effect is enhanced by ensuring that the patient lies supine for at least 30 minutes before the study. If this is not done complete mixing of the material is possible, with resulting bilateral isodense collections, which may occasionally be elusive.

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1 Davenport RJ, Statham PFX, Warlow CP. Detection of bilateral isodense subdural haematomas. *BMJ* 1994;309:792-4. (24 September.)

Appearances in scan were obvious

EDITOR,—R J Davenport and colleagues remind us that the detection of subacute subdural haematomas on computed tomography is not invariably straightforward.¹ The figure in their paper, however, shows a rather more obvious example than I usually use for teaching junior clinicians; it should not have been misinterpreted. The computed tomographic signs of isodense subdural collections are given in textbooks, even if the publication of "lessons" such as that reported by Davenport and colleagues suggests that a number of radiologists do not detect them. (The questions of unsupervised reporting of clinically important imaging studies by trainee registrars and of computed tomography being performed by general radiologists are too big to pursue here.)

In both cases reported by the authors the computed tomograms were interpreted as showing diffuse swelling of the brain, presumably without change in radiographic density. This picture, however frequently described, is rarely seen other than in a few children with acute head injury. For reasons that are not clear, "cortical venous thrombosis," which was suggested in the second case, is currently a popular neurological diagnosis; it virtually never causes the computed tomographic picture described. Bilateral subdural haematomas are not only a much commoner cause of the picture described but have undisputed therapeutic consequences: were radiologists to stop seeking subtle signs of intracranial venous thrombosis they would probably harm few of their patients.

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1 Davenport RJ, Statham PFX, Warlow CP. Detection of bilateral isodense subdural haematomas. *BMJ* 1994;309:792-4. (24 September.)

Authors' reply

EDITOR,—We broadly agree with the diagnostic points made by Ivan Moseley and T Powell. Both correspondents believe that the illustrated case was straightforward and are surprised that there was any delay in the diagnosis. To our mind, however, the purpose of the Lesson of the Week is to show how cases are actually managed rather than how they might ideally be managed, in the hope that readers from a wide range of disciplines may benefit from the mistakes made.

Many patients presenting with headache are managed in non-neurological units, where staff may be less familiar with appearances on computed tomography, be they subtle or unsubtle. Such was the case with our first patient. The initial incorrect interpretation of the computed tomogram, by a registrar in radiology with four months' neuro-radiological experience, was not challenged until a neurological opinion was requested. Although the computed tomogram in this case was more obvious than that in the second case (not published in our paper because of lack of space), we chose to use it

because the difference between the two images is dramatic (in particular, highlighting the obliteration of the sulcal spaces); we thought that even those who do not review computed tomograms of the brain regularly (that is, the bulk of the *BMJ*'s readers) would appreciate this.

Lest the neurological community believe that such a mistake could never occur in a neuroscience unit we included the second patient; this time the diagnosis was initially missed by a consultant neurologist and neuroradiologist, both with many years' experience. It was this episode that prompted us to write the paper.

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New resource allocation formula

Agism by stealth

EDITOR,—In estimating the resource consequences of use of inpatient services by age bands Peter Smith and colleagues classify geriatrics as a non-acute specialty and assign reduced weight to expenditure on the care of elderly people.¹ This ignores the usual practice in Britain, where most geriatric departments provide acute care. Such care is more expensive than acute care for younger people because the length of stay is longer (14 days in my department); this is due to the patients having multiple diseases, the aging body recovering from illness more slowly, and discharge planning processes.

The adoption of Smith and colleagues' formula, reported by John Warden,² will greatly disadvantage those areas with high proportions of elderly people and may effectively reduce acute care for this group. Such a policy runs contrary to the document from the Royal College of Physicians³ commended by the NHS Executive as part of its priorities and planning guidance for the NHS.⁴ There was a public outcry when individual hospitals were thought to be rationing treatment on the grounds of age—practising overt agism. The application of this formula will lead to funds being moved away from areas with a high proportion of elderly people—agism by stealth.

