

## Profile of neurological practice in Malaysia

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### Abstract

A survey of patient profile among Malaysian neurologists was made using the proforma of World Federation of Neurology Research Group on Medical Education. Six neurologists from the university, government and private practices participated. They reported 427 patient encounters in one typical week's practice, giving a range of 40 - 93 patients per neurologist. 64.6% of the encounters were as outpatients, and 45% of all encounters were new patients. Sex distribution was even and the age range was from 4 months to 82 years. 9.1% of the patients were from paediatric age group. 36.5% of patients were considered by the respondents as cases that could be treated by non neurologists. Epilepsy (19%), headache and migraine (14%), stroke (9%), peripheral neuropathy (8%), Parkinsons Disease (5%), myasthenia gravis (5%), cranial neuropathy (4%), meningoencephalitis (4%), chronic meningitis (4%), and cervical spondylosis (4%), accounted for 75% of all patient encounters. The survey indicated that in Malaysia, neurologists complement the role of physicians and family practitioners for the care of neurological patients. Continuing education of these doctors will be important to enhance further the role of neurologists.

*Key Words: disease pattern, neurology practice, Malaysia.*

### INTRODUCTION

Malaysia is a country with 336,700 sq. Km. In two land masses separated by 700 kilometres of South China Sea. In 1990 it has a population of 18 million with 11,000 doctors and 12 neurologists.

Neurological service as a speciality existed since 1963, but expansion has been slow because of shortage of neurologists. There is also maldistribution of neurologists with a great concentration in the capital city. The government's projected requirement for neurologists up to year 2000 is 1:500,000 population<sup>1</sup>. Proper planning of the service and manpower development require information on workload and the pattern of neurological conditions that occur in the country. Such information is also useful for the education of doctors at undergraduate and postgraduate levels.

Clinic or hospital data are commonly used to extract information, although such sources are biased by several factors and will not give a true picture of the incidence and prevalence of diseases. However such data will be able to capture certain information regarding types of cases referred to specialists and the frequency of referrals<sup>2</sup>.

The American way of projecting manpower need is by calculating patient load based on incidence and prevalence of disease, and looking

at the type of practice in regard to principal care and consultative service<sup>3,4,5</sup>.

A survey was done in 1990 among Malaysian neurologists to look at the patient profile of their practice.

### MATERIALS AND METHODS

The survey utilised the World Federation of Neurology Research Group on Neurological Education proforma<sup>6</sup>. Six out of twelve neurologists in the country participated (4 government, 1 university, 1 private). They reported all patient encounters in a representative week's practice. Records were made regarding patients personal data, whether it was a new or follow up patient, source of referral diagnosis, appropriate level of care and intention for future follow up.

### RESULTS

The six participants reported 427 patient encounters in the one week giving an average of 71 patients per neurologist (range 40 - 90). Outpatient encounters accounted for 64.6% of all patients, and 45% of all patient encounters were new patients.

Sex distribution of patients were even with 52.7% males and 47.3% females. The age range of patients was from 4 months to 82 years, with

9.1% of patients from paediatric age group (under 12 years).

The majority of patients (67.7%) were referred by other specialist physicians, while 22.7% were referred by general practitioners and 8.7% self-referred.

81% of the patients were public patients and 19% were private patients. 34% of the cases were considered by the respondents as the kind of cases that could be managed by non neurologists. However, the respondents said that they would continue follow up in 81.3% of the patients.

Epilepsy (19.4%), headache syndromes and migraine (13.6%), stroke (9.1%), peripheral neuropathy (8.2%), Parkinson's disease (5.4%), myasthenia gravis (4.9%), cranial neuropathy (3.8%), meningo-encephalitis (3.5%), chronic meningitis (3.5%) and cervical spondylosis (3.5%) accounted for 75% of all patient

encounters. The summary of patient characteristics and their diagnoses are as in Tables 1 and 2.

## DISCUSSION

The health delivery in Malaysia allows dual systems in parallel. On the one hand there is the public system where in general, fees are very minimal and linked to ability to pay, while at the same time there is the private system which provides service for a fee. Another unique feature of the Malaysian system is that doctors in public service are not allowed to do private practice. Because of the shortage of neurologists in the country, only a small percentage of the neurological patients get to see the neurologist. The big majority will be treated and followed up by specialist internal physicians. This survey was the first of its kind done in Malaysia to look at the profile of neurology practice in the country.

