National Health Committee Meeting/21May2006

MALAYSIAN MEDICAL ASSOCIATION

Position Paper (Draft)

NATIONAL HEALTHCARE FINANCING SCHEME

A. Preamble

Malaysia, a developing country, has achieved health standards almost at par with developed countries, as measured by its health status indices. Remarkably, it was able to achieve this within a health budget of 3% of GDP, an expenditure which is considerably lower than those of developing countries and lower than the WHO recommendation that 4-8% of GDP should be spent on health.

Escalating health care costs, as perceived and experienced by many other governments all over the world, has moved the Malaysian government to review its health care system in search of an alternative strategy for financing, organising and delivering health care services more efficiently and equitably, in what may be collectively referred to as health reform strategies.

Reform measures, however, will have to be judged not only by control of public health budgets but also by their ability to promote health and generate health gain for the entire population. Admittedly and factually, the Malaysian government has indeed gained much in promoting the health of its population through disease control, immunization programmes, opening up rural health centres, developing secondary and tertiary healthcare facilities and upgrading diagnostic and therapeutic technology in these facilities.

Changing patterns in disease, ageing population and demography and higher consumer expectations, spurred by economic development, have increased the demand for "better" and more specialised health care. These demands for secondary and tertiary care, the most expensive component of health care, have led to spiraling health care costs in Malaysia, where economic growth, increasing affluence and the government's market ideology have encouraged the growth of private hospitals.

It was during the mid-term review of the 4th Malaysia Plan (1981-1985) that the first call for a study was made to determine ways of increasing efficiency and equity and developing alternative ways of financing health services. The first National Health Financing Study was undertaken in 1984-1985, and subsequently numerous other studies had been carried out on this central theme.

The MMA in 1980 carried out a study of the health services and submitted a comprehensive report on "The Future of Health Services in Malaysia".

The 7th Malaysia Plan (1996-2000) stated that the country would establish a National Health Financing Authority as a single-payer to fund health care. The Financing Authority would be based on the fundamental principle of equity and social solidarity, and would receive allocations from general taxation and compulsory contributions from employers, the self-employed and employees, based on payroll and income.

The country did make considerable progress in improving healthcare infrastructure and the achievements are proudly recorded in the 9th Malaysia Plan and further states:

> 20.77 **The implementation of the health financing mechanism will further enhance accessibility and equity through the provision of high quality, efficient, integrated and comprehensive health coverage for the population. In doing so, the mechanism will encourage greater flexibility and freedoms of choice in obtaining care from both the private and public sectors. In addition the Government will continue to ensure that no one is denied access to health care.**

B. Health Care Financing Scheme (NHFS)

There are three major objectives of NHFS:

a. equitable, appropriate and quality health care to all citizens;
b. clinical autonomy and economic freedom for providers, and
c. budgetary and cost control for the government.

These would require:

(i) equitable and accessible distribution of services,
(ii) planning for healthcare at a manageable level,
(iii) improvement to the quality of healthcare services,
(iv) freedom for healthcare providers to provide care as they see fit and freedom to determine fees.

Healthcare financing is a politically sensitive and value-driven issue that will determine the nature of a country's health care system and the commitment to providing universal, accessible and comprehensive health care for its citizens.

C. The Principles of NHFS as Initially Proposed by MMA

The guiding principles in healthcare financing envisage that the government has a social responsibility to ensure that the country's environment and public health status are satisfactory to ensure the health and wellbeing of all members of the public.

The members of the public are also responsible for their own health and wellbeing, that those who can afford to pay for their health care should pay, those who are poor and unable to pay for their health care should be provided free care, all citizens should receive equitable and appropriate treatment, and there must be a central system of funding mechanism managed and controlled by the government.

The following are essential ingredients to achieve the above scheme:

a. Primary Care/Family Physician Practice

National health financing scheme is essentially primary care driven and would determine first-line preventive, prophylactic and curative care for the public. The primary care doctors will provide 'gate-keeping' functions before referral of the patients for secondary and tertiary health care.

