Obstetric anaesthetic and analgesic services in Wales

SIR,—We agree with Dr D J Bowen and his colleagues (20 October, p 1002) that epidural analgesia should be available in every consultant obstetric unit as part of the pain relief service. However, there are considerable logistic difficulties to overcome in implementing this policy, such as the size and location of the unit and, not least, a shortage of trained anaesthetists. Unless the service can be safely offered mortality and morbidity are inevitable. It will take time to achieve this aim and our survey in Wales showed that the present deficiencies are substantial. We believed that our suggestions might go some way towards improving the situation.

Dr Bowen and his colleagues are puzzled because we stated that there were few medical indications for epidural block and feel that breech deliveries, pre-eclamptic toxemia, forceps deliveries, etc, are indications. However, there are no controlled trials to support their views.

Finally, it is claimed that "the main medical benefit is that the risk of death is less with epidural analgesia than with general anaesthesia." If they refer to the unfortunate deaths associated with general anaesthesia, mainly from aspiration of gastric contents (6-10 a year), then it will take some time to prove that a change to epidural block for all the 35 000 caesarean sections a year (even if it were appropriate) would alter the mortality rate. Conduction anaesthesia does not guarantee freedom even from the risk of aspiration. Epidural block also carries other hazards, and must be carefully supervised and skilfully managed by the anaesthetist, obstetrician, and midwife. Already two deaths have been reported in the most recent confidential enquiry.¹

There is no doubt that epidural analgesia is the most effective method of pain relief. So long as it can be provided safely, that is a sufficient reason for making it ultimately available in every major obstetric unit.

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¹ Department of Health and Social Security, *Confidential Enquiry into Maternal Deaths in England and Wales 1973-1975*. London, HMSO, 1979.

Analgesia and the acute abdomen

SIR,—I wish to comment on your leading article "Analgesia and the acute abdomen" (3 November, p 1093).

Zachary Cope's comment that "if morphine be given, it is possible for a patient to die happy in the belief that he is on the road to recovery, and in some cases the medical attendant may for a time be induced to share the delusive hope" is as true today as it was when it was first written in 1921. Your editorial suggests that the experience of the general practitioner, casualty doctor (perhaps an experienced consultant), and houseman is parallel to that of a "trainee surgeon": nothing could be further from the truth. Firstly, most of them have gained their surgical experience in a relatively short

period of six months, in many cases this period being spent in studying orthopaedic or ear, nose, and throat surgery, where the "acute abdomen" is a rarity; and, secondly, they lack all the facilities that are available to the trainee surgeon. These will provide a haemoglobin level, a white blood count, a chest x-ray, an erect and supine x-ray of the abdomen, a urea and electrolyte level, a serum amylase level, an intravenous pyelogram, and in a few cases peritoneal lavage. Some of these investigations, and others such as a lumbar puncture, are even more important in childhood, when many illnesses can present with an acute abdomen.

Even when these facilities are available, the diagnosis may still not be clearcut. It is even more difficult if the patient has been given analgesics; if I was a patient I would allow myself to receive analgesics only after my diagnosis and future management had been decided. I remember well one woman in her 30s who had some gangrenous bowel resected two hours after being completely relieved symptomatically and clinically of her severe abdominal pain. She had originally presented in casualty screaming in pain and writhing around; a complete history and examination had been impossible. What she required therefore was not analgesics, but urgent laparotomy. The effects that abdominal pain can have on the sensorium have been well described by Angell.¹ To give analgesics for abdominal pain when clearly operation is essential lulls everyone into a false sense of security—it should not permit a more "leisurely" approach. A patient "out of his mind" with abdominal pain needs urgent diagnosis before treatment; to treat before you diagnose is not "humane." I do, however, endorse Mr T J Hughes's comment, on p 1145 of the same issue, when he states that "if opiates are to be withheld then we should ensure that the more experienced diagnostician sees the patient early in this process so that treatment, including analgesia, may be instituted rapidly." The only doctor therefore who should take the responsibility of giving analgesics to the patient with an "acute abdomen" is the doctor who subsequently manages the patient and makes himself available should a second injection be required. Old traditions contain more grains of truth than new ones.

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¹ Angell, J C, *The Acute Abdomen for the Man on the Spot*. 3rd edn. Tunbridge Wells, Pitman, 1978.

SIR,—In the leading article "Analgesia and the acute abdomen" (3 November, p 1093) young or "apprentice" surgeons (sic) were encouraged to alleviate severe pain at the initial consultation. Admirable as this concept appears, some consideration should be given to the appropriate pharmacological agent used, especially as morphine sulphate is quoted in the text and may be considered by some to be the analgesic of choice.

