("cold tolerance test").² Our findings with the cold tolerance test applied to potential carriers of haemophilia were presented at the Fifth Congress of the International Society on Thrombosis and Haemostasis in Paris in 1975.³ They have now been extended and we have obtained the following results.

A total of 25 carriers (mothers and daughters of haemophiliacs) were examined. The differentiation into "proved" and "probable" carriers was in accordance with the criteria used by Nilsson *et al.*⁴ Considering the fact that haemophilia may be due to spontaneous gene mutation in some instances, a woman who has one haemophilic son while no further case of haemophilia is known among her relatives is called a "probable" carrier.

Haemorrhagometry: Cold tolerance test in normals and proved and probable carriers of haemophilia.

The figure shows the bleeding times observed with the cold tolerance test. The normal range—that is, up to 14.3 min—is indicated by the shaded area (based on the one-sided non-parametric upper tolerance limit, thus covering 95% of the population whatever the distribution). Of the 25 carriers, 21 had bleeding times outside the shaded area, which means that they can be identified by this method. For the proved carriers the rate of "false-negative" results is even smaller: Only two out of 19 proved carriers showed normal bleeding times with the cold tolerance test. Thus an estimate of the probability of false-positive results is 0.05 by definition and the probability for "proved" carriers to show false-negative results can be estimated as $2/19 = 0.105$.

When the cold tolerance test with the haemorrhagometer was applied to female relatives of haemophiliacs who were not necessarily carriers on genetic reasons—for example, aunts and sisters of haemophiliacs without male offspring ("potential" carriers)—10 of 18 had prolonged bleeding times, which is in fair agreement with the probability of 0.5 to be expected theoretically.

Thus the haemorrhagometry cold tolerance test provides a further diagnostic tool for detecting carriers of haemophilia.

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¹ Sutor, A H, *et al*, *American Journal of Clinical Pathology*, 1971, 55, 541.

² Sutor, A H, Bowie, E J W, and Owen, C A, *jun*, *Blut*, 1971, 22, 27.

³ Jesdinsky-Buscher, C, and Sutor, A H, *Blut*, 1976, 33, 83.

⁴ Nilsson, I M, *et al*, *Acta Medica Scandinavica*, 1962, 171, 223.

*This is an interesting approach to the diagnosis of carriers of haemophilia and looks promising in the hands of the Freiburg workers. The method consists of continuous irrigation of a standard skin wound with cold

distilled water. The haemolysed blood from the wound is then passed through a photometer, where the haemoglobin content is measured and continuously recorded on a moving-pen recorder. If the above results are confirmed by other workers, preferably in a blind study, then haemorrhagometry may be a useful addition to the tests at present used for the detection of carriers of haemophilia.—ED, *BMJ*.

Royal College of General Practitioners

SIR,—According to Dr Ian Capstick (5 February, p 373), members of the Royal College of General Practitioners "are weakening, losing enthusiasm, and have doubts." But surely this happens to the members of any large corporate body after the first few years of its existence. A group of doctors, like any other group of people, consists of a small core of energetic enthusiasts and a large mass of members who grumble at their leaders' actions but do precious little themselves about altering the status quo.

As a foundation member who does not enjoy committee work and whose energy and enthusiasm have been largely diverted into other channels I have stood admirably on the sidelines watching the college gain in stature and recognition over the years. I am sure it will go from strength to strength. General practitioners who are well known for their research and educational activities but have remained outside the college are few in number, whereas hundreds of college members have advanced the status of general practice in both these fields.

As far as general policies are concerned the college leaders would be the first to admit that mistakes have been made, as happens in the early years of any new major organisation, but they have shown that they have been willing to learn from their mistakes and are happy and willing to accept constructive criticism.

