PRACTICE OBSERVED

Continuing Education

Developing the matrix

J ROBSON

Whichever way you look at it—volume, cost, and, for good or bad, outcome—the pharmaceutical industry dominates continuing education in general practice. It is undoubtedly the single biggest modifier of physician behaviour. The average general practitioner can expect exposure to 420 free journals, 1600 mailed advertisements, 15 000 journal ads, and 50 visits from a company representative each year[1] at a cost of £92m or £3500 per general practitioner in 1979.[2] Sponsorship of postgraduate lectures, pharmacy dispensing profiles, and promotional trials complete a pattern of influence at almost every available interface. The problems of such marketing have been well documented.[3]

Even if motives are open to question and material openly biased, such tactics are certainly effective. At the hub of this system are in-practice, face to face techniques based on the company representative who accounts for about half the promotional budget. Not since they were undergraduates will doctors have faced such sustained personal pressure about what they do, how they do it, and how it might be done differently. It is an approach that mainstream continuing education has largely ignored.

In 1979 a mere £1·27m was allocated for section 63 activities in England (Department of Health and Social Security, 1983), of which a substantial amount went on vocational training. Ninety per cent of these activities are lectures presented outside the practice. Only 3% are classified under the heading of "general practice"; neither community health nor epidemiology warrants a category. The effect of such uncoordinated strategies based on hospital postgraduate centres is, as Byrne has pointed out, likely at best to have a "shotgun effect; scattered, weak, and unpredictable."[4] Between 1967 and 1977 the upsurge in educational activity reflected the revitalisation of general practice. Of late, the process has become retarded, in form, content, and numbers reached, concerned with updating old methods rather than developing the new. What is most notable is the commitment of those general practitioners who do take time to support these activities whatever their deficiencies (table I).

TABLE I—*Attendances by general practitioner principals, assistants, and trainees in England at section 63 activities (Department of Health and Social Security, 1983)*

	1977	1978	1979
No of attendances	69 509	65 547	68 831
Total No of courses	3 979	3 797	3 832

Since the 1950s, when Moran saw general practice as the bucket into which fallen specialists sank, the medical schools have belatedly recognised the discipline. In 1980, 36·8% of medical students placed it as their first career choice.[5] The present dean of St Mary's thought that: "The next generation of inner city general practitioners could be assured if today's students were given a full sight of the challenge, a local opportunity to train to meet it, a realistic prospect of partnership with appropriate premises on completion of training, and a continuing involvement in postgraduate and undergraduate education."[6]

This is laudable, but assured for what? There has never been any shortage of applicants here.[7] My predecessors in practice were young once, worked very hard, and attended available postgraduate lectures when they could. New blood is a necessary but not sufficient condition for progress. Most general practitioners, fallen or not, have always been well motivated, driven and sustained by their patients. What is not assured, in inner cities or elsewhere, is either the resources or the mechanisms that will foster the development of primary care over the

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succeeding 20 or 30 years of professional life. Viewing a substantial part of one's work as unnecessary or trivial is related not to age but to the nature of training (table II).[8] We should learn the lesson. The future of general practice will only be assured when development is based around the context in which it works.

TABLE II—*Variations in practice with doctor's date of birth*

	Percentage of doctors by date of birth			
	Before 1917 (%)	1917-26 (%)	1927-36 (%)	1937 or later (%)
Practice has electrocardiograph	16	36	36	64
Family care felt to be very important	43	27	25	17

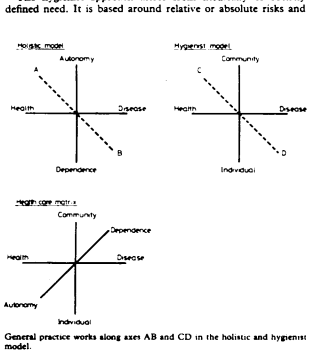
Adapted from Cartwright A, Anderson R. *General practice revisited*. London: Tavistock Publications, 1981.[9]

The health care matrix

General practice is in the process of developing two interrelated models: the hygienist and the holistic (figure). Practice takes place along and around the diagonals. At one extreme, bottom right, the general practitioner and others in the primary team provide acute and continuing care for dependent and sick individuals. At the other, top left, they provide anticipatory care for healthy, free living populations. For the most part care combines these approaches between and around these points.[9]

Holism takes as its starting point the expressed needs of patients—the story, history, or problem.[10] At A, essentially healthy patients are listened to or provided with advice. Their current needs are few and concerned mainly with making choices. The aim is to minimise the limits of available options—for example, counselling or contraceptive advice. At B, needs are great, the choices few. Care is geared to maximising options within imposed limits—for example, the support of chronically sick or disabled people.

The hygienist approach arises from medically or socially defined need. It is based around relative or absolute risks and their modification. At C, population based strategies take whole populations at low risk. Here the benefits and costs for each individual are low but the social outcome is high—for example, child immunisation. At D are high risk individuals, where costs and benefits for each person are high, and in terms of a shift in social outcome the impact is low—coronary artery surgery.[11] In day to day practice the axes are intimately and essentially related—the health care matrix.



