consisting of non-drinkers, beer drinkers, spirits drinkers, and beer and spirits drinkers. The drinkers, again, could have ranged from those who drank beer or spirits only once a month to those who had more than five drinks a day. This would falsely increase the risk among those who did not drink wine and give a falsely low risk for those who did drink wine. Indeed, it is difficult to believe that a drink of wine only once a month can reduce the risk of cardiovascular death by 31%. If this is true it supports the premise that drinking wine may be associated with other favourable traits that influence cardiovascular risk.³

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Risk function had peculiar properties

EDITOR,—Morten Grønbaek and colleagues' study of mortality associated with moderate intakes of wine, beer, or spirits presents relative risks of death as functions of consumption of each type of beverage.¹ Apparently none of the first order interactions between levels of consumption of different beverages were significant. Ignoring interactions, however, leads to a model with peculiar properties, for it implies that one can simply multiply the relative risks for each type of beverage.

Thus the authors' estimates imply that a person drinking three to five drinks daily of each of wine, beer, and spirits (a total of nine to 15 drinks daily) has a relative risk of death from coronary heart disease of 0.43 compared with someone who never drinks alcohol. For deaths from other causes the relative risk between these two extreme groups of people is 0.82. Such estimates are hard to take seriously, so the model clearly cannot be extrapolated this far. Even at lower consumptions for the separate beverages, however, an absence of interaction seems unlikely.

Since one of the study's main conclusions rests on the upturn of the risk function for the highest category of consumption of spirits it seems important to ensure that the model estimates are valid not just for moderate consumption but for the highest category considered. We wonder how sensitive the conclusion about spirits is to the assumption of no interaction.

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Study confounded by lack of correction for social class

EDITOR,—Morten Grønbaek and colleagues' paper on the possible health benefits of drinking wine¹ attracted wide attention in the media in Norway. It might be wise to obey the slogan "never check a

good story." However, the reporting of associations between risk factors and health outcomes in the medical literature is plagued with the various interpretations of causation, and the media made no exception this time.

No one who knows the social habits of Scandinavians should overlook the possible confounding of wine drinking by social class and related life-styles. It is a pity, then, that this well conducted study leaves some doubt about whether social class or social status was controlled for properly. Classification by social class is not done in standardised ways in the Scandinavian countries,² yet mortality in most European countries shows a strong (and increasing) gradient with social class.^{2,3} The Danish paper presents education and income (loosely named "socioeconomic conditions") as covariates, only to leave us with the intriguing statement, "We found that wine intake was positively correlated with social class variables (data not shown), but the protective effect of wine, with regard to mortality, was not significantly weakened when we controlled for this factor."

In this case, I think that the data, on one or both factors, should have been shown so that we could more easily rely on any biological mechanism and not feel compelled to maintain healthy lifestyles most prevalent among affluent people.

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Authors' reply

EDITOR,—Our paper had some impact in the media, most of which was beyond our control. We admit that we were cautious about inferring causation.

To simplify interpretation of our analyses we excluded people who drank more than five units of any beverage daily. Victoria Wilson and colleagues are concerned that we thereby introduced bias by excluding beer drinkers who were not wine drinkers. In analysis of crude data this group might increase the mortality among those who do not drink wine. In our analysis, however, we controlled for the intake of other types of beverages, which implies that we estimated the effect of wine intake within each category of intake of other types of beverages. We found no significant interaction between the three types of beverages in their effects on mortality, which suggests that the effect of wine is the same irrespective of the habit of drinking beer and spirits.

There probably is a U shaped relation between wine intake and mortality, but this would not contradict our conclusion about a different mortality at moderate intakes of beer, wine, and spirits. Indeed, wine may be the only beverage exhibiting this pattern.

Steiner Westin is concerned about confounding by social class. Intake of wine was strongly corre-

Percentages of people drinking wine weekly or more frequently by income and education

	Income			Education		
	Low	Medium	High	Low	Medium	High
Men	9.4	18	35.4	11.9	19.1	35.0
Women	11	17.8	31.5	10.2	20.0	35.5

Relative risk of death from all causes by income and education, according to consumption of wine

lated with income and education (table). The figure shows the relative risk of death from all causes by income and education. For all the curves the reference group (relative risk set at 1) is people who never drank wine in the groups with low income and a low level of education. Generally, consumption of wine seems to have a beneficial effect on mortality independent of socioeconomic conditions.

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Performance indicators for general practice

Emphasis is changing from quality assurance to continuous quality improvement

EDITOR,—Performance indicators have long been used in the United States as a tool of quality assurance programmes and are now being promoted in Britain.¹ The emphasis of quality assurance on identifying "problems" and the "bad apples" in medicine is, however, now being viewed in the United States as counter productive. Unsurprisingly, it is difficult for a negatively oriented process to engender the enthusiasm and capture the support of health care professionals. That is not to say that standards are not required, but in the United States the emphasis is changing from quality assurance to continuous quality improvement.

The Joint Commission on Accreditation of Healthcare Organisations has used performance indicators as part of its quality assurance programme and will continue to do so, but it is placing increasing emphasis on continuous quality improvement.² Many general practitioners must fear

that performance indicators as introduced by family health services authorities will be used punitively to identify deficiencies and exert control. Continuous quality improvement aims not to blame but, instead, to seek the root causes of a failure in process that can be improved.³ Important tenets of continuous quality improvement are that efforts for improvement are internally driven, not an external mandate; that it focuses on systems first and individuals second; that it recognises that error free care cannot be guaranteed but instead emphasises that the quality of care can always be continuously improved; and that the commitment of leaders is necessary.²

Quality of care should be assessed and monitored and efforts made to improve standards. Nevertheless, the imposition of performance indicators by family health services authorities without consultation and negotiation is unlikely to be as beneficial as a well planned quality improvement programme that aims to get each primary health care team continually to improve the quality of care provided. As with many things that are imposed, people will try to find ways of cheating the system and of going through the motions of monitoring and evaluation while not really believing in them.