The college now requires a fresh impetus in the opinion of many doctors both inside and outside its portals. It could well come from literate enthusiasts such as Dr David Cargill (19 February, p 508). Why can't David Cargill and others who think along similar lines join or rejoin the college and reform it from within? I can guarantee from my own experience of serving for short periods on two college faculty boards and from having contacts with members as lecturer and tutor that they will be given a fair hearing at all levels in the college. Positive suggestions put forward will be debated fairly. Constructive criticism from within the college is more valuable than from outside it, as it is more informed. There can never be too much of it!

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Royal College of General
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S Croydon, Surrey

"Act of Rape"

SIR,—On 22 January a television programme entitled "Act of Rape" was presented on BBC2. It consisted of a play "based on recent court cases" followed by a panel discussion. Many of our members have complained about the impression the play set out, apparently quite deliberately and certainly successfully, to give of the police and to a lesser extent the

police surgeon—the plaintive cries and later screams of the victim while in the surgeon's room together with the fact that the police officers outside could hear everything that was going on therein gave an impression of a complete disregard by the police surgeon of normal medical ethics and courtesy to his patient. The doctor and the senior police officer on the panel were repeatedly interrupted by the interviewer, who allowed uncomplimentary remarks by the other members of the panel to go unanswered.

We would stress that this association and indeed our police colleagues would not tolerate such behaviour by a doctor, who would be very quickly removed from the police surgeon's rota. We concede, as Barbara Torner, author of the recently published report *The Facts of Rape*,¹ has implied in her chapter on the medical and forensic examination, that all is not well in some areas and that there is room for improvement in these areas, but she has written a fair and well-balanced chapter which gives a much more truthful picture of the subject than the BBC programme.

Since 1967 this association has been pressing for proper medical facilities at police stations and indeed in 1968 sent recommendations to the Home Office for the design and equipment of medical rooms. Following our evidence to the Heilbron Committee² Home Office inspectors of constabulary have notified chief constables that these facilities will be specially inspected this year. We hope economic reasons will not be the excuse for failing to bring medical facilities up to the proper standard, as the cost of providing these at one police station is less than the cost incurred in the investigation and subsequent trial of a rape case. Furthermore, while deploring the type of behaviour shown on the programme, this association by education and example continues to improve the conduct of these examinations. Most police authorities now actively encourage their appointed police surgeons to become members of the association and from our personal knowledge of our members we are sure that they do strive to carry out a difficult and sensitive task with the dignity and professionalism they would expect to be shown to one of their own family in such circumstances.

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President

H DE LA HAYE DAVIES
Honorary Secretary,
Association of Police Surgeons
of Great Britain

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¹ Torner, B, *The Facts of Rape*. London, Arrow Books, 1977.

² Home Office, *Report of the Advisory Group on the Law of Rape*. London, HMSO, 1975.

Radiation-induced breast cancer

SIR,—Your leading article on radiation-induced breast cancer (22 January, p 191) may have produced some apprehension over the use of mammography. The report on your article by the medical correspondent of *The Times* (21 January, p 5) appeared under the headline "Doctors say x-ray testing may lead to breast cancer." Phillip Strax recently told me that in the USA many women have overreacted to similar reports and some are refusing mammography where there are clear clinical indications for it.

The uncertainty surrounding radiation risk estimates is well documented by Goss,¹ and

in the UNSCEAR report.² In the papers by Wanebo *et al*³ and Jablon and Kato⁴ there is caution over the interpretation of the effects of low radiation levels. They emphasise the susceptibility of younger age groups to radiation-induced breast cancer and they state that in the deaths occurring in 1965-70 among women over 35 at the time of atomic bombing and who received doses of over 50 rads mortality was not significantly elevated.

The difficulty of extrapolating the biological effects of high radiation dose levels to lower levels are increased by the possibility that the fission neutrons and gamma radiation from atomic bomb explosions may have a more pronounced effect than the softer radiation used in mammography and also by the fact that the accuracy of measurement of air dose at Hiroshima was $\pm 30\%$.¹

The improvement in mammography techniques in recent years⁵ "minimise the radiation hazard. If one assumes that the 50-rad dose is a significant level a woman of 40 could, with biennial mammograms at a dose of 0.5 rad, reach the age of 60 having sustained a cumulative dose of only 5 rads.