Primary care must be available nation-wide and accessible without exception to all sectors of the population. It is noteworthy that in the budget allocation in the 9th Malaysia Plan, the government plans to develop more primary care clinics particularly in the semi-urban and rural sectors.

b. Secondary and Tertiary Care Facilities

This must be available for curative emergency, critical care and elective care for patients in all major towns and cities, as well as in outlying areas too distant from cities and towns.

c. Rehabilitation and Geriatric Care Facilities

Facilities with specialised care for rehabilitation and for management of elderly patients need to be developed so that 'active' beds in secondary and tertiary care facilities are available for emergency, acute and elective surgery/treatment.

d. Disease Control and Public Health

These functions require national planning and execution and will remain the responsibility of the government.

e. Sources of Funds for Health Care

There are five main sources of funds for health care:

- Government funding through direct taxation
- Private health insurance
- Social insurance
- Out-of-pocket payments
- 'Sin Tax' (from alcohol brewery firms and tobacco companies)

Taxation should be formulated so that there is universal contribution towards the health care fund, based on income, but there should be a ceiling on the amount payable by an individual. No one, except those earning below a level to be determined, should be exempted from payment. Self-employed should show their income supported with a business activity statement (BAS).

f. Integration of Public & Private Healthcare Facilities and Services

The public and private sector health care facilities should be integrated, so that the quality of professional care is comparable but the patient may choose to have treatment in private hospitals by paying extra for the accommodation through private health insurance or out of savings.

g. Private health insurance

Private health insurance must be encouraged as this provides voluntary, supplementary cover and reimbursement for medical costs not funded by the statutory system (NHF).

h. Diagnosis Related Groups (DRGs)

There must be a basic package of fees payable form central funds based on case-mix studies of Diagnosis Related Groups (DRG), for both the public and private professional services.

i. National Healthcare Financing Authority

A National Healthcare Financing Authority (NHFA) should be established directly under the Government as a single payer to fund healthcare. No segments of the authority or scheme management should be farmed out to private organisations. The NHFA should have representatives, besides the government, from major professional bodies, consumer and other interest groups and the lay public.

D. Present Position of the MMA on NHF Scheme

The MMA feels that no single National Healthcare Scheme (as operating in Britain, Canada or Continental European countries) can be totally substituted for the current Malaysian healthcare system.

The MMA considers that the ingredients essential for implementation of the NHF Scheme will not be ready within the period of the 9th Malaysia Plan.

The MMA submits that the full implementation of all envisaged aspects of the NHF Scheme will not radically improve the healthcare status of the country nor materially improve the provision of health care, given the current excellent standard and health indices.

The MMA is of the opinion that any scheme hereafter should recognise the strengths of the existing system and further enhance and improve on it without major alterations in its form and structure, thereby maximizing the provision of health care in the country,.

The MMA is further of the opinion that aspects of the NHF, as outlined above, which would complement and enhance the existing system should be carefully studied and integrated where appropriate with the above objectives in mind.

E. The Strengths of the Existing Healthcare System

Any proposed scheme should take cognisance of the strength of the existing healthcare system in the country and take steps that will only enhance and improve the existing system. The major strengths of the existing healthcare system are:

a. The health care indices of Malaysia are better than most upper middle income countries.

b. The rural healthcare in Malaysia is excellent and well established with a network of community clinics, and maternal and child health clinics. It is often said that no person in Peninsular Malaysia is more than 5 km away from a government health clinic or private medical clinic.

c. There is a well distributed public sector hospital network, with 128 hospitals (ratio of 1 hospital per 204,000 persons) and national total bed strength of 35,210, giving a ratio of 1 bed per 742 persons.

d. The quality of health care provided is relatively good within limitations of manpower, the services available and physical space constraints of its facilities.

e. There is free or highly subsidised health care for the poor and disadvantaged, and nobody is turned away from public hospitals because of inability to pay for treatment.

f. Public sector global budget has enabled the government to control the supply of services and keep related expenditure within national fiscal capacity.

g. The private sector has generally not set prices that would discourage use of the private sector and its health care is available at moderately affordable price to middle class.

h. There is good public health disease control and the health indices are comparable to international standards.