General practice works along axes AB and CD in the holistic and hygienist model.

"We should continually remind ourselves" wrote Weed, "that not to think quantitatively about the needs of all the people has qualitative implications for most of the people."[11] Technology imposed on diseases will not take us any further forward than philanthropic rumination on the lives of our patients. To meet the needs, primary care must practically integrate the holistic and hygienist approaches.[12 13] If general practice is not to become an obsolete sick shop, relegated to the perimeter of the field, then it will have to move, with the population it serves, upwards and to the left. Continuing education is part of the development along that axis.

Approaches to learning

New approaches need new methods of teaching, new teachers, and new locations. Despite a wealth of riches in the local postgraduate centres we are rarely willing or able to use them and the drug representatives who attempt in-practice contact are not seen. If organised and sustained educational intervention is to reach us it must be based mainly around the work we do and where we do it. Peripatetic methods, which will not only bring the mountain to Mohammed but use the data and experience bound up in practices, are still in their infancy.

Teaching is one of the biggest stimuli to learning, yet only about 30% of general practitioners are engaged in this. Lectureships and fellowships have begun to be developed in practices,[14] and audit groups and workshops go some way to dealing with material and problems generated locally. Where the hospitals have been prepared to come out, innovation has been two way. An obstetrician at the surgery may not only help to develop skills but new styles of work emerge, and in this case patient held records make sense to everyone.[15] The academic "promotional trial" has as big an implication for styles of work as it does for research. A research nurse in the Medical Research Council's hypertension trial pointed out that "there was a largely untapped pool of motivated practices who, when provided with adequate help, finance, and facilities enjoyed and successfully contributed to a multicentre trial."[16]

Conversely, developments outside the practice could be strengthened. If special skills such as obstetrics and paediatric development are to be taken up and sustained on any scale then clinical attachments (which have shown a steady decline) will have to be revitalised. There is an 18 month waiting list for our one "local" course in developmental paediatrics lasting 10 days. Prolonged study leave is either rarely applied for or rarely given. In my own family practitioner committee area only three principals have been granted the option in the past 10 years.

Not since sphygmomanometers replaced tracheostomy sets has the future of primary care had greater potential. With computers and associated technology we are at the start of a change that will alter the face of practice in the next 30 years more than it has changed in the past 60. Yet in the year 2000 measles will continue to be as unnecessary as diphtheria and so will the hypertensive stroke. By then excuses for failing to provide personal care around defined needs for all the people will be running thin. To achieve this provision, continuing education needs to be located with general practice along the axis of the health care matrix. Like vocational training, responsibility for it cannot be left to those working on the periphery. The responsibility for developing strategies that will concern all general practitioners lies in our court. The drug companies are not selective and neither are the patients. When were you last visited by your tutor in general practice?

I thank members of the Royal College of General Practitioners Education Division Working Party on the Black report for discussions on the holistic approach to health care.

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Practice Research

Penicillin allergy: a suspect label

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While referring to patients' records during daily clinical practice I noted that a large number carried a reference to penicillin allergy. The evidence for this was often hard to find and some patients seemed to have been re-exposed without ill effects. It was likely that many patients had been incorrectly labelled and that it might be possible to improve the records in this respect.

Method

The study population was a personal list of 2100 patients. Over two years I inspected the notes of all those who consulted for any reason. Any record of a penicillin reaction was noted and all those receiving an antibiotic were asked specifically about allergy to penicillin. All patients thus identified as allergic were asked about the nature and circumstances of the allergy. The records were then carefully searched for contemporary evidence of the episode. Written evidence of exposure to penicillin after the date of alleged allergy was also recorded, together with any note of a further reaction.

Results

Seventy eight patients believed themselves to be allergic or were so identified on their records: 32 men and 46 women. This represents a minimum prevalence of 3·7%, although an exact figure cannot be given because not every patient on the list consulted during the study period. No less than 28 patients (36%) had been re-exposed to penicillin at some time since the original diagnosis. Tables I and II give the time since the first episode and the patient's experience *at that time*. In both tables the group that was later inadvertently re-exposed is compared with all the patients.

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Miscellaneous reactions included non-allergic side effects of penicillin and reactions that are not known to be caused by penicillins. In many cases there was no memory of symptoms at all, the patients having been informed of their allergy by a parent.

Of the 28 re-exposed patients only four (14%) had a further reaction. One had a recurrence of angio-oedema. Three patients had a maculopapular rash. Two of these had described a maculopapular rash previously and one a non-specific rash. All three were given ampicillin or ampicillin and flucloxacillin at the time of the second episode. The remaining 24 (86%) who were re-exposed had no reaction of any kind.

