to enlist their support, and to encourage their continued participation in this branch of medicine.

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1 Johnson IS, Rogers C, Biswas B, Ahmedzai S. What do hospices do? A survey of hospices in the United Kingdom and Republic of Ireland. *Br Med J* 1990;**300**:791-3. (24 March.)

SIR,—We would like to make two points about the paper on hospices by Dr I S Johnson and colleagues.[1]

Firstly, although the Royal College of Physicians has deemed palliative care a new specialty, it will be a good few years before sufficient senior registrar posts are established to satisfy the number of consultant posts becoming vacant. It is both necessary and desirable therefore that "enthusiastic amateurs" continue to provide a service. The role of the general physician in palliative care is well established; the general practitioner, effectively a community based general physician, with a special interest in palliation is also in an ideal position to orchestrate such care.

These sentiments were forwarded 25 years ago by Wilkes, who found general practitioners to have "great shrewdness and experience in this field."[2]

Increasing specialisation of what we believe to be basic medical skills is unfortunate: many clinicians have much to contribute to palliative care. The arbitrary distinction between those perceived to have had formal training in palliative care and those who have not causes an unnecessary and inevitable hierarchical polarisation. More importantly, evaluation studies will identify those units which are failing to meet the needs of the local community, irrespective of the postgraduate qualifications of the medical staff.

Secondly, the paper gave few details on the patients for whom the hospices catered, and we suspect that there would have been great variation in the populations served. Until there is convincing evidence that all appropriate groups of patients—for example, those with HIV disease—have access to palliative services it would seem reasonable that any unit—whether staffed by accredited consultants or enthusiastic amateurs—attempts to respond to what is appearing to be a genuine need.

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1 Johnson IS, Rogers C, Biswas B, Ahmedzai S. What do hospices do? A survey of hospices in the United Kingdom and Republic of Ireland. *Br Med J* 1990;**300**:791-3. (24 March.)
2 Wilkes E. Cancer outside hospital. *Lancet* 1964;i:1379-81.

Management of patients with head injuries

SIR,—We share Mr S C Brooks's concern regarding the lack of availability of neurosurgical facilities for patients with injuries.[1]

The problems that he and our neurosurgical colleagues in the South East Thames region face are, unfortunately, commonplace. We frequently have to accept ventilated patients when we do not have any vacant intensive therapy beds on a "sale or return" basis. It is only as a result of the dedication and cooperation of our nursing and medical colleagues that we are able to admit many of the patients with head injuries who are referred to this unit from both North East and North West Thames regions. Not infrequently we are asked to accept patients who were initially destined for transfer to other neurosurgical units that have, during the transfer, become unable to cope because of restricted facilities. We have also, on occasion, had to transfer our own ventilated patients to other neurosurgical and non-neurosurgical intensive care units.

One possible solution that has been proposed is the establishment of a bed bureau system along the lines of that currently in use for neonatal cases. This is neither ideal nor acceptable when transfer across London may add two hours to transfer time.

We urge that, excellent as they are, the adoption of the South East Thames Regional Health Authority guidelines[2] takes second place to the provision of adequate facilities in all hospitals with neurosurgical units. As the expectations of the public and skills of the carers escalate, the provision of adequate facilities becomes of paramount importance. Our intensive care unit has to meet the requirements of a district general hospital and specialist services, including neurosurgery and liver transplantation services, with an inadequate total of seven beds. We ask that all concerned, at referring and receiving units alike, continue to emphasise the importance of ensuring the availability of neurosurgical intensive care facilities to those who are in a position to remedy the current inadequacies.

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1 Brooks SC. Management of patients with head injuries. *Br Med J* 1990;**300**:876. (31 March.)
2 Anonymous. Notes. *Br Med J* 1990;**300**:546. (24 February.)

