elderly people may be the unrepresentativeness of patients enrolled in the major trials.

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Secondary prophylaxis after myocardial infarction

EDITOR.—In writing about secondary prophylaxis after myocardial infarction D L Whitford and A J Southern state that "β blockers should be given to all patients except those with active reversible airways disease, heart block, or heart failure, and treatment should be continued for at least one year and up to six years in the community."¹ Such dogmatism is not justified, and it would be alarming if such authoritarian statements were used as a criterion on which to evaluate the quality of care given by physicians. The opinions expressed are based on the interpretation of clinical trials. While these trials have clearly shown the prophylactic benefit of this treatment in the subjects recruited, they have included only a minority of the potential patients after infarction. Furthermore, many of those included in the trials had such a good prognosis that one can question the need for β blockade in similar cases.² As Chamberlain wrote recently, "In addition to the 30% of patients after infarction who may not tolerate β blockade, it may be reasonable to define another group of approximately similar size for whom β blockade is not indicated on grounds of good prognosis."³

Practice should certainly be based, when possible, on the results of good clinical trials. Interpretations, however, are not straightforward. One should be cautious about elaborating rigid rules on treatment and incorporating them into local protocols. It would be unfortunate if those physicians who believe that one can be selective about the use of β blockade after infarction were criticised or even penalised for not having achieved a questionable standard.

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Smoking in China

EDITOR.—I was heartened by the titles of the Editor's Choice and Ronald M Davis's editorial¹ in the issue of 8 October, which is dominated by articles on smoking. I wish to point out, however, that it is not enough just to slow the march of the Marlboro man; we should eliminate him

Antismoking slogan on packet of cigarettes

altogether. After a letter that I wrote, entitled "Marlboro man,"² was published in the *Medical Journal of Australia*³ I received quite a bit of hate mail.

During my latest visit to China, last June, I saw a photograph on the wall of the observatory opposite the tall television tower in Wuhan of the tower with a conspicuous sign advertising KENT painted on it. But when I looked at the tower itself the sign had disappeared. Apparently, a month earlier Dr M Z Chen, minister of public health in China, had visited Wuhan, seen the sign, and ordered its immediate removal.

Although we bemoan the deplorable statistics cited by Peto that one of every three cigarettes manufactured in the world is consumed by people in China,⁴ we can take pride in the strong antismoking campaign that Minister Chen has been waging.⁴ He is, however, fighting an uphill battle, because Mao Zedong was, and Deng Xiaoping is, a heavy cigarette smoker. But I was interested to note that in a newspaper that published a photograph of Deng smoking there was an equally prominent antismoking slogan printed on the next page, which said in Chinese, "Every time you smoke a cigarette you shorten your life by five minutes." Nowadays, all the cigarettes in China have to carry the same health hazard warning, whether in English or in Chinese, on their packaging (figure). So there is hope that "a smoke-free hospital can be achieved in China by year 2000."⁵

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Vaccination against hepatitis A for travellers

Will alter the dynamics of transmission in Britain

EDITOR.—R H Behrens and J A Roberts suggest that vaccination against hepatitis A is not cost effective and recommend that travellers should contribute more to the true cost.¹ This requires debate, but their work also raises several public health issues. Hepatitis A is endemic in Britain,^{2,3} and on average each case of infection results in one secondary case⁴; this is a feature common to infectious diseases, which allows them to persist. Hepatitis A associated with travel may cause few outbreaks because those most at risk (family and household members⁵) may have been protected against hepatitis A as they travelled at the same time. Not preventing hepatitis A would lead to an increase in secondary cases.

Mortality from hepatitis A increases with age,⁶ with the death rate per notified case in 55-64 year olds being 30 times higher than that in 15-34 year olds. Vaccination of susceptible elderly people is particularly important, and prior antibody screening makes this cost effective. Although nearly all elderly people were immune to hepatitis A some years ago, for new cohorts of this age group this will not be the case: 20-25% of 50-60 year olds are currently at risk of infection.⁷

Two and a half million people—more than 4% of the total British population—travel annually to areas where protection against hepatitis A could be warranted.⁸ Over five years this percentage would be greater. If large numbers of the population were vaccinated herd immunity would increase, with a subsequent reduction in the transmission of hepatitis A virus in Britain⁹; there would also, however, be an increase in the average age at infection and, more importantly, in the number of elderly people becoming infected, with a worse prognosis.¹⁰ Because of the low basic reproductive rate of hepatitis A⁴ (about 2¹¹) herd immunity needs to be increased by only a small amount to reduce endemic transmission in Britain appreciably. Because hepatitis A virus is commonly spread from child to child¹² protection of adults by vaccination as the only measure would not eliminate transmission.

