JOHN ANDERSON

Taunton, Somerset

Trial of trimipramine for depression

SIR,—I never expected to see such an article as that by Dr J P R Young and others (24 November, p 1315) emanating from Dr William Sargent's old hospital.

It is surprising to find that anybody would nowadays take "a large, unselected group of depressed outpatients" for treatment without sorting them into recognised clinical categories.

There are many reports which indicate that the monoamine oxidase inhibitors (MAOIs) are the treatment of choice in so-called atypical depression. Does this investigation tell us whether trimipramine is as good as, better, or worse for the treatment of this group of patients? Patients are individuals and they come to us not to have their Hamilton or Beck or MRC scores lowered but to be made to feel better. Does this study show us how to do this?

The authors conclude that neither MAOIs nor MAOIs combined with trimipramine is the treatment of first choice in unselected patients with depression. Those of us who were treating patients in the early 1960s learned that. Since then we have learned something about the selection of patients.

W L JONES

Mapperley Hospital,
Nottingham NG3 6AA

Management of haemorrhoids

SIR,—The advocates of stretching, banding, and freezing of haemorrhoids are many, but rarely do they define exactly the severity of their patients' symptoms, nor do they compare their results with management by injection therapy and haemorrhoidectomy.

The latest paper by Mr M R B Keighley and others (20 October, p 967)¹ is an example of this. An attempt has been made to divide patients into two groups on the basis of pressure studies, but their definition of the two groups is rather curious. Their first or high-pressure group were mainly men (99/108) and pain and bleeding were the principal symptoms (92/108), but their second or low-pressure group—"usually women with prolapse as a principal symptom"—contained 55 men and 53 women, while 56 had bleeding as a

principal symptom and only 24 had prolapse.

In the high-pressure group, 65/108 had bleeding as their principal symptom and this group should have done well with injection therapy—that is, 46 patients would have avoided an operative procedure. Twenty-seven patients had “pain.” The symptom of pain when associated with haemorrhoids needs to be defined. Patients, especially those with prolapsing haemorrhoids, will complain of discomfort, but pain associated with defecation almost always means a fissure—easily missed on clinical examination. In the low-pressure group, 56/108 again had bleeding as their principal symptom and 37 might have avoided surgery if injections had been tried.

The natural history of haemorrhoids is long term; it is therefore not surprising that in this study the results at one year are worse than those at four months, but one year is also early to assess success. Sphincterotomy (63% no better) and diet (73% no better) are obviously of little value in the high-pressure group, and equally cryosurgery (56%) and diet (72%) are of little value in the low-pressure group. In fact, under one-third (11/37) of those in the high-pressure group treated with anal dilatation were symptom free, and under half (16/35) of those in the low-pressure group treated by the rubber band method. I am therefore surprised that in their conclusion Mr Keighley and his colleagues suggest that haemorrhoids in patients with excessive activity of the internal sphincter are best treated by anal dilatation and that in all other patients rubber-band ligation is the treatment of choice. This conclusion is certainly not borne out by their results, particularly as they have ignored injection therapy and surgery.

ROGER GRACE

Royal Hospital,
Wolverhampton WV2 1BT

* * * We sent a copy of this letter to Mr Keighley, whose reply is printed below.—ED, *BMJ*.

SIR,—Mr Grace seems to raise four objections to our recently published paper on the outpatient management of haemorrhoids.

Firstly, he implies that patients with anal pain must have an anal fissure and that this diagnosis may be missed on clinical examination. We would dispute this, as proctoscopy was performed on every one of the patients admitted to this trial and frequently patients with acute fissure are in so much discomfort that proctoscopy is quite impossible. We took great pains to make sure there was no fissure and our observations leave us in no doubt that there is a group of patients with haemorrhoids who complain of anal discomfort.

The second point relates to the clinical groups. It is somewhat unfortunate that the patients admitted to this trial did not conform to a larger series of patients studied, where analysis of our records makes it quite clear that patients with low anal pressures are more commonly women and that prolapse as a symptom is much more common in this group.

Perhaps the most important justified criticism is that injection therapy was not studied in this clinical trial. We have subsequently undertaken a randomised trial to compare rubber-band ligation with injection therapy, and the preliminary findings in 87 patients (shortly to be presented at the Surgical Research Society) indicate that there is no difference in the clinical results when rubber-

band ligation is compared with injection therapy.

The last point seems to concern the duration of follow-up. We went to great pains to undertake a 12-month follow-up, which is longer than that in most published trials. We would accept that symptoms may occur over a longer period, but the practical difficulties of recalling patients more than 12 months after outpatient therapy are considerable.

