

Utilisation of Specialist Medical Manpower in Malaysia

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Summary

One hundred and twenty specialists from the Ministry of Health, the Universities and the private sector provided information on 4,802 patients seen over a total of two hundred and forty working days. This information was used to classify the patients into four categories based on a disease complexity classification. Each specialist's perception on the appropriateness of utilisation of his expertise was obtained.

Complex cases requiring specialist expertise in management made up 69.8%, 73.5% and 19.1% of the cases of the Ministry of Health, University and private sector specialists respectively. Underutilisation was most marked with paediatricians and obstetricians in the private sector. The Specialist Register, the Programme for Accreditation of Hospitals and a National Health Financing Plan can be used to influence positively the case-mix of specialists.

Key Words: Specialist, Utilization, Case-mix

Introduction

Patient care services in Malaysia are provided by the public sector (Ministry of Health and Universities) and the private sector. Specialist services are available in the larger Ministry of Health hospitals, the University hospitals and most of the private hospitals.

Training of specialist medical manpower is becoming longer, more complex and increasingly expensive. Specialist medical manpower in the country is at present limited and there is concern that it may not be optimally utilised. Some specialists may be spending a disproportionate part of their time in managing patients with minor illnesses that do not need their specialist expertise while some specialists may have to manage more complex cases than they have the expertise for. Such malutilisation may exist in the public or private sector.

For optimal utilisation, specialist expertise, advanced technology and patient's needs should be matched.

Malutilisation arises when there is a mismatch of these three. Some of the factors that may contribute to such mismatch include:

1. a continuous flow of experienced specialist medical manpower from the public to the private sector due to the play of market forces and the existing public services structure;
2. the availability of advanced medical technology mostly in the public sector, and only to a limited extent in the private sector because it generally requires high capital investment as well as high recurrent expenditure;
3. a growing demand for specialists to provide primary (i.e first contact) care due to rising public expectations and inadequate consumer knowledge of the role of specialists;
4. specialists selecting to see only less complex cases.

With this concern, the Ministry of Health and the Academy of Medicine Malaysia collaborated to conduct a study on the utilisation of specialist medical manpower in the country. The study looked at the case-mix of specialists and attempted to identify factors that could have influenced the case-mix, so that strategies could be developed to improve utilisation.

Materials and Methods

Five hundred and eighty two specialists from the five common disciplines (medicine, surgery, obstetrics and gynaecology, paediatrics and orthopaedics) from five major urban centres who make up a large proportion of the specialists practising in the country were stratified by practice sector viz. Ministry of Health, University and private sector, and the five disciplines. A random sample of 40 specialists from each practice sector was subsequently selected. These comprise 12 internal physicians, 8 surgeons, 8 obstetricians and gynaecologists, 8 paediatricians and 4 orthopaedic surgeons. The number is proportionate to the number of specialists in the discipline.

These specialists were requested to provide information on all the patients managed by them on two consecutive days of work, randomly selected by the researchers. The two days data collection period was decided on to increase participation by the doctors whose heavy workload may have precluded participation or accurate data collection if the study period was longer. These specialists were provided with a format to record the information, which included identification data, presenting complaints or provisional diagnosis, any complication arising out of the presenting complaints and any procedure performed on the patient¹.

The information on the patients was used by the researchers to classify them into four categories based on a disease complexity classification, which was developed for the study. The classification of severity of diseases^{2,3,4,5,6,7} in the literature could not be used for this study as they were designed only for inpatients and required various clinical and laboratory measurements. The basic principles used in these classifications were however used in the formulation of the classification for the study. Consensus on this classification and the list of

disease conditions/procedures in each category was obtained among identified experts in these disciplines from both the public and private sectors, using the Delphi technique.

The criteria used in this classification was the degree of complexity of skills required to manage the disease conditions. The classification adopted was as follows:

Category 1: conditions that could be managed by a doctor with a basic medical qualification and with no further training in the discipline

Category 2: conditions that could be managed by a doctor with at least 12 months training in the discipline

Category 3: conditions that required the skills of a specialist in the discipline to manage them

Category 4: conditions that required the skills of a specialist with special skills or sub-speciality training in the discipline

In addition, each specialist was interviewed to ascertain his perception on the appropriateness of utilisation of his expertise as well as of the factors perceived to be contributing to inappropriate utilisation, if present.

Data analysis was carried out utilising a microcomputer and the Statistical Program for Social Sciences (SPSS).

