few resources to support people once they have given up drugs.

Resource needs are modest as, with imagination, existing local services could be used—for example, links could be established between adult education, further education, and sports centres and Manpower Services Commission projects. Making links, however, needs sensitive handling as people do not wish to be identified as ex-drug users. Links also need to be flexible as people would enter courses at various intervals, which may not always be convenient for course organisers. In addition, drop out rates may be high, which might affect people's willingness to take ex-users into their schemes. Because of the difficulties of making links people may be tempted to set up special rehabilitation facilities for drug misusers alone, yet this has a disadvantage as grouping drug misusers together sets up yet another ghetto type of environment. Instead of being prepared for a new lifestyle, past misusers are kept in a drug culture environment, and their resolution to give up drugs may be destroyed by less motivated members of the group.

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Does atenolol have an effect on calcium metabolism?

SIR,—Dr C J Bushe (23 May, p 1324) reports the hypocalcaemic effect of the selective β blocker atenolol and suggests that this may be due to blockade of adrenergic mediated release of parathyroid hormone. This is not, however, the whole story as experimental in vitro evidence shows that the non-selective β blocker propranolol may inhibit bone resorption stimulated by parathyroid hormone, vitamin D metabolites, prostaglandins, and osteoclast activating factor.¹ Furthermore, propranolol can inhibit thyroid hormone stimulated bone resorption in vitro as effectively as salmon calcitonin² and can lower serum calcium concentration in the thyrotoxic patient.³ The thyroid hormones directly stimulate cortical osteoclast activity, increasing both bone turnover and the serum calcium concentration while secondarily decreasing the serum parathyroid hormone concentration, often to non-detectable levels. Propranolol probably acts by direct inhibition of osteoclast activity, and inhibition may be more effective when bone turnover is increased.⁴ This site of action would explain the hypocalcaemic effect of atenolol seen in primary hyperparathyroidism and sarcoidosis, and alterations in the plasma and urinary phosphate and 24 hour urinary calcium concentrations would reflect the reduction in bone turnover and a secondary response of the parathyroid glands.

Though β adrenergic blockade may reduce secretion of parathyroid hormone, measurement temporally of serum parathyroid hormone concentration, urinary renal cyclic adenosine monophosphate concentration, and hydroxyproline secretion in response to atenolol in these patients would probably confirm a direct site of bone action that was independent of parathyroid hormone.

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- Rude RK, Oldham SB, Singer FR, Nicoloff JT. Treatment of thyrotoxic hypercalcaemia with propranolol. *N Engl J Med* 1976;294:431-3.
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SIR,—One observation is interesting, two are publishable seems to be the basis of Dr C J Bushe's report (23 May, p 1324), and we therefore report a case that is contrary to his experience.

A 41 year old woman with hypercalcaemia due to primary hyperparathyroidism had been treated with atenolol 100 mg daily for hypertension. This was stopped before entry to a double blind study comparing the hypotensive effect of atenolol, placebo, and an angiotensin converting enzyme inhibitor. The table shows her plasma calcium, phosphate, and albumin concentrations on four occasions, twice while taking atenolol (in different doses), once when receiving no treatment (for five days), and once while receiving placebo. All treatments had been given for at least three weeks.

Patient's calcium, phosphate, and albumin concentrations while receiving atenolol or no treatment

	Normal range	Atenolol 100 mg	No treatment	Atenolol 50 mg	Placebo
Total calcium (mmol/l)	2.12-2.62	2.69	2.82	3.00	2.89
Phosphate (mmol/l)	0.8-1.4	0.75	0.44	1.08	0.73
Albumin (g/l)	36-47	38	41	41	41

This case illustrates the wide variation in plasma calcium and phosphate concentrations possible in patients with this condition. Both the highest and lowest plasma calcium concentrations occurred during atenolol treatment, and the phosphate concentrations were similar while the patient was taking atenolol 100 mg daily and placebo. Dr Bushe did not state whether the blood samples were taken under standard conditions (fasting, no venous stasis). His observations might be explained by random variation, and we need much better evidence before accepting that atenolol has any effect on calcium metabolism.

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The future role of midwives

SIR,—Professor Peter W Howie (13 June, p 1502) highlights the modern dilemmas of maternity care. Without being too simplistic, two basic and contrasting care philosophies may be identified from the existing maternity medical services. The general practitioner obstetrician perceives that the safety of his care results from the relationship he creates with his patients. This is now usually limited to shared antenatal and postnatal care, but evidence shows that when carried through to intrapartum care it leads to the non-interventionist approach much favoured by midwives and many prospective mothers.

