Editorial

What should neurologists do?

On page 1061 of this issue, we publish a paper by Ray Fitzpatrick and Anthony Hopkins on "Referrals to neurologists for headache not due to structural disease". The paper deals with the expectations of patients referred to neurologists for evaluation of their headache, the extent to which those expectations are fulfilled, and the impact of the consultation on subsequent visits to the referring general practitioner. In other words, the subject matter is that of Social Neurology. Some of our referees were reluctant to advise publication of material such as this in the Journal, so we invited Dr Hopkins' comments. He replied as follows:

"Sir,—

The Journal of Neurology, Neurosurgery and Psychiatry and other neurological journals quite rightly see as their first priority the publication and dissemination of advances in neurological science. The recent spectacular advances in the study of, for example, the immunology of myasthenia gravis, peptidergic neurotransmission, and the chemical treatment of pituitary prolactinomas depend upon clinical science, which in turn is founded on an understanding of normal and abnormal biochemical and electrical physiology. It is probable that our understanding of many neurological diseases will advance through such new discoveries in what now might be called the traditional sciences.

But the image of neurology portrayed in the Journal of Neurology, Neurosurgery and Psychiatry and its sister specialist journals is totally at variance with day to day neurological practice. Readers who are intellectually honest will know when they last saw a newly referred patient with syringomyelia or Huntingdon's disease, two examples of the "traditional" neurological diseases, which form the backbone of undergraduate and postgraduate teaching, and which are the subject of research. In order to overcome the response of some of my colleagues on whom I have tried this question—"I saw three last week"—I have brought up to date part of a table previously published.[1]

Table

	Ref		*Huntingdon's disease*	*Syringo-myelia*	*Primary cerebral tumour*	*Parkinson's disease*	*Epilepsy*	*Cerebro-vascular disease*	*Multiple sclerosis*	*Headache and migraine*
Population of United Kingdom mid 1979	2	$55{\cdot}9 \times 10^6$								
Number of neurologists in United Kingdom—30th September 1980	3	157								
Incidence/100 000/year	4		0·5	0·3	10	20	40	200	2	—
Incidence in population served by one neurologist/year	2-4		2	1	40	80	100	700	7	—
Prevalence/100 000	4		6	8	40	200	500	500	50	—
Prevalence in population served by one neurologist	2-4		20	30	100	700	2000	2000	200	—
General Practitioner (GP) consulting rates/100 000	5		not available	not available	10	100	290	530	70	1600
Per cent of patients consulting GP referred	5		,,	,,	74	15	17	23	19	17
Referred patients/100 000	5		,,	,,	7	15	49	120	13	270
Referred patients from population served by one neurologist/year	2-5		,,	,,	26	53	180	430	47	970

I do not suggest that all those with cerebrovascular disease, or all those referred to hospital for opinions about their headaches, will necessarily be seen by a neurologist. The point of the table is to give some indication of the relative frequency of various diseases and symptoms, and the relative frequency of referral for specialist advice. From the table it can be seen that for every new case of multiple sclerosis in the community—generally considered to be a common neurological disease—there will be a hundred referrals for headache and migraine. The ratio of referral for headache and migraine to referrals for common prevalent on-going neurological illnesses (calculated from the bottom line of the table) is 40:1 for cerebral tumour; 20:1 for multiple sclerosis; 20:1 for Parkinson's disease; 5:1 for epilepsy and 2:1 for cerebrovascular disease. In short, a typical Monday morning outpatient clinic will, as every neurologist knows, be made up principally of patients wanting opinions on their headaches, fits and faints, transient ischaemic attacks and strokes.

