for you, but try to relax; examiners get put out by signs of tension (sweating, overbreathing, and tremor all distract them from their job), and, although you may not find it easy to believe, they really welcome an opportunity for a quiet and uninhibited discussion with you.

If you're a man, you will have to give some thought to what tie you are going to wear; it should depend on how you feel when you get up on The Day—a bow, a recognisable club, or something anonymous—whatever is comfortable—but tuck it in if it is long, as it may exhaust the abdominal reflexes while you are auscultating the left chest. You also have to decide what to do with your hands, which are better out of your pockets.

If you're a woman, you have different problems; heavy rings may be uncomfortable for your patient when you palpate for axillary lymph nodes, long hair may flop over the anterior chest wall, swinging earrings get in the way. Your examiner may be an experienced man who is able to pick up a prophetic whiff of "Je Reviens," so watch your scent. It is better not to be obviously

pregnant. Though everyone accepts its increasing prevalence in medical students, the effect of pregnancy on examiners is unpredictable, ranging from avuncular concern to uncertainty whether you have got your priorities right.

It is no longer so urgent as it used to be to discover the identity of your examiner. Pairs protect, and prophylactic action is taken by examining boards to avoid lethal combinations of examining genes. You will, of course, meet hawks and doves and the occasional peacock, woodpecker, cuckoo, or owl, but don't let this worry you: it will enlarge your experience and you may rest assured that, whatever their avian characteristics, the vast majority of them are trying to find out what you *do* know, not what you don't, recognising that an examination is no more than a milestone in a continuum of medical education.

Let me wish you good luck—you will still need a little bit of this.

Eventually this series will be collected into a book and hence no reprints will be available from the authors.

Aspects of Australian Medicine

Restrictions on NHS prescribing in Australia

TONY SMITH

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British doctors feeling themselves suffocated by NHS bureaucracy sometimes look to Australia as a country where medicine may be practised in freedom. In most regards this is true, and Australian doctors are certainly better rewarded financially than their British counterparts in all branches of the profession.

Yet in one way Australian doctors accept restrictions on their clinical freedom that would be regarded as quite unacceptable if proposed by the British Departments of Health: under the pharmaceutical benefits scheme, which subsidises almost all drugs prescribed outside hospital, not only is the range of drugs available restricted but there are also controls over the dose, the duration of treatment, and in many cases the clinical indications for which they may be prescribed.

Medical care in Australia

Most general practitioners and hospital consultants in Australia work on a fee-for-service basis, and their patients are required by law to take out medical insurance either through the government-operated Medibank scheme or through one of the non-profit insurance companies. The major hospitals, teaching and non-teaching, are operated by the state governments, and again the charges they make to patients are reimbursed by the insurance schemes. The cost of drugs supplied in hospitals is shared between the state governments (which run the hospitals) and the Federal Government, which controls the import and licensing of drugs.

As in Britain, when a general practitioner prescribes for his patients, the prescription is dispensed by a retail pharmacist. If the drug is on the list of "pharmaceutical benefits" approved by the Federal Government then the patient has to pay only a fixed charge of \$2.50 (about £1.40). Pensioners are exempt. If, however, the drug is not a listed pharmaceutical benefit then the patient has to pay whatever the pharmacist charges, and in practice in addition to the cost of the drug most pharmacists charge a dispensing fee close to double the rate paid under the pharmaceutical benefit (also known as the NHS) scheme.

When the scheme was first introduced in the early 1950s the intention was for there to be a list of life-saving and essential drugs provided by the State and for patients to pay for all their other drugs. In practice, however, the first very restricted list of 90 drugs proved unsatisfactory; for when they wanted to save patients money doctors were soon tempted to use the "essential" drugs for unsuitable indications. The list was, therefore, expanded to provide a fuller range of drugs, and about half of the preparations on the ethical market in Australia are now listed. With the expansion of the list, there are now very few non-listed drugs that are prescribed in large quantities; and the selected drugs that appear on the pharmaceutical benefits list account for 90% of all prescription medicines dispensed.

Restrictions on prescribing

The primary aim of the pharmaceutical benefits scheme was to keep down costs, and as the list of drugs available has been expanded the restraints on their use have been maintained and strengthened. Some products may be prescribed freely, but others are restricted to specified conditions. A few drugs are available only with the written authority of the Director General of Health. Finally, a few preparations such as influenza vaccine are available as pharmaceutical benefits only to pensioners.

Doctors in Australia are supplied free with a blue booklet

published by the Commonwealth Department of Health listing the drugs included in the schedule of pharmaceutical benefits. Each drug entry has against it the maximum quantity that can be prescribed and the number of repeat prescriptions that can be issued. Typically, the maximum quantity allowed is the amount that provides treatment for the normal course of an acute condition: so that the maximum quantity of ampicillin is 25 250-mg capsules or 12 500-mg capsules. In chronic conditions the maximum quantity provides one month's treatment.

For the drugs that have restricted indications the entries are printed in red. Phenoxymethylpenicillin, for example, is available only for prophylaxis against rheumatic fever; phenobarbitone only for epilepsy; and ibuprofen for rheumatoid and osteoarthritis only when salicylates are contraindicated or are ineffective. When prescribing one of the drugs a doctor has to mark the prescription "specified purpose"—and the Department of Health has a monitoring system to ensure that drugs are not prescribed under false pretences.

