hours in the age group 65-75 years,[1] not the three to four days quoted by Mr O'Reilly.

Our second point concerns the action of opiates. Though epidural opiates may give rise to urinary retention, this may be a problem peculiar to this route of administration. Mr O'Reilly and Dr Wight and colleagues seem to confuse the effects of epidural opiates with those of opiates given by either intravenous or intramuscular routes—not noted for their ability to produce urinary retention. To extend this confusion further, as Dr Wight and colleagues have done, by suggesting that naloxone should be used empirically to treat postoperative retention is to go far beyond any evidence. Furthermore, they seem to ignore the fact that patients are given opiates postoperatively specifically to obtund the feeling of pain and reduce the concomitant adverse physiological sequelae. Giving naloxone as suggested would surely reverse the well established benefits of postoperative analgesia.

Overall, though agreeing that unnecessary urethral catheterisation should be avoided if possible, we suggest that anaesthetic agents should not be implicated in the aetiology of urinary retention in the absence of any objective supporting evidence.

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1 O'Reilly PH. Postoperative urinary retention in men. *BMJ* 1991;**302**:864. (13 April.)
2 Wight R, Kennedy H, Abdelal A, Fulton JD. Postoperative urinary retention. *BMJ* 1991;**302**:1151. (11 May.)
3 Virtanen R, Kanto J, Lisalo E, *et al*. Pharmacokinetic studies on atropine with special reference to age. *Acta Anaesthesiol Scand* 1982;**26**:297-300.

Absence of risk associated with exposure to radiation before conception in Japan

SIR,—It is often supposed that there is insufficient information on cases of leukaemia in the offspring of the Japanese survivors of the atomic bombs who were conceived in the first few months after exposure for a comparison to be made with the risks calculated by Gardner *et al* for the doses received in the six months before conception by the workforce at Sellafield.[1]

Using data given to us by the Radiation Effects Research Foundation on children born during May to December 1946 to survivors of the bombings (that is, 9-16 months after the bombings), we have determined that the relative risks of leukaemia in offspring are statistically incompatible (at the 1% confidence level) with those found in children of the Sellafield workforce.[2] This parallels (and is stronger than) the incompatibility in risks found between the two groups in a previous analysis in terms of total dose before conception.[3] Sensitivity analyses indicate that the incompatibility is reasonably robust to possible dosimetric uncertainties in the group of Sellafield fathers, risk modelling assumptions, and the addition of extra cases in the offspring of parents in the highest dose categories of both groups. We believe that cases of leukaemia are unlikely to have been missed through deficient ascertainment (whether by misdiagnosis of leukaemias as some other blood disorder or through deaths due to infection of children in the early stages of leukaemia) in the early years of follow up in the Japanese cohort,[2] so that the possibility of deficient recording of childhood leukaemia before 1950 in the Japanese group accounting for the inconsistency of the two groups[4] can be largely discounted.

Professor Martin Gardner rightly calls attention[5] to the compatibility of the study of Mr James D Urquhart and colleagues in Caithness[6] with the earlier report linking childhood leukaemia and exposure before conception in the Sellafield workforce by Gardner *et al*.[1] The relative risks implied by this study in terms of both the dose in the six months before conception and the total dose before conception, however, are also compatible with those of the Japanese data, as shown in our table. The table shows the deviance statistics (and significance values) associated with fits of exponential relative risk models to the three datasets with various restrictions imposed on the relative risk coefficients. As can be seen, none of the evaluated differences between the Caithness study and the two other datasets approaches significance (for example, for the analysis in terms of the dose in the six months before conception the difference between the deviances of the models in which the risk coefficients for the Caithness study (β_c) and the Japanese (paternal dose) data (β_j) are assumed to be the same and that in which they are not so constrained is 0·622 (p=0·18)).

Compatibility of relative risks of childhood leukaemia resulting from parental exposure to radiation before conception

Constraint*	Controls used for Sellafield data	Japanese dose used	Deviance difference†
Doses in six months before conception			
$\beta_s=\beta_j$ v β_s,β_j	Area	Paternal	5·997 (p=0·01)
$\beta_s=\beta_j$ v β_s,β_j	Local	Paternal	7·639 (p<0·01)
$\beta_s=\beta_j$ v β_s,β_j	Area	Joint parental	6·011 (p<0·01)
$\beta_s=\beta_j$ v β_s,β_j	Local	Joint parental	7·663 (p<0·01)
$\beta_s=\beta_c$ v β_s,β_c	Area		0·010 (p=0·93)
$\beta_s=\beta_c$ v β_s,β_c	Local		0·081 (p=0·80)
$\beta_c=\beta_j$ v β_c,β_j		Paternal	0·622 (p=0·18)
$\beta_c=\beta_j$ v β_c,β_j		Joint parental	0·584 (p=0·16)
Total doses before conception			
$\beta_s=\beta_j$ v β_s,β_j	Area	Paternal	4·091 (p=0·05)
$\beta_s=\beta_j$ v β_s,β_j	Local	Paternal	5·205 (p=0·03)
$\beta_s=\beta_j$ v β_s,β_j	Area	Joint parental	3·934 (p=0·08)
$\beta_s=\beta_j$ v β_s,β_j	Local	Joint parental	5·042 (p=0·04)
$\beta_s=\beta_c$ v β_s,β_c	Area		1·740 (p=0·28)
$\beta_s=\beta_c$ v β_s,β_c	Local		2·103 (p=0·25)
$\beta_c=\beta_j$ v β_c,β_j		Paternal	0·517 (p=0·54)
$\beta_c=\beta_j$ v β_c,β_j		Joint parental	0·540 (p=0·52)

*β_s=Relative risk coefficient for Sellafield data. β_j=Relative risk coefficient for Japanese data. β_c=Relative risk coefficient for Caithness data.
†All p values estimated by 500 Monte-Carlo simulations.

