The alleged roles of passive smoking in causing lung cancer and excess salt in causing hypertension have been endorsed by many medical bodies, incorporated into public policy, and presented to the public as scientific facts that should be acted on. It is a revealing commentary on the intellectual status of public health epidemiology that the statistical fiction on which this and similar misleading advice is derived should have gone unchallenged for so long.

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- 1 Egger M, Davey Smith G. Misleading meta-analysis. *BMJ* 1995;310:752-4. (25 March.)
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Registers for clinical trials already exist

EDITOR,—In their editorial on misleading meta-analyses, Matthias Egger and George Davey Smith point out that bias is a major cause of error because of the tendency for negative trials to disappear from view.¹ They call for registers of clinical trials to be established. The Medical Research Council already runs a register for cancer trials, and the national research and development programme has a project register system, which can do the job for other trials.

Ethics committees should ensure that investigators intend to publish their trial, perhaps requiring all patients to be informed that registration and publication will occur so that they can be reassured that their participation will benefit others. The project register system can then register the trials so that even the smallest negative trial, which is most likely to be the subject of publication bias, will be available to meta-analysis of the future.

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Variability among studies should be investigated

EDITOR,—Matthias Egger and George Davey Smith explain how pooling of smaller studies can turn out to be misleading after the subsequent publication of larger trials and suggest that meta-analyses of small trials should now be distrusted, even if their combined effect reaches significance.¹ Yet they also point out that evidence from mega-trials will continue to be unavailable for most medical interventions, and hence meta-analyses of smaller trials remain the only apparent way of appraising available evidence.

The various statistical manoeuvres that the authors suggest to remedy this situation ignore one important focus of meta-analysis—namely, the degree of variability, or spread, among different studies. One way of analysing this is to perform a χ^2 test of deviations of individual studies from the overall mean achieved by pooling the studies.² A significant P value for this test suggests a considerable amount of variability around the summary result. This approach could provide a more precise statistical test of whether meta-analysis of results of small trials should be distrusted or questioned.

Interestingly, the next issue of the *BMJ* con-

tained a meta-analysis of the efficacy of tricyclic drugs in treating child and adolescent depression in which a χ^2 test of heterogeneity of the different studies' results (as measured by changes in outcome score) was performed; this was significant at $P=0.05$.² This significant variability across studies was largely ignored in that paper. This, alongside the neglect of measures of dispersion in Egger and Davey Smith's editorial, testifies to a current tendency to overlook the issue of variability across results of studies in meta-analysis.

Obviously if all studies give the same result there is no point in a meta-analysis; such a statistical exploration becomes of interest only in the context of variability among studies. But widely differing findings across many studies surely demand an exploration of the reason for the variability, not just an attempt to derive a mean result. In the case of drug trials in particular, in which significant heterogeneity in results may be accounted for by different drug doses used, accounting for variation may be a better purpose for meta-analysis than merely deriving an average result.

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- 1 Egger M, Davey Smith G. Misleading meta-analysis. *BMJ* 1995;310:752-4. (25 March.)
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Fish oils and cardiovascular disease

EDITOR,—In their editorial B N C Pritchard and colleagues concluded that fish oils have beneficial effects on lipids and the haemostatic system, but they pressed for more studies in diseases related to atherosclerosis.¹ We wish to reinforce this recommendation, particularly in relation to diabetes.

Two studies in which we have been involved have suggested possible adverse effects on the coagulation system. In the case of patients with insulin dependent diabetes a randomised trial showed significant increases in fibrinogen and clotting factor X concentrations in the group that took a fish oil supplement.² In a separate trial in patients with non-insulin dependent diabetes factor VII concentration increased significantly in the group receiving the fish oil preparation; this group also showed worsening glycaemic control.³ Fibrinogen and factor VII may be risk factors for ischaemic heart disease.⁴ Thus these apparently adverse effects on the coagulation system may outweigh other potentially beneficial effects on platelet function. We are therefore concerned that the use of fish oil in diabetic subjects should be reserved for those participating in well designed trials to investigate further the effect of fish oils on the risk of ischaemic heart disease.

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- 1 Pritchard BNC, Smith CCT, Ling KLE, Betteridge DJ. Fish oils and cardiovascular disease. *BMJ* 1995;310:819-20. (1 April.)
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Advance directives

Approved guidelines are now required

EDITOR,—While it is useful to know that the Law Commission has followed the House of Lords in appearing to support the concept of advance directives,^{1,2} it is disappointing that more formal guidelines have not been suggested or approved. Keeping concepts in loose terms may satisfy the lawyers, who may in turn make incomes out of the loopholes, but this will not help our patients. Who will define capacity and the ability to consent or withhold consent? At present the final arbiter is the law, but recent cases suggest that this is muddled and not helpful to medical practitioners or patients.

