and concentrate antenatally on women with multiple partners and multiple pregnancies.

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Psychosocial stress in pregnancy

SIR,—I would like to thank Dr J Dearlove (8 September, p 613) and Dr M O Roland (22 September, p 738) for their interest in our paper (18 August, p 411) and to answer their criticisms.

The women were interviewed three to four days after delivery to minimise the labile emotions associated with the time of delivery. It seems that it is those mothers going to term who have the better recall for those major life events considered to be subjective. We reviewed our results and divided the major life events into those considered to rely on subjective interpretation and those which were purely objective. The subjective life events represented 31% of the total recorded in the group going to term but only 19% of those recorded in the preterm groups combined.

The criticism of methodology is partially valid but there was overlap of interviewers, with two authors interviewing mothers from all three groups. The results from these interviews substantiated the trends seen in the whole sample.

I would emphasise again that few women had been asked about their worries during their pregnancies. I think it noteworthy that no one through your columns has supported our call for better "social" caring in what is probably a good caretaking antenatal service at a time when interest in place of birth is to the fore.

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Appendicectomy and family history

SIR,—The management of possible appendicitis, both at home and in hospital, is indeed influenced and complicated by the presence of past family histories of appendicitis or appendicectomy, as Dr N Andersson and his colleagues have suggested (22 September, p 697). Just over a decade ago I reported some findings from a study which was similar to theirs in intention.¹

Two hundred and four females and 92 males (aged 12-29) who had had histologically inflamed appendices removed at emergency operations for acute abdominal pain were matched for age and sex with patients who had had histologically normal appendices removed at similar operations. All were sent a questionnaire asking how many of their parents and siblings had had their appendices removed. The relatives of female patients who had normal appendices removed included a significant excess with past appendicectomies ($P < 0.01$) when compared with the relatives of those females with acute appendicitis. No such relationship was found with male patients.

These findings confirm that a past history of appendicectomy in the relatives of a patient with abdominal pain is of importance, but suggest that the importance is at least as likely to be behavioural as physical. Another reminder of the importance of behavioural

influences on the management of acute abdominal pain which was reported in the paper was the excess number of normal appendices removed from the members of "medical" families. Dr Andersson's team should think again about how human factors influence the presentation and management of illness before they pursue the possibilities that their interesting findings might have either a dietary or a genetic basis.

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¹ Howie, J G R, *Lancet*, 1968, **1**, 1365.

SIR,—The interesting article "Is appendicitis familial?" by Dr N Andersson and others (22 September, p 697) prompts us to report an extraordinary coincidence in a pair of identical twins.

The first twin sister, aged 10½ years, presented in the afternoon of 24 February 1975 with a typical history of central abdominal pain radiating to the right iliac fossa. On examination there was guarding and tenderness with rebound tenderness. Emergency operation was undertaken in the early evening and an acutely inflamed appendix removed. The patient made an uneventful recovery and histology confirmed the diagnosis "fairly severe acute purulent non-obstructive appendicitis."

Later the same evening we saw the second child, who had been away at a different address and not in contact with her twin sister. She gave an identical history and also had signs of appendicitis with peritonitis. Emergency operation was undertaken the same evening and again an acutely inflamed appendix was removed. Histology confirmed the diagnosis of severe acute purulent appendicitis—in this case due to obstruction by a small faecolith. The patient also made an uneventful recovery.

We are not aware of a previous report of acute appendicitis affecting identical twins at almost the same moment in time. It is interesting that in one twin a faecolith was present causing obstruction, but this was not so in the other twin.

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Accidental injury in children and interrogation of families

SIR,—In recent years there has been increasing pressure upon the profession to recognise cases of non-accidental injury to children. This is very laudable, but we wonder if anyone has actually looked into the effect on an accidentally injured child's family of the typical interrogation procedure to which relatives are now subjected.

A number of cases have recently come to our attention where great distress has been caused by the implied accusation which such questioning brings. Most parents, when under pressure, chastise their children from time to time; and current social mores concerning physical punishment of children lead to the formation of deep guilt feelings, which are easily aroused by injudicious accusations, real or imagined.

Many parents are insecure and uncertain anyway, especially those with known predisposing factors in their case histories, such as being young, having had children in special care units, multiple births, and abnormal children. While the doctor's primary aim is rightly to protect the child from non-

accidental injury it must be remembered that this is achieved only by giving insecure families more support, and that the alienation achieved by what is perceived as a witch hunt is strongly counterproductive. Arguably, the deterioration in relations between parents and health service personnel we have observed may actually lead to more rather than less non-accidental injury.

From these reflections we would like to ask one question and make two recommendations. (1) Has any research been undertaken into the type of interrogation we are considering, to determine its effects? (2) GPs, when referring injured children in whom they are sure that non-accidental injury is unlikely, should say so in their referral letter. (3) Hospital staff should be aware of the sensitive nature of their inquiries and should solicit the views of the GPs and health visitors who know the patients well before any form of confrontation.

