incidence of breast cancer in the United States,² it is impossible to draw any conclusions about the effectiveness of screening from studying simple incidence and mortality data. Only analysis of randomised controlled trials can assess whether mammography is an effective method of reducing mortality from this disease. Recently published overview data from the combined Swedish trials show a 29% reduction in mortality from breast cancer in screened women aged between 50 and 69.⁴ Barmus also criticises screening for the large number of patients having unnecessary investigations and surgery. While this may be true for the United States, in Scotland 126 867 women were screened during April 1991 to March 1992 and 794 underwent biopsy after breast screening. Of these, 570 were subsequently shown to have breast cancer, a ratio of malignant to benign biopsies of 2.5:1.⁵ The number of patients undergoing unnecessary surgery is therefore small.

Hewitt states the commonly held view that women who have breast cancer detected by screening have a decreased quality of life, but a recent study of long term survivors with breast cancer detected by screening found that psychological morbidity was less than in aged matched women without breast cancer.³ A recent consensus statement by the European Society of Mastology, which has considered all available data on breast screening, concludes that breast screening should be available for all women aged 50 or over throughout Europe.³ All efforts should be directed to achieving this rather than expounding viewpoints that do not have a sound scientific basis.

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- 1 Hewitt H. Screening for breast cancer. *BMJ* 1993;307:1281. (13 November.)
- 2 Barmus B. Screening for breast cancer. *BMJ* 1993;307:1281. (13 November.)
- 3 Wald NJ, Chamberlain J, Hacksaw A. Report of the European Society for Mastology breast screening evaluation committee (1993). *Breast* 1993;2:209-16.
- 4 Nystrom L, Rutqvist LE, Wall S, Lingren A, Lindqvist M, Ryden S, et al. Breast cancer screening with mammography: overview of Swedish randomised trials. *Lancet* 1993;341:973-8.
- 5 Scottish breast screening report 1993. Edinburgh: Common Services Agency, 1993.

Screening programme not cost effective

EDITOR,—Examination of the data from the United Kingdom's breast screening programme from March 1991 to April 1992¹ reported by J Chamberlain and colleagues allows some tentative conclusions to be drawn about the costs and potential benefits. Altogether 1 028 984 women accepted an invitation for mammographic screening. With a recall rate of 6.2% there would have been an extra 63 797 tests, making a total of 1 092 781 tests. It is reported that 6605 cancers were detected. Of these, 1465 (22%) were palpable. It follows that 78% of cancers could in principle have been detected by clinical examination and at a much lower cost, especially if the examinations were performed by the women's general practitioner. MacEwan estimated the cost of a mammogram at \$C59,² so the cost of this screening round would be about \$C64m.

Chamberlain and colleagues attach great importance to the number of palpable lesions, stating, "A more important indication of screening performance is the rate at which small invasive cancers were detected, shown as 1.4/1000 screened in the first round." Thus mammography was used primarily to detect the 1465 palpable cancers at a cost of \$C44 010 per cancer. But not all these women will benefit. Skrabanek pointed out that when a tumour reaches 10 mm it has been growing for an average of 8-12 years and will probably have metastasised.³ He also pointed out that there are

many small lesions whose natural course is not well established. Other authors agree that more research is needed to evaluate the natural course of minimal lesions, some of which may never become life threatening. If all minimal lesions are treated there will be overtreatment; if not, the purpose of screening will be defeated. Skrabanek has questioned the benefits accruing from the Swedish screening trial, whose results were adduced to show the feasibility of obtaining a 30% reduction in mortality from breast cancer.⁴

Mammography has been criticised as an unsuitable screening test. The wisdom of compressing malignant tumours, as is now customary with this imaging process, has been questioned.⁵ There have been reports of cysts rupturing during mammographic compression. This gives credence to the view that mechanical squeezing of a breast containing a neoplasm may disseminate cancer cells and cancer cell emboli. Certainly, manipulation of tumours can increase the number of metastases in experimental animals. The lack of a clinical examination before mammographic investigation in the screening service in the United Kingdom means that tumours of all sizes are subjected to compression, whether essential or not.

In view of the high cost of screening and the small reported reductions in mortality, we believe it might be wiser to redirect these funds to target research into the biology of cancer and into new strategies for its treatment.

