described but mistaken fears about quality of care and patient satisfaction that prevents team care progressing.

Let there be no mistake, I believe in the National Health Service, I love working in it, I am happy to have entered medicine in the year that it was born. I have proclaimed, I think convincingly, its virtues in several parts of the world. Nevertheless we must be ever watchful that it does not become wasteful.

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The role of skeletal scanning in clinical oncology

SIR,—The review by Drs James H McKillop and I Ross McDougall (9 August, p 407) on the value of bone scanning in clinical oncology included the observation that scanning is less effective than skeletal radiology for detecting bone lesions in multiple myeloma. We have recently studied the skeletal radiology and isotope scan images of a series of patients with multiple myeloma and made the following observations.

(1) Of 18 patients so far studied, there has been no instance where there has been a normal bone scan and an abnormal skeletal radiograph. (2) While lesions (particularly lytic lesions) are more frequently seen in the limbs and skull on x-ray examination than on isotope scan, radiology is inferior to bone scanning in detecting rib lesions. (3) The majority of isotope scan abnormalities are areas of increased activity due to repair consequent on fracture. However, in one case a "cold area" was detected on scanning and this corresponded to a large lytic area on the x-ray film. We concluded that small lytic lesions not at present detected by bone scanning are not seen merely because of resolution problems.

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Breast cancer trials—a new initiative

SIR,—There is obviously no shortage of patients with carcinoma of the breast for entering into clinical trials, as clearly outlined in a recent paper in the *Lancet*.¹ It would appear that only approximately 8% of eligible patients with breast cancer are entering such studies. Yet, to quote the leading article that accompanied this paper, "the structure of the National Health Service offers scope for clinical trials on a scale which most countries could not hope to undertake."² Failure to recruit patients into current trials suggests that the questions posed by the individual studies are not those which are of immediate interest to the majority of clinicians in this country or that in addition there may be a

natural reluctance on the part of many surgeons and radiotherapists to take part in studies which involve additional, unrewarded effort. Therefore before launching a new study it is important that the question posed should be uppermost in people's minds and that it can be answered with minimal effort on the part of busy clinicians working in a Health Service which is in the process of being starved of resources.

There are two major questions to which we need address ourselves in the next 10 years concerning the management of early breast cancer: (1) Will some form of adjuvant systemic therapy salvage more lives following conventional local treatment? (2) Is breast conservation a realistic alternative to mastectomy with an acceptable risk? It is the purpose of this new initiative to pose the first question in a way that is both statistically efficient and minimal in the demand it makes on the contributing clinicians, and on the patients themselves.

The Cancer Research Campaign trial concerning the local management of early breast cancer in a recent publication gave added support to the view that the outcome following local therapy is pre-determined by the extent of dissemination at the time of diagnosis.³ Unfortunately, at the present time it is impossible to quantify accurately the residual tumour burden in patients following mastectomy for apparently localised disease. Neither is there any real way of monitoring the behaviour of such micrometastases in response to adjuvant systemic therapy. It is therefore largely guesswork based on extrapolation from the behaviour of the advanced disease whether an increased cure rate might follow the administration of aggressive long-term combination chemotherapy, a short course of single-agent chemotherapy, or for that matter some form of endocrine manipulation. There are at present many groups in the world investigating aggressive systemic chemotherapy, expecting large returns at the expense of increased morbidity. If such an approach does in fact produce an increase of say 30-40% in 10-year survival, then of course it would be necessary to reorganise the oncology services in this country so that complex treatment would be available for all patients. In the meantime there is a need for other groups to investigate the so-called "soft option," such as endocrine therapy or short courses of single-agent cytotoxic therapy. Such an approach might indeed benefit a smaller proportion of cases but because of the ease of administration the results would be immediately acceptable to the generality of clinicians and available to all patients within the current structure of the National Health Service.

At present there are a handful of trials of adjuvant systemic therapy in early breast cancer which have demonstrated encouraging results either in the delay of recurrence or in an improvement in survival.⁴⁻⁷ However, it is worth noting that the studies with the longest follow-up—namely, those originating from Oslo⁴ and Toronto⁵—have demonstrated an unequivocal, albeit modest, improvement in survival as a result of the application of the "soft options." It is with these thoughts in mind that a new initiative has been taken in launching a randomised prospective trial to investigate the benefits of a short course of cyclophosphamide in the immediate postoperative period (similar to the Oslo trial), a long course of adjuvant antioestrogen therapy (similar in intent to the Toronto trial), and a combination of the two regimens, using a 2×2 factorial design. The administration of such simple systemic therapies should be within the skills of any surgeon or radiotherapist, the treatment should be very acceptable to the patient, and one might anticipate modest benefits in survival at ten years of the order of 10-20%. When it is considered how many women die each year of carcinoma of the breast, it could be anticipated that such an approach might lead to the salvage of over 1000 women's lives each

year at very small cost. Unfortunately, in attempting to demonstrate these modest improvements one is immediately faced with statistical difficulties. In order to detect such a difference (should it in fact exist) at an acceptable level of significance, in excess of 1000 patients need to be recruited within a relatively short time.⁸ This is not an unreasonably ambitious target as the Cancer Research Campaign trial was able to recruit in excess of 2500 patients. The headquarters staff who co-ordinated the original study are responsible for launching this new initiative, and in addition the Cancer Research Campaign has awarded a further generous grant so that the new trial can be run with business-like efficiency.

To conclude, therefore, it is not unrealistic to launch another major study in the United Kingdom, where there are "untapped resources" of nearly 20 000 new cases of breast cancer a year, and where there exists organisational expertise to handle the large volume of data that will be generated. If any surgeons or radiotherapists reading this letter are interested to learn more about the study or are willing to participate, protocols are available on application to the trials centre, or alternatively a visit by one of the trials co-ordinators can be arranged. An open meeting to launch the study formally will take place at the Cancer Research Campaign headquarters at 2 Carlton House Terrace, London SW1, on Tuesday, 28 October, at 2.30 pm.

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³ Cancer Research Campaign Working Party. *Lancet* 1980;ii:55-60.

⁴ Nissen Meyer R, Kjellgren K, Malmio K, Mansson B, Norin T. *Cancer* 1978;41:2088-98.

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Geographical analysis of cardiovascular mortality: a cautionary note

SIR,—An article by Dr S J Pocock and others (24 May, p 1243) concerned with the study of regional variations in cardiovascular mortality demonstrates many of the problems that are commonly encountered in the geographical analysis of medical data. The following comments have an important bearing on any considered interpretation of the results.

(1) The choice of "towns" as observational units largely predetermines the relationships that are identified.^{1,2} In what way are "towns," which are arbitrary definitions for administrative purposes and possessed of vastly different degrees of internal heterogeneity in terms of the variables studied, meaningful entities for a study of cardiovascular mortality? For purposes of geographical analysis it is not sensible to use any set of areal units merely because data exist for them and be totally oblivious of the effects that this choice has on the results.

(2) It should be clearly understood that statistical analysis can never explain geographical variations; it can at best only describe some of the observed spatial data patterns, patterns which depend on the areal units used in the analysis. Causal inferences