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Malaysia Health System Review

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Preface

The Health Systems in Transition (HiT) profiles are country-based reports that provide a detailed description of a health system and of reform and policy initiatives in progress or under development in a specific country. Each profile is produced by country experts in collaboration with an international editor. In order to facilitate comparisons between countries, the profiles are based on a common template used by the Asia Pacific and European Observatories on Health Systems and Policies (see section 9.3). The template provides detailed guidelines and specific questions, definitions and examples needed to compile a profile.

HiT profiles seek to provide relevant information to support policy-makers and analysts in the development of health systems. They can be used:

- to learn in detail about different approaches to the organization, financing and delivery of health services and the role of the main actors in health systems;
- to describe the institutional framework, the process, content and implementation of health care reform programmes;
- to highlight challenges and areas that require more in-depth analysis;
- to provide a tool for the dissemination of information on health systems and the exchange of experiences between policy-makers and analysts in different countries implementing reform strategies ; and
- to assist other researchers in more in-depth comparative health policy analysis.

Compiling the profiles poses a number of methodological problems. In many countries, there is relatively little information available on the health system and the impact of reforms. Due to the lack of a uniform data source, quantitative data on health services are based on a number of different sources, including the World Health Organization (WHO) Western Pacific Country Health Information Profiles, national statistical offices, the International Monetary Fund (IMF), the World Bank, and any other relevant sources considered useful by the authors. Data collection methods and definitions sometimes vary, but typically are consistent within each separate series.

A standardized profile has certain disadvantages because the financing and delivery of health care differs across countries. However, it also offers advantages, because it raises similar issues and questions. The HiT profiles can be used to inform policy-makers about experiences in other countries that may be relevant to their own national situation. They can also be used to inform comparative analysis of health systems. This series is an ongoing initiative and material is updated at regular intervals. Comments and suggestions for the further development and improvement of the HiT series are most welcome and can be sent to apobservatory@wpro.who.int

The data and evidence contained in this report, which was written in 2010, and at the time of its release, is in some instances out-of-date.

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The writing team wishes to acknowledge the Director General of Health Malaysia for his permission to publish this document.

List of abbreviations

9MP:	9th Malaysia Plan
10MP:	10th Malaysia Plan
ACCRH:	Advisory Coordinating Committee on Reproductive Health
ACCs:	Ambulatory care centres
ADR:	Adverse drug reaction
AMOs:	Assistant medical officers
BN:	<i>Barisan Nasional</i> coalition
CPD:	Continuous professional development
DSAs:	Dental surgery assistants
DUNAS:	National Medicines Policy
<i>E-Perolehan:</i>	Electronic procurement system
E-SPKB:	Electronic financial management system
EPF:	Employee Provident Funds
FDS:	Flying doctor service
GGHE:	General government health expenditure
GGE:	General government expenditure
HRMIS:	Human resource management information system
HUKM:	<i>Hospital Universiti Kebangsaan Malaysia</i> or National University Malaysia Hospital
ICT:	Information communication technology
ISO:	International Organization for Standardization
KPIs:	Key performance indicators
MaHTAS:	MOH Medical Development Division
MCA:	Malaysian Chinese Association
MCO:	Managed care organization
MIC:	Malaysian Indian Congress
MOH:	Ministry of Health
MYSED:	National Strategic Plan for Emerging Diseases
NCPB:	National Pharmaceutical Control Bureau

NDP:	National Development Policy
NEP:	New Economic Policy
NGOs:	Nongovernmental organizations
NHMS:	National Health Morbidity Surveys
NPCB:	National Pharmaceutical Control Bureau
OOP:	Out-of-pocket payments
PMS:	Patient management system
PPUKM:	<i>Pusat Perubatan UKM</i> (PPUKM) or UKM Medical Centre (UKMMC)
PSD:	Pharmaceutical Services Division
SOCSO:	Social Security Organization
T/CM:	Traditional and Complementary Medicine
UMMC:	University Malaya Medical Centre
UMNO:	United Malays National Organization
USMMC:	University Sains Malaysia Medical Centre

Executive summary

Malaysia is a federation of 13 states and 2 territories in a parliamentary democracy, with the Prime Minister the head of government and a constitutional monarch elected by the Sultans. Malaysia is a multicultural society and a secular state with Sunni Islam as the official religion. Classified by the World Bank as an upper middle-income country, its society and economy were transformed by rapid economic growth in the latter half of the 20th century. Malaysia's population (now numbering over 28 million with 70% living in urban areas) has benefited from a well-developed health care system, good access to clean water and sanitation, and strong social and economic programmes. Life expectancy at birth is 73 years. Noncommunicable diseases now account for most mortality and morbidity but communicable diseases remain a concern.