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- 1 Chamberlain J, Moss SM, Kirkpatrick AE, Mitchell M, Johns L. National Health Service breast screening programme results for 1991-2. *BMJ* 1993;307:353-6. (7 August.)
- 2 MacEwan DW. Screening mammography program delay recommended by Manitoba working group: issues for radiology. *Eur J Radiol* 1993;15:289-92.
- 3 Skrabanek P. Benefits of mass breast screening rest on equivocal evidence. *Diagnostic Imaging International* 1988;4(3):29-34.
- 4 Skrabanek P. Shadows over screening mammography. *Clin Radiol* 1989;40:4-5.
- 5 Watmough DJ, Quan KM. X-ray mammography and breast compression. *Lancet* 1992;340:122.

Management of trauma

EDITOR,—The impression gained by Jon Nicholl and colleagues—"that the trauma centre is showing promising results is founded on the results put out by the trauma centre itself"—is correct.¹ We work in the north west midlands trauma system and believe that we have a duty to audit our work and that the results of our internal audit should not be secret. We are obviously pleased that "early results are promising," and we emphasise that these are our early results. At the North Staffordshire Hospital there has been a decrease in mortality with a corresponding decrease in hospital stay for severely injured patients, and analysis of outcome with the combined trauma and injury severity score has shown a continuing improvement as the number of unexpected deaths has fallen. The study being undertaken by the Medical Care Research Unit at the University of Sheffield is separate from our audit. We must emphasise, however, that the study, though commissioned by the Department of Health and clearly important to the department, cannot be the sole arbiter on this important matter.

We are looking forward to the results of the study by the University of Sheffield, which, unfortunately, will not be published until a year after the project has finished. It is because we believe that new forms of health care should not be offered within the NHS until their effects have been assessed that we have had to look to our own data to help us plan for the immediate future.

The trauma centre evaluation project started in July 1991, and it may be several more years before

all that we have planned over the past two years finally bears fruit. In the meantime we and others must collect and publish as much information as possible to continue to inform the debate to ensure that we develop the best system of trauma care for severely injured patients in Britain.

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- 1 Nicholl J, Brazier JE, Williams BT. Management of trauma. *BMJ* 1993;307:683-4. (11 September.)

Clinical ecology

EDITOR,—Keith Mumby claims to be "at the leading edge," but I cannot find his "pioneer clinical observations" in any journal.¹ The references in his article are highly selective, in contrast to those in the reports on clinical ecology by committees of the Royal College of Physicians and the American College of Physicians.² Those committees concluded—as have many others—that the claims of clinical ecologists are not supported by valid objective evidence.

The emphasis on allergy rather than conventional diagnoses often leads to failure to offer proved treatment. I have seen a wide range of serious physical conditions left untreated for months to years. Clinical ecology particularly blames allergy as the cause of psychiatric symptoms. This is often grasped gratefully by patients terrified of the perceived stigma of psychological illness. These patients commonly get worse rather than better while receiving ecology treatment.^{3,4} In avoiding putative environmental triggers they often adopt more and more restricted, bizarre lifestyles.⁴

Even in psychologically normal subjects the provocation-neutralisation technique, which is commonly coupled with strong suggestion from a highly personable operator, can lead to conditioned phobic responses. Physical symptoms are then often mediated by hyperventilation. I often see patients in whom progressive food avoidance has produced malnutrition.

Orthodox medicine has already looked fairly at the claims of clinical ecology and considers them unproved. Surely it cannot therefore be appropriate to continue to use them, except possibly as part of a controlled clinical trial to assess their validity, and to which each subject gives informed consent.

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- 1 Mumby K. Science or flat earthers? The clinical ecologist replies. *BMJ* 1993;307:1055-6. (23 October.)
- 2 American College of Physicians. Position paper: clinical ecology. *Ann Intern Med* 1989;111:168-78.
- 3 Rix KJB, Pearson DJ, Bently SJ. A psychiatric study of supposed food allergy. *Br J Psychiatry* 1984;145:121-6.
- 4 Terr AI. Environmental illness: a clinical review of 50 cases. *Arch Intern Med* 1986;146:145-9.

Designing a questionnaire

Send a personal covering letter

EDITOR,—In writing about designing a questionnaire D H Stone only briefly mentions a covering letter for postal questionnaires.¹ The importance of such letters has been debated: one experiment found no significant difference in response rate between a sample of people sent a relatively impersonal letter and a sample sent a relatively