The complete report of the study is presented in a Health Systems Research Report¹. This paper describes only the case-mix of the specialists and some of the factors perceived by them to influence the case-mix.

Results

One hundred and twenty specialists participated in the study. Only ten specialists declined to participate and these were replaced by randomly selected specialists from the same practice sector and discipline.

Among the specialists who participated, those in the private sector had been in practice for a longer period of time with a mean duration of 16.1 years (range 1 to 35 years). The mean duration of practice of the Ministry of

Health specialists was 7.6 years (range 0 to 22 years) while that of the University specialists was 8.1 years (range 1 to 26 years).

A total of 4,802 cases were reported by the specialists over a total of 240 working days, from June to October 1992. The breakdown of the cases and the case-mix in the three types of practice are as shown in Figure 1. Patients in categories 3 and 4, who were considered as complex cases requiring the expertise of specialists in their management, made up 69.8% and 73.5% of the cases seen by the Ministry of Health and the University specialists respectively. On the other hand, only 19.1% of the patients managed by the private sector specialists were complex cases.

The case-mix of the specialists according to disciplines are as shown in Figures 2,3,4,5 and 6. In all the five

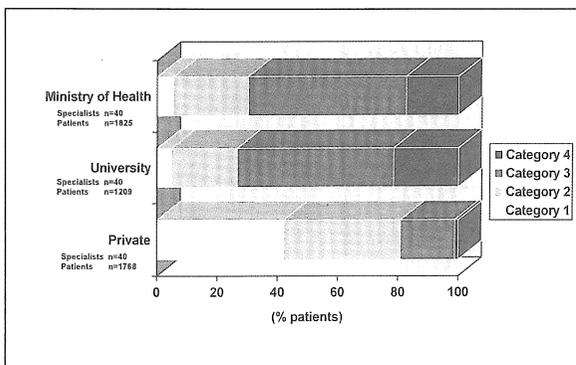


Fig. 1: Case-mix of Specialists

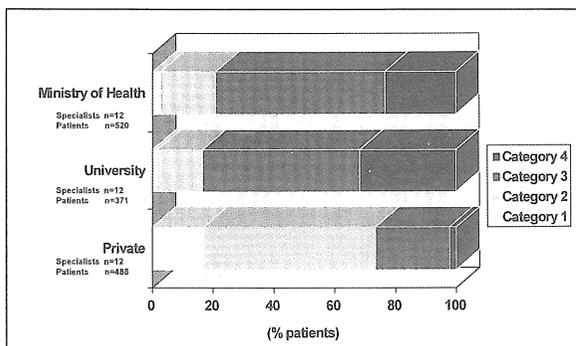


Fig. 2: Case-mix of Physicians

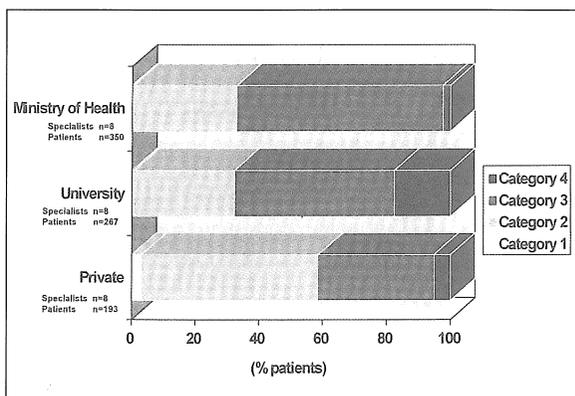


Fig. 3: Case-mix of Surgeons

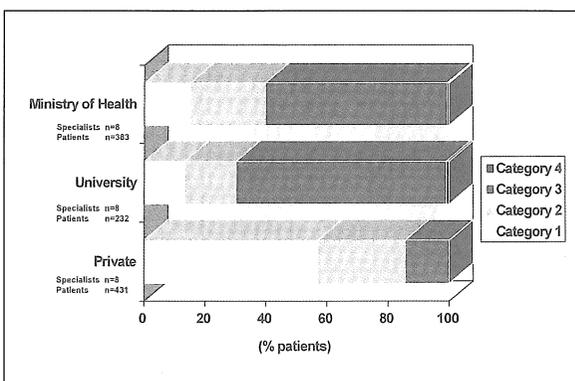


Fig. 4: Case-mix of Obstetricians and Gynaecologists

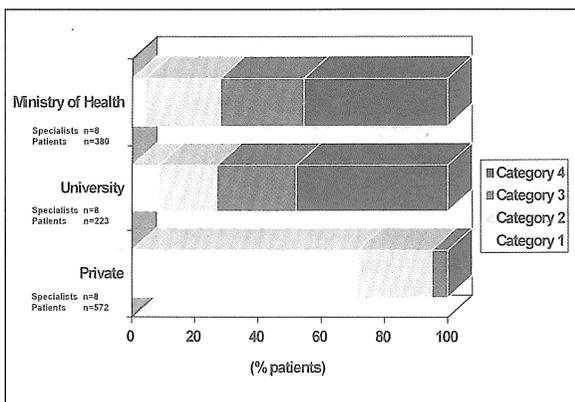


Fig. 5: Case-mix of Paediatricians

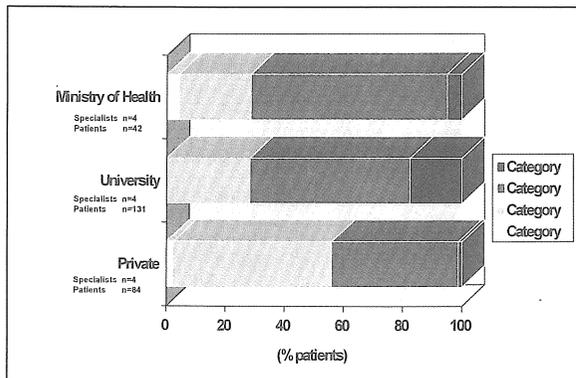


Fig. 6: Case-mix of Orthopaedic Surgeons

disciplines, the public sector specialists managed a higher percentage of complex cases than those in the private sector. The difference was least in the surgical disciplines, and most in paediatrics and obstetrics and gynaecology. In these two disciplines, only 5.1% and 14.4% of the patients of the private sector specialists were complex cases, with common childhood illnesses and antenatal care of uncomplicated pregnancies making up most of their workload.

In spite of this, most of the specialists (88.3%) were of the opinion that their expertise was being used appropriately. Only 8 (20%) of the private specialists, 4 (10%) of the University specialists and 1 (2.5%) of the Ministry of Health specialists stated that a large proportion of the patients they managed did not need their specialist expertise. Only one junior specialist in the University was of the opinion that a large proportion of the patients he managed required more complex skills than he was able to provide.