Protection for foreign travel is unlikely to be withdrawn because the government could be accused of privatising the NHS. Whatever funding arrangements exist, vaccination will increase immunity to hepatitis A, which will alter the dynamics of transmission. The current policy has the potential to increase mortality and morbidity, and a full assessment of the implications of measures to control hepatitis A is required.

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All relevant costs and consequences should be measured

EDITOR.—On the basis of a comprehensive economic evaluation R H Behrens and J A Roberts conclude that "a national policy of immunising all travellers against typhoid and hepatitis A does not seem to be cost beneficial to the community."¹ While in principle such evaluations should help guide public health policy, considerable uncertainty surrounds many of the estimates used, and their conclusion should not compromise public health advice on the need for vaccination for certain categories of travellers.

Certain costs and consequences were not identified in the evaluation. The authors acknowledge the potential for outbreaks of typhoid and hepatitis A to occur but state that, on the basis of published data, there is no evidence to suggest that either infection is transmitted from returning travellers to the community. A lack of published evidence for such transmission does not, however, exclude its occurrence. Furthermore, many potential out-

breaks are prevented by the work of consultants in communicable disease control and environmental health officers. Both hepatitis A and typhoid are notifiable diseases. Notification sets in motion a series of events, which may include contact tracing, education, administration of immunoglobulin, and surveillance of contacts.² These "behind the scenes" measures for prevention and control may consume considerable resources, particularly if the index case is in someone who handles food. Although inclusion of the costs of prevention and control of these two diseases in the analyses may not have affected the authors' overall conclusion, the resource implications of the work of consultants in communicable disease control and their colleagues should have been incorporated.

In addition, the cost of administering the vaccines were based on a survey published in 1990 and reflect historical patterns of work. In recent years practice nurses have taken on an increasing range of tasks.³ In many primary health care centres practice nurses rather than general practitioners probably administer vaccines to travellers. The costs of administration in Behrens and Roberts' table III should be recalculated with this in mind.

If analyses such as these are to be used for directing public health policy they should first ensure that all relevant costs and consequences are identified and measured and valued appropriately. Secondly, given the sensitivity of the cost-benefit ratios to changes in the incidence of disease, it would be helpful for those devising local policy if estimates could be provided for threshold incidences at which administration of these vaccines would be cost beneficial.

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Generalists as gatekeepers to secondary care

EDITOR,—Brendan Sweeney describes the advantages of the NHS's referral system, whereby patients have access to specialist care only through their generalist, their general practitioner.¹ These advantages are clear when one works (as I now do) in a country in which, by contrast, all patients have open access to specialist services.

But what of the disadvantages of the British system? Why does open access flourish on the continent and elsewhere? One factor is undoubtedly the power of the specialist lobby, anxious to retain direct access to patients for whom a fee per service is paid. Probably equally important is public opinion: patients in Belgium regard a choice of doctor (who, when, and where) as a right. Sweeney's editorial makes almost no mention of patients' views on the referral system. As British "patients" become "consumers" they, too, may become unhappy with a system in which their general practitioner exercises choice on their behalf—an issue that the patient's charter scarcely begins to address.

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Myths in medicine

Jenner did not discover vaccination

EDITOR,—Without wishing to take anything away from the contribution made by Edward Jenner's cow, Blossom, I fear that Norman Begg and Angus Nicoll score an own goal in their article on myths in immunisation.¹ To reiterate their own quotation: "falsehood flies and truth comes limping after."