The tradition of training young neurologists in the techniques of taking a careful history and of scrupulous

physical examination, and in the analysis of their findings on the basis of anatomy and normal and abnormal physiology is an entirely proper foundation for the diagnosis of neurological disease. These skills take some time to acquire and are sharpened by constant practice, so that neurologists in the first hundred years of the development of their discipline acquired a formidable reputation for giving opinions on other doctors' patients. It seems that the "easy" things like strokes were (and in many areas of the country still are) left to general physicians, epileptics were left to the registrars or were sent to the colonies, and headaches were only interesting if they proved to be worse in the morning and a symptom of a tumour. The advent of computed tomography has, I believe, devalued clinical techniques so painstakingly acquired. If neurology is to maintain its reputation as a speciality, it must be conscious of its much wider supportive role. Neurologists must know—or do research to find out—the best way of helping people without clear-cut physical diseases to cope with chronic ill-defined symptoms such as headache; they must also know—or do research to find out—how to improve the quality of life for those with major disabling diseases for which there is at present no effective primary treatment.

It is easy to dismiss research in these fields as "woolly" and "unappealing". An alternative view is that many papers published in the medical literature contain carefully measured numerical data—blood or cerebrospinal fluid levels of this and that, latencies and amplitudes of potential differences derived from here and there—data which are only collected because they can be measured. Unfortunately it often appears that no hypothesis is being tested, no conclusion is being reached, and no discernible benefit results. My view is that it is a real challenge to devise reproducible techniques for the investigation and better management of human problems—even if these problems are not "diseases". I hope others will agree, and contribute in this field." (A Hopkins).

Dr Hopkins' arguments are persuasive and justify his cause. However, he does not take up the point also raised by the figures he presents. He bases his case on incidence and prevalence of neurological disease in the community, but how much of this neurological case load ever reaches a neurologist?

There are some 157 neurologists in the United Kingdom for a population of near to 56 million, and there are no plans to expand this number. Each neurologist is expected to "serve" about 360 000 people, a population that will contain, for example, about 2000 patients with epilepsy, 2000 patients with stroke, 700 patients with Parkinson's disease and 200 patients with multiple sclerosis. Such a task is impossible. If you suffer from epilepsy, stroke or Parkinson's disease you are more than likely to be looked after by a general practitioner or general physician than by a neurologist. But examine the general practitioner's neurological experience. Within an average list of one general practitioner there may be some 10-20 patients with epilepsy, 10-20 patients with stroke and 4-8 patients with Parkinson's disease. Treatment of many of these conditions is now becoming complex and demanding, requiring considerable experience to get the best out of the therapeutic measures currently available. For example, present-day long-term treatment of Parkinson's disease has been likened to that of diabetes. Both represent replacement therapies, utilising a range of different agents for illnesses in which progression of the underlying disease, side effects of drugs, and other incidental illnesses commonly interact to produce confusing problems. It can be asked whether there are adequate numbers of neurologists in the United Kingdom to provide the sort of easily available advice that general practitioners should require to manage common neurological problems.

The United States of America now has about 6000 neurologists for a population of about 250 million, each serving about 41 000 people; this number is predicted to rise to 10 000 neurologists by 1990! The United States has some 38 times more neurologists than the United Kingdom to serve a population that is not quite 5 times as large. Someone must be wrong!

In matters such as these, truth usually lies between the extremes. The practice of Neurology has changed dramatically as we have moved from providing an essentially diagnostic service to one involved in complex management and therapy. This trend will continue and accelerate thanks to the explosion of scientific knowledge and therapeutic action that the Journal regularly reports. Furthermore, neurologists should, and will be forced to, take responsibility for supervising re-habilitation of their disabled patients. There are too few neurologists in the United Kingdom, but to find out how many we really need and what they should be expected to do, requires the sort of research described by Fitzpatrick and Hopkins. That is why similar papers should be published in the Journal.

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References

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[4] Kurland L. *Epidemiology of neurological and sense organ disorders*. Massachusetts: Cambridge, 1973.
[5] Office of Population Censuses and Surveys. *Morbidity Statistics from General Practice. Second National Study 1970-71*. London: Her Majesty's Stationery Office, 1974.