Lipid lowering drugs

SIR,—In a recent review article on lipid lowering drugs Dr Patricia O'Connor and colleagues state that pravastatin seems to be more tissue selective than simvastatin.[1] This statement is based on in vitro and ex vivo animal data.[2,3] In vivo studies of tissue distribution in rats have, however, shown that 3-hydroxy-3-methylglutaryl coenzyme A reductase inhibitory activities in peripheral tissues (kidney, spleen, testes, stomach, and adrenal glands) after oral simvastatin and lovastatin are three to six times lower than those after pravastatin.[4] On the other hand, the inhibitory activity in the liver after pravastatin was 50% of that after either simvastatin or lovastatin. Merck Sharp and Dohme chose to develop the lactone forms of lovastatin and simvastatin because they are preferentially taken up by the liver—the principal organ for cholesterol synthesis—and converted there into their bioactive hydroxyacid forms.[5]

More importantly, clinical experience, which is substantial with simvastatin and lovastatin (about 20 000 patients have been treated in clinical trials for up to five years and two million in worldwide marketed use), indicates that these drugs are well tolerated,[6,7] but the use of pravastatin has been much more limited. The important adverse effects of this class of drugs—they raise liver transaminase activities and cause myopathy—occur with all three drugs. These adverse effects are uncommon and there is no evidence that they are less frequent with pravastatin.

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1 O'Connor P, Feely J, Shepherd J. Lipid lowering drugs. *Br Med J* 1990;**300**:667-72. (10 March.)
2 Tsujita Y, Kuroda M, Shimada Y, *et al.* CS-514, a competitive inhibitor of 3-hydroxy-3-methylglutaryl-coenzyme A reductase: tissue selective inhibition of sterol synthesis and hypolipidemic effect on various animal species. *Biochem Biophys Acta* 1986;**877**:50-60.
3 Mosley S, Kalinowski S, Schafer B, Tanaka R. Tissue-selective acute effects of inhibitors of 3-hydroxy-3-methylglutaryl coenzyme A reductase on cholesterol synthesis in lens. *J Lipid Res* 1989;**30**:1411-20.
4 Germershausen JI, Hunt VM, Bostedor RG, *et al.* Tissue selectivity of the cholesterol-lowering agents lovastatin, simvastatin and pravastatin in rats in-vivo. *Biochem Biophys Res Comm* 1989;**158**:667-75.
5 Duggan DE, Chen IW, Rosegay A, Ellsworth RL. Hepatoselectivities of simvastatin and pravastatin: direct measurements of drug and metabolites in dogs and rats. *Biochem Biophys Res Comm* (in press).
6 Walker JF. Simvastatin: the clinical profile. *Am J Med* 1989;**87** (suppl 4A):44-6.
7 Tobert JA, Shear CL, Chremos AN, Mantell G. Clinical experience with lovastatin. *Am J Cardiol* 1990;**63**:23-6F.

AUTHORS' REPLY,—In the statement referred to by Drs Tomás S Bocanegra and Jonathan A Tobert we chose the term "seems" because it is a non-definitive term. Available studies are not strictly comparable and are open to various interpretations.[1,2]

Chemical studies have shown that pravastatin is several times more water soluble than simvastatin and lovastatin. Consequently it may be preferentially taken up by the liver. Unfortunately, measurements of hepatic concentrations are confounded by the fact that these drugs are converted to metabolites that have differential activity as inhibitors of 3-hydroxy-3-methylglutaryl coenzyme A reductase. In addition, these drugs and their metabolites bind to tissue proteins, which may cause their differential inactivation. Thus methods that measure inhibition of the enzyme after disruption of the tissue may not reflect the true biological state.

Additional useful information may evolve when direct chemical measurements of these drugs and their active metabolites are available. If, as seems to be the case, however, several active metabolites exist this may prove difficult. The absolute answer to the question of the tissue selectivity of hydrophobic and hydrophilic 3-hydroxy-3-methylglutaryl coenzyme A reductase inhibitors must remain moot.

Whether or not tissue selectivity of these drugs has any real biological importance in terms of differential toxicity is unknown. We must await the outcome of continuing long term postmarketing surveillance studies. As stated in our review, studies on the clinical efficacy of the 3-hydroxy-3-methylglutaryl coenzyme A reductase inhibitors show all three drugs to be equally efficacious as hypolipidaemic drugs. In addition, adverse effects are not known to occur more frequently with any one of the three drugs.

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1 Gemershausen JI, Hunt VM, Bostedor RG, *et al.* Tissue selectivity of cholesterol lowering agents lovastatin, simvastatin and pravastatin in rats in-vivo. *Biochem Biophys Res Comm* 1989;**158**:667-75.
2 Tsujita Y, Kurada M, Shimada Y, *et al.* CS-514, a competitive inhibitor of 3-hydroxy-3-methylglutaryl coenzyme A reductase; tissue selective inhibition of sterol synthesis and hypolipidaemic effect on various animal species. *Biochem Biophys Acta* 1986;**877**:50-60.
3 O'Connor P, Feely J, Shepherd J. Lipid lowering drugs. *Br Med J* 1990;**300**:667-72. (10 March.)