Performance indicators can certainly be useful, but they should be only one of many tools used in a much wider programme that seeks to improve quality of care. It is also vital that any such project be proactive and a collaborative effort between management and all those in the front line of the provision of health care.

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Inadequate smears are not always due to poor technique

EDITOR,—F Azeem Majeed and Simon Voss suggest that the creation of certain performance indicators by family health services authorities may benefit general practitioners by exposing areas in which their practice deviates from the norm and in which further investigation or audit may therefore be appropriate.¹ They give as an example the proportion of cervical smears that are technically unsuitable for examination.

Just such an audit by Sefton Medical Audit Advisory Group has highlighted a problem with the single code provided for such smears by the cervical cytology form HMR101/5/C and the effect that this may have on general practitioners' ability to attain cytology targets. Mandatory use of the form limits laboratories to using code 1 ("inadequate specimen") in box 22 ("cytological pattern") to report all smears that, for whatever reason, are unsuitable for screening. Under this system, smears that are truly inadequate (because they are scanty, air dried, or from the wrong part of the cervix) and that may therefore indicate a deficient technique for taking smears are lumped together with smears that may be unsuitable for other reasons (because they are bloodstained or obscured by polymorphs).

Whether or not one agrees with the principle that poorly taken smears should not count towards cytology targets, it is patently unfair that general practitioners should be penalised for taking smears that, for reasons outside their control, are unsuitable for screening. In North Sefton this problem has been exacerbated by the changes adopted

by the laboratory to bring its reporting system in line with national guidelines (by abandoning its category of "negative repeats" for smears obscured by polymorphs). This limited coding also makes the data produced by the family health services authority's computer useless for any meaningful audit of unsuitable smears. Sefton Medical Audit Advisory Group and the Sefton Cytology Core Group have written to the Department of Health on this subject, strongly suggesting that the forthcoming changes to form HMR101/5/C address this problem, which must be relevant to every practice in Britain.

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Factors influencing participation in audit

EDITOR,—Richard Baker and colleagues propose that advisory groups will need to devise strategies to encourage higher levels of participation in audit.¹ They also suggest that the most important factors influencing participation are attitudes towards audit and the audit group, and discussion in the practice about participation.

Audit is a minimum criterion required by the Joint Committee for Postgraduate Training for General Practice for all training practices. Summative assessment will affect all trainees who complete their training after 1 September next year and will include a submission of practical work. The current recommendation that, for the first few years, this should be audit is likely to have a considerable impact on the factors mentioned by Robin C Fraser and Baker and colleagues.²

Summative assessment for vocational trainees has been developed in the west of Scotland, and for the past three years every trainee has carried out an audit. Two years after audit was introduced its impact was assessed on 117 trainees in May 1994; 104 (89%) responded.³ As a result of their experience 99 of the trainees felt more confident about introducing change in their next practice and for 82 trainees this was their first practical experience of audit.

Time is always mentioned as a barrier, but our study showed that most trainees spend little more than a working week on an audit project and that this time could be reduced if more of the practice team participated in the audit.⁴ The study also showed that trainees who chose their own project were more likely than those who did not to collect two sets of data and therefore were more likely to have had the chance to experience change in the delivery of care. This work has also allowed the development of a marking system based on defined criteria,⁵ and this is available throughout the region and alerts trainers to the necessary components of audit.

The work described will go a long way to changing attitudes and to meeting many of the difficulties experienced by Baker and colleagues and Fraser and colleagues.

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Authors' reply

EDITOR,—J R M Lough and colleagues suggest that audit undertaken by trainees or registrars in general practice and forming the practical work to be submitted as part of summative assessment will change the attitudes of future general practitioners towards clinical audit. We agree that this is desirable and that the scheme reported by McKay *et al* shows how good organisation and the whole-hearted commitment of trainers and advisers can have a major impact.¹ Nevertheless, when adopted in other parts of the country, this approach might not be as successful as it has been in the west of Scotland.

If some trainers are themselves unsure about the value of audit they may fail to promote interest or positive attitudes among their registrars. In these circumstances, when compulsion is introduced, resistance or antagonism may increase further and registrars may conclude that audit is a tiresome chore best completed with the minimum of active participation. As a result they would be unlikely to learn that audit is a worthwhile method of improving the quality of their work. As principals they would then avoid audit if possible.

It is therefore essential that all trainers and advisers learn the lessons of the experience in the west of Scotland and consider their views about audit. If they learn how audit can be practical and effective they will then be able to show by personal example that it is an important method of improving quality and should be a routine part of every general practitioner's professional life. Otherwise, suspicions held by the present generation of general practitioners about the desirability of examining the quality of their work and trying to improve it if necessary will be passed on to their successors.

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Health authorities use panels to gather public opinion

EDITOR,—Whether the public should be explicitly involved in decisions about health care is the subject of debate. Some researchers have found that members of the public are reluctant to state a view¹ or prefer decisions about the allocation of health resources to be made by doctors.² The debates that have begun to take place over the rationing of health care³ have, however, made the issue more open, and many people believe that the public can no longer be allowed to remain ignorant of decisions that concern them.