We like to believe that adults without mental illness have a right to self determination, yet Re T and Re S both indicate that this is not so.^{3,4} Re T concerned a Jehovah's Witness who refused blood transfusion: the courts decided that her decision had been made and her religious persuasion determined under coercion and rejected her autonomous choice not to be given a transfusion when she could not defend herself against that decision.³ Re S concerned a woman whom the court ordered to have a caesarean section against her will.⁴ In contrast, in another recent case, Re C, a patient with paranoid schizophrenia in hospital, who thought that he was a medical practitioner, refused treatment and was deemed competent by the court to do so.⁵

If competent people refuse treatment in the present then the ability of an advance directive to be binding in the future must be severely compromised. In addition, if an incarcerated psychotic patient can be granted full competence on medical matters then presumably demented or other equally compromised patients will be able to make full autonomous decisions, upheld by the courts, irrespective of any existing directive. The only thing that will be achieved will be further legal intrusions into clinical decision making; patients do not stand to benefit.

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- 1 Doyal L. Advance directives. *BMJ* 1995;310:612-3. (11 March.)
- 2 House of Lords Select Committee on Medical Ethics. *Report*. London: HMSO, 1994. (HL paper 21.)
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- 4 Re S [1992] 9 BMLR 69.
- 5 Re C [1993] 15 BMLR 77.

Law Commission's report makes no provision for dissenting doctors

EDITOR,—There is more to some advance directives than the extension of autonomy by a once competent patient. That of the Voluntary Euthanasia Society, for example, requires that insulin is withheld when required from a signatory who develops presenile dementia. If that advance directive were legally enforceable the doctor would have to give way to a patient's wish to have death brought forward by unreasonable measures.

Len Doyal¹ does not mention a serious deficiency in the Law Commission's draft legislation—namely, the lack of any provision for a doctor to dissent for medical or moral reasons from implementing an advance directive. If the document cannot require doctors to act unlawfully, as the Law Commission claims, then it should not require them to act unethically either.

Practical problems can be foreseen: a patient who has taken an overdose may have signed an advance directive stating "do not resuscitate," or a directive stating "I am not to be subjected to any medical treatment aimed at prolonging or sustaining life" may be found when a patient is on the operating table. Nor should it be accepted that analgesics can be used to treat thirst when simple help with nutrition will suffice.

When advance directives have been made legally enforceable, problems such as these have arisen. The doctor has been unable to treat a conscious patient who has lost the capacity to revoke the directive. As a result the patient has suffered, sometimes greatly.

The BMA's original stance on advance directives was that they should not be legally binding but should be a starting point for an improved dialogue with patients over choice of treatment. After certain judgments there has been an overhasty change. There is still, however, no mandate for the BMA's council to support the Law Commission's recommendations without widely consulting members.

There is no evidence in Britain that patients who become incompetent are being treated against their wishes or against their best interests. Nor is there any study of what the general public, as opposed to pressure groups that are seeking to advance their own agenda, really want. The original concept of a living will was introduced by Kutner in a commentary entitled "Due process of euthanasia: the living will a proposal."²

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- 1 Doyal L. Advance directives. *BMJ* 1995;310:612-3. (11 March.)
- 2 Kutner L. Due process of euthanasia: the living will a proposal. *Indiana Law Journal* 1969;XLIX:539-54.

Incompetence develops gradually

EDITOR,—Incompetence is not an all or nothing issue (as the Law Commission recognises).¹ Dementia may cause a gradual erosion of competence, and it might be difficult to decide at what point a patient lost the ability to revoke an earlier advance directive. This can be covered in a properly framed law, but we must be vigilant to make sure that the law is properly framed and that doctors are not made to face unnecessary and impossible moral and ethical dilemmas by an oversimplistic approach.

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Keyhole surgery

EDITOR,—M J Notaras may make a case for the development of specialised (perhaps private) hernia centres but fails to make any case against laparoscopic hernia repair.¹ It is true that excellent results are reported from internationally recognised hernia repair centres (although the completeness and methods of follow up do not always stand close examination). Unfortunately, however, everyday clinical reality is different. In Britain most hernias are not repaired by experts and those of us who audit hernia repairs are aware that results are far from satisfactory.

An epidemiological study of open hernia repair in a health district in Britain reported poor results, although absolute numbers of patients were not published: recurrence had occurred by three years in 31% of cases, wound infection in 14%, persistent deep sinuses in 6%, persistent pain in 16%, and

testicular atrophy in 7%, and altogether 47% of patients were dissatisfied.² Probably this represents the worst end of the spectrum, but such results may not be as atypical as we would like to think. It is incorrect to state that organ injury and death do not occur with open elective hernia repairs. They do but are rarely reported.

