How many drugs do I use?

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The paper by D. G. Wilson (1971) made me re-examine the data for a study of my prescribing habits, started nine years ago but abandoned because of a change of practice circumstances. Some of the drugs I then prescribed look distinctly outmoded today, and prescribing one or two could now be considered malpractice. However, the picture presented of one general practitioner's prescribing is probably still valid. How much my prescribing was altered by the study itself cannot now be determined.

The aims of the enquiry were to discover: (1) the extent of my pharmaceutical repertoire, (2) whether it was bigger than it need be, (3) whether I could reduce costs without reducing effectiveness and (4) whether, and if so how, my prescribing habits changed from year to year.

Method

The practice was single-handed and urban, with just over 1,500 NHS patients at the start of the enquiry and just over 1,600 at the end; it contained relatively few young families and a high proportion (20–24 per cent) of over sixty-fives.

Once a quarter, practitioners are offered the chance of examining their priced prescription forms written in an earlier month—usually about a year previously. I examined every NHS prescription written in the months of June 1962, May 1963, October 1964 and June 1965; owing to the system of batching adopted by the pricing bureau it was not possible to examine those written in the same month of each year. The preparations prescribed were classified into 13 categories according to therapeutic intent, of which nine corresponded to nine of Wilson's 13, and two corresponded to four of his; in addition I had a category of dressings and appliances. Each preparation and the number of times it was prescribed was listed under one category only; the placing was sometimes arbitrary. Were aminophylline preparations cardiac or respiratory? Was kaolin poultice a dressing or an anti-rheumatic? Preparations were also divided into proprietary and non-proprietary.

At the end of 1965 the practice was amalgamated with a neighbouring one. My partner and I now see each other's patients whenever the patient, when making an appointment, so chooses and also whenever the geographical spread of home visits demands it. As I could no longer regard all the prescriptions I wrote as being my personal prescribing, I abandoned the enquiry.

Results

Table I shows the total number of preparations used and prescriptions written in each of the months reviewed in the 13 therapeutic categories. Substances were often prescribed in different strengths and with both proprietary and non-proprietary names, but these duplications, which increased the total of preparations by about ten per cent, were eliminated before constructing the table. Different formulations of the same substance (e.g. penicillin 'G' tablets and suspension) were counted as separate preparations. Also counted as separate preparations were proprietary preparations with the same active principle but different bases (e.g. topical preparations of hydrocortisone).

The number of times each preparation was prescribed in each of the four months was noted, in the hope of demonstrating a change from older preparations to new ones. Though it was occasionally obvious in what year a new drug had been taken up with enthusiasm, it was less easy to see where an older one had been dropped, since many reappeared in the lists after a year's absence. The numbers were too small for any clear trends to be shown over four years, with a few suggestive but statistically valueless exceptions, (table II).

The number of preparations prescribed by proprietary name varied from 49 per cent in 1963 to 53 per cent in 1965. I tended to be above the area average in both frequency and cost

TABLE I

PREPARATIONS USED AND PRESCRIPTIONS WRITTEN

	June 1962		*May* 1963		*Oct.* 1964		*June* 1965		*Total*
	Prepar-ations	*Prescrip-tions*	*Prepar-ations*	*Prescrip-tions*	*Prepar-ations*	*Prescrip-tions*	*Prepar-ations*	*Prescrip-tions*	*Prepar-ations*
Hypnotic & Psychotropic	32	135	24	92	24	88	27	119	42
Antibiotic	18	80	16	70	15	78	22	111	35
Respiratory	19	57	15	41	20	74	26	68	33
Gastro-intestinal	25	49	17	41	23	47	23	51	41
Topical	32	62	26	48	23	37	31	51	72
Endocrine	6	11	8	18	9	17	8	26	15
Analgesic & Anti-Rheumatic	18	65	16	46	15	37	14	51	33
Antihistamines	4	7	9	11	2	3	3	8	11
Cardiovascular	11	52	14	36	10	34	9	52	22
Hypotensive & Diuretic	12	39	9	23	13	28	13	48	18
Vitamins & Minerals	8	30	8	15	11	26	14	32	21
Miscellaneous	15	18	8	12	10	16	15	22	33
Dressings & Appliances	11	28	12	25	11	16	18	29	27
Total	211	633	182	478	186	528	223	675	403

TABLE II

TOTAL PRESCRIPTIONS WRITTEN FOR CERTAIN PREPARATIONS

	June 1962	*May* 1963	*Oct.* 1964	*June* 1965
'drinamyl'	5	0	2	0
dexamphetamine	3	2	0	0
'phenobarbitone'	23	7	9	9
'librium'	14	21	11	13
'valium'	0	0	0	3

per prescription by 5–10 per cent and therefore 10–20 per cent higher in cost per head of the practice population; the area cost per head itself was about five per cent above the national average.