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1 Smith P, Sheldon TA, Carr-Hill RA, Martin S, Peacock S, Hardman G. Allocating resources to health authorities: results and policy implications of small area analysis of use of inpatient services. *BMJ* 1994;309:1050-4. (20 October.)

2 Warden J. New funding formula for NHS. *BMJ* 1994;309:1109. (29 October.)

3 Royal College of Physicians. *Ensuring equity and quality of care for elderly people*. London: RCP, 1994.

4 NHS Executive. *Priorities and planning guidance for the NHS: 1995/6*. Leeds: NHSE, 1994.

Author's reply

EDITOR,—Kalman Kafetz makes two important points in relation to our study of resource allocation, noting, firstly, that we classified geriatrics as non-acute. We did this simply so that we could explore the determinants of need specific to that specialty. By doing this we got round the problem of needing to identify costs of patients in geriatrics relative to those in other specialties. In the event,

we were unable to develop a satisfactory model of needs in geriatrics, and Kafetz may be interested to know that we understand that the NHS Executive plans to allocate funds for geriatrics using the formula we developed for the acute sector.

The second point is that our recommendations will result in a shift of resources away from areas with high proportions of elderly people. This is also true. To understand why it should be so it is important to emphasise that our results are based on the actual use of resources by NHS patients during 1990-2. The report of the study explains in some detail that, while our work offers what we think is the best representation of national average use of NHS services in those years, it cannot capture need that was not reflected in use of NHS inpatient services.¹ We have emphatically pointed out that if a strategic shift of resources towards particular care groups is desired the NHS Executive has the freedom to increase the weighting given to those groups in the application of the formula.

We refute the claim that use of such research results in agism by stealth. Indeed, we believe that when resource allocation is based on explicit empirical research it becomes much easier to identify and quantify changes in policy. If Kafetz believes that elderly people are systematically being denied their fair share of resources he should direct his attention at NHS policymakers.

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1 Carr-Hill R, Hardman G, Martin S, Peacock S, Sheldon T, Smith P. *A formula for distributing NHS revenues based on small area use of hospital beds*. York: University of York, 1994. (Centre for Health Economics occasional paper.)

Socioeconomic status does not always reflect health

EDITOR,—The first briefing document from the BMA's Health Policy and Economic Research Unit "flags up" some issues for a revised resource allocation formula, recommending that it should include "a component for the impact of deprivation on health" and that "a deprivation measure must be added to ensure that inner city areas . . . do not lose out against more affluent retirement areas" (unpublished paper). I had not expected to read such old fashioned socialist dogma, presented without evidence or justification, in a publication of the BMA.

Resource allocation formulas were originally based on standardised mortality ratios with adjustments. If social deprivation causes (or is associated with) morbidity the excess mortality will be picked up by the standardised mortality ratio. Many deprivation indices have been developed. Sheldon *et al* commented, "There is an evolving industry where indices are developed" and "those health authorities which express most interest in refining formulas by varying the factors included tend to be those which have lost out with the current formula."¹

Williams *et al* criticised the Department of Health's review of weighted capitation in 1993, saying that it favoured retirement districts, most of which were coastal, at the expense of inner cities and large business development areas.² The *Health of the Nation*, however, comments that coronary heart disease is the single largest cause of both death and premature death. A survey of heart disease in England and Wales by the Faculty of Public Health Medicine in 1986 listed three north west coastal locations—Liverpool, Southport, and Blackpool—in its 10 worst areas. By contrast the 10 areas with the lowest incidence of coronary heart disease included four inner city areas in London—Tower Hamlets, Lewisham, Greenwich, and Waltham Forest. Clearly one cannot

assume that people in coastal retirement areas are automatically healthier than those in inner city areas.