Laparoscopic hernia repair can be safely carried out as a day case procedure with an entirely extraperitoneal approach. True, at present general anaesthesia is required, but in our experience most patients prefer this, and local anaesthesia is not without complications. A recently published randomised trial has indicated an overall advantage for laparoscopic repair in terms of more rapid discharge and convalescence,³ and our experience of over 700 cases supports this strongly; the advantages are even more obvious for bilateral and recurrent hernia repair.

Are such trials justified? Notaras would have us believe not, but they must take place. Perhaps the opponents of trials are frightened of the results. The mere preference of a surgeon for a particular technique does not necessarily mean that it is the best. We agree that in skilled hands the Lichtenstein repair is an excellent operation, but let it be put to the test in a randomised trial against the best laparoscopic techniques.

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- 1 Notaras MJ. Keyhole surgery. *BMJ* 1995;310:871-2. (1 April.)
- 2 Devlin B. In: Katkhouda N. Treatment of bilateral hernia by open surgery—the STOPPA positional repair. In: Schumpelick V, Wantz GE, eds. *Inguinal hernia repair*. Basel: Karger, 1995.
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Accident and emergency radiology

"Rule of two" is outmoded and unhelpful

EDITOR,—We disagree with several parts of the "rule of twos" in Robin Touquet and colleagues' article on teaching radiology in accident and emergency medicine.¹ The authors state that when a fracture is suspected the radiograph must include the joint at either end of the long bones because of the risk of an associated dislocation or subluxation. If this practice were carried out then all radiographs of twisted ankles would include the knee and all radiographs of sprained wrists would include the elbow. This is clearly not practical or necessary. It is true that in certain instances, such as a fracture of the medial malleolus, there may be an associated fracture of the upper end of the fibula. A senior house officer should know this and carefully examine the knee, obtaining radiographs only in those cases in which there is tenderness. There is also a danger that the radiographer may be tempted to include both joints and the long bone in a single film. This results in an inadequate examination of both joints because of the divergence of the x ray beam and difficulty in getting both joints square on to the film.

It is suggested that in a child with limited extension of the elbow after injury a radiograph of the normal side should be obtained for comparison at the outset. This is an outmoded practice, and few mothers nowadays will allow an x ray examination of an unaffected limb just because the doctor does not know what normality looks like. In our department we have a book showing normal elbows at various stages of development. I cannot remember the last time we obtained a radiograph of a joint for comparison.

The authors recommend that radiographs

should be obtained before and after the removal of a foreign body in a wound. It is more sensible to remove any obvious foreign bodies, clean the wound, and then obtain a radiograph to see if any foreign bodies remain in the wound. Obtaining a radiograph of something that can be seen with the naked eye is pointless.

The rule of twos is unhelpful. It results in too many radiographs, too much radiation, and too much cost.

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- 1 Touquet R, Driscoll P, Nicolson D. Teaching in accident and emergency medicine: 10 commandments of accident and emergency radiology. *BMJ* 1995;310:642-5. (11 March.)

Comparison view radiographs are not routinely required

EDITOR,—Robin Touquet and colleagues state that "a child with limited extension of the elbow after injury should have radiographs taken of both elbow joints for comparison at the outset."¹ This suggests that comparison views should be taken as a routine in all cases, and we take issue with this.

Firstly, this guidance is directly contrary to recommendations produced by the Royal College of Radiologists.² Secondly, contralateral radiographs are superfluous if the fracture is visible in radiographs of the affected side. Thirdly, comparable radiographs of the contralateral side are difficult to obtain. Radiographs of the affected side are often poorly positioned because of pain and swelling. If contralateral views are to be used one should ensure that the exact position of the affected side is mimicked. Fourthly, contralateral views are unnecessary if good radiological opinion is readily available. Finally, the diagnosis of subtle fractures around the elbow joint will not necessarily change the clinical management. While we agree that radiographs of the elbow in children can be difficult to interpret, we believe that the correct approach is to combine the results of clinical examination with expert radiological advice. This may occasionally result in further radiological examination being advised.

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- 1 Touquet R, Driscoll P, Nicolson D. Teaching in accident and emergency medicine: 10 commandments of accident and emergency radiology. *BMJ* 1995;310:642-5. (11 March.)
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Elderly people and the 1990 act

EDITOR,—Victoria Ajayi and colleagues state that "the reduction in the length of hospital stay is consistent with the findings that after the legislation patients were more likely to be in hospital for rehabilitation than awaiting placement."¹ Our experience in Edinburgh seems to confirm this finding.

Since 1988 we have carried out five surveys to monitor the prevalence of elderly patients awaiting placements for long stay care in our general hospitals. The first two surveys were reported in 1992² and the results of the last three surveys have