F. The Limitations in the Current System and Steps to Remedy

a. Rural Healthcare

Rural healthcare network is well established and has been provided free by the government for the rural inhabitants.

Health taxation of the rural population will be initially difficult and a proper economic study has to be carried out to determine the formula for contribution from rural citizens. (*If such is not possible then the government has to provide free healthcare for the rural sector.)*

b. Primary Care

The major impediment to establishing primary care as the principal driver of NHCFS is that there is uneven distribution of primary care clinics throughout the country to effectively provide first-line care. The primary care clinics are mainly in urban or semi-urban locations.

Some incentives have to be provided by the government for doctors to open up private primary clinics to complement the small number of existing government health clinics. These incentives could take the forms of providing clinic premises at low rentals, provision of basic equipment and instruments, and so on.

Difficulty is envisaged in integrating the various types of existing primary care clinics (solo practitioners, group practitioners, OPD services in private and public hospitals) into a national organisation.

The system of reimbursement if there is integration would mean fee-for-service or capitation. Both methods have their inherent drawbacks, but a system DRG based payment with co-payment for private health care by those seeking it, is preferable.

There may be an argument to retain the present structure of primary care practice, but this not feasible. Choice of doctors for patients is still feasible through a kind of 'Medisave' card.

C. Private Healthcare Facilities

The establishment of private hospitals in the country has so far not been regulated, with the result that there has been mushrooming of private hospitals in the cities and big towns.

Private hospital beds make up 23% of the national total, with 46% of medical officers and 59% of specialists of the country's total running them. The majority of these hospitals have advanced diagnostic equipment (MRI scans, CT scans, etc) in greater numbers than public hospitals in the same geographical area.

Only some 20% of the public seek inpatient care in private hospitals.

There is significant uneven distribution of doctors and workload in private hospitals.

The nursing and specialist care is usually more personal and individualized because of the lesser workload compared with public hospitals.

However, there are limitations:

(i) Medical officers and specialists leave the government/teaching hospitals to enter into private practice primarily with overwhelming pecuniary objectives;

(ii) Doctors who set up private practice clinics are often faced with unforeseen challenges to survive and finding this to be so, some resort to unethical practices and exorbitant professional charges.

(iii) 'Kick back' is believed to be a significant practice amongst private hospital/clinic doctors.

(iv) The recently implemented Regulations (2006) to the Private Healthcare Facilities & Services Act (1998) is poised to create numerous restrictions to facilities and services provided by both private hospitals and private medical clinics, and so create further divide between the public and private health care services. Any attempts to integrate public and private healthcare under the National Healthcare Finance Scheme will present even more obstacles.

d. Corporatisation of Public Hospitals

The Government corporatised the National Heart Institute (Institiut Jantung Negara) in September 1992, under the Ministry of Finance and managed by a Board. The medical officers and specialists there work with salaries much higher than those in public hospitals, in spite of which the Institute has problems attracting local doctors (particularly in anaesthesia and cardiology) to work in them. The government pays the Institute's fees in full for civil servants (serving and retired) seeking cardiac and cardiothoracic treatment, and refuses to consider this as a subsidy from the government.

It is interesting to note that in 1995/96, the government conducted a study on the Corporatisation of 14 General Hospitals in the country. The outcome and findings are not known but the Minister of Health made the announcement on 13 August 1999 that the government would not corporatise public hospitals..

e. Integration of Private and Public Healthcare

To raise the standard of public hospitals in terms of professional care and facilities to the level of the private hospitals is a difficult task, given the budget constraints, lack of facilities, shortage of professional and nursing care and patient load in public hospitals.

The purpose of integration is to establish equal status between public and private hospitals so that the standard of care and quality of both the facilities will be equally well received by the public if and when the NHF Scheme is implemented.