TABLE I—*Years since original episode*

Years	Total No (%) of patients	No (%) of re-exposed patients
<1	2 (2·5)	—
1-2	3 (4)	—
2-5	13 (17)	3 (11)
5-10	12 (15·5)	7 (25)
10-20	15 (19)	9 (32)
20	11 (14)	5 (18)
Not known	22 (28	4 (14)
Total	78 (100)	28 (100)

TABLE II—*Type of reaction described at time of original episode*

Type of reaction	Total No (%) of patients	No (%) of re-exposed patients
Anaphylaxis (shock/general reaction)	0 (0)	0 (0)
Angio-oedema	2 (2·5)	0 (0)
Rash	2 (2·5)	1 (3·5)
Urticarial	16 (20·5)	2 (7)
Maculopapular	10 (13)	2 (7)
Non-specific	20 (26)	11 (40)
Miscellaneous	4 (5)	2 (7)
Likely due to illness	5 (6·5)	1 (3·5)
No details	19 (24)	9 (32)
Total	78 (100)	28 (100)

When asked, 22 (79%) of those who had been re-exposed still believed that a further exposure to penicillin would be harmful to them.

In 45 cases (58%) it was possible to identify the form of penicillin responsible for the initial alleged reaction with reasonable certainty and this is given in table III along with the type of penicillin given later to those in the re-exposed group. In only 32 case notes (41%) was it possible to identify the penicillin as well as the episode for which it was prescribed.

TABLE III—*Type of penicillin known to have caused a reaction*

Type of penicillin	No (%) of patients		
	Initial exposure	Re-exposure without reaction	Re-exposure with reaction
Penicillin	22 (49)	3 (12·5)	1 (25)
Ampicillin amoxycillin	21 (47)	15 (62·5)	2 (50)
Ampicillin plus flucloxacillin	2 (4)	2 (8·3)	1 (25)
Phenoxymethylpenicillin	0	4 (16·7)	0
Total	45 (100)	24 (100)	4 (100)

Discussion

The results show that penicillin allergy is a common label which restricts doctors' choice of treatment and implies a risk of life threatening side effects. Thus doctors are rightly bound to be cautious when faced with any patient claiming to be allergic to penicillin or whose record indicates past allergy. Figures presented in this paper, however, also show that many such patients have been re-exposed and further reactions have been minor or in most cases there were none. This implies that patients have been incorrectly given the label "allergic to penicillin."

Although the data on most patients are incomplete, the results suggest that the history is more reliable if the reaction has been serious or the episode well documented. The only re-exposed patient with angio-oedema had a further similar reaction, whereas none of those for whom no details were available had any reaction. It is notable that the more vague the history the more likely the patient was to have been re-exposed: 47% (9/19) of those with no details of the original reaction and 55% (11/20) of those with a non-specific rash had a further exposure, compared with only 20% (2/10) with a maculopapular rash and 12% (2/16) with urticaria.

The reason for errors in labelling may be attributed to either patient or doctor. There are several non-allergic side effects of penicillin such as a sore mouth, which may be interpreted by patients as an allergy. In addition, several patients reported such features as "fever and yellow spots on the tonsils," which clearly relates to the illness for which they were being treated. A few descriptions were bizarre, such as "a feeling of my fingers flying off" after a single dose of ampicillin.

It is likely that several non-specific viral rashes occurring in people who take penicillin for a febrile illness are being interpreted as allergy and that sometimes patients who develop a reaction of any kind while on the drug are being advised to stop it to be on the safe side. Patients may interpret this as indicating that they should not have penicillin again. Phenomena such as the maculopapular rash associated with ampicillin, which occurs in an appreciable percentage of all those exposed to the drug, are a particular problem. Much has been written about this reaction, which is probably not allergic and which does not imply cross sensitivity with other penicillins.[1]

Conclusions

It is important that the label "penicillin allergic" is reserved for those for whom there is a genuine risk. Information in published reports and the results of this paper suggest that if the following points are accepted the accuracy and reliability of the diagnosis will be much improved.

(1) The diagnosis should be made by a doctor after the rash has been inspected and not at second hand. This would exclude several other causes of rash and some misapprehensions by patients.

(2) When a doctor concludes that the reaction is probably due to penicillin allergy the illness, the reaction, and the type of penicillin should be carefully written in the patient's notes and the information entered on the front of the record along with the date. This would help doctors in future to rely on the patient's information.

(3) Patients who develop a maculopapular rash on ampicillin should not be regarded as allergic to all penicillins.

(4) Responsible prescribing of penicillins is necessary to avoid both true allergy and diagnostic confusion leading to incorrect labelling.

I thank Mrs Vida Sellen for typing the manuscript.

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What would you do?

My wife wishes to be a career general practitioner and to that end is just completing a vocational training scheme, having added the diploma of the Royal College of Obstetrics and Gynaecology, the family planning certification, and so far passed the written part of the membership examination of the Royal College of General Practitioners.

As a probation officer myself I was intrigued to receive a phone call from the senior general practitioner—a trainer—at a practice to which my wife had applied for a vacancy. The conversation contained two points: firstly, all the women on the local vocational training scheme were thought to be better than the men this year, and, secondly, they were not appointing a woman because "they have a habit of getting pregnant."

Hearsay has it that this is not local lunacy. How would you go about securing an interview, nay a job even, under such circumstances?—A general practitioner's husband.