The hospital obstetrician by the nature of his working curriculum cannot achieve the same continuity of relationship with his patients, and so the safety of his care depends on the accuracy of transferable records and a strict adherence to protocols and procedures that cover every eventuality. This has led to criticism that hospital obstetricians do not respond to individual patients'

needs and undertake too much medical intervention in normal labour, though this is defended by the increasing overall safety of childbirth.

Midwives fall between these two philosophies. Their traditional role is that of the non-interventionist carer, but their salaried 37 and a half hour week pushes them towards the specialist camp. The concept of the midwife team working independently of other health care professionals is, as Professor Howie points out, unrealistic, but the dilemma might be overcome by more midwives having closer identification with primary health care teams. Consideration might be given to the idea of combining midwives' contracts with their district health authorities and the family practitioner services using a shared salaried structure. If the general practitioner ancillary payment scheme was used this part of the salary could be financed by more shared antenatal care and its conversion to more full general practitioner care, with the midwife using her skills appropriately.

Such a concept might carry the seeds of a job structure that would give our midwives more professional satisfaction and reduce the almost universally expressed feeling of being undervalued. It would, of course, lead to general practitioners participating more in childbirth, but as most vocational training schemes now include an obstetric senior house officer post it is not unreasonable to expect general practitioners to be able to oversee the normal and refer the complicated.

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Pinch skin grafting or porcine dermis in venous ulcers

SIR,—At least three of the comments on my letter (23 May, p 1352) by Messrs K R Poskitt and Charles McCollum are not supported by the work of others.

Firstly, they seem to base their concepts on the hypothesis of Professor Browse that pericapillary fibrin forms a diffusion barrier to oxygen, resulting in tissue hypoxia, and on this basis they propose two different forms of treatment—namely, compression bandaging (40 mm Hg) for one week and, in the case of large ulcers, pinch grafting. They did not explain how the treatments overcame the hypoxia resulting from the fibrin cuff, nor is it easy to see how the fibrin cuff could have been affected by the treatments. Dodd *et al*, however, showed that transcutaneous oxygen tensions in the skin of the foot were higher in patients with ulcers than in controls when the subjects were in the recumbent position, but much lower when subjects were standing.¹ It is unlikely that vascular changes occurred when the body changed from the horizontal to the vertical plane.

Therefore it seems reasonable to suggest that the fall in oxygen pressure results from a reduction in the rate of blood flow, which would result in haemorrhheological changes. Reduction in the rate of blood flow results in thixotropic amplification of blood viscosity, which adds to the resistance to flow. Evidence suggests that hypoxia reduces red cell deformability, and this could impair flow in the smallest capillaries. As Dodd *et al* pointed out, their measurements of oxygen pressures in the skin of the foot disproved the existence of a fibrin related oxygen barrier and provided a basis for understanding why bed rest is effective in the management of venous ulcers.¹

Secondly, Messrs Poskitt and McCollum proposed that pinch grafting increased the rate of healing in large ulcers. According to Monk and Sarkany, two thirds of grafted ulcers recurred

within one year, and pinch grafting did not improve the prognosis.²

Thirdly, if a compression bandage for one week is the "most important element in healing venous ulcers" why do a sizable proportion of ulcers persist and why is recurrence such a major problem?

Our experience in Dunedin agrees with that of Ruckley *et al* in the Lothian and Forth Valley areas, in so far as ulcers are associated with various disorders and some persist for a long time despite regular treatment. Their most recent report³ noted that 20% of ulcers were unhealed after two years and 8% were unhealed after five years. Some of the ulcers in our series had not responded to grafting and had persisted for more than 20 years. Callam *et al* emphasised recurrence as a major problem and suggested that "more attention should be paid to underlying aetiological factors."³ I submit that there is sufficient evidence now to propose that abnormal blood rheology will be found to be one of the underlying factors. Furthermore, the means to correct the rheological abnormality have been available for some time.

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1 Dodd HJ, Gaylarde PM, Sarkany I. Skin oxygen tension in venous insufficiency of the lower leg. *J R Soc Med* 1985;78:373-6.

