

treatment pose any risk that could further erode quality of life?". If the situation is that of dubious gain at considerable risk then criticism almost to the level of negligent assault becomes a possibility if the patient or their advocate have not been involved.

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SIR—In your perceptive editorial you raise several issues about elderly patients. The trap of ageism is very real: although I operated an unwritten unagreed policy about admission to an intensive therapy unit some years ago (which was wrong), I am concerned about present management in hospital of elderly patients. In the UK, too often, management, when it involves anaesthesia and surgery, is delegated to trainees. In anaesthesia, junior doctors tend to administer fluids too generously and to ignore the effects of intercurrent disease, whereas in surgery, they may take too long to perform (and sometimes the wrong) operations.

Although all old people have to die sometime, the question after the event that needs an answer is, "did they have to die when they did?". The answer to this question is important because it reveals the quality of the delivery of care. Gerontophobia may exist but I doubt that it should be countered, as you suggest, by "learning to enjoy working with elderly people". Rather, perhaps, by an appreciation of and research into gerontophysiology and pharmacology, so that appropriate actions are taken.

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SIR—Your concerns about medical practice and the elderly extend to resuscitation policy and its implementation. Clearly resuscitation in the elderly can only be justified if subsequent outcome measures, in terms of survival and quality of life, are adequate.¹ We have examined the influence of age on outcome in patients who are resuscitated after out-of-hospital cardiac arrest. Such patients have a high overall mortality.^{2,3} Total mortality data do not, however, predict the patient's outlook in hospital, since most deaths occur before admission. Studies of in-hospital mortality are often limited by small cohorts or by a long study period during which resuscitation techniques and aftercare may change. At Edinburgh Royal Infirmary we are investigating patients who have survived out-of-hospital cardiac arrest.

Our centre has admitted 200 such patients since April, 1990. We have examined the effect of patients' age on in-hospital mortality, and on place of discharge. The overall in-hospital mortality for those who survived to reach hospital (all types of cardiac arrest) was 57%, which is close to data from other centres worldwide. We have shown that in-hospital mortality does not correlate strongly with patients' age (table), and that of 25 patients aged over 70 years who were discharged from hospital only 1 subsequently required placement in a long-stay care facility. The remainder were discharged home or to the care of their families.

Age (yr)	Total no admitted	Patients surviving to discharge	Deaths during Index admission	Mortality (%)
15-60	67	26	41	61.2
61-70	67	33	34	50.7
>70	66	25	41	60.9
Overall	200	86	114	57

Differences between groups are not significant.

Table: **Outcome by age in patients admitted after out-of-hospital cardiac arrest during 3 years from April, 1990**

Elderly patients who survive out-of-hospital cardiac arrest to be admitted seem to have much the same prospect of being discharged alive as do younger patients, and most survivors are discharged to their own home or families. We believe, on the basis of our findings, that a decision to resuscitate must be made in the context of the patient's previous quality of life and current illness rather than on the basis of age alone.

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- 1 Tresch DD, Thakur RK, Hoffman RG, Olson D, Brooks HL. Should the elderly be resuscitated following out-of-hospital cardiac arrest? *Am J Med* 1989; **86**: 145-50.
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- 3 Weaver WD, Cobb LA, Hallstrom AP, Fahrenbruch C, Copass MK, Ray R. Factors influencing survival after out-of-hospital cardiac arrest. *J Am Coll Cardiol* 1986; **7**: 752-57.

SIR—The similar lethality of pneumonia at different ages that Brancati and colleagues report is puzzling. One accepts the inevitable contradictory findings of sequential epidemiological studies as indicative of selective biases. They do not mention the effects, if any, of smoking. The importance of confounding factors such as smoking, and the selectivity of exclusions such as pneumonia in the past 6 months affect acceptance by the reader. Many studies suggest that smokers and to a lesser extent former smokers have impaired pulmonary and cardiovascular functions that would affect the lethality of pneumonia. These impairments include loss of ciliated cells, lessened vital capacity, and increased bronchitis, emphysema, and asthmatic reactions, as well as more frequent infections.¹ Their conclusions may be correct but an important confounding factor is ignored.

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- 1 Higgins MW, Enright PL, Kronmal RA, Schenker MB, Anton-Culver H, Lyles M. Smoking and lung function in elderly men and women. *JAMA* 1993; **269**: 2741-48.

Population variation in ovarian function

SIR—Ovarian function can be modulated by several factors, including age, parity, intensity of lactation, exercise, nutritional status, energy balance, and diet.¹ Such modulation may have an appreciable impact on individual variance in fecundity and may also be important in the cause of breast, ovarian, and uterine cancers within individuals.² Yet despite the importance to women's health and reproductive capacity, scant information exists on natural variation in ovarian function at the population level.

We have done comparative studies of ovarian function in four populations of distinct genetic, geographical, ecological, and cultural backgrounds: middle-class women in Boston, USA; Lesé horticulturalists in the Ituri Forest of Zaire; Tamang agro-pastoralists in central Nepal; and Quechua Indians in highland Bolivia. We collected serial saliva samples from adult women with regular menstrual cycles in each of these populations for the analysis of progesterone content with standardised protocols in both the field and the laboratory.³ The results indicate that considerable inter-population variance exists in this index of ovarian function (figure). Differences between the four populations in average progesterone profiles are highly significant by repeated-measures analysis of variance ($p < 0.001$).