The current allocation of resources already provides extra money for inner cities. Here in the north west the district allocation to Blackpool for 1991-2 was £107m for a population of 321 000, while central and north Manchester received £163m for a population of 260 000. In a review of capitation funding Raftery noted a projected continuing population drift away from inner cities to coastal retirement areas.³ I suggest that the capitation funding formula should remain as simple as possible, without any sociological tinkering. Charlton concluded, "redistribution of income and other resources has little to offer in improving the national health: it is merely robbing Peter to pay Paul."⁴

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- 1 Sheldon TA, Davey Smith G, Bevan G. Weighting in the dark: resource allocation in the new NHS. *BMJ* 1993;306:835-9.
- 2 Williams ES, Scott CM, Brazil R. Resource allocation. *BMJ* 1993;306:1415.
- 3 Raftery J. Capitation funding: population, age, and mortality adjustments for regional and district health authorities in England. *BMJ* 1993;307:1121-4.
- 4 Charlton BG. Is inequality bad for the national health? *Lancet* 1994;343:221-2.

BMA's reply

EDITOR,—P J N Howorth misses the point in two important respects. Firstly, the Health Policy and Economic Research Unit exists not only to promote and expand the BMA's policy but, more importantly, to stimulate debate by research into issues of health policy and thereby to allow the association and others to come to a considered view on these important matters. The paper on resource allocation formulas therefore seems to be succeeding in its stated aim of stimulating just such a debate and should not be censured for this reason.

Secondly, as the paper makes clear, the review of the Resource Allocation Working party formula in 1986 specifically included a factor for the regional Jarman score, which is an indirect measure of social deprivation based on several census variables. Despite the criticisms levelled at it there is no doubt that this score provides a measure of use of health services as measured by the perceived workload of general practitioners. This is presumably one of the factors underlying the disparity in the resources allocated to Blackpool and to Manchester quoted in Howorth's letter. This point is dealt with more fully in the briefing note. As the paper concludes, "there has been much criticism of the current weighted capitation formula." Howorth's letter is further testimony to the truth of this statement. The Health Policy and Economic Research Unit's document is a valuable contribution in advancing this debate.

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Long term psychotherapy

EDITOR,—Isaac Marks's arguments against the cost effectiveness of long term psychotherapy could equally well be applied to the long term and often purely palliative treatments available for patients with intractable somatic disease. These patients' needs are not yet neglected because the drugs and surgery involved are unlikely to effect an outright cure or be proved to be cost effective in the terms of reference of the profession of accountancy as contrasted to that of medicine.

Perhaps we should bear in mind that the purpose

of medicine is to cure sometimes, to ameliorate often, to comfort always.

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- 1 Holmes J, Marks I. Psychotherapy—a luxury the NHS cannot afford? *BMJ* 1994;309:1070-2. (22 October.)

Moderate drinking and loss of brain cells

Factor converting imperial to metric measures was wrong

EDITOR,—Pekka J Karhunen and colleagues' thought provoking paper on moderate alcohol consumption and loss of cerebellar Purkinje cells seems to provide a further basis on which to advise our patients (and ourselves) on safe drinking limits.¹ Those familiar with imperial measures may, however, have become alarmed that the loss of cerebellar Purkinje cells was significantly increased above a daily alcohol consumption quoted as 2 fluid ounces (fl oz) of wine or 0.5 fl oz of spirits.

A useful tool in interpreting research is to place results in an everyday context: 1 fl oz is only 1.6 tablespoons full. The Finns may, however, be less familiar with imperial than with metric measures. Karhunen and colleagues seem to have applied a conversion factor to their metric data that was incorrect by a multiple of 7.75—1 fl oz is equivalent to 28.4 ml, not 220 ml.

To set the results of this study in a more accurate (and reassuring) everyday context, the authors' suggested safe level of drinking of 40 g absolute alcohol a day is in fact equivalent to 15.5 fl oz of wine, or three generous wine glasses. This adds up to four bottles of wine a week. For spirits this is 4 fl oz a day, or half a tumbler, and adds up to just over one 750 ml bottle a week (the standard size of spirit bottles in Britain, rather than the 500 ml referred to by Karhunen and colleagues).

