within 48 hours, however desirable, would be difficult for most district general hospitals to comply with, even with the best will in the world. Most of these tests are usually done weekly to reduce costs and to fit in with the working of the laboratory. The same applies to results of tests that would be required in a clinic—for example, measurement of glycated haemoglobin and drug concentrations for therapeutic drug monitoring. The soaring costs would not impress our managers, however much it might improve the quality of the service provided.

Finally, it is interesting that Stewart refers to “properly staffed laboratories.” Perhaps the time has come for a national charter for laboratories prepared by professional bodies, which could include guidelines about staffing and budgetary requirements for laboratories serving a given population. This would help to ensure that the provision of pathology services was not totally dictated by market forces, with everything determined by a price label.

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1 Stewart MJ. A patient's charter for laboratories. *BMJ* 1992;304:251. (25 January.)

Audit: the crucial role of medical records

SIR,—M G S Dunnill and S R Gould's retrospective audit of acute gastrointestinal bleeding in a district general hospital highlights one of the main obstructions to audit and attempts to improve outcome—namely, the medical record.¹ Drawing any satisfactory conclusion from medical audit is difficult when 44% (46/104) of the case notes are unavailable. This is not an isolated problem.² Patients' care is also handicapped when notes are unavailable in outpatient departments or on the wards.

Until this problem is resolved we will have to rely on prospective audits with data collection independent of case notes. Good, accessible medical records are the foundation for medical audit, clinical care, coding, resource management, and so on. They are fundamental to the service, and improvements are urgently needed.

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1 Dunnill MGS, Gould SR. Audit of gastrointestinal bleeding in a district general hospital. *BMJ* 1992;304:383-4. (8 February.)
2 Pounder RE. Audit in practice: some reports from those who have tried it. *J R Coll Physicians Lond* 1991;25:339-40.

Audit in general practice

SIR,—In the past few weeks the medical journals and newspapers have exhorted general practitioners to audit 13 aspects of care—namely, the standards of diabetic care, hypertensive care, child health surveillance, and minor surgery; the care of patients who have hypothyroidism, have arthritis, have heart failure, or are receiving diuretics; the prescription of antibiotics and of non-steroidal anti-inflammatory drugs; the waiting time for an appointment and after the appointment time; and consultation techniques.

I have a list of 24 other aspects of medical care that apparently need to be audited by competent, keen general practitioners. For each of these a protocol needs to be established and standards set. The care given has to be measured, a plan for

improvement defined, and the care measured again after a defined time has elapsed. Audit is not a once for all activity. This process has to be repeated in a cyclical manner for each aspect of care audited.

In our practice we have done some audit. We have published our results. The minimum time it has taken us to collect the data has been two weeks, using our ancillary staff to the full.

My list of aspects of care that need to be audited is, I am sure, incomplete, but with the ones given above there are now 37 aspects of care on the list. How do you audit all of them? If you do not audit all of them how do you choose which to audit? I guess that most people audit aspects of care that they are interested in or happy with—not an ideal way to improve your service. If you audit only half of these 37 aspects of care how much extra time do you spend on this process and what do you give up in your normal working day to produce this time? Already I have less time than I would like to visit my terminally ill patients and to counsel patients with alcohol and drug related problems (my interest: perhaps I should audit this?) despite working a 12 hour day.

I submit that the undirected general call to practise audit is illogical and unworkable and leads to disillusionment. I suggest that jointly the General Medical Services Committee and Royal College of General Practitioners should define one aspect of practice each year, define protocols, and encourage doctors all over the United Kingdom to audit this aspect of care against the protocol. Who knows, the care might become better, the improvement might stick, and little by little general practice as a discipline might improve further.

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NHS distribution of funds unfair

SIR,—The idea that NHS resources should be allocated according to health need is generally accepted. The underlying objective of the Resource Allocation Working Party was to seek criteria that were broadly responsive to relative need.¹ *Working for Patients* proposed using a formula based on population weighted for age and morbidity for distributing funds to regions and suggested that district health authorities should be funded on broadly the same basis, taking local factors into account.² West Birmingham Health Authority, however, in a paper presented to its region, has claimed that the national formula gives too much emphasis to the size of districts' elderly populations.³ It argues that deprived districts tend to have fewer elderly people than more affluent districts. Consequently, the current national formula is biased against deprived districts.

To test this hypothesis we examined the relation between mortality (a proxy for deprivation) and the proportion of elderly people in a district population. Our source of data was the Department of Health's common dataset. We calculated the percentage of people aged 65 and over in 190 district health authorities in England, using 1990 mid-year population estimates. All cause, all age standardised mortality ratios, based on deaths for the five years 1986-90, were abstracted for the 190 districts. To investigate the relation between these two variables we calculated the product-moment correlation coefficient; it showed a highly significant inverse relation between the percentage of elderly people and standardised mortality ratio ($R = -0.32$ (confidence interval -0.45 to -0.19), $p < 0.0001$). A simple linear regression analysis (table) yielded the predicted standardised mortality ratios for a given percentage of elderly people. Districts with the highest percentage of elderly people can expect to have the lowest standardised mortality ratios. Because of the known geographical variation in standardised mortality ratio dis-

Predicted standardised mortality ratio for English districts according to percentage population aged over 65, derived from regression analysis

% Aged over 65	Standardised mortality ratio (confidence interval) for English districts (n=190)
12	106 (103 to 108)
13	104 (102 to 106)
14	103 (102 to 105)
15	102 (101 to 103)
16	101 (99 to 102)
17	99 (98 to 101)
18	98 (96 to 100)
19	97 (95 to 99)
20	96 (93 to 98)
21	95 (92 to 98)
22	93 (90 to 97)
23	92 (88 to 96)
24	91 (86 to 95)
25	90 (85 to 95)

Regression of standardised mortality ratio on age: slope = -1.225 (SE 0.26). t Test for $b = 0$: $t = -4.7$, $p < 0.0001$ (two tailed probability).

tricts were classified as north or south, and the regression analysis showed similar results for both groups.

This finding raises fundamental questions about the way in which age structure should be used to allocate resources. We contend that the most likely explanation for the low standardised mortality ratios in districts with a high percentage of elderly people is selective migration: those who cannot afford to move to affluent retirement areas are likely to be less healthy than those who can. Therefore there are health differentials between elderly populations: old people who live in district health authorities with the lowest percentage of elderly people probably have the greatest needs. It follows that a resource allocation formula that moves money away from younger populations to retirement areas will move resources away from deprived inner city areas.

In our view, the current national formula, if used at a district level, is likely to increase the health differential between affluent and deprived populations. The Department of Health and regional health authorities should take account of this when deciding whether age structure should affect the distribution of resources in the NHS.

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1 Resource Allocation Working Party. *Sharing resources for health in England*. London: HMSO, 1976.
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3 Appleby J. NHS distribution of funds unfair. *BMJ* 1992;304:70. (11 January.)

Europe and nutrition

SIR,—Michael O'Connor makes a plea for a food policy in the European Community that puts human health before farmers' profits.¹ He assumes that a healthy diet will prevent the “coronaries” from which his group takes its name. He ignores the facts.

Keys's seven countries study showed significant association between the proportion of dietary energy derived from saturated fatty acids and the 10 year coronary death rate.² When intake of saturated fatty acids is plotted against coronary death rate for 23 European countries (including five of Keys's seven), however, there is no significant relation,³ which makes a causal basis for Keys's unconfirmed statistical association unlikely.

More importantly, some of the most extensive