The factors perceived by the thirteen doctors to be contributing to under utilisation could be summarised as follows:

1. the present system where the private sector specialists manage mainly walk-in patients, whereas the public sector specialists manage mainly referred cases
2. no established system for referral of patients from the general practitioners to the private sector specialists

3. lack of acute intensive care facilities in most private hospitals
4. the patient's perception of the need for specialist care
5. the patient's preference for specialist care for minor illnesses

Discussion

This study would not be possible without cooperation from the specialists who had to agree to participate in the study, to record on the format provided information on their patients and to be interviewed. The study should not burden the busy doctors with excessive paper work or interfere with their work. This was taken into consideration when formulating the disease complexity classification and in deciding on the duration of the data collection. Only 8.3% of the selected doctors refused to participate.

The disease complexity classification was based on available literature and the clinical experience of the research team, which comprised of 20 specialists and the classification was subjected to consensus among 25 other specialists. These 45 specialists were from the 5 disciplines and had representation from both the public and the private sector. The final consensus was arrived at after two rounds in the Delphi technique and several meetings of the members of the research team. To avoid bias, the participating doctors were not given any information on the disease complexity classification; they were only asked to provide information on their patients. The classification of the patients was done by a member of the research team of the same discipline.

The interview of the doctors asked for their perceptions and therefore had its limitations. The interview was conducted by a trained research assistant using a structured questionnaire. Although only a small number of specialists perceived that their expertise was under utilised the majority of these specialists were from the private sector.

It is estimated that during the study period, about 20% of the 8,000 doctors in Malaysia were specialists. This was a small number compared to Singapore (41%),

Canada (32%), New Zealand (32%) and Australia (30%)⁸. These specialists were about equally distributed in the public and the private sectors.

The specialists in the private sector had been in practice longer than those in the public sector. The specialists in the public sector, however, managed the majority of the complex cases.