Section 2 describes the organization and governance of the health system. Health care services consist of tax-funded and government-run primary health care centres and hospitals, and fast-growing private services mainly located in physician clinics and hospitals in urban areas. Public sector health services are administered by the Ministry of Health through its central, state and district offices. The Ministry of Health regulates the private sector, pharmaceutical industry and food safety and plans and regulates its own health care services. Legislation governing health care professionals requires them to register with statutory professional bodies.

Section 3 reports on health care financing. Malaysia's public health system is financed mainly through general revenue and taxation collected by the federal government, while the private sector is funded principally through out-of-pocket payments from patients and some private health insurance. Spending on health reached 4.6% of GDP in 2009 with the majority from public spending, reaching 56% of total health expenditure (THE) in 2009. The main sources of THE in 2008 were the Ministry of Health (42%), followed by household out-of-pocket expenditure at nearly 34%. The Ministry of Health funds public facilities through line item budgets and patients pay private physicians and private hospitals on a fee-for-service basis.

Physical and human resources are described in Section 4. The number of public primary care facilities (currently 802 centres and over 2000 small community clinics) and dental clinics were expanded steadily in earlier decades, particularly to reach people in under-served rural areas. Secondary care is offered in smaller public hospitals and more complex tertiary care, in regional and national hospitals (including university teaching hospitals run by the Ministry of Higher Education). Growth has slowed in recent years, however, and public services in urban areas have not kept pace with rapid urbanization, while the population ratio of hospital beds has declined slightly. Private clinics and hospitals in urban areas have grown rapidly over the last decade. The supply of health professionals remains seriously below the required number, although the government has increased the number of training places.

Section 5 looks at provision of services. National health policies stress public health and health promotion, that is, 'a wellness' as well as a 'disease' perspective. The Ministry of Health has developed an extensive network of public primary care centres and also dental services especially for children, but these services are under strain and have staff shortages, so patients often encounter long waits. Primary care exerts only a limited gatekeeper function since people can bypass a referral from a general practitioner and for a small additional fee (if in the public sector) can go directly to specialists and hospitals. Government services increasingly serve the poor and private services the better-off people who live in urban areas. Hospital policy currently has three main thrusts: strengthening specialty care in large public hospitals; increasing the number of day surgery centres; and expanding top-end private hospital care to cater to the medical tourism market (with 35 participating hospitals in 2010). Malaysia has a large pharmaceutical manufacturing sector that exports to other countries and also supplies 30% of domestic demand.

The principal health care reforms are discussed in Section 6. The government has stepped up its surveillance and early response to infectious disease outbreaks as a result of recent pandemics such as SARS and avian flu, which had a major impact on the country's economy. The Ministry of Health has maintained its extensive vaccination programmes, has consolidated its primary health care clinics and upgraded its hospitals, and is slowly introducing information communication technology into its public facilities. The government has increased training places to counter shortages of health professionals, has strengthened food and drug safety regulation, is considering price

regulation of pharmaceuticals, and is positioning the country as a medical tourism destination.

Section 7 provides an assessment of the health system. Malaysia has a strong population health tradition and well-established and extensive health care services. Although total health expenditure at 4.6% of GDP in 2008 is in the range for middle-income countries, the government is concerned about future sustainable financing. Successive administrators have prioritized the provision of cost-effective, preventative and mainly free primary health care in public clinics. The rapid growth of private health care means that private spending has risen faster than public spending, including out-of-pocket payments by the public, with the government share (from general revenue) just above half (56%) of health expenditure in 2009.

In conclusion, Malaysia has achieved impressive health gains for its population with a low-cost health care system funded through general revenue that provides universal and comprehensive services. Like many other countries in the region, Malaysia has struggled to produce an adequate supply of health professionals, and to integrate and regulate its rapidly growing private health sector. Public services have not kept pace with population growth in urban areas and those with higher purchasing power use private rather than public doctors and hospitals, which leaves the public sector with more poorer and sicker patients.

The Malaysian Government recently revived the debate over options for a national social health insurance scheme. The financing challenge is to agree on a scheme for fair and sustainable funding and its respective contributions from general revenue and private payments. The regulatory challenge for the Malaysian Government is to strengthen its governance of both public and private health services in order to ensure high quality and safe services and fair charges. The structural challenge is to determine the balance between public and private sector delivery and to engage in a more productive partnership between public and private sectors. The administrative challenge is to consider whether the community would be better served by more decentralized and responsive services.

As Malaysia seeks to attain high income country status, and as demographic and epidemiological transitions continue and new technology expands the possibilities for intervention, the demand for

health care by the population will continue to rise. The government will need to address growing concerns about equity, efficiency and budgetary constraints and balance conflicting policy principles. Pressures are building up for health system reform in Malaysia looking towards the year 2020 and beyond.

1. Introduction