2 Monk BE, Sarkany I. Outcome of treatment of venous stasis ulcers. *Clin Exp Dermatol* 1982;7:397-400.

3 Callam MJ, Harper DR, Dale JJ, Ruckley CV. Chronic ulcer of the leg: clinical history. *Br Med J* 1987;294:1389-91.

Points

Children, bikes, and money

Drs R H JACKSON (Child Accident Prevention Trust, London W1N 3AL) and A W CRAFT (Royal Victoria Infirmary, Newcastle upon Tyne NE1 4LP) write: We support the concern expressed by Dr S A Henderson and colleagues (16 May, p 1259) and Dr Tony Smith (p 1244). We have on two previous occasions expressed our opinion that the youngest age at which children should be allowed to ride motorcycles should be 13 or 14.^{1,2} The number of severe injuries occurring in one year in Belfast reported by Dr Henderson and coworkers serves only to reinforce our opinion. We also strongly support the implied rebuke for motorcycle manufacturers, importers, and retailers over their exploitation of parental irresponsibility—or should it be parental ignorance? Dr Smith rightly emphasises the importance of accidents in childhood as a cause of mortality and morbidity and highlights the need for prevention. The Child Accident Prevention Trust was founded nine years ago as a scientific advisory body in this type of health promotion. It is primarily a multidisciplinary body, but the input from the health profession is very strong, with support coming from the Department of Health and Social Security and other government departments as well as from professional and voluntary bodies. There is still much to be done, however; we are anxious to increase the concern shown by doctors and others about this problem, and any contributions and suggestions would be welcome.

1 Jackson RH, Craft AW. Injuries to boys who scramble. *Br Med J* 1979;i:1624-5.

2 Jackson RH, Baderman H, Craft AW. Motorcycling injuries to children. *Br Med J* 1984;289:1227-8.

Dr R SUNDERLAND (Selly Oak Hospital, Birmingham B29 6JD) writes: In the issue of 16 May there was an article by Mr James Nixon and colleagues (p 1267) and a leading article by Dr Tony Smith (p 1244) on children's cycling accidents. Many paediatricians are increasingly concerned that accidents are now causing more suffering to children than the diseases seen within hospital doors. The suffering from these preventable conditions may well be the first marker of societies' concern for their children. There seems,

however, to be some editorial dyslexia. Two weeks earlier a news item (2 May, p 1665) showed that in 1985-6 child cycle deaths in Britain fell by 50%, serious injuries by 18%, and other injuries by 12%. There is similar good news on child pedestrian accidents: mortality down 13%, serious injuries down 10%, and other injuries down 6%. These encouraging figures are the result of intensive and extensive efforts by many professionals. It is sad, therefore, that the figures were published under the headline "Rise in road deaths." The gloomy report and leading article occupied 1800 cm², the good news 92 cm². Is it true that even within the medical press only bad news sells?

Dr TONY WATERSTON (Community Health Service, Newcastle General Hospital, Newcastle upon Tyne NE4 6BE) writes: Dr Tony Smith is right to point out the public health issues relating to children's bicycle accidents (16 May, p 1244) but is vague on where action should be targeted. In the case of helmets it must be towards the government, which should both legislate on and publicise their use. In the case of the separation of cyclists (adults as well as children) from other traffic, it is the local authority at whom we (and surely health education) should direct our complaints. Some cities, such as London, Nottingham, and Edinburgh, where there have been active campaigns and sympathetic councils, have provided cycle routes, special lane markings, and cycle traffic lights; others have done nothing. Members of the small band of commuting cyclists have been campaigning for years for better separation of pollution free bikes from accident prone cars. It is good to have the support of the *BMJ*, and it will be even better if concerned doctors and health educators join their local campaign group.

Appointment and mobility of general practitioners

Dr JOHN A J MACLEOD (North Uist, Western Isles PA82 5AE) writes: Dr Christopher Side has written good sense at an appropriate time (16 May, p 1265). There must be many doctors who have made multiple applications in the past few years and have then accepted an offered post because they felt that they could not go to any more interviews. They may not be happy now, but under the current system they feel that they cannot move. I would suggest two additions to Dr Side's sensible recommendations. Firstly, encouragement to young doctors to refrain from mass applications and instead plan and arrange a series of locum appointments in the area where they would like to live and work, which may be different from the area in which they trained. This would enable the applicant and the advertising practice to see far more of each other than they would at the standard interview. Secondly, the introduction of term contracts—that is, for two, three, or four years with a "no detriment" opt out option at the end of each year and departure some six months after that date. I have raised this idea with a number of established doctors and trainees and have found that there would be wide interest in the plan if it was generally approved. Perhaps the General Medical Services Committee could consider a draft contract on these lines.

