general practice tutor who now visits and assesses practices applying to employ a retained doctor and who meets the retained doctors annually to assess whether their educational needs are being met.

Toynton also recommends a system whereby retained doctors can be given a free pass for educational activities. At this postgraduate centre, and many others in this region, this has been the system for some time. Fees are charged only to doctors who require a postgraduate education allowance certificate. Doctors on the retainer scheme, and trainees, assistants, retired doctors, and anyone else who does not require a certificate, are welcome to contact our postgraduate administrator for details of our educational programmes, to which they will be admitted free of charge.

WILLIAM GRIFFITHS

Postgraduate Medical Centre,
West Middlesex University Hospital,
Isleworth,
Middlesex TW7 6AF

1 Toynton N. Doctors' retainer scheme. *BMJ* 1992;**305**:1378-9. (5 December.)

Child resistant containers needed for liquid medications

EDITOR,—While working in paediatrics recently, I saw a 20 month old girl in the accident and emergency department who had drunk half a bottle of her Sudafed cough elixir. The bottle had been left on a mantelpiece and she had reached up, opened it, and drunk its contents. Luckily, although she had taken more than the fatal dose for her weight, her speedy admission and treatment ensured that no harm was done.

This case prompted me to wonder why liquid dose prescribable medications are not dispensed in bottles with child resistant tops. Since the government made child resistant containers compulsory for solid dose prescribable medications (with exceptions for elderly and infirm people) the incidence of accidental poisoning in children has fallen, yet no similar policy has been proposed for liquids.

The issue was addressed indirectly last October when the problem of ingestion of methadone was tackled by the Royal Pharmaceutical Society. According to my inquiries, however, only one pharmaceutical company has a policy of using child resistant tops, and this is for only controlled drugs.

Is it not time for legislation to be introduced to cover liquid dose prescribable medications, or do we have to wait until deaths occur before something is done?

MICHELLE JACOBS

University Hospital of Wales,
Cardiff CF4 4XN

Urodynamic investigation in elderly women

EDITOR,—We wish to reply to some of the points in James A Barrett and colleagues' letter[1] about our paper looking at referral patterns in women attending a urodynamic unit.[2] Barrett and colleagues give a typical geriatrician's view of the need for urodynamic investigation and say that the management of incontinence in most geriatric patients can be based on a careful history, physical examination, and information gleaned from a frequency-volume chart. They also believe that urodynamic investigation in this population should be reserved for those who have had an adequate trial of conservative management and are being considered for surgical treatment. A review of the literature would not support their views.

Castleden *et al* showed that there was no correlation between clinical and urodynamic findings in elderly incontinent patients,[3] while other geriatricians in the United States have shown that history correlates poorly with symptoms of urge incontinence[4] and with stress incontinence established with a clinical algorithm.[5] In addition, we do not believe that a urodynamic investigation lasting 30-40 minutes, which is our average for routine studies, is all that time consuming, particularly if it results in a correct diagnosis and appropriate management. Finally, Barrett and colleagues mention that they often offer a trial of oxybutinin to their patients. We consider that this drug's side effects,[6,7] particularly in elderly people, militate against its empirical use without confirmation of detrusor instability.

We agree with Barrett and colleagues about the multifactorial nature of incontinence in elderly people but believe that this reinforces the need for urodynamic investigation in this group rather than refutes it.

DECLAN P KEANE
SEUMAS D ECKFORD
ANGELA M SHEPHERD
PAUL ABRAMS

Urodynamic Unit,
Southmead Hospital,
Bristol BS10 5NB

1 Barrett JA, Banks A, Roe B. Urodynamic investigation in elderly women. *BMJ* 1992;**305**:1438. (5 December.)
2 Keane DP, Eckford SD, Shepherd AM, Abrams P. Referral patterns and diagnoses in women attending a urodynamic unit. *BMJ* 1992;**305**:808-9. (3 October.)
3 Castleden CM, Duffin HM, Asher MJ. Clinical and urodynamic studies in 100 elderly incontinent patients. *Br J Urol* 1981;**282**: 1103-6.
4 Diokno AC, Wells TJ, Brink CA. Urinary incontinence in elderly women: urodynamic evaluation. *J Am Geriatr Soc* 1987;**35**: 940-6.
5 Eastwood HDH, Warrell R. Urinary incontinence in the elderly female: prediction in diagnosis and outcome of management. *Age Ageing* 1984;**13**:230-4.
6 Cardozo LD, Cooper D, Versi E. Oxybutynin chloride in the management of idiopathic detrusor instability. *BMJ* 1987;**280**: 281-2.
7 Baigrie RJ, Kelleher JP, Fawcett DP, Pengelly AW. Oxybutynin: is it safe? *Br J Urol* 1988;**62**:319-22.