The limping truth is that Edward Jenner was a political opportunist who obtained priority in the discovery of vaccination (1796) through his reputation (he was elected a fellow of the Royal Society in 1779 on the strength of his research on cuckoos) and aristocratic social standing (he received financial support from the Duke of Bedford and the lord mayor of London). The efficacy of vaccination was already known among local farmers in north Dorset in the mid-1770s. Benjamin Jesty, who had observed the protective effects of cowpox infection among his milkmaids, persuaded his wife (then aged 50) and two sons that they should be deliberately infected with cowpox material. He used a stocking needle to transfer matter from a cowpox pustule on a cow (not Blossom, I'm afraid) to a scratch made on the arm of each of the members of his family. These inoculations were the first recorded vaccinations.^{2,3} His wife lived until she was 84 (over twice the life expectancy in the 18th century).

Jenner's experiments came 22 years later. Benjamin Jesty was presented with two lancets mounted in gold in 1805, together with a document attesting to his discovery of vaccination. In 1829 John Fosbroke wrote that if Jenner had not had "fortune, fame, and high alliance, his merit would have been crushed or faintly supported." Let us lay the Jenner myth to rest for the final time.

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Surveillance-containment is key to eradication of smallpox

Another myth about immunisation should be added to Norman Begg and Angus Nicoll's list, though it is perhaps now of only historical importance.¹ It is commonly said, particularly in the introductory sentences to the appropriate passage in undergraduate and non-specialist books, that smallpox was eradicated by mass immunisation. Undoubtedly immunisation played a part in reducing the incidence to manageable levels. The key to eradication, however, was the switch from mass immunisation, which was not very successful, to a dynamic campaign of surveillance-containment backed up by immunisation.²

The significance of the switch in policy is illustrated by the campaign in Sierra Leone. In 1967-8 Sierra Leone had the highest rate of smallpox in the world. The eradication campaign started there in January 1968, and the last case occurred in April 1969. Three of the four largest outbreaks were controlled without mass immunisation.³ Similar success was achieved in other countries in west and central Africa.²

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Word of warning to junior ophthalmologists

EDITOR,—I recently spent several humbling and depressing hours trying to shortlist half a dozen applicants for a career registrar post in ophthalmology. There were 30 applications for the one post, which is only the 11th such post to be advertised in the *BMJ* during the first eight months of 1994.

Twenty four applicants had an FRCS or FRCOphth; four also had an MRCP; three had an MSc; one had an MD; one had an MRCP; many were multiple prize winners; and most had multiple publications. Any one of the applicants would have had no problem in obtaining a registrar post 10 years ago. Today only half a dozen will be shortlisted, and probably only the top 10 will ever obtain a registrar post in the United Kingdom. What about the 20 others?

According to the Royal College of Ophthalmologists, in 1993 in the United Kingdom there were 416 senior house officers; 282 were of settled status, 229 were pursuing a career in ophthalmology, and 51 had an FRCS or FRCOphth.¹ At the same time there were 155 career registrars in the United Kingdom, 43 being in research posts.² Joint Planning Advisory Committee (JPAC) national targets for career registrars in 1993 in England and Wales were 107.³ The number of high quality applications from senior house officers for a career registrar post is therefore not surprising. Is it not, therefore, a scandal that a large proportion of these highly able, intelligent, and qualified applicants stand little or no chance of continuing their ophthalmic career to consultant level?

Senior house officers do an enormous amount of work in the health service, largely in outpatient clinics (ophthalmologists see 19 outpatients for every inpatient⁴). Their numbers therefore cannot simply be reduced if the service requirement of the health service is to be met. To achieve any sort of career balance the numbers of senior house officers have to be cut but replaced with a different grade.

To achieve such a balance at least 100 so called settled career senior house officers must be lost. To fulfil the service requirements the work must be done, either by replacing them with more consultants and the appropriate extra registrars and senior registrars (Calman trainees) or by replacing them with more associate specialists, staff grade doctors, clinical assistants, or whatever alternative career grade can be devised.

Until this problem is adequately addressed, junior doctors contemplating a career in ophthalmology would be well advised to think carefully before embarking on such a course. An MRCP, an MSc, an MD, prizes, and publications seem to be essential requirements for all senior house officers aspiring to be career registrars. The fellowship that was necessary 30 years ago to become a consultant, 20 years ago to become a senior registrar, and 10 years ago to become a registrar is now reduced to a senior house officer qualification, which on its own seems to be almost useless if acceptance into higher specialty training is desired.

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