General practitioner obstetrics in Bradford

SIR,—The recent paper[1] and correspondence about intrapartum obstetric care by general practitioners in Bradford should be taken as the starting point of a debate about a nationwide problem. Above all we should not be left with the idea that the difficulties of Bradford are in any way unique or atypical.

The unpalatable truth is that intrapartum care

by general practitioner obstetricians has dwindled to the point where it represents a largely voluntary activity by a diminishing number of masochistic enthusiasts. The number of general practitioners holding clinical assistant or hospital practitioner appointments in obstetrics is minimal. The item of service payment for providing intrapartum care, £33.35, has been overtaken by that for inserting an intrauterine contraceptive device, £41.25, and recently by that for doing a single night visit, £43.35. It is totally unrealistic to expect a highly professional service to be provided in this way in the 1990s and beyond.

Intrapartum care must be recognised as the most demanding aspect of general practice. Of all clinical activities it is the most easily measured and audited, and there is no reason why it cannot meet the highest standards. The Royal College of Obstetricians and Gynaecologists awards more than 1000 diplomas annually, and an appreciable minority of doctors who have received obstetric training could be recruited to the intrapartum service, if encouraged. The nature of the work, however, requires that some limitations must be placed on those doctors' other commitments in general practice. This problem has not yet been addressed in the new contract by our negotiators, by the Royal College of Obstetricians and Gynaecologists, or by the Royal College of General Practitioners.

The time for wringing of hands and half measures is surely over. Clearly defined standards, and incentives to ensure that they are met, are now needed: anything less will ensure the demise of intrapartum care by general practitioners in the next decade.

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1 Bryce FC, Clayton JK, Rand RJ, Beck I, Farquharson DJM, Jones SE. General practitioner obstetrics in Bradford. *Br Med J* 1990;**300**:725-7. (17 March.)

**This correspondence is now closed. —ED, *BMJ*.

Perimenopausal women's views on hormone replacement therapy

SIR,—Doctors were quick to criticise Kenneth Clarke's claim that 850 general practices had "expressed an interest" in budget holding. Must we not apply a similar logic to the study by Cambridge general practitioners Drs Juliet Draper and Martin Roland on hormone replacement therapy? Mr Clarke's "sample" filled in a form inviting them, under no obligation, to discuss budget holding further; many simply wanted to receive more information. The Cambridge practice population "expressed an interest" in taking hormone replacement therapy in the context of receiving two personally addressed questionnaires from their general practitioner and in some cases a telephone call as well. In fact they were asked whether they would be interested in taking hormone replacement therapy to prevent osteoporosis "if they were recommended to do so." That all but the 17% who were "definitely interested" would presumably be prepared to resist a medical "recommendation" is interesting; it is quite remarkable that they replied in this sceptical way to a letter that presented the menopause in a totally negative light and detailed the horrors of osteoporosis without explaining the time taken for the problems to develop ("some patients might have understood from the letter that the development of osteoporosis occurs at the time of the menopause").

Furthermore, the authors concede that the period of treatment required to prevent fractures occurring is unknown, but their letter to patients states that taking hormone treatment for five years can help to prevent osteoporosis. Surely if we want to discover perimenopausal women's views on taking hormone replacement therapy—to prevent osteoporosis or for any other purpose—we have a duty at least to provide them with information that we believe to be accurate.[2]

The financial implications for drug companies of the enormous potential market for hormone replacement therapy mean that it is incumbent on doctors to protect the varied interests of individual patients. A blanket policy of encouraging (or discouraging) the use of hormone replacement therapy will not address these specific needs. The resource implications for the NHS of reaching a reasoned and negotiated decision with each woman would, however, clearly be enormous, in terms of both the drug budget and time spent with the women. What a pity that the current changes in the NHS, with the increase in administrative work and longer general practitioner list sizes favoured by the shift towards capitation, are unlikely to make more time available for such work.

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1 Draper J, Roland M. Perimenopausal women's views on taking hormone replacement therapy to prevent osteoporosis. *Br Med J* 1990;**300**:786-8. (24 March.)
2 Anonymous. Consensus development conference: prophylaxis and treatment of osteoporosis. *Br Med J* 1987;**295**:914-5.