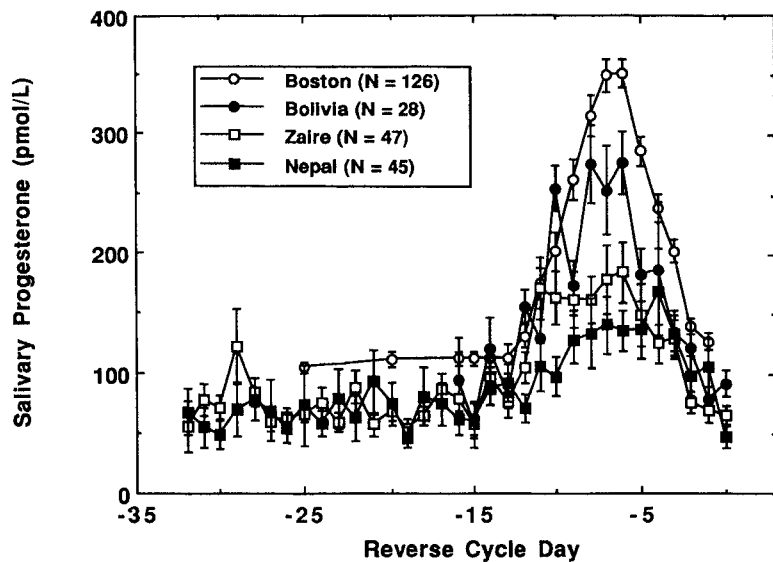


Figure: Average (SE) of daily salivary progesterone assays for women from four populations aligned on menstrual onset

The cause of this inter-population variation in progesterone is unclear. It may result from acute differences in health, diet, energy balance, or other factors, or may be the result of chronic differences in such factors during development.⁴ Whether such differences in average ovarian steroid profiles contribute to population differences in fecundity or to the epidemiology of breast and reproductive tract cancers at the population level is also unclear. These questions deserve attention. The average ovarian hormone concentrations in developed western populations may represent one extreme of the global distribution of ovarian function rather than an ideal normal.

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Pre-emptive analgesia: sufficient to change practice?

SIR—We would like to believe that there is a pre-emptive effect of analgesics, so that preoperative analgesia reduces postoperative pain. Unfortunately your commentary (July 10, p 65) is less than systematic in reviewing the evidence. We have to consider 3 types of intervention: local anaesthetic, non-steroidal anti-inflammatory drugs (NSAIDs), and opioids. The commentary dismisses lack of pre-emptive effect with local anaesthetics by saying that the patients had all had opioids. Preoperative caudal blocks, however, showed no more benefit than the same procedure done after surgery, and no opioid was given.¹ The

NSAIDs are not mentioned in the commentary. Of the 3 studies comparing preoperative and postoperative NSAIDs none showed any difference;²⁻⁴ 2 of the 3 were not "contaminated" by use of opioids. Preoperative and postoperative paracetamol (with no opioid premedication) showed no pre-emptive effect.⁵

The evidence for a pre-emptive effect with opioids rests on two papers.^{6,7} Neither is clear-cut: in the intravenous study⁶ there is conflict within and between the three outcomes; in the epidural study⁷ there was a significant advantage for the preoperative over the postoperative dose at only one of 6 sample times. The evidence does suggest that there may be a pre-emptive effect of opioids. This is an "almost" answer to an academic question rather than grounds for changing clinical practice. We hope that the evidence to convince us will emerge.

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Transmission of *Pseudomonas cepacia* by social contact in cystic fibrosis

SIR—Govan and colleagues' (July 3, p 15) suggestion that transmission of *Pseudomonas cepacia* in patients with cystic fibrosis (CF) is mainly by social contact concurs with our experience. Routine culture of all sputum samples from CF patients attending our clinic began in March, 1991, with the use of selective medium (Mast Diagnostic, Bootle, UK). In the 3 weeks following the introduction of routine culture an organism was isolated from 6 patients which proved to represent one type of *P cepacia*. *P cepacia* was typed by pyrolysis mass spectrometry.¹

From May, 1991, all CF patients known to be colonised with *P cepacia* were admitted to another ward in the hospital so that they had no contact with non-colonised patients. Outpatients were not segregated. However, during the next 4 months this type of *P cepacia* was found as a new isolate in 2 further CF patients who had previously been negative with selective media. These patients had extensive social contact with other patients colonised with this type of *P cepacia*. In August, 1991, the Adult Cystic Fibrosis Association discontinued its meetings in the Liverpool area and patients colonised with *P cepacia* had much less social contact with non-colonised patients. After this change, there were no new isolates of this type of *P cepacia* in our clinic.

2 patients became colonised with *P cepacia* in April, 1993. 1 of these is an infant who has been admitted to neither of our CF wards and who has attended our clinic on one occasion only. The other is a child who had little social contact with