In the existing system, the public sector specialists manage mainly referred patients and inpatients whereas the private sector specialists manage mainly walk-in outpatients. In addition, the advanced technology required for the management of complex cases is more likely to be available in the public sector. Since care in the public sector is subsidised, the greater expenses associated with complex illnesses will again result in more of them being managed in the public sector hospitals. It is therefore not unexpected that a larger proportion of patients managed by the private sector specialist are less complex cases.

No comparisons have been possible because of the absence of similar studies elsewhere on the case-mix of specialists. There are no existing recommendations for an appropriate case-mix for specialists. Specialists do not have to see only complex cases to be considered as appropriately utilised. However, a large proportion of the patients they manage should be complex and a case-mix where at least two-thirds of them are, is probably a suitable level. In this study, the specialists however felt that their expertise was appropriately utilised in the management of even the less complex cases. This study did not look at the outcome of the patients. We are therefore not able to conclude whether specialist care especially for simple conditions result in a better outcome.

The proposed implementation of the following two programmes in this country is expected to have a positive effect on the case-mix of the specialists, especially those in the private sector:

1. Establishment of the Specialist Register and the process of credentialling of specialised procedures⁹;
2. Accreditation of Hospitals^{10,11}.

The Specialist Register will provide information on the qualification, experience and services provided by the specialists in both sectors. The availability of this information to the profession will strengthen the referral system and is expected to increase referrals within the private sector (from the general practitioners to the private sector specialists) and to the sub-specialists in both sectors. At the same time the availability of this information to the public can be used to educate them on the appropriate use of specialist services. Maintenance of specialist status can be made dependent among other factors on providing evidence of the continued practice of specialist expertise.

The Programme for Accreditation of Hospitals will, among other things, look into the structure, equipment and manpower of the hospitals. Accreditation will ensure the development of those facilities and manpower required to enable the specialist to manage more complex cases. Furthermore, if the bigger private hospitals are accredited for training of doctors, a hierarchical system similar to that in the public hospitals can be developed in these hospitals and the specialists will be able to manage mainly screened cases.

The country is exploring various health financing schemes in order to formulate one that is suitable for use in this country. A scheme with standardised payment in both the public and private sectors, will allow patients to choose treatment from either sector, and result in a more equitable distribution of complex cases. If payment is also proportionate to the complexity of the case and its management, specialists in both sectors would be encouraged to manage more complex cases.

With the implementation of the Specialist Register and the Accreditation of Hospitals Programme and the introduction of a national health financing scheme in the future, the case-mix of the specialists in the three practice sectors is expected to change towards one of more optimal utilisation of specialist manpower.

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References

1. Suleiman AB, Wong SL, Mohan AJ, Kandasami P, Jegasothy R, Chin CH, Lim TO. Utilisation of specialist medical manpower. Health Systems Research Report, Ministry of Health Malaysia 1993.
2. Horn SD, Horn RA and Sharkey PD. The severity of illness index as a severity adjustment to diagnosis-related groups. Health Care Financing Review Nov 1984; 33 - 45.
3. Jencks SF, Dobson A, Willis P, and Feinstein PH. Evaluating and improving the measurement of hospital case mix. Health Care Financing Review Nov 1984; 1 - 11.
4. Brewster AC, Jacobs CM and Bradbury RC. Classifying severity of illness by using clinical findings. Health Care Financing Review Nov 1988 ; 107 - 8.
5. Knaus, WA, Draper EA, Wagner DP et al APACHE II: A severity of disease classification system. Critical Care Medicine 1985; 13(10): 818 - 29.
6. Gonnella JS, Hornbrook MC and Loius DZ. Staging of disease: A Case-Mix Measurement. JAMA 1984; 251(5): 637 - 44.
7. Thomas JW, Longo DR. Application of severity measurement systems for hospital quality management. Hospital and Health Services Administration 1990; 35(2) : 221 - 43.
8. Yeo C.T. Medical excellence within a country's resources - Role of doctors - Address at 26th Singapore - Malaysia Congress of Medicine, Singapore, 1992.
9. Singaram SP. Credentialling for specialised procedures. Proceedings of the National Quality Assurance Conference, Ministry of Health Malaysia, 1993.
10. Ahmad Tajudin J. Accreditation of hospitals. Proceedings of the National Quality Assurance Conference, Ministry of Health Malaysia, 1993.
11. Rotem W. Suggestions for implementation of accreditation in Malaysian Hospitals. WHO Mission Report 1993.