SIR,—Given the current high level of interest in hormone replacement therapy for perimenopausal and postmenopausal women we feel obliged to take issue with the theoretical nature of the observations of Drs Juliet Draper and Martin Roland.[1] These show that three quarters of the women whom they surveyed expressed an interest in taking hormone replacement therapy. Though we do not dispute this figure, we question its importance in terms of uptake among these women if they were actually given the opportunity to receive the treatment. Do the authors really believe that expressing an interest in the treatment on a questionnaire is indicative of a commitment to take hormone replacement therapy in the future?

A study of acceptability of the treatment to postmenopausal women has been carried out in Nottingham. In all, 100 women between the ages of 50 and 70 who had sustained a distal radial fracture were offered hormone replacement therapy to protect them from osteoporosis. These women were counselled comprehensively regarding both the benefits and possible side effects of the treatment. The results differed considerably from those of Drs Draper and Roland.

Initially, 66 of the women expressed an interest in hormone replacement therapy. When offered specific appointments for gynaecological screening before receiving the treatment 30 women changed their minds, giving an initial uptake of the treatment of only 36%. The younger women in the study showed more willingness to take hormone replacement therapy and were less bothered by the continuation of their menstrual periods than those who had not menstruated for some time. We therefore appreciate that the difference in age groups between the two studies must have some bearing on our results compared with those of Drs Draper and Roland, but we believe that the large discrepancy is due ultimately to the difference between the theory and the practice of hormone replacement therapy.

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Benefits of thrombolysis

SIR,—The extensive correspondence[1] on the dangers of thrombolysis contained many valuable comments but did not emphasise sufficiently the generally much greater dangers of failing to give thrombolysis to patients with suspected acute myocardial infarction.

The most extensively tested and least expensive thrombolytic agent is streptokinase, and no other has been shown to produce a reduction in mortality better than that produced by an intravenous infusion of 1·5 million units. Life threatening side effects of this regimen have been described in the reports of randomised trials such as the second international study of infarct survival (ISIS-2).[2] Yet ISIS-2 showed benefit for a wide range of patients, including many who did not have definite ST segment elevation on electrocardiography and those who developed pain many hours before treatment. If aspirin 160 mg a day was also added the benefit was twice as large: 343 deaths (8·0%) with streptokinase and aspirin as against 568 deaths (13·2%) with neither. This reduction in the odds of death applied similarly to many types of patient: old and young, hypertensive and hypotensive, men and women, those with first and subsequent myocardial infarction, those with ST segment elevation on electrocardiography and those without, those who were treated promptly and those who were not. Reduction in mortality was accompanied by a net reduction in strokes.

The best interests of patients require doctors to be guided not only by the possibility of the incidence of side effects but more by the expected net gain for particular patients having thrombolysis and aspirin. This gain is probably substantial in a wide range of circumstances.

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1 Correspondence. Dangers of thrombolysis. *Br Med J* 1990;**300**: 810-11. (24 March.)
2 ISIS-2 (Second International Study of Infarct Survival) Collaborative Group. Randomised trial of intravenous streptokinase, oral aspirin, both, or neither among 17 187 cases of suspected myocardial infarction (ISIS-2.) *Lancet* 1988;ii:349-60.

Thrombolysis and the general practitioner

SIR,—While there may be debate about the use of thrombolytic treatment by general practitioners,[1,2] there is general agreement that thrombolysis can be life saving in acute myocardial infarction. Professor P C Rubin comments that patients with suspected myocardial infarction should be admitted to hospital[1]; and, given the widespread use of thrombolytic treatment, the entire question of whether patients with acute myocardial infarction should be treated at home or in hospital merits reappraisal.

We surveyed 69 principals in general practice in west Fife to determine their views regarding home or hospital care of patients with acute myocardial infarction.[3] Most (67) were aware that thrombolytic treatment could be beneficial in the first six hours after acute myocardial infarction and they would request hospital admission for most patients aged up to 71 within this time. Only 11 doctors, however, thought that treatment could be effective beyond six hours and 32 chose home care within 13 hours of the onset of symptoms for a hypothetical patient aged 66.

Studies performed before the introduction of thrombolytic treatment reported that general practitioners were more likely to recommend home care for elderly patients.[4] In our survey only 23 doctors would request hospital admission for