Intra-abdominal and retroperitoneal viscera contain predominantly involuntary smooth muscle, which is stimulated to contract with morphine sulphate. Stimulation of smooth muscle in the sphincter of Oddi in acute pancreatitis, and of the bowel in diverticular disease and large bowel obstruction, should

be avoided in the treatment of these common, painful emergencies.

Relaxation of the smooth muscle with atropine sulphate or propantheline bromide in these situations not only interrupts the vicious cycle in these conditions¹⁻⁴ but, as recent (as yet unpublished) work in primates suggests, the colicky pain of uncomplicated large bowel obstruction may be resolved without the use of opiates.

The understanding of the mode of action of the pharmacological agents at our disposal and their application in the acute abdomen can relieve pain and even aid in the diagnosis of the underlying disease. Blunderbuss use of inappropriate analgesic agents will be as easily criticised by our successors as the delay alluded to in the leading article.

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¹ Bennett, A, *Gut*, 1975, **16**, 307.

² Painter, N S, and Truelove, S C, *Gut*, 1964, **5**, 369.

³ Painter, N S, and Truelove, S C, *Gut*, 1964, **5**, 207.

⁴ Painter, N S, *et al*, *Gut*, 1965, **6**, 57.

Introduction of U-100 insulin

SIR,—The hazards resulting from the availability of different strengths of insulin, chiefly 40 units/ml (U-40) and 80 units/ml (U-80), are well known though not widely publicised. Relatively frequent dose errors occur because of confusion of insulin strength, syringe marks, and insulin units. Several countries have therefore concluded that, for safety's sake, only one strength of insulin should be available, and that ideally this should be 100 units/ml (U-100).

A new strength is chosen rather than one of the existing strengths to avoid residual confusion from the use of old syringes, which usually required a $\times 2$ or $\times 4$ transformation from the 20 divisions per ml but were sometimes actually calibrated in units for one of the two strengths. The higher concentration of U-100 maintains the advantage of smaller injection volumes; it fits better with the metric philosophy rapidly becoming generally adopted; and it is increasingly widely used as a single-strength insulin elsewhere. The change to U-100 has been successfully achieved in Canada and is being undertaken in the United States and Australia. The principle of adopting U-100 has been accepted by the British Diabetic Association and has received the support of the Council of the Pharmaceutical Society of Great Britain.

British Diabetic Association meetings with insulin manufacturers, syringe manufacturers, and pharmaceutical representatives have agreed that U-100 could be safely introduced in combination with the phased withdrawal of U-40 and U-80—since retention of three insulin strengths would be undesirable. The changeover would be carefully planned and preceded by the launching of a suitable educational programme. The DHSS considers that this change should be initiated by the medical profession, and the British Diabetic Association is therefore seeking the wide support of professional colleagues.

The introduction of U-100 will require a suitably graduated syringe; these can be manufactured in both glass and plastic, and have already been satisfactorily tested in a trial conducted by the British Diabetic Association. The marking of syringe divisions directly indicates the number of insulin units

without any conversion factor. No difficulties have been encountered in practice with very small doses when suitably calibrated syringes are used, except in the very rare cases when less than 4 units are prescribed. Plastic U-100 syringes are already available and, with care, can be used repeatedly. They cannot at present be obtained through the NHS on FP10 forms, but plastic syringes can even now be prescribed by hospital doctors.

To change to U-100 as the sole strength of insulin will require much planning and organisation and an intensive educational campaign is an essential part. A co-ordinating officer will need to be appointed to organise the many aspects of the changeover and will be supported by a small advisory committee representing the professions, insulin manufacturers, syringe manufacturers, pharmaceutical industry, and diabetic patients. The co-ordinator and the committee will enlist the support and patience of professional groups and diabetics, and will also draw on the considerable experience of colleagues in other countries who have already introduced U-100 insulin.

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Are breast-fed babies still getting a raw deal in hospital?

SIR,—We wholeheartedly endorse the sentiments expressed in your recent paper (13 October, p 891). Furthermore, we would like to elaborate on two points.

Despite its small quantities, colostrum is finely adapted to meet the needs of the newborn infant over the first days of life. It is a dynamic fluid whose composition alters daily. In a recent study (Verrier Jones, Serenyi, and Lister, unpublished data) we examined samples of colostrum on the third, fifth, seventh, and ninth days after birth (table).

The results show that there are progressive increases in fat and lactose, with a reduction in protein and mineral content. In addition, colostrum contains macrophages, which provide its cellular anti-infective properties. Indeed, colostrum has been aptly named "white

blood." Clearly, if an infant is to obtain optimum amounts of colostrum then he must be allowed to feed on demand.

We also wish to point out the fallacy of giving dextrose supplements instead of breast feeds to satisfy the infants' thirst. Studies¹ on breast-milk composition during a breast-feed show that after four to five minutes of feeding there is a steep rise in lipid content. The milk from the early part of the feed provides water and the later milk is richer in calories. Thus by taking a short breast-feed the thirsty infant can use the early milk for satisfying his or her water requirements.