M R B KEIGHLEY

General Hospital
Birmingham B4 6NH

Dietary advice and obesity

SIR,—Dr J S Garrow (10 November, p 1171) is to be congratulated on a lucid appraisal of current knowledge about obesity. He rightly draws attention to the lunacy of attempts to relate weight to body frame, which is unmeasurable. The problem for clinicians is to know the ideal weight for a particular individual, and as the dominant weight problem is obesity a goal representing a desirable upper limit is of most practical use. This could be taken as a body mass index [weight in kilograms ÷ (height in metres)²] of 25 men and 24 for women, but this is somewhat arbitrary and overgenerous. Another approach is to adopt as ideal the average weight for age 20-24 from the Metropolitan Life Assurance data,¹ for a given height without shoes. But the relationship between obesity and health is not unequivocal,² and before we embark on a programme of medically supervised weight reduction it is desirable to be aware of the likely outcome.

We studied compliance in a highly motivated group of patients with a history or family history of heart disease who were closely monitored by a dietitian and a physician in a clinic for lipid disorders. They were told their desirable maximum weight.¹ All cigarette smokers (58%) were advised to stop and 25% of them remained non-smokers at the one-year follow-up. Patients with primary hypercholesterolaemia were started on a low-animal-fat diet, with restriction of the total energy intake (2.5-4.2 MJ (600-1000 kcal)) if they were obese. Patients with primary hypertriglyceridaemia or mixed hyperlipidaemia were started on a low-carbohydrate reducing diet (3.4-6.3 MJ (815-1100 kcal)). Weight change results were analysed by sex, degree of obesity (weight/height²), and type of diet used. Paired results were analysed by Student's *t* test.

Ninety men had lost an average of 3.8 kg (4.9% initial weight, $P < 0.0005$) at one year, but in 65 at two years the loss was only 2.1 kg (2.8%, $P < 0.0005$) and in 20 at three years it was 2.0 kg (2.5%, NS). Forty-one women had lost an average of 3.8 kg (5.9%, $P < 0.0005$) at one year, and this was maintained in 21 at two years at 4.6 kg (7.6%, $P < 0.0005$) and in 14 at three years at 3.8 kg (6.3%, $P < 0.01$). There was no correlation between obesity and absolute weight loss ($r = 0.02$). On low-animal fat diets there was a significant fall in weight even though the patients were not initially obese. No type of reducing diet was shown to be definitely superior as judged by weight loss, which at one year was from 4.7 to 7.5% in the different groups.

Thus women were able to achieve and maintain a weight loss of about 4 kg in this supervised education programme, despite known poor compliance with other such health advice.³⁻⁶ Men achieved a similar initial weight loss, but by contrast this was not maintained. These relatively modest changes in weight do not justify treatment for obesity unassociated with other problems. There may, however, be a disproportionate improvement

in hyperlipidaemia: for example, hypertriglyceridaemia was reduced by 36% in 45 men by a low-carbohydrate diet which reduced weight only 5.5% at one year. We confirm that unsolicited medical dietary advice has little contribution to make in the management of obesity.

MALCOLM BATESON

University Department of Medicine,
Ninewells Hospital and Medical School,
Dundee DD1 9SY

¹ Metropolitan Life Assurance Company, *Statistical Bulletin*, November-December 1959.

² Mann, G V, *New England Journal of Medicine*, 1974, **291**, 178 and 226.

³ Guildford, J, *Social Sciences and Medicine*, 1972, **6**, 137.

⁴ Handel, S, *Postgraduate Medical Journal*, 1973, **49**, 679.

⁵ Krasner, N, et al, *British Medical Journal*, 1977, **1**, 1497.

⁶ Morgan, M Y, and Sherlock, S, *British Medical Journal*, 1977, **1**, 939.

Non-compliance: does it matter?

SIR,—Your leading article “Non-compliance: does it matter?” (10 November, p 1168) ignores an important consequence of non-compliance in drug taking.

While controlled trials of medicine can give probabilities of success, they cannot predict the outcome in an individual patient—a doctor has to work with this and other unavoidable variables. For example, his diagnosis is often uncertain; there are real possibilities of interactions with other medicines or disease states; and there is the risk of misevaluating the significance of coincidental changes, whether good or bad. To these we must add the possibility that the results of treatment have been determined by the patient's non-compliance.

Clearly the larger this last factor is the poorer will be the quality of the doctor's experience and the greater will be the uncertainty surrounding all his clinical decisions. The resulting poorer quality of professional care afforded will affect not just the non-compliant patient but also others under his care.

R FRYERS

Oxted, Surrey

SIR,—I was very interested to read your leading article (10 November, p 1168) “Non-compliance: does it matter?” I think the answer to this question as posed must be yes. However, one of the problems you raise could be expanded—that is, that too often the doctor is asking the patient to comply with directions which are either illogical or not based on scientific rationale. For instance, the time-hallowed direction to take medicine three times a day cannot be based on pharmacokinetics, otherwise it would be eight hourly. Most practising clinicians realise that three times a day to the patient means first thing in the morning, at lunchtime, and in the evening. During the night therefore there can be little drug available if it needs to be taken that often during the day. Many will also realise that the midday dose is frequently not taken because of the difficulties of swallowing tablets at work, either on a shop floor or in the office. As well as these difficulties with the frequency of taking tablets, the length of a course of treatment is more based on belief than on evidence.

In addition to these problems there are major difficulties for the patient over the