The fee packaging of private professional care in line with that of the public sector, based on case mix DRG, will be resisted by private sector doctors already enjoying higher fees. Thus the DRG has to be consonant with the fee schedule in the Regulations (2006) of the Private Healthcare Facilities & Services Act 1998.

There are also too many new private hospitals being built in urban areas, with specialists and nurses being drawn to them from public hospitals with offers of better pay and more congenial working environment.

Integration of public and private healthcare services is therefore perceived to be a difficult proposition.

f. Public Healthcare Services

The public healthcare services need to be upgraded comparable to the standard of the private health care. This would mean:

(i) Developing separate specialty based secondary care hospitals in all major cities and towns: Children's, Women's, Geriatric & Rehabilitation Hospitals, besides the "General" hospitals.

(ii) Shorter patient waiting time for consultation, admission, definitive treatment through a revamp of organisational and administrative functions.

(iii) Improving level of care, compassion, efficiency and commitment of nursing and ancillary staff through public relations lectures and training;

(iv) Improving on the working, relaxing and living environment of all grades of staff.

(v) Pay and allowances to be based on continuing professional development assessment with incentives.

(vi) Improved career structure for nursing and ancillary staff.

g. Migration of professional manpower from public to private sector

The perennial departure of medical officers, specialists, nursing and ancillary staff is a much discussed but rarely resolved problem. Stop-gap measures thus far taken by the government lack long-term planning and reflect a failure to appreciate future adverse implications.

(i) Increase in pay and allowances are not commensurate with the work load;

(ii) Allowing in-house private practice by specialists (in teaching hospitals and selected public hospitals) to retain specialists, has led to abuse and unethical practices through covert canvassing by clinic staff;

(iii) The move to formally permit medical officers and specialists to work as locums in the private sector will be counter-productive and create problems of its own;

The working environment (physical, intellectual and professional) in public hospitals fails to endear doctors to continue working in them at the completion of compulsory service (3 years) or bonds (for postgraduate courses).

(iv) Lack of supervision by senior consultants, the indifference to frustrations expressed by junior doctors, unfavourable or extended hardship postings and poor working and living conditions encourage migration to private sector.

(v) The proposed move to allow traditional medical practitioners (bomohs, sinsehs and ayurvedists) to provide care to patients in the public hospitals based on patient's choice is fraught with numerous serious ethical, administrative and professional implications and setbacks.

h. Health Care Providers (Doctors)

The general quality and commitment of doctors in healthcare service needs to be evaluated. The traditional value of patient care with compassion by doctors seems to be waning and consequentially the standards of care. The contributory factors are many:

Public Sector:

The quality of undergraduate and postgraduate training:

(i) The number of medical schools in the country is fast increasing without proper vision and planning. There are at present 7 government medical schools and 5 private medical schools in a country with 25 million population.

(ii) The number of new doctors graduating annually is about *1000 from local government* and private medical schools and about *200 from overseas schools*. The overseas students are either privately funded or on government and statutory body scholarships.

(iii) The large number of students entering into medical colleges without proper evaluation of their character and attitude may be a reason. There may in addition be

serious shortcomings in the undergraduate training system.

(iv) The intake of medical students should eventually be capped in local universities, both government and private, and the controlled admission should be on merit.

(v) The large number of students seeking medical education in overseas colleges should be curtailed by providing places in local universities and colleges based on merit. Admission should also take into consideration places for eligible students from marginalized ethnic groups.

Poor in-service Employment

(i) Lack of supervision and training of trainees (housemen, medical officers and postgraduate students by senior doctors and specialists whose time seems to be taken up with non-clinical duties and assignments (attending meetings, attending overseas conferences, preparing administrative directives, etc).

(ii) Service considerations taking priority over proper and chosen posting of medical officers leading to frustration, lack of interest and waiting to complete compulsory service before leaving for the private sector.

Pay, Allowance, Career Prospects

(i) Pay and allowances to be restructured. Doctors' salary scheme should be separated from civil service pay structure.

(ii) Career structure and postgraduate training to be individually monitored.