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¹ Crawford, M A, *et al*, *Current Medical Research Opinion*, 1976, 4, suppl 1, p 33.

SIR,—I read the article "Are breast-fed babies still getting a raw deal in hospital?" (13 October, p 891) with interest because, as a midwife, I have spent many years helping women establish breast-feeding at home.

There are other aspects of the management of these breast-fed babies which would also contribute to their disadvantaged state. Sucking time was restricted to three minutes at the beginning—yet this hardly allows the let-down reflex to occur, let alone provides a nutritionally satisfactory feed. Although it is not specifically stated, the continued restriction of total sucking time to 10 minutes at each breast usually goes with this pattern of management.

I would question the practice of giving the breast-fed baby dextrose feeds instead of breast milk during the night. If the bottle-fed babies were to be controls, surely they should have been deprived of milk feeds in the same way?

The current practice of timing the frequency and duration of breasts feeds originated in this country in 1913, when Sir Frederick Truby King's teachings were first published.¹ Has not the time come for hospitals to stop interfering with a process which, in normal mothers and babies, is perfectly orchestrated?

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¹ Truby King, F, *Feeding and Care of the Baby*. London, Society for the Health of Women and Children, 1913.

A and E departments for children

SIR,—In the series of articles by your special correspondent on accident and emergency services, until the one on the staffing of

departments (3 November, p 1119) no mention has been made at all about the problem of children attending such departments. Where numbers are available the paediatric component of the work is from about 23% up to as high as 30% of the total attendances. Apart from medical and surgical conditions which bring them there, the complicated nature of many of the social conditions which are intermixed with these means that these are unlikely to be picked up or certainly unlikely to be dealt with adequately in the sort of atmosphere which applies to the average large accident and emergency department.

I wish that paediatricians would be much more forceful in seeing that the particular needs of such children are properly catered for. If it is not possible to have a paediatric accident and emergency department attached to a children's hospital, it surely should not be impossible in a big city to have one department which may run in parallel with an adult one but which has medical and nursing staff who have paediatric training and interest. Apart from the benefit to children, this would make it much easier to look into the particular problems of accidents and acute illnesses in childhood.

Although a period of paediatric training is included in the senior registrar's four-year programme, for the next few years it is likely that many if not most of the senior registrars will be appointed to consultant posts before they reach this stage and in consequence will have had no postgraduate experience in paediatrics.

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Antibiotic lavage for peritonitis

SIR,—Your recent leading article "Antibiotic lavage for peritonitis" (22 September, p 691) was a timely reminder of an important part of the treatment of patients with severe peritonitis. However, it was remarkable that you did not refer to *operative* antibiotic peritoneal lavage and instead directed attention to postoperative dialysis-type antibiotic peritoneal lavage exclusively. This latter method is highly labour intensive and not without complications, among which the most frequent is fluid and electrolyte overload and the most serious is intestinal fistulation from prolonged contact with large-diameter tube drains. In addition to these practical disadvantages, there is neither clinical nor experimental evidence that postoperative antibiotic peritoneal lavage is necessary after operative antibiotic peritoneal lavage.¹

The efficacy of large-volume, high-concentration operative antibiotic peritoneal lavage has been demonstrated most clearly in catastrophic experimental faecal peritonitis.² The very high survival rates which were achieved by this treatment are persuasive evidence that in clinical practice the combination of operative antibiotic peritoneal lavage and full-spectrum systemic antibiotic support will be adequate treatment for the majority of patients with even the most severe peritonitis. Postoperative antibiotic peritoneal lavage should be added to these simpler measures in the small group of patients in whom it is not possible to remove a potential source of reinfection of the peritoneal cavity.

Operative antibiotic peritoneal lavage is not a widely used technique. To some extent it was discredited by delayed recovery from neuromuscular blocking anaesthesia after aminoglycoside antibiotic lavage.³ Few surgeons considered

Changing composition of colostrum

	Day 3	Day 5	Day 7	Day 9
Total protein (g/l)	29	22	22	23
Whey protein (g/l)	14.68	9.34	9.92	10.31
Lactoferrin (g/l)	4.7	4.0	3.9	2.8
IgA (g/l)	0.82	0.47	0.43	0.36
Human albumin (g/l)	0.63	0.7	0.6	0.61
Fat (g/l)	25.1	28.5	37.1	35.3
Lactose (mmol/l)	59.3	58.3	66.0	67.0
Calcium (mmol/l)	7.4	9.9	8.2	7.4
Phosphate (mmol/l)	4.62	5.78	4.88	5.7
Sodium (mmol/l)	81.2	82.8	72.8	61.1
Potassium (mmol/l)	62.5	44	35.6	48.6