**TABLE 1: Diagnoses of Patient Encounters**

ICD	Diagnosis	New Patients	Follow up Patients	New & Follow up Patients
345	Epilepsy	29 (15.1%)	54 (33.0%)	83 (19.4%)
784.0 307.8 346	Headaches and Migraine	32 (16.7%)	26 (11.1%)	58 (13.6%)
430-434	CVD	14 (7.3%)	25 (10.6%)	39 (9.1%)
354-357	Peripheral neuropathy including Entrapment syndrome	17 (8.9%)	18 (7.7%)	35 (8.2%)
332-332.1	Parkinson's Disease including Drug-induced	6 (3.1%)	17 (7.2%)	23 (5.4%)
358.0	Myasthenia gravis	1 (0.5%)	20 (8.5%)	21 (4.9%)
350.1 351-352	Cranial neuropathy including Bell's palsy	9 (4.7%)	7 (3.0%)	16 (3.8%)
323	Acute meningoencephalitis	9 (4.7%)	6 (2.6%)	15 (3.5%)
321.0	Chronic meningitis			
320.4	Cryptococcal and TB	5 (2.6%)	10 (4.3%)	15 (3.5%)
353.2 721	Cervical spondylosis with radiculopathy and myelopathy	9 (4.7%)	6 (2.6%)	15 (3.5%)
191 192.0	Primary intracranial tumour including acoustic neuroma	7 (3.6%)	4 (1.7%)	11 (2.6%)
386	Vertigo	5 (2.6%)	2 (0.9%)	7 (1.6%)
323	Transverse myelitis	3 (1.6%)	1 (0.4%)	4 (0.9%)
340	Multiple sclerosis	1 (0.5%)	3 (1.3%)	4 (0.9%)
	Others	45 (23.4%)	36 (15.3%)	81 (19.0%)
	<b>TOTAL</b>	<b>192</b>	<b>235</b>	<b>427</b>



Since the six respondents came from all sectors of neurological practice, the results are probably a fair reflection of the overall neurology practice in this country.

Similar studies have been done in Thailand<sup>6</sup> and the United Kingdom<sup>7</sup>. The average patient load per week per neurologist was about the same in all the three studies. However a neurologist in Thailand only sees an average of 21 new patients per week compared to 32 in United Kingdom and Malaysia. A different type of study involving one consultant neurology practice in England gave 16-19 new patients per week<sup>2</sup>.

The pattern of referrals approaches that of United States where 13% of patients were self referred. According to a similar study by Boongird et al<sup>6</sup>, in Thailand self referrals accounted for 52% of all new patients. This was in contrast to the practice in England and Canada where virtually no self referrals are seen<sup>8,9</sup>.

In Thailand, patients have direct access to a neurologist, even in government facilities; and 40% of all patient encounters are private patients. Thus, the neurologist in Thailand has primary care as well as specialist function<sup>6</sup>. Five out of 6 neurologists participating in this study were in public or university practice where private practice was not allowed, and access to the neurologist is usually only through referral. For those neurologists in private practice, patients usually have easier direct access to the neurologists with greater number of self referred patients. Thus, it is expected that like the situation in Thailand, the neurologists in private practice in Malaysia would also have primary care as well as specialist function.

The types of common neurological diseases seen in Thailand and Malaysia are fairly similar except that cerebrovascular disease was the most common neurologic problem encountered (38.4%) in Thailand<sup>6</sup>, whereas it accounted for 9.1% in Malaysia. This is likely to be due to lesser number of neurologists in Malaysia, and cerebrovascular disease is mainly managed by specialist internal physicians rather than neurologists in this country. As for the disease pattern, noticeably different between Malaysia or Thailand compared to England was the low occurrence of multiple sclerosis in the two Asian countries<sup>2,6,7</sup>.

An interesting finding was that 34% of the cases were considered to be the level of cases that may be handled by other specialist physicians or general practitioners. The figures for Thailand and United Kingdom were 54% and 17%

respectively<sup>6,8</sup>. However, the neurologists wanted to provide continuing care in a much bigger percentage (81.3%). In a country with shortage of neurologists more attention need to be given to ensure a more efficient utilization of the specialty. One possible way to achieve this would be by increasing the CME activities in neurology for general medical practitioners.

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