Shapiro⁷ has reported that although the Health Insurance Plan (HIP) study showed no reduction in mortality in women under 50, there was a possibility that under different screening conditions with current mammography equipment a benefit would be found. The most recent figures from the West London Screening Programme show that for the 40-50-year age group 30.7% of the cancers were found by mammography alone compared with 19.4% in the HIP New York study. As the lowest case fatality rates occurred in breast cancer cases positive only on mammography I suspect that the less favourable outlook for the younger age group in the New York study may be related to the lower proportion of cancers discovered in the under-50s by mammography alone.

In England and Wales breast cancer is the commonest cause of death in women aged 35-54, with 2745 women dying in 1975.⁸ It would be unfortunate if the possible benefits of screening were denied to this age group before the latest mammographic techniques are fully evaluated.

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¹ Goss, S G, *The Risk of Death from Radiation Induced Cancers as Estimated from the Published Data on the Japanese Atomic Bomb Survivors*. Harwell, National Radiological Protection Board—R20, 1974.

² United Nations Scientific Committee on the Effects of Atomic Radiation, *Ionising Radiation: Levels and Effects*, vol II. United Nations, New York, 1972.

³ Wanebo, G K, *et al*, *New England Journal of Medicine*, 1968, **279**, 667.

⁴ Jablon, S, and Kato, H, *Radiation Research*, 1972, **50**, 649.

⁵ Asbury, D L, and Barker, P G, *Proceedings of the Royal Society of Medicine*, 1975, **68**, 435.

⁶ Price, J L, and Butler, P D, *British Journal of Radiology*, 1975, **48**, 872.

⁷ Shapiro, S, Conference on "Breast Cancer: A Report to the Profession." Washington, DC, 1976. Abstracts, p 26.

⁸ *Cancer Topics*, 1976, **1**, No 3, p 1.

Amoxil and Talpen

SIR,—I was interested to read Dr E T Knudsen's reply to my letter (12 February, p 442). The nub of his argument seems to be that amoxycillin *ought*, on theoretical grounds, to be more effective and less liable to cause diarrhoea than ampicillin and that this must indeed be so because "amoxycillin is now very widely used in both hospital and general

practice in this country and overseas." Although he quotes several references to the "outstanding efficacy" of amoxycillin, he does not challenge my statement that "the clinical superiority of amoxycillin over ampicillin in the control of infective exacerbations of chronic bronchitis... has never been demonstrated in a controlled trial." It would appear that he has no evidence on which to do so: if he had, I am sure it would have been the keynote of his letter.

With regard to the comparative incidence of diarrhoea with ampicillin and talampicillin I would refer him to his own article in the *British Journal of Clinical Practice*.¹ In the "open" clinical trial reported in that article it is stated that the overall incidence of diarrhoea (mild, moderate, and severe) was 8.6% with ampicillin and 4.3% with talampicillin and that this difference was statistically significant ($P < 0.02$). That may be so, but the data recorded in table 7 of the article also showed that "severe" diarrhoea (which is what really matters in the clinical context) occurred in 5 (29%) of 17 patients on talampicillin and in 8 (23%) of 35 patients on ampicillin. It would appear from these figures that "severe" diarrhoea is, if anything, more liable to occur with talampicillin than with ampicillin, which makes nonsense of Dr Knudsen's claim for the superiority of talampicillin in this respect.

If I may paraphrase the last paragraph of his letter, may I say that the NHS would be getting better value for money if its precious resources were not going down the drain as a result of his firm's success in selling expensive patent-protected drugs, such as Amoxil and Talpen, which have not yet been shown in a controlled trial to be clinically superior to ampicillin except in acute typhoid fever?