Organ donation

EDITOR,—Ross Taylor mentioned other proposals that have been put forward to increase the number of organ donors.[1] Like many other transplant surgeons and physicians he thinks the idea of interventional ventilation as proposed by Feest and colleagues in Exeter[2] should be actively pursued as a way of increasing the number of potential donors. We have grave reservations about the ethics of this.

At present patients who present in the emergency department and other areas of the hospital with a previously undiagnosed cerebral condition that leads to respiratory arrest will have their tracheas intubated as part of a resuscitation attempt to save their life. Should they then become brain dead, established lines of management are followed that avoid futile treatment and unnecessary distress to the relatives. Only when death has been certified does patient care stop and donor care start. Other patients with a clearly diagnosed fatal cerebral injury that causes a respiratory arrest are allowed to die, and do so quickly and with dignity. If a policy of interventional ventilation is accepted it will mean that patients with a known fatal intracerebral injury who have, or are about to have, a respiratory arrest will receive full supportive measures that will continue until the patient fulfils the criteria for brain stem death, when organ donation will take place. Unlike conventional organ donation management, donor care must start before the patient is dead. Furthermore, patients receiving interventional ventilation are known to be dying. Deliberately prolonging a patient's dying is unacceptable for any reason.

This intensive care unit has been committed to organ transplantation for 25 years. However, we fear that the widespread introduction of interventional ventilation will erode the standards of proper medical care that our patients with intracerebral injuries, and their relatives, expect of us. These standards of care have evolved over many years and should not be ignored without more thought being given to the ethics rather than the practicalities of interventional ventilation.

G R PARK
K E GUNNING
M J LINDOP
P G ROE

John Farman Intensive Care Unit,
Addenbrooke's Hospital,
Cambridge CB2 2QQ

1 Taylor RMR. Opting in or out of organ donation. *BMJ* 1992;**305**:1380. (5 December.)
2 Feest TG, Riad HN, Collins CH, Golby MGS, Nicholls AJ, Hamad SN. Protocol for increasing organ donation after cerebrovascular deaths in a district general hospital. *Lancet* 1990;**335**:1133-5.

EDITOR,—R M R Taylor perpetuates the misconception that consent is necessary for the removal of organs for transplantation from cadavers.[1] The Human Tissue Act 1961 (Chapter 54) makes clear that all that is necessary is that the person in possession of the body, having made such reasonable inquiries as may be practicable, has found no reason to believe that the person who has died had any objection or that there is any objection from the surviving relatives. In my view this is the most liberal law that could have been enacted to make provision for parts of the body of someone who has died to be used for transplant purposes.

Any change in the law by way of opting in consent or opting out consent, even were it to find parliamentary time, would probably be much more restrictive than the present law. Under the present statute, in the case of any subsequent dispute or objection it is necessary only for the person in possession of the body to present findings that his or her inquiries were indeed reasonable.

A D BARNES

Queen Elizabeth Hospital,
Birmingham B15 2TH

1 Taylor RMR. Opting in or out of organ donation. *BMJ* 1992;**305**:1380. (5 December.)

Cardiovascular disease in developing countries

EDITOR,—According to Robert Beaglehole an epidemic of cardiovascular disease is haunting the developing countries, mainly because they are adopting an atherogenic and thrombogenic diet.[1] I question his statements for the following reasons.

Conclusions based on vital statistics should be drawn with care because even in developed countries death certificates are often wrong.[2] Sudden, unexpected death, for instance, is usually recorded as myocardial infarction, although this is correct in only half of the cases; half of those who really die from a heart attack are given another diagnosis.[2] In developing countries the death certificates are more unreliable; the cause of death is not always set by a doctor, much less by a coroner, and knowledge or equipment may be insufficient to diagnose a myocardial infarction.

Even if vital statistics were correct there is a more likely explanation to the increasing cardiovascular mortality in the developing countries. Westernisation is followed by increased cardiovascular mortality, so any factor that follows Westernisation may be more or less correlated to such mortality.[3] To blame the diet is unjustified because in many countries trends of fat consumption and coronary mortality are unrelated,[3,4] and contrary to authorised claims coronary patients do not eat more saturated fatty acids than others; if

anything they eat more of the polyunsaturated variety.[5,6]

Furthermore, Westernisation is also followed by a decrease of total mortality, which means that more people grow old to die from age related disorders such as coronary heart disease instead from malnutrition or infections. Accordingly, increase of coronary mortality is seen in the upper age cohorts only, as is seen for instance in reference 2 of Beaglehole's paper. Such increase is thus not an epidemic, rather, it is a sign of better health.