Poor working environment and Workload

(i) Working environment, working conditions, study and rest areas to be upgraded to cater for comfort and peace.

(ii) Public sector facilities are overcrowded and suffer from poor organisation of services and shortage of key specialists and staff.

i. Privatisation of Healthcare Services

While privatization of laundry, cleaning, and clinical waste disposal may be considered low impact involvements, the privatization of pharmaceutical supply is a matter of grave concern, given the volume of the commodity, tendering processes and contract awards, quality control, and the direct impact on patients, both therapeutically and financially.

The savings claimed by the government from privatization of these services is questionable and have to be viewed from quality of service and products beyond doubtful economic gains.

There seems a tendency to overpay for the purchased items, be they pharmaceuticals, disposables, healthcare equipment and non-clinical items. The system of tendering and awards of contracts need to be scrutinized, controlled and monitored so that contracts are based on merit and proper fund allocation and quality of the commodity are ensured.

j. Case-mix Study and DRG

The case-mix system is an information tool that provides an objective method for describing healthcare activities based on the type of patients treated, type of disease treated and medical resources used in a hospital.

Diagnosis Related Groups (DRGs) are used to classify inpatients receiving acute hospital care according to their principal diagnosis. From there, case mix information is obtained by aggregating patients into meaningful cluster groups in terms of resource usage. That is, it assumes that patients with related diagnoses would require similar medical examinations and hence would incur similar treatment costs. Therefore, DRGs can serve as standards of measurement for hospital administrators and clinicians to justify the cost and resource allocation in the provision of care.

The government has not made any comprehensive study on, or finalized, the Diagnosis Related Grouping of diseases. A study was in fact started in UMMC in 2000, and another in Hospital UKM, but the findings and applications have not been conclusively established.

It is proposed that national standards be established for DRG, even though this may have to be modified for Sabah and Sarawak.

k. Government Health Budget and Unrecovered Expenditure

One of the arguments put up the government for planning to implement a National Healthcare Financing Scheme is that there is increase in the operational and running expenditure of the public healthcare service. It is claimed that less than 5% of the amount expended is recovered from the public.

Treatment and medications are charged very low in public hospitals and those who can pay evade payment. The system of billing, collection, accounting and book-keeping in public hospitals need to be more stringently enforced.

The wastage of clinical and non-clinical materials in public healthcare facilities is also believed to be considerable and this needs to be checked.

The coverage for expensive and long term medical treatment has to be reviewed and reimbursement from patients on a able-to-pay basis has to be enforced. To be considered in this light are treatment for chronic illnesses, mental illness, and critical and catastrophic illnesses and the provision of cardiac stents, prosthetic valves, and total joint replacement prostheses and surgical implants.

l. Healthcare Financing Strategies

The critical ingredient to Healthcare Financing is working out formulae for obtaining adequate funds for the NHFA so that it can facilitate healthcare expenditure.

The two main sources of health financing in Malaysia are general taxation (57%) and private household out-of-pocket (43%) (Report on National Health and Morbidity Survey II, MOH, 1996).

Contributions from private sector employers and private insurance are small. The user-fee for use of public sector facilities is also small and the revenue generated is only about 5% of public sector expenditure.

There has been a sharp increase, from 24% in 1986 to 42% in 1996, of the private expenditure, mainly for out-of-pocket expenditure for health care in the private sector.

The increase in healthcare expenditure is inevitable. The issue is to ensure that health expenditure remains affordable to the nation as well as the individual.

Many models on Healthcare Financing from developed countries may not be acceptable or implementable in our country in which 40% of the population is rural based.

m. Private Health Insurance

Private health insurance provides voluntary, supplementary cover for certain sections of the population covered by a national health service or statutory social insurance.

Such private health insurance has to be community-based and the government could be expected to partly 'subsidise' premiums for persons who are unable to pay the full premium.

Health care systems, financed predominantly through statutory health insurance, are marked by the diversity of their arrangements. In such system, private insurance is taken out to reimburse the patient for the percentage of medical costs not funded by the statutory system, as well as for providing more comfortable accommodation.

