TABLE I

Characteristics of the patient population

	Hospitals A & B N = 511	
	n	%
Day patients	199	39
Women	267	52
Age:		
17–39	98	19
40–59	143	28
60 and over	268	52
Diagnosis:		
Schizophrenia	207	41
Affective disorder	120	24
Dementia and other organic disorder	101	20
Neuroses	24	5
Personality disorder	28	6
Other	31	7

receiving other psychotropic drugs, *viz* hypnotics (71), antidepressants (41) and/or minor tranquillizers (19). Anti-parkinsonian medication was prescribed to half. Chlorpromazine was the favourite oral neuroleptic (77 patients), followed by fluphenazine decanoate and flupenthixol decanoate in about equal proportions, then by thioridazine. In 32 patients, prescriptions for neuroleptics included two different drugs. Among the highest dosages recorded was chlorpromazine 900 mg/day with clopenthixol 300 mg/week. Depot preparations were given to less than half of patients treated with neuroleptics (Table III) but, even among day-patients, one-fifth of those receiving long-acting injections also had oral preparations.

Antidepressants were prescribed to one-fifth of the population (Table II) and in the majority of this group (78 of 97) they were combined with other psychotropic drugs, mainly neuroleptics (41) and/or hypnotics (33). The most commonly prescribed antidepressant was amitriptyline (68 patients), followed by imipramine (16) and mianserin (8). Monoamine oxidase inhibitors were used for two patients and other antidepressants in single cases only. The doses did not exceed amitriptyline 200 mg/day or its equivalent, and in nearly one-third of patients doses were lower than 100 mg/day. These lower doses were prescribed mainly for the elderly and for those with diagnoses other than 'affective disorder, depression'.

Over one-quarter of patients received hypnotics. The drugs used were mainly benzodiazepines, with a small proportion of prescriptions for chloral hydrate (mainly in the elderly) or chlormethiazole. Only one

TABLE II

Prescriptions for psychotropic drugs and their combinations

	Patients (N = 511)		
Drugs	n	(%)	
			% of all on neuroleptics (294 = 100%)
Neuroleptics	294	(58)	
only*	178	(35)	61
with antidepressants	41	(8)	14
with minor tranquilizers	19	(4)	7
with hypnotics	71	(14)	24
			% of all on antidepressants (97 = 100%)
Antidepressants	97	(19)	
only*	19	(4)	20
with neuroleptics	41	(8)	42
with minor tranquilizers	19	(4)	20
with hypnotics	33	(6)	34
Minor tranquilizers	51	(10)	
Hypnotics	143	(28)	
Lithium	39	(8)	

* No other psychotropic drugs.

TABLE III

Treatment with neuroleptic drugs: prescriptions for oral and depot preparations by type of care

	Patients treated with neuroleptics					
	In-patients (N = 179)		Day-patients (N = 115)		Total (N = 294)	
Preparation	N	(%)	N	(%)	N	(%)
Oral only	132	(74)	38	(33)	170	(58)
Depot only	33	(18)	62	(54)	95	(32)
Depot + oral	17	(8)	15	(13)	29	(10)

was for a barbiturate. Nearly three-quarters of these patients were treated with neuroleptics or antidepressants.

Minor tranquillizers were given during the day to 10 per cent of the population, mostly in combination

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TABLE IV

Number of psychotropic drugs per patient

	Number of drugs per patient										
	0		1		2		3		4 or more		
	n	%	n	%	n	%	n	%	n	%	Average
Psychotropic drugs only	110	22	214	42	147	29	37	7	3	1	1.2
Including lithium	103	20	195	38	163	32	46	9	4	1	1.3
Including lithium and anti-parkinsonian drugs	97	19	143	28	153	30	92	18	26	5	1.9

with neuroleptics and/or antidepressants. Nearly all prescriptions were for diazepam. The highest dose recorded was 40 mg/day.

Table IV shows, when lithium and anti-parkinsonian agents were excluded, that about one-fifth of the entire population had no psychotropic drugs, while for one-third (nearly half of those receiving medication) a combination of two or more drugs was prescribed. When lithium and anti-parkinsonian medication were included, 19 per cent of patients appeared as drug free and 5 per cent as receiving four or more different drugs.

Frequency of administration and number of tablets per day

Prescriptions for three or more than three doses per day were common with minor tranquillizers (26 and 6 of 51 patients respectively) and neuroleptics (one-fourth and one-fifth respectively). Antidepressants were given mainly once or twice a day (three-quarters of prescriptions); only three patients had 4 doses a day.

Prescriptions for 3 or more doses a day resulted in a high number of tablets or capsules given to some patients. The maximum of 22 tablets per day was found in the middle-aged group (average 6.0); in the groups aged under 40 and over 60 it was 14 and 19 tablets respectively (average 3.8 and 4.4 respectively).