A few drugs are listed as "authority required." A doctor wanting to prescribe one of these drugs for an individual patient has to fill in a form and send it to the Department of Health for authorisation; only when the form is returned to him can he give the patient the prescription. Drugs in this category include expensive new preparations such as cimetidine (which can be prescribed only for patients with a gastric or duodenal ulcer proved by recent endoscopic or radiological examination), immunosuppressives such as azathioprine, and anticancer drugs such as cyclophosphamide.

Some drugs widely used in Britain are notably absent from the schedule: for example, there are no anticholinergics for the treatment of peptic ulcer.

Finally, even when there are no restrictions on the use of a drug, the blue book sometimes contains terse comments on indications: against frusemide, for example, the entry reads "frusemide is not the drug of choice in uncomplicated hypertension."

Power politics

How has the scheme evolved and how does it work in practice? Australia is in a different position to Britain in that virtually all drugs are imported, and the Commonwealth Government uses its control of import licences as a powerful weapon in its dealings with international pharmaceutical companies. Any company wanting to introduce a new product to Australia has first to submit it to the Australian Drug Evaluation Committee, which looks at toxicity and efficacy in the same way as our Medicines Commission. New products may be accepted with restrictions on their marketing (for example, a drug may be accepted for short-term use only or for only certain clinical indications) but there is generally no legal restriction on the way these drugs are prescribed by doctors in private practice.

Once a drug has passed through the Drug Evaluation Committee it is considered by the Pharmaceutical Benefits Advisory Committee, an independent statutory committee with six medical practitioners nominated by the Australian Medical Association, two pharmacists, and a pharmacologist. Members of the committee willingly admit that it is at least as much concerned with the quality of prescribing as with costs, and it looks closely at clinical trials and other evidence about comparability and efficacy in reaching its decisions. For example, while penicillamine is available as a pharmaceutical benefit for the treatment of Wilson's disease it is not listed for the treatment of rheumatoid arthritis. The reasoning behind that decision is that the close monitoring for side effects implicit in such treatment is best arranged in a hospital department. On the other hand, the evaluation committee has not removed all barbiturate hypnotics from the list, despite the arguments against their continued use; it accepts that many elderly patients have come to rely on these drugs and that doctors still want to prescribe them.

The committee often announces the reasons for its recommendations and may send explanatory circulars to medical practitioners or publish articles in the medical press. It also publishes a quarterly magazine, the *Australian Prescriber* (which looks and reads more like *Update* than *Prescribers' Journal*), which contains review articles on prescribing and comments on current problems in therapeutics. Doctors in Australia seem to accept the restrictions imposed by the committee with fair grace. Certainly the Australian Medical Association (which nominates the medical members of the advisory committee) has repeatedly endorsed the scheme. The system has, moreover, kept down prescribing costs; between 1966 and 1976 the cost per prescription rose from only \$1.83 to \$3.23. Not surprisingly, the major drug companies believe that prices have been held down unfairly by the government's negotiators, and they have succeeded in getting a public inquiry set up to look into the system.

Hospital prescribing

The restrictions of the pharmaceutical benefits scheme apply only to doctors working outside hospital. Nevertheless, Australian hospital doctors are not given the same freedom as their British counterparts to prescribe whatever and how they like. Almost all large hospitals have therapeutics committees, which agree on the range of drugs to be made available within the institution—and their decisions are mandatory on hospital staff. Sometimes drugs are restricted to prescription by consultants only. Decisions taken by therapeutics committees can be challenged by individual consultants—and, power politics being what they are, a strong-minded senior physician is likely to get his own way; but the committee's rulings are accepted as binding.

The paradox that freedom-loving Australian doctors should accept much more control over their clinical freedom to prescribe than do the British may partly be explained by the multiplicity and diversity of the health care systems there. Doctors outside hospital are free to prescribe any drug that has been approved by the evaluation committee; their patients simply pay more for drugs that are not pharmaceutical benefits. In practice, of course, this freedom is not exercised very often—but its existence serves to answer any charges of state interventionism.

This article is based on a visit to Australia I made last year on behalf of the *BMJ*. Everywhere I went I was met with kindness, busy doctors giving up their time to talk to me and show me round. I am extremely grateful to all of my generous hosts.

A young man with Hodgkin's disease, who has had quadruple chemotherapy and a splenectomy, inquires about the possibility of having a family. Is there any evidence of teratogenicity? Also, should he be inoculated against flu etc in view of his increased susceptibility to infections?

The drugs used to treat Hodgkin's disease are well known to have damaging effects on testicular function. We find that all young men who are being treated with these agents become infertile (unpublished data), but Roeser and colleagues¹ found that 31 out of 32 patients studied had impaired testicular function. What we do not yet know is whether, in the long term, the azoospermia recovers and these men again become fertile. There is evidence that, although recovery occasionally takes place, even after several years most men remain infertile. As to teratogenicity, the studies by Li² have shown that there has been no evidence of an increased abortion rate, stillbirth, or fetal malformation in the children of either men or women who have received chemotherapy (some time previously, of course). Finally, with inoculation the most important rule is that patients who are immunodepressed or have Hodgkin's disease should never be given live virus for inoculation, as this is dangerous. Most flu inoculations use killed virus but a few have live virus in them.

¹ Roeser, H P, et al, *Australian and New Zealand Journal of Medicine*, 1978, 8, 250.

² Li, F P, *Cancer*, 1977, 39, 1776.