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¹ Knudsen, E T, and Harding, J W, *British Journal of Clinical Practice*, 1975, **29**, 255.

SIR,—Dr I W D Grant is absolutely right to sound the alarm on Amoxil (amoxycillin) and Talpen (talampicillin) in his recent letter (12 February, p 442). His complaint that there is no satisfactory controlled clinical trial comparing amoxycillin and ampicillin was first made in 1972¹ and is still valid today. His stressing of economic aspects is especially important in view of the massive quantities of ampicillin-like drugs being prescribed.

Dr Knudsen in his reply (p 442) can refer only to in-vitro studies and studies comparing amoxycillin with antibiotics other than ampicillin. He has the impertinence to rebuke Dr Grant for having failed to perform research on amoxycillin and talampicillin in the six-month period since July 1976. I am sure Dr Grant has better ways to spend his time. The lack of controlled trials comparing amoxycillin and ampicillin is surely the responsibility of Beechams, who have failed to encourage such trials. For instance, it would have been nice to have had a trial on acute-on-chronic bronchitis under the auspices of the British Thoracic and Tuberculosis Association.

However, these are minor points compared with the major issue, which is the economic one. Even if all the claims made by Beechams for amoxycillin and talampicillin are eventually proved respectably this does not mean that we should rush to prescribe them. We should

first ask the question, "Is this advantage significant enough to justify the increased cost of the newer drug?"

At the present time the relative cost of these drugs are as follows (retail costs, one week course, oral route): ampicillin, 500 mg thrice daily, £1.59; amoxycillin (Amoxil) 250 mg thrice daily, £1.87; Talampicillin (Talpen) 250 mg thrice daily, £1.45. However, the apparent cheapness of Talpen is misleading and should be seen in a long-term context, bearing in mind the differing situation with respect to patents in these three drugs. The patent on ampicillin expired in 1975 and it is already manufactured by several other firms. Its price can be expected to fall considerably over the next few years owing to price competition. In fact this process has already started and it is now possible to obtain ampicillin at hospital contract prices which are significantly cheaper than Talpen, and almost half the price of Amoxil. The patent on Amoxil has about 10 years to run and on Talpen the patent has probably another 14 years. During this time Beechams can maintain the prices of these two drugs at a high level without fear of competition. Once enough doctors are habituated to prescribing them, Beechams may even feel able to raise the prices. In these circumstances it is natural that Beechams should wish to convince us that ampicillin is obsolete. Their massive advertising campaign reveals this desire most blatantly. The present success of this campaign is a sad reflection on the ease with which we as a profession allow ourselves to be manipulated by advertising in the way smokers are switched to brand X cigarette or housewives to brand Y detergent.

Doctors are only beginning to think in terms of cost-effectiveness in drug prescribing.² The majority are too ready to prescribe the latest drug whatever the cost. Dr Grant is quite right to criticise the *British National Formulary* for the way it ignores the economic aspects of its recommendations. Perhaps the *Drugs and Therapeutics Bulletin* can repair the omission?

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¹ *Drugs and Therapeutics Bulletin*, 1972, **10**, 61.

² Speight, A N P, *Tropical Doctor*, 1975, **5**, 89.

Future of child health services

SIR,—We have read the Court Report¹ with interest and are pleased that it has highlighted various deficiencies in the present system. We do not, however, agree with the proposal that paediatric general practitioners should be established.

This proposal seems to us to move in an opposite direction to that indicated by the concept of primary health care services looking after the family unit. It would seem likely to lead to a situation in which patients have to make a decision as to which doctor they will select, on the North American pattern. There would seem to be a clear need for a community paediatrician in a consultant role, but we deplore anything that destroys the fundamental concept of the family unit, removing its primary health care from the general practitioner and his team. This concept has been supported in many recent reports including that of a panel of the Board of Science and Education of the BMA in 1974, and more