Private health insurance also provides voluntary cover for certain parts of the population in countries with statutory insurance systems, mainly those on a high income who have opted out and have no other cover. In Australia, a person who opts out of the national health care system has to pay a higher (2.5% of income) compared to those in the system (1.5% of the income).

n. Health Expenditure and GDP

Health expenditure as a percentage of GDP is recommended by WHO in the region of 4-8% for developing countries. In 1990, the

percentage for Malaysia was below 3.0%, compared with 3.5% in Sri Lanka, 5.7% in Hong Kong, 6.6% in South Korea and 5.0% in Thailand.

In 1995, the Malaysian health expenditure was 2.28% and 5.31% of the Federal Budget (total allocation of RM2.6 billion).

In the 9th Malaysia Plan, the government has allocated total MOH expenditure of 10.28 billion, which is 5.1% of the Federal Budget.

One source of funding for the NHF Scheme is the government through direct taxation, and it is hoped that allocation to develop the infrastructure in preparation for the NHFS will be augmented during the 9th MP period.

G. Recommendations

a. Any healthcare reform in Malaysia has to be based on strengthening the existing system, which has over the years proven to be effective.

b. The plan to institute a National Healthcare Financing Scheme has to be reviewed and held back until the infrastructure for nation-wide accessible, equitable, integrated health care are firmly upgraded or established, as stated in the 9th Malaysia Plan.

c. The government needs to identify and study areas in which there are existing serious shortcomings in the quality, standards, and facilities of healthcare provision and upgrade them. While accessibility to health care in the country is good, there is still room to increase facilities and services in rural and interiors of the country, particularly in primary care and secondary care.

d. The government should not abrogate its general responsibility to ensure the health care of the people and must continue to provide public healthcare,

control of communicable and non-communicable diseases, and care for those who cannot afford to pay.

e. The government must take steps to stop the economic loss incurred in various areas of healthcare services in the country by monitoring wastage, award of tenders, purchase of drugs and equipment, etc.

Draft prepared on 19May2006 /AHAK

Table 3: Assessment of alternative methods of financing, payment and delivery of health care in affluent nations

Method of financing	Equity			Cost control	Efficient use of resources	Customer choice
	Universal coverage	Equal access	Equity in financing			
General Tax						
Central government, direct provisions (eg. United Kingdom)	Yes	High	Progressive	Strong (supply)	Moderate	Low
Regional government, indirect provision (eg. Canada)	Yes	High	Progressive	Strong (supply)	High	High
Local government, direct provision (eg. Sweden)	Yes	Moderate	Progressive	Strong (supply)	High	Moderate
Social Insurance						
Government, direct provision (eg. Spain)	Yes	High	Mildly regressive	Strong (supply)	Moderate	Low
Mandated insurance with global budget (eg. Germany, Japan)	Yes	Moderate/ High	Regressive	Strong (supply)	Moderate	High
Mandated insurance with global budget (eg. Republi c of Korea)	Yes	Moderate	Regressive	Weak (demand)	Low	High
Pluralistic						
Universal provision by public hospitals with private insurance "opt-out" (eg. Australia, Singapore)	Yes	Moderate	Mildly progressive	Weak (demand)	Low	High
Free choice and market competition (eg. United States)	No	Low	Regressive	Weak (demand)	Low	High

Source: Hsiao W. C. op cit

DEVELOPMENT EXPENDITURE AND ALLOCATION FOR HEALTH SERVICES, 2001-2010

(RM million)

Programme	*8MP Expenditure*	*9MP Allocation*
Patient Care Services	7,719.0	5,483.2
New Hospitals	5,324.8	1,275.6
Upgrading and Renovation	2,394.2	4,207.6
Public Health Services	1,329.3	3,311.6
Urban Health	471.8	1,269.9
Rural Health	797.6	2,027.2
Environmental Health	59.9	14.5
Other Health Services	451.7	1,481.2
Training	364.5	1,052.2
Research and Development[1]	28.9	250.0
Land Procurement	58.3	179.0
Total	**9,500.0**	**10,276.0**

Source: Economic Planning Unit

Notes: [1] Excludes allocation under IRPA.