It can be seen from table I that about 200 preparations were used in each of the months reviewed, but not the same 200. The total number of preparations was 403, with a total of 2,314 prescriptions. Of these 403 preparations, 154 were prescribed once only, 64 twice only, while at the other end of the scale one preparation was prescribed 101 times (five per cent of all prescriptions). Fifty per cent of the prescriptions were for preparations prescribed less than ten times over the whole survey.

Forty-six preparations accounted for 50 per cent of the total prescriptions: 14 preparations (table III) accounted for over 25 per cent, and three preparations for over ten per cent.

TABLE III

PREPARATIONS MOST OFTEN PRESCRIBED

penicillin	v caps	101	prescriptions
digoxin	tabs	74	,,
'tuinal'	caps	62	,,
'librium'	caps	59	,,
pholcodine	linct.	49	,,
phenobarbitone	tabs	45	,,
'raudixin'	tabs	40	,,
tetracycline	caps	30	,,
'codis'	tabs	26	,,
penicillin	G susp.	26	,,
ferrous sulphate	tabs	26	,,
'largactil'	tabs	26	,,
phenylbutazone	tabs	24	,,
'choledyl'	tabs	23	,,

Discussion

It was a shock to find that penicillin was the drug I most often prescribed, with a barbiturate third, and I hope that they have now been moved further down the list. It was a surprise that while 46 preparations accounted for half the prescriptions written, the other half was thinly spread over another 357 preparations. The highest total (72) of preparations prescribed and the highest proportion prescribed once only were in the topical category. The next highest total (42) was in the category of hypnotics and psychotropics. By no stretch of the imagination can such figures represent differing clinical indications; rather do they suggest areas where progress is often disappointing, confidence is apt to crumble, and the doctor, since he can change nothing else, feels impelled to change the drug. Similar considerations may account for the total of 33 analgesics and anti-rheumatics recorded. The gastro-intestinal tract varies so much in anatomy, physiology and ecology that I think there is more excuse for the total of 41 preparations to which I subjected it; but there can be little pharmacological or bacteriological justification for deploying 35 different antibiotic preparations.

The scale of the enquiry made it difficult to determine where any particular preparation had been dropped, apart from certain drugs given adverse publicity, e.g. thalidomide and the amphetamines. The fourth aim of the enquiry was therefore not achieved. It seems likely that my process of eliminating drugs consisted of prescribing them sporadically and infrequently over several years, rather than taking a conscious decision to drop them. Sentiment plays a larger part in prescribing than we care to admit; why else did Dover's powder linger so long in the *Formulary*?

The general practitioner has more important things to carry in his memory than the cost of about 400 preparations, yet he must have some idea of his prescribing costs; it follows that a repertoire of 400 (even if only 200 are used in any one month) is too many if he is to prescribe economically. It may be argued that pruning the numbers may be to some patient's clinical detriment and therefore false economy, but I believe that though the practitioner who uses a large number of preparations may pride himself on never being at a loss for a suitable drug, too big a pharmacopoeia conceals and encourages inexact diagnosis and vague prescribing.

"We seem to be out of Vitamin B_1 tablets," I said once to my principal in a dispensing practice. "Send her caps. vitaminorum," he replied instantly. "Ah", said his medically-qualified wife admiringly, "he has a wonderful knowledge of drugs, that man". Perhaps.

Summary

An analysis by therapeutic categories has been made of all prescriptions written by a single-handed general practitioner during one month in four successive years. The total number of preparations and the frequency with which each was prescribed is recorded. Therapeutic categories in which a large number of preparations were used are identified, and possible reasons briefly discussed.

REFERENCE

Wilson, D. G. (1971). *Journal of the Royal College of General Practitioners*, **21**, 558.