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General practice in hospital accident and emergency departments

SIR,—I refer to the article "Changes in demand for initial medical care in general practice and hospital accident and emergency departments" by Dr Joyce M Watson and others (11 August, p 365) and the letter by Major P J Gravett (22 September, p 737).

Dr Watson's article implies that, contrary to the ethic of the GP consultative service, patients have a free choice of the two alternatives. Other than on this point, however, I agree with her comments. Her findings are supported by the Newcastle Accident Report.¹ In themselves they do not disprove the contrary evidence of the Fourth Report from the Expenditure Committee,² but it is reassuring to know that since this was prepared in 1973-4 the situation has not worsened—at least in Glasgow. I was pleased that she drew attention to the ratio of first attenders at accident and emergency departments and GP surgeries. Although her ratio is rather greater than that calculated from Fry's figures³ it does emphasise that failure of a general practitioner to provide emergency cover for one in every 100 of his patients leads to a 6-10% increase in casualty attendances, depending on the number of general practitioners and hospitals in the district.

I would, however, take issue with Major Gravett. He appears to have used Durbin's criteria for appropriate attendance at the accident and emergency department,⁴ although here I would have liked more information. Casualty departments do not treat only trauma—though there are many who, for the sake of a structured organisation, administrative convenience, or even clarity of exposition, would wish that they did. Their function must be seen in social rather than medical terms and it has not changed much since the mediaeval hospice served those displaced and disabled people who were suddenly rendered dependent on their immediate and perhaps estranged neighbour for help.

The spectrum of diagnoses of bona fide attenders is neither all accidents nor all emergencies—nor, in a medical sense, entirely composed of both. Almost all diagnoses can, in some circumstance, be disabling and render a person immediately community-dependent^{5 6}

and Dr Watson's figures merely confirm the increasing daily displacement of people from home, family, and practitioner in the twentieth century social revolution and the increasing hazards to which they are subject while displaced. In fact there has not been one year since attendance rates of casualties were first recorded in 1828⁷ that the rate has dropped.

During the period of National Health Insurance, if the patient had a free choice, then, unless he was referred by his GP, he was an inappropriate attender at the casualty department. Has there been a change?

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¹ Russell, I T, and Halohan, A M, *Newcastle Accident Report*, p 3. University of Newcastle upon Tyne, Medical Care Research Unit, 1974.

² Expenditure Committee, *Accident and Emergency Services*, vol II, London, HMSO, 1974.

³ Fry, J (editor), *Trends in General Practice*, London, British Medical Journal for Royal College of General Practitioners, 1977.

⁴ Durbin, F C, *British Medical Journal*, 1974, **1**, 125.

⁵ Calnan, M, Health Services Research Unit, University of Kent, in preparation.

⁶ Lord, S M, and Thompson, J Y, Walton Hospital, Liverpool, in preparation.

⁷ Loudon, I S L, *British Medical Journal*, 1979, **1**, 974.

Referral of mothers and infants for intensive care

SIR,—We read with interest the account of the University College Hospital experience of perinatal transfer of "at risk" low-birthweight infants (18 August, p 414) and the subsequent letter by Dr M L Chiswick (22 September, p 733).

Intensive care methods were introduced into the special care baby unit of the Jessop Hospital for Women, Sheffield, in early 1977 and a policy of active encouragement of the transfer from outlying hospitals to our maternity unit of mothers likely to deliver very low-birthweight infants was adopted. We also started to operate a neonatal intensive care transport service similar to that of Blake *et al*¹ and Chiswick *et al*,² using a modified Vickers 77 transport incubator.

Between January 1977 and August 1979 the survival rate for infants of birth weight 1.5 kg or less was better for those transferred in utero than for those transferred after delivery, the survival rate for the former being similar to that of the infants born here (see table). Ventilatory assistance was required less frequently in those infants transferred in utero (10 out of 16 (63%)), compared with 29 out of 30 infants (97%) transferred after delivery. There was also a higher survival rate following ventilation of those transferred in utero—(7 out of 10 (70%))—than in those transferred after birth—12 out of 29 (41%). Infants of less than 1000 grams or of gestational age 26 weeks or less formed a higher proportion of the infants transferred after birth, but this does not completely explain the discrepancy in the survival figures. It is difficult to compare in the two groups the extent to which the six infants transferred in utero who did not require ventilatory support may have benefited from intensive antenatal and neonatal monitoring. These infants may be seen as competing for intensive

care cot space with infants whose needs may be greater, an effect which we try to minimise by early return of mother and baby to the referring hospital. We agree with Dr Chiswick that the infants transferred after birth are a different population, frequently with additional adverse perinatal factors, as illustrated by the excess of extremely small infants among those transferred after delivery (see table); and accurate comparison of the two methods of transport is therefore impossible.

Although we shall continue to encourage the transfer of very low-birthweight infants in utero, circumstances prevent antenatal referral in a large proportion of cases and the baby is frequently delivered in the district general hospital unit soon after arrival there. The prognosis of the very low-birthweight infant, even after delivery and transfer to the regional neonatal intensive care unit, is dependent on the level of obstetric and neonatal skill available at the district general hospital maternity unit in the immediate perinatal period; and improvements in facilities and training at this level are a high priority if we wish further to improve the prognosis of the very low-birthweight infant.