SELECTED INDICATORS OF HEALTH STATUS, 2000 AND 2005

Indicator	*2000*	*2005*
Life Expectancy at Birth (in years)		
Male	70.0	70.6
Female	75.1	76.4
Crude Birth Rate (per 1,000 population)	24.5	21.0
Crude Death Rate (per 1,000 population)	4.4	4.5
Infant Mortality Rate (per 1,000 live births)	6.6	5.8
Toddler Mortality Rate (per 1,000 toddler population)	0.6	0.5
Maternal Mortality Rate (per 1,000 live births)	0.3	0.3
Perinatal Mortality Rate (per 1,000 total births)	7.5	6.8
Neonatal Mortality Rate (per 1,000 live births)	3.8	3.8

Source: Ministry of Health

HEALTH PERSONNEL: POPULATION RATIO, 2000 AND 2005

Type of Personnel	Number		Ratio to Population	
	2000	2005	2000	2005
Doctors[1]	15,619	18,842	1 : 1,413	1 : 1,387
Dentists[1]	2,144	2,689	1 : 10,356	1 : 9,716
Pharmacists[1]	2,225	4,021	1 : 8,306	1 : 6,512
Nurses[1]	31,129	43,977	1 : 1,000	1 : 594
Medical Assistants[2]	6,530	6,200	1 : 4,742	1 : 4,214
Dental Technicians[2]	538	691	1 : 43,344	1 : 37,811
Dental Surgery Assistants[2]	1,296	2,357	1 : 18,091	1 : 11,085
Community Nurses[2]	7,717	15,218	1 : 3,767	1 : 1,717
Dental Nurses[2]	1,552	2,104	1 : 14,635	1 : 12,418
Occupational Therapists[2]	153	265	1 : 152,050	1 : 98,594
Physiotherapists[2]	271	398	1 : 85,215	1 : 65,647
Radiographers[2]	638	1,158	1 : 36,578	1 : 22,563
Medical Laboratory Technologists[2]	2,974	3,373	1 : 7,823	1 : 7,746

Source: Ministry of Health

Notes: [1] Includes public and private sectors

[2] Refers to the ratio and requirement of the Ministry of Health only.

TABLE 20-5

SUPPLY OF DOCTORS BY STATE, 2005

State	Number					Ratio to Population
	Public Sector[1]			Private Sector	Total	
	MOH	Non-MOH	Total			
Johor	832	12	844	885	**1,729**	1 : 1,794
Kedah	529	6	535	452	**987**	1 : 1,872
Kelantan	378	377	755	188	**943**	1 : 1,596
Melaka	315	26	341	337	**678**	1 : 1,051
Negeri Sembilan	464	6	470	324	**794**	1 : 1,191
Pahang	483	1	484	315	**799**	1 : 1,786
Perak	661	24	685	811	**1,496**	1 : 1,509
Perlis	98	1	99	37	**136**	1 : 1,655
Pulau Pinang	665	9	674	851	**1,525**	1 : 963
Sabah	754	3	757	352	**1,109**	1 : 2,719
Sarawak	722	25	747	366	**1,113**	1 : 2,078
Selangor	962	93	1,055	2,078	**3,133**	1 : 1,512
Terengganu	328	0	328	146	**474**	1 : 2,145
W.P. Kuala Lumpur	1,177	948	2,125	1,801	**3,926**	1 : 396
Malaysia	**8,368**	**1,531**	**9,899**	**8,943**	**18,842**	**1 : 1,387**

Source: Ministry of Health

Notes: [1] Includes Ministry of Health, other government agencies, local authorities and universities

Note : This draft paper was prepared by Dato' Dr Abdul Hamid with input from Datuk Dr Teoh Siang Chin, Prof Dr John George and Dr G Jayakumar in 2006.