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- 1 Karhunen PJ, Erkinjuntti T, Laippala P. Moderate alcohol consumption and loss of cerebellar Purkinje cells. *BMJ* 1994;308:1663-7. (25 June.)

Author's reply

EDITOR,—We did make a mistake in our conversion from millilitres to fluid ounces, and the calculations of Mark L Tattersall and Sally White are correct. Luckily, our conversion from millilitres to pints seems to be correct.

We are indeed not familiar with imperial measures. Moreover, if we apply American measures then 1 fl oz is 29.6 ml. We used grams, millilitres, or litres throughout our paper, mentioning fluid ounces and pints only once to make the results more familiar to British readers. In Finland we do not use fluid ounces, preferring grams, so called restaurant units (one unit contains 12 g ethanol), centilitres, millilitres, or, simply, bottles of beer, wine, or spirit. In Finland the standard size of a beer bottle is 330 ml, that of a wine bottle 750 ml, and that of a spirit bottle 500 ml. Although we respect the long history of national measures, we hope that some standardisation will take place in the future. The concept of units of alcohol seems promising—if

agreement can be reached on how many grams of alcohol one unit contains. Maybe we Finns will also have to change the standard size of spirit bottles when Finland joins the European Union next year.

However, the message of our paper does not change. Further evidence also suggests that the safe limit of drinking for men is somewhere around 40 g of absolute alcohol daily.² The beneficial effect of alcohol on mortality seems to be obtained by smaller doses,^{1,3} mainly by reducing the rate of deaths due to myocardial infarction. It is also obvious that the effects of alcohol show no clear dose dependence and that some people can safely drink more than others. The reasons for this individual variation are largely unknown and subject to further research.

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- 1 Doll R, Peto R, Hall E, Whitley K, Gray R. Mortality in relation to consumption of alcohol: 13 years' observations on male British doctors. *BMJ* 1994;309:911-8.
- 2 Savolainen VT, Liesto K, Männikkö A, Penttilä A, Karhunen PJ. Alcohol consumption and alcoholic liver disease—evidence of a threshold level of effects of alcohol. *Alcohol Clin Exp Res* 1993;17:1112-7.
- 3 Hendriks HFJ, Veenstra J, Velthuis-te Wierik EJM, Schaafsma G, Kluit C. Effects of moderate dose of alcohol with evening meal on fibrinolytic factors. *BMJ* 1994;308:1003-6.

Health promotion

Sensitive outcome measures are needed

EDITOR,—N C H Stott and colleagues succinctly summarise arguments for the sensitive application of health promotion interventions that are matched to individuals' readiness to change.¹ They point out, however, that research into the practice of health promotion at an individual level is in its infancy. In the same issue the study by M E Cupples and A McKnight shows the difficulties in persuading patients to alter their health related behaviour even when they have strong medical reasons to do so.² The study was designed to detect decreases in the severity of patients' angina. The sample size was determined accordingly, and the study showed that the intervention applied could significantly reduce the severity of self reported angina.

Among the other outcomes considered in the study no significant differences were shown in the distribution of smoking habit, systolic or diastolic blood pressure, cholesterol concentration, or body mass index between the control and intervention groups. The lack of change in physiological outcome measures possibly reflects the fact that, in the absence of any other influences, these can alter only when a person has made a decisive, consistent effort to improve his or her lifestyle. The interventions that were applied obviously did not have such a great effect on people.

Similarly, smoking cessation can be considered to be the end point of a lengthy process in which a person progresses from being a smoker who does not question his or her habit to becoming a non-smoker. This process can entail repeated attempts to stop smoking over several years.³

The evaluation of health promotion may perhaps have suffered from the use of outcome measures that are insensitive to change and therefore unlikely to be responsive to the interventions applied. If the study of health promotion at an individual level is to advance then, in addition to exploring ways of measuring patients' "readiness to change,"¹ researchers need to develop sensitive outcome measures, perhaps reflecting changes in patients' attitudes or health related behaviours. For example, it has been suggested that in