very strongly supports the view that in more severe degrees of hypertension the benefits of propranolol are dose-related up to amounts of at least 1 g daily, as well as exerting a markedly beneficial effect in some circumstances as soon as 30 minutes after ingestion.

As a hypertensive myself I have found it expedient if not imperative to limit the rate of intake of propranolol to 80 mg in any period of 40 minutes at least, and during a period of some weeks last year, after unwisely reducing the total daily dose to 400 mg, it became essential, particularly during the evenings, actually to consume the drug at an average rate of 2 mg/min. Whatever the long-term benefits of propranolol, I was left in no doubt that, given a certain level of active drugs already available to the body, definite effects occur within 30 minutes in slowing the pulse and reducing arrhythmia. Equally, it is quite clear that the necessary rate of intake varies with the time of day. The efficacy of relying on subjective sensations of need has been validated by objective observations of the consultant physician at regular review in the outpatient department.

As a psychiatrist I am inevitably reminded of the different clinical benefits of phenothiazine drugs in the short term and in the long term, but I hope that psychiatrists are better acquainted with the desirable upper limits of dosage in their own field than the highly respected physicians of Aberdeen appear to be. If read carefully the article from Aberdeen should not mislead, it is true, but I think one would have to be pedantic—or experienced—not to run the risk of being so misled.

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¹ Wilder, J, *Journal of Nervous and Mental Disease*, 1957, **125**, 73.

² Bierman, E L, *Lancet*, 1976, **1**, 1076.

Abortion and maternal deaths

SIR,—Your leading article (10 July, p 70) reminds us of the mortality of therapeutic abortion but does not mention the morbidity that more commonly occurs. The sequelae include pelvic infection resulting in sub-fertility and tubal pregnancy, now known to cause 9% of maternal deaths. Cervical laceration may be followed by middle-trimester abortion, premature labour, and an increased perinatal mortality.¹ Perforation of the fundus, unrecognised or undocumented, may cause rupture of the uterus in subsequent labour. Failure to give immunoglobulin to the rhesus-negative patient can be catastrophic. Therapeutic middle-trimester abortion of the young primigravida on purely social grounds should perhaps now be condemned.

Pregnancy in young girls is not especially hazardous provided they receive antenatal care. In Wolverhampton in the past five years 56 primigravidae were delivered while still under 16 years of age. Anaemia (haemoglobin less than 10.5 g/dl) occurred in 33% but was treated effectively since postnatal anaemia occurred in only 12.5%. Toxaemia was not unduly common (10.7%) although there was one eclamptic. The induction rate, 17%, was half that of the unit as a whole. A quarter of the patients had epidural analgesia and 23.2% were delivered by forceps. There were no caesarean sections. Unfortunately there were three stillbirths, but there were no neonatal

deaths. Undoubtedly the two 13-year-olds had complicated pregnancies. One had a difficult forceps delivery, while the other, who had no antenatal care, sustained abruption of the placenta and stillbirth. Whether the pregnancy is terminated or allowed to continue, it is surely vital to ensure that these young girls use effective contraception, because of those who become pregnant again, over 40% will do so within 12 months.¹

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¹ Richardson, J A, and Dixon, G, *British Medical Journal*, 1976, **1**, 1303.

Out-of-hours calls in general practice

SIR,—We were interested to read the account by Dr M G F Crowe and his colleagues (26 June, p 1582) of the way in which they provide out-of-hours care in their practice. They suggest that small partnerships which cover their own out-of-hours calls provide a more traditional, personal service to patients and that one of the results of this relationship is that a sizeable proportion of requests for help can be handled over the telephone, avoiding the need to visit the patient. They contrast this position with that of a deputising service, quoting from our study of the Sheffield deputising service, in 1970¹ the fact that 97% of calls resulted in a visit from a deputy.

We believe that this is not a comparison between like situations and that it gives a misleading impression. The Leicestershire doctors averaged 302 out-of-hours calls per year compared with 106 per year per subscriber received by the Sheffield service. Although the average list size of the Leicestershire practice doctors was approximately 25% greater than that of Sheffield doctors and their out-of-hours period was one hour longer on weekdays than that for which the Sheffield deputising service operated, these factors can account for only a small part of the three-fold difference in the number of calls. A more important factor is likely to be that the Sheffield subscribers passed only a proportion of their out-of-hours calls to the deputising service, dealing with the remainder either by giving advice over the telephone or by a personal visit to the patient. Although we do not know how often this occurred, it was clearly common practice for Sheffield subscribers to screen their calls since 47% of all those received by the deputising service in 1970 came via the general practitioner. In other words, the high proportion visited by the deputising service arose in part because the practitioners had already given advice to a number of patients and had made referral to the service unnecessary.

Dr Crowe and his colleagues also criticise our estimate that the deputising service handled between 36% and 69% of the night calls for its subscribers, suggesting, on the basis of the night-call rates in their practice, that the proportion should be much higher, over 90%. Here again it is very doubtful whether the circumstances of a semirural group practice are sufficiently similar to the pooled experience of 100 urban subscribing practices to justify such conclusions.

The problem remains that we do not know quantitatively how primary medical care is being dispensed out of hours in large areas of this country, nor do we know much about the effectiveness of the various methods or

their acceptability to the public. We recognise the limitations of assessing the size of the deputising service contribution by means of the indirect methods which we, and now Dr Crowe and his colleagues, have used. We envisage that a true picture can be obtained only through a study of a situation in which various methods of operating in the same place at the same time, a situation common to the majority of our large towns.

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¹ Williams, B T, Dixon, R A, and Knowelden, J, *British Medical Journal*, 1973, **1**, 593.

Management of eclampsia

SIR,—In your leading article on this subject (19 June, p 1485) you refer to hypovolaemia in these patients and the danger of using diuretics. Although you mention death from intracerebral haemorrhage, no comment is made on the morbidity and mortality from renal failure.

Kennedy *et al*¹ included 20 women with pre-eclampsia or eclampsia in a large series of medical, surgical, and obstetric patients admitted to their unit with acute renal failure. Seven of the 20 died and those who survived had a higher incidence of residual renal impairment than surviving patients from the other groups.

Thomson *et al*² described the typical reversible renal lesions in pre-eclampsia of endothelial and mesangial cell proliferation and fibrinoid deposition. Such changes are aggravated, with decrease in glomerular function, when hypovolaemia reduces renal perfusion. It was suggested that prompt correction of hypovolaemia lessens the risk of irreversible damage. Bonnar³ reported that a similar problem in patients with abruptio placentae can be avoided by using central venous pressure (CVP) monitoring to maintain adequate circulating blood volumes.

Recently we have inserted CVP lines via the antecubital fossa in six patients with severe pre-eclampsia. This was performed in the first two cases when reduction in the urinary output was noted and was used in the subsequent four cases to monitor fluid replacement both before and after delivery. Venous pressure below -5 cm H₂O, measured from the angle of Louis, was noted in five of these patients. Normovolaemic states were restored with infusions of albumin and isotonic saline. Only then was frusemide or mannitol used to maintain urinary output. No deterioration in renal function occurred.

We believe that to avoid further renal damage CVP monitoring is an important aid in achieving a normovolaemic state in the management of severe pre-eclampsia or eclampsia.

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¹ Kennedy, A C, *et al*, *Quarterly Journal of Medicine*, 1973, **42**, 73.

² Thomson, D, *et al*, *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 1972, **79**, 311.

³ Bonnar, J, *Clinics in Haematology*, 1973, **2**, 213.