Meeting of minds in Moscow

Dr BRIAN ROBINSON (St Albans, Hertfordshire AL3 5SQ) writes: I am glad that Ms Jane Smith in her report on the International Physicians for the Prevention of Nuclear War (IPPNW) (13 June, p 1539) made her point that IPPNW "does not... have a view... on nuclear power because it knows its members disagree about it."

I consider this position to be increasingly untenable for several reasons. Any nuclear reactor is capable of discharging its radioactive load into the atmosphere or water table, either by accident or in hostile action. Recent developments in conventional weapons have made their blast and fire power almost as great as what we could expect from "smallish" nuclear weapons. If, for example, a conventional Exocet missile scored a direct hit on Sellafield or Sizewell much of Britain

would be rendered uninhabitable. A conventional European war, like the second world war but with modern weapons, would certainly entail, as prime targets, the 160 nuclear reactors presently in Britain and the continent. Consider how the explosion at Chernobyl affected the whole of Europe. What would be the effects of 160 such explosions? Or, around the world, of anything up to 413? One of the main reasons for seeking to prevent nuclear war, apart from the unacceptable damage caused by blast, fire, and electromagnetic radiation, has always been the short and long term effects of ionising radiation. But it is clear that any country that has a nuclear reactor, or whose neighbour has a nuclear reactor, would suffer just such ionising radiation effects even from non-nuclear attack. I cannot understand how an organisation like IPPNW, dedicated to preventing nuclear war because of its medical effects, can "not have a view on nuclear power." In particular, I find it incomprehensible that Soviet members seem willing to tolerate such a—dare I say it—"nuclearphilic" enemy within. I have heard encouraging reports recently that there have been some brave antinuclear power protests inside the Soviet Union; I very much hope that the entire membership of IPPNW will heed them.

The cost of unnecessary tests by day or night

Dr J B ILANGARATNE (Department of Histopathology, Mayday Hospital, Surrey CR4 7YE) writes: There are several methods of reducing out of hours laboratory tests, but Dr P M G Broughton (13 June, p 1503) shows that none of these methods produce a financially worthwhile reduction in laboratory costs. Unfortunately, Dr Broughton has not mentioned an important method of reducing out of hours costs: the use of junior hospital doctors (in pathology rotations) for on call laboratory duties in clinical chemistry and haematology. This method is practised by many hospital laboratories in Britain, and I take part in such a technical on call for only one class A unit of medical time fee (£36.45) per night, irrespective of the number of requests. In some instances my on call commitments amount to one in two, but the payment remains unchanged. Hence this obvious, major contribution by the trainee pathologists towards reducing laboratory expenditure should be duly appreciated.

Inappropriate use of confidence intervals

Professor M J R HEALY (London School of Hygiene and Tropical Medicine, London WC1E 7HT) writes: As Dr Peter MacFarlane states (13 June, p 1552), a confidence interval is properly used to describe the precision of a mean value or other estimated quantity. It would be useful to have a separate term for an interval defined by a multiple of the standard deviation (rather than the standard error) which is intended to include a certain fraction of the population and hence to serve as a normal or reference range. Statisticians call such an interval a tolerance interval, and I suggest that the use of this term should be encouraged.

Food irradiation

Dr KAREN TREWINNARD (Southampton, Hampshire SO2 5JJ) writes: I was disturbed to read Professor A Stewart Truswell's assessment of the potential hazards of food irradiation (6 June, p 1437). He "sees no reason why the government should not permit irradiation of stored winter potatoes," yet while it seems that the toxicological effects are probably negligible, the nutritional ones are by no means so. Potatoes are a staple food in Britain and for most people the major source of vitamin C in the winter. If, as Professor Truswell states, irradiation causes losses of vitamin C comparable to conventional cooking then about 40% vitamin C will be lost through irradiation and a further 40% of the remainder will be lost during cooking. The vitamin C content of stored winter potatoes is already low, and thus people depending on such potatoes for this vitamin will doubtless suffer. Furthermore, as many people consume their potatoes in canteens and from "takeaways" labelling would not help.