Despite the excellent results of Blake *et al*³ demonstrating transport of the sick low-birthweight infant to be a relatively safe procedure after delivery, as smaller and smaller infants become potentially capable of survival the sophistication of the transport equipment required increases. We have found it impossible to maintain the temperature of infants of less than 1000 grams ventilated with cold oxygen straight from a cylinder for more than 45 minutes and refinements in the currently available transport equipment are needed urgently to make it suitable to transport very small infants long distances safely.

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¹ Blake, A M, *et al*, *British Medical Journal*, 1979, **2**, 414.

² Chiswick, M L, *British Medical Journal*, 1979, **2**, 733.

³ Blake, A M, *et al*, *British Medical Journal*, 1975, **4**, 13.

⁴ Chiswick, M L, *et al*, *British Medical Journal*, 1979, **2**, 247.

Antibiotic lavage for peritonitis

SIR,—Your leading article "Antibiotic lavage for peritonitis" (22 September, p 691) highlights the problems still experienced by surgeons when dealing with severe peritonitis. Stephen and Loewenthal¹ have recently reminded us of the high mortality associated with this condition and have also demonstrated the benefits to be gained from lavage with multiple antibiotics.

Peritoneal lavage has never been popular in Britain since it was condemned by Lord

Moynihan² and the most recent edition of Maingot's *Abdominal Operations*³ continues to perpetuate the myth that irrigation of the peritoneal cavity for cleansing purposes is never justified even in the presence of gross faecal contamination. However, it has been widely used in Europe,⁴ the USSR,⁵ and the USA⁶; and the use of the three or four drain technique with lavage through each drain in turn has been frequently reported. Recent animal studies⁷ have continued to demonstrate the benefits of lavage in experimental peritonitis.

The use of intraperitoneal antibiotics both by instillation and by lavage is widespread and well documented, though in most cases only a single drug is used: but, as you point out, with such a mix of organisms combination chemotherapy seems more logical, although most surgeons today would probably prefer metronidazole to lincomycin for the control of *Bacteroides* spp. One of the factors accounting for the high mortality in faecal peritonitis may be a failure of peritoneal fibrinolysis.⁸ This allows the infection to become walled off, hinders antibiotic penetration, and leads to residual abscesses. It has been shown that heparin lavage⁹ in experimental animals prevents fatalities in induced peritonitis, probably by preventing fibrin deposition; and it seems reasonable to add this to other regimens in peritonitis.

The use of multiple antibiotics does raise some problems, such as the development of resistance, allergic reactions, anaesthetic difficulties, and perhaps the rather theoretical endotoxaemia resulting from "overkill."¹⁰ In an attempt to avoid the difficulties associated with the use of antibiotics and yet cover all the bowel organisms antiseptics are being used by instillation and lavage. Two groups of these have been reported—povidone-iodine¹¹ and methylol donors,^{12 13} both of which confer considerable protection in the experimental animal and also in the clinical situation. A recently developed antiseptic (Taurolin) of the latter group has an added advantage over the antibiotics and other antiseptics. It has been shown to be active against the toxins from *Escherichia coli*, *Bacteroides fragilis*, and *Salmonella typhi*,¹⁴ probably by direct reaction with the endotoxin; and its active metabolites are rapidly absorbed from the peritoneum to give effective levels in the blood. In a series (to be reported elsewhere) of 70 cases of purulent peritonitis arising from gangrenous or perforated appendices treated with intraperitoneal taurolin without any antibiotics there have been no deaths and only one residual abscess, the wound sepsis rate by the strictest criteria being 18%; while in the more severe cases of peritonitis, arising from perforation of colon, small bowel, or gall bladder, out of 33 cases treated with intraperitoneal taurolin there were no deaths, but the wound infection rate was 43%. The latter, apart from reflecting the severity of the causative lesion, is probably due to too low a dose of taurolin, since, unlike antibiotics, antiseptics have a direct relationship to the number of organisms and must always be present in excess.

It is to be hoped that in severe peritonitis the use of lavage to clear away organisms, toxins, and particulate matter and to control electrolyte balance will be adopted in this country. As an alternative to combination chemotherapy with several antibiotics and their attendant risks, a return to the Listerian concept of antisepsis might be indicated. Several modern antiseptics are now available

Survival of infants of 1.5 kg birth weight and below after referral in utero and after delivery (January 1977-August 1979)

Birth weight (g)	Transferred in utero				Transferred after delivery			
	No	Survivors No (%)	Birth weight (kg) Mean (range)	Gestational age (weeks) Mean (range)	No	Survivors No (%)	Birth weight (kg) Mean (range)	Gestational age (weeks) Mean (range)
≤1000	3	2 (67)	0.89 (0.84-1.0)	27.3 (26-28)	13	3 (23)	0.86 (0.63-1.0)	26.4 (25-28)
1001-1500	13	11 (85)	1.24 (1.02-1.40)	30.6 (27-36)	17	10 (59)	1.22 (1.06-1.46)	29.2 (27-35)