Psychotropic drugs and diagnosis

The proportion of patients with no psychotropic drugs (Table V) was highest in the diagnostic group of dementia (43 of 101), followed by those with personality disorder (one-third), and neuroses (4 of 24). Polypharmacy was common in all the diagnostic groups. Combinations of two or more psychotropic drugs were prescribed to nearly two-thirds of both manic and depressed patients, to 40 per cent of schizophrenics, to half the patients diagnosed as neurotic and over one-third of those with personality disorder.

Table VI relates type of psychotropic drug to diagnosis. Among patients treated with neuroleptics, 40 per cent had diagnoses other than schizophrenia. Neuroleptics were prescribed to one-third of depressed patients, to 40 per cent of those with dementia or other organic disorder and to almost half of those diagnosed as personality disorder.

Similarly, over one-third of prescriptions for antidepressants were made for patients with diagnoses other than affective illness, mainly neurosis and schizophrenia.

Discussion

The survey shows that from each class of psychotropic drugs only a small number of compounds has been used. In particular, the 'new antidepressants' were seldom used and diazepam had a monopoly position as a minor tranquillizer. Over one-third of all patients, i.e. almost half of those receiving psychotropic medication, had more than one psychotropic drug (when lithium was excluded), and about 10 per cent had at least three different drugs. This frequency of polypharmacy is lower than that reported from some hospitals in Israel and Finland (Yosselson-Superstine, 1979—up to 67 per cent; Hemminki, 1977—69 per cent), but is close to the average in the surveyed US hospitals (Prien *et al*, 1978) and to the high 37 per cent found in prescriptions by general practitioners (Tyrer, 1978).

Polypharmacy is generally not recommended because of increased risk of adverse reactions, and the lack of evidence for therapeutic advantage from using several psychotropic drugs instead of a properly chosen one (see reviews by Hollister, 1975 and Hemminki, 1977). In particular, the sedative and anxiolytic properties of some antidepressants and neuroleptics make it hard to justify the common concurrent administration of minor tranquillizers and/or hypnotics. It seems doubtful also whether

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TABLE V

Number of psychotropic drugs per patient by diagnosis

		Number of drugs per patient									
		0		1		2		3		4 or more	
Diagnosis	N	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)
Schizophrenic	207	21	(10)	104	(50)	64	(31)	16	(8)	2	(1)
Affective disorders	120	19	(16)	43	(36)	43	(36)	14	(12)	1	(1)
hypomania	13		—	5	(38)	7	(54)	1	(8)		—
depression	72		—	27	(37)	31	(43)	13	(18)	1	(1)
in remission	36	19	(53)	11	(30)	6	(17)		—		—
Dementia and other organic disorder	101	43	(43)	38	(38)	20	(20)		—		—
Neurosis	24	4	(17)	8	(33)	8	(33)	4	(17)		—
Personality disorder	28	9	(32)	9	(32)	7	(25)	3	(10)		—
Other	31	14	(45)	12	(39)	5	(16)		—		—

TABLE VI

Prescriptions for neuroleptics, antidepressants and lithium by diagnosis

Diagnosis	N	Neuroleptics N = 294	Antidepressants N = 97	Lithium N = 39
Schizophrenia	207	177	18	5
Affective disorder:	120	51	63	33
hypomania	13	13	—	5
depression	72	29	61	18
in remission	35	9	2	9
Dementia and other organic disorder	101	43	—	—
Neurosis	24	2	10	1
Personality disorder	28	12	5	—
Other	31	9	—	—

one-fifth of day-patients treated with depot preparations needed an additional oral neuroleptic.

The next questionable pattern concerns prescribing drugs to be taken three or more times a day, as was the case with two-thirds of minor tranquillizers and nearly half of oral neuroleptics. The pharmacokinetics of most of these drugs make it possible, except in the initial phase of treatment, to administer the entire daily amount at bed-time or at the most in two doses. Less frequent administration could improve compliance, save the time of nursing staff, and reduce the number of tablets taken per day.

The clinical data collected are insufficient to allow us to comment any further on these and certain other aspects of drug prescribing. Thus, the specificity of drug choice cannot be discussed, although the prescription of neuroleptics for a high proportion of patients in the diagnostic groups of personality disorder (12 of 28) or depression (over a half) raises this question.

Similarly, without information on the side effects and duration of treatment, it is impossible to assess whether the use of anti-parkinsonian medication was excessive among those treated with neuroleptics.

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This question is of clinical importance since in a proportion of patients, anticholinergics can be safely withdrawn after a few months of treatment (McClelland *et al*, 1974; Klett and Caffey, 1972; Orlov *et al*, 1971) and there is evidence that these drugs promote development of tardive dyskinesia (Perris *et al*, 1979). In addition, from our unsystematic observations, we believe that some patients become dependent on the stimulating effects of orphenadrine or benzhexol and tend to abuse them.

To answer these questions, more detailed clinical information will have to be collected on the selected groups of patients. It would also be of interest to compare these findings with the use of psychotropic drugs in other British psychiatric hospitals. It has been shown that such surveys are helpful in improving prescribing habits (Diamond *et al*, 1976) and we report our findings partly in the hope that others will be encouraged to carry out enquiries into the use of drugs in the hospitals in which they work.

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