Different rates have been proposed as a possible explanation of differences in risks between the Sellafield and Japanese datasets.[1] Various animal data indicate that although the mutation rate in spermatogonia depends partially on the rate, that in spermatozoa and spermatids is largely insensitive to dose rate,[7] suggesting that differences in the dose rate in the few months before conception between the two groups of children cannot account for the difference between the relative risk coefficients.

The findings of Kinlen *et al*[8] and Cook-Mozaffari *et al*,[9] which suggest that non-radiological factors may be important determinants of the risk of childhood leukaemia, have recently been supported by Alexander *et al*,[10] whose work indicates an infectious aetiology and suggests that community isolation is an important risk factor.

Given these arguments and the incompatibility between the Sellafield and Japanese data, consideration should be given to the several possible explanations other than preconceptional exposure to radiation that have been proposed for the excess of leukaemia among children of the village of Seascale near Sellafield—for example, factors (occupational or otherwise) that might be related to but not causally associated with exposure to radiation.

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1 Gardner MJ, Snee MP, Hall AJ, Powell CA, Downes S, Terrell JD. Results of case-control study of leukaemia and lymphoma among young people near Sellafield nuclear plant in West Cumbria. *BMJ* 1990;**300**:423-9.
2 Little MP. A comparison of the apparent risks of childhood leukaemia from parental exposure to radiation in the six months prior to conception in the Sellafield workforce and the Japanese bomb survivors. *Journal of Radiological Protection* (in press).
3 Little MP. A comparison between the risks of childhood leukaemia from parental exposure to radiation in the Sellafield workforce and those displayed among the Japanese bomb survivors. *Journal of Radiological Protection* 1990;**10**:185-98.
4 Greaves MF. The Sellafield childhood leukemia cluster: are germline mutations responsible? *Leukemia* 1990;**4**:391-6.
5 Gardner MJ. Radiation workers and childhood leukaemia. *BMJ* 1991;**302**:907. (13 April.)
6 Urquhart JD, Black RJ, Muirhead MJ, Sharp L, Maxwell M, Eden OB, *et al*. Case-control study of leukaemia and non-Hodgkin's lymphoma in children in Caithness near the Dounreay nuclear installation. *BMJ* 1991;**302**:687-92. (23 March.)
7 Abrahamson S. Childhood leukemia at Sellafield. *Radiat Res* 1990;**123**:237-8.
8 Kinlen L, Clarke K, Hudson C. Evidence from population mixing in British new towns 1946-85 of an infective basis for childhood leukaemia. *Lancet* 1990;**336**:577-82.
9 Cook-Mozaffari PJ, Darby SC, Doll R. Cancer near potential sites of nuclear installations. *Lancet* 1989;ii:1145-7.
10 Alexander FE, Ricketts TJ, McKinney PA, Cartwright RA. Community lifestyle characteristics and risk of acute lymphoblastic leukaemia in children. *Lancet* 1990;**336**:1461-5.

Resuscitation of children who nearly drown

SIR,—Drs A M Kemp and J R Sibert report the outcome in children in the British Isles who nearly drowned.[1] We have successfully resuscitated children found drowned in the winter waters of the Thames, or face down in garden ponds, despite their having fixed dilated pupils and having been immersed for up to 30 minutes.

There are additional eye signs. Ophthalmoscopy may show discontinuity of columns of blood in retinal vessels ("trucking"), but this is an inconsistent sign difficult to interpret. There may be a "swimming" appearance on ophthalmoscopy, like looking through a glass pane of irregular thickness; the retina is seen clearly in parts. This seems to be due to patchy changes in refraction in the vitreous humour due to anoxia.

If there are fixed dilated pupils and no such distortion effects on funduscopy it is worth continuing resuscitation (unless there are other contraindications). I have never found continued resuscitation of children or adults to be successful when the signs of distortion have been present.

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1 Kemp AM, Sibert JR. Outcome in children who nearly drown: a British Isles study. *BMJ* 1991;**302**:931-3. (20 April.)

Hypnotic analgesia?

SIR,—Recently, in its series *Your Life in Their Hands*, BBC2 transmitted the clearest documentary I have ever seen on major operations carried out without anaesthesia. It provided sufficient precise detail to allow consideration of this phenomenon. Unfortunately, your critic, Dr Chris McManus, simply dismissed the programme as a "demonstration of the well known power of hypnotic analgesia" and "unworthy of a once respected and serious medical programme." He is wrong.

It is a well known tactic to rubbish a phenomenon whose mechanism one does not understand by labelling it as another, equally poorly understood phenomenon. The BBC scriptwriters, who are not doctors, used the same tactic as Dr McManus when they slipped in one sentence: "Perhaps it is ethereal-like extrasensory perception." To slap such labels on events adds nothing and explains nothing. Dr McManus even gets his