Although he considers diet important, Beaglehole is wise not to suggest a low fat diet as undernutrition is frequent in developing countries. He could also have mentioned that low cholesterol values are associated with increased non-coronary mortality, as he[7] and others have shown, and that between countries this mortality is inversely correlated with the consumption of saturated fatty acids.[8]

There is no epidemic of cardiovascular disease,[2] and even if there was it could not be prevented by a change of diet.[10]

UFFE RAVNSKOV

S-223 61 Lund,
Sweden

1 Beaglehole R. Cardiovascular disease in developing countries. *BMJ*;**305**:1170-1. (14 November.)
2 Stehbens WE. An appraisal of the epidemic rise of coronary heart disease and its decline. *Lancet* 1987;i:606-11.
3 Masironi R. Dietary factors and coronary heart disease. *Bull World Health Organ* 1970;**42**:103-14.
4 Marmot MG, Booth M, Beral V. International trends in heart disease mortality. *Atheroscl Rev* 1982;**9**:19-27.
5 Garcia-Palmieri MR, Sorlie P, Tillotson J, Costas R, Cordero E, Rodriguez M. Relationship of dietary intake to subsequent coronary heart disease incidence: the Puerto Rico heart health program. *Am J Clin Nutr* 1980;**33**:1818-27.
6 Gordon T, Kagan A, Garcia-Palmieri M, Kannel WB, Zukei WJ, Tillotson J, *et al.* Diet and its relation to coronary heart disease and death in three populations. *Circulation* 1981;**63**: 500-15.
7 Beaglehole R, Foulkes MA, Prior IA, Eyles EF. Cholesterol and mortality in New Zealand Maoris. *BMJ* 1980;**280**:285-7.
8 Hulley SB, Walsh JMB, Newman TB. Health policy on blood cholesterol. Time to change directions. *Circulation* 1992;**86**: 1026-9.
9 Jacobs D, Blackburn H, Higgins M. Report of the conference on low blood cholesterol: mortality associations. *Circulation* 1992;**86**:1046-60.
10 Ravnskov U. Cholesterol lowering trials in coronary heart disease: frequency of citation and outcome. *BMJ* 1992;**305**: 15-9.

Ecstasy and dantrolene

EDITOR,—We disagree with P J Barrett's assertion that "unless an association with neuroleptic malignant syndrome or malignant hyperpyrexia is seriously suspected" the proposed mechanism of toxicity of ecstasy provides no logical reason to administer dantrolene.[1]

Rat studies have shown that ecstasy (3,4 methylenedioxymethamphetamine) causes release of 5-hydroxytryptamine, inhibition of its reuptake, and decreased tryptophan hydroxylase activity in the central nervous system.[2] This causes an increase in the metabolic rate accompanied by peripheral vasoconstriction,[3] which accounts for hyperpyrexia. In that hyperthermia is produced by neurotransmitter imbalance this is at least similar to the neuroleptic malignant syndrome. A major site of the increased metabolic activity is skeletal muscle.[4] On these grounds we believe that use of dantrolene is logical.

Colleagues and I found that non-depolarising neuromuscular blockers alone were ineffective in a patient who had ingested a sister drug of ecstasy, "Eve" (3,4 methylenedioxyethamphetamine).[5] Despite active cooling and infusion of atracurium the patient's rectal temperature rose unchecked to a maximum of 42·2°C. Only after the addition of dantrolene was the temperature normalised—and this within an hour of admission. Despite early aggressive treatment the patient developed rhabdomyolysis and disseminated intravascular coagulation, but he survived.

Experience of managing hyperpyrexia associated with hallucinogenic amphetamines is limited, but on the basis of our experience and that of Singarajah and Lavies[6] we believe that dantrolene should be used. The patient reported on by Campkin and Davies died despite receiving dantrolene[7]: pyrexia reached 42°C. Possibly by that time irreversible changes had occurred, making it too late for dantrolene.

B TEHAN

General Infirmary at Leeds,
Leeds LS1 3EX

1 Barrett PJ. Ecstasy and dantrolene. *BMJ* 1992;**305**:1225. (14 November.)
2 McKenna DJ, Peroutka SJ. Neurochemistry and neurotoxicity of 3,4 MDMA. *J Neurochem* 1990;**54**:14-22.
3 Gordon CJ, Watkinson WP, O'Callaghan JP, Miller DB. Effects of 3,4 methylenedioxymethamphetamine on autonomic thermoregulatory responses in the rat. *Pharmacol Biochem Behav* 1991;**38**:339-44.
4 Rosenberg J, Pentel P, Pond S, Benowitz N. Hyperthermia associated with drug intoxication. *Crit Care Med* 1986;**14**: 964-9.
5 Tehan B, Hardern R, Bodenham A. The hots from Eve. *Anaesthesia* (in press).
6 Singarajah C, Lavies NG. An overdose of ecstasy: a role for dantrolene. *Anaesthesia* 1992;**47**:686-7.
7 Campkin NTA, Davies UM. Another death from ecstasy. *J R Soc Med* 1992;**85**:61.

Assisted conception: cumulative effectiveness

EDITOR,—In commenting on our paper[1] E R Te Velde and colleagues[2] draw attention to the potential bias in life table analysis of fertility treatment due to couples with a less favourable prognosis being excluded from continuing treatment after failure of the treatment. The life table method is essential for fertility studies, but its validity depends crucially on homogeneity of any group being studied. In other words, diagnostic indications for treatment must be accurately defined and incidental adverse factors must be excluded in the first place. In analysing their results Te Velde and colleagues started by including all couples. Their apparent lack of correlation between diagnostic class and discontinuation of treatment, which was, however, related to fertilisation rates, suggests weakness in the diagnostic classification.

In our paper we were careful to confine our life table analysis to women under 40 with normal ovulatory potential and men with normal sperm function (not just simple sperm counts), the specific causes of infertility being usually tubal damage, endometriosis, or prolonged unexplained infertility. We have now analysed the progress of all such couples to subsequent treatments and the outcome, related to the fertilisation rate per oocyte in the first cycle of in vitro fertilisation attempted during 1990 and 1991—this leaves sufficient time for any couples to have tried again if they wanted. We advise such couples who have unexpected failure of fertilisation to try again, in contrast to others with previously defined sperm dysfunction. Subsequent cycles of treatment by only in vitro fertilisation or gamete intrafallopian transfer have been studied. Treatment by intrauterine insemination is not comparable.

The table shows the results. A total of 308 first cycles resulted in a pregnancy rate of 31%. Of those who achieved fertilisation but failed to conceive and were therefore eligible to try again (199), 86 proceeded to further treatment with an overall pregnancy rate of 42% of cycles (44/105)—36% cycles by in vitro fertilisation (27/75) and 57% of cycles by gamete intrafallopian transfer (17/30). Only 4% failed to achieve fertilisation in their first cycle of in vitro fertilisation, but nearly a third of them tried again (not much different from the other groups) and they all achieved favourable fertilisation rates (40-100% of oocytes) and one pregnancy out of five cycles of in vitro fertilisation. Fertilisation failed in three couples because the cultures were contaminated by bacteria in the semen; this was unlikely to recur if they tried again. Only two were advised against a further attempt, because of previous failure at another centre.

These findings show that, if the reason for infertility is properly diagnosed beforehand, the proportion of couples undergoing in vitro fertilisation who have unexpected failure of fertilisation should be small and the failure usually random and not likely to be repeated. Any bias such cases might contribute to life table analysis of cumulative pregnancy rates must be extremely small. In practice, such couples can be encouraged to try again, unlike those who suffer expected failure of fertilisation, usually because of defined sperm dysfunction. In practice few couples persist for more than a few cycles of treatment because of its complexity and cost. The evidence in favour of ultimate success if they are prepared to keep trying seems, however, to be reliable.

DAVID J ROWLANDS
R JAMES ARMATAGE
LYNNE R NICE
MICHAEL G R HULL

University of Bristol IVF Service,
BUPA Hospital,
Bristol BS6 7JJ

1 Hull MGR, Eddowes HA, Fahy U, Ubuzeid MI, Mills MS, Cahill DJ, *et al.* Expectations of assisted conception for infertility. *BMJ* 1992;**304**:1465-9. (6 June.)
2 Te Velde ER, Koudstaal J, Eimers JM. Assisted conception for infertility. *BMJ* 1992;**305**:1097-8. (31 October.)

Outcome of assisted conception treatment by in vitro fertilisation or gamete intrafallopian transfer, related to fertilisation rate per oocyte in first cycle of attempted in vitro fertilisation undertaken during 1990 and 1991 for women under 40 and men with normal sperm. Figures are numbers (percentages)

Fertilisation rate in first cycle (% of oocytes)	Couples	Pregnancies	Couples continuing to subsequent cycle (% eligible)	Results in subsequent cycles	
				Cycles	Pregnancies (per cycle)
0	13	0	4 (31)	5	1 (20)
1-24	12	1 (8)	5 (46)	6	2 (33)
25-49	57	16 (28)	20 (49)	25	11 (44)
50-74	94	30 (32)	31 (48)	36	18 (50)
75-100	132	49 (37)	30 (36)	38	13 (34)

Pregnancy and ionising radiation

EDITOR,—Most women who work in radiology or nuclear medicine departments are worried about the risks to their fetus if they become pregnant. To set these risks in proper perspective, published advice such as that in J G B Russell's editorial is important.[1] In addition, the British Institute of Radiology has produced a booklet containing further information.[2]

Russell states that the dose to the fetus can be reasonably estimated as half that recorded by a film badge worn at the waist. The International Commission on Radiological Protection has proposed a "supplementary equivalent dose limit" of 2 mSv to the skin surface of the woman's abdomen.[3] This is easily measurable with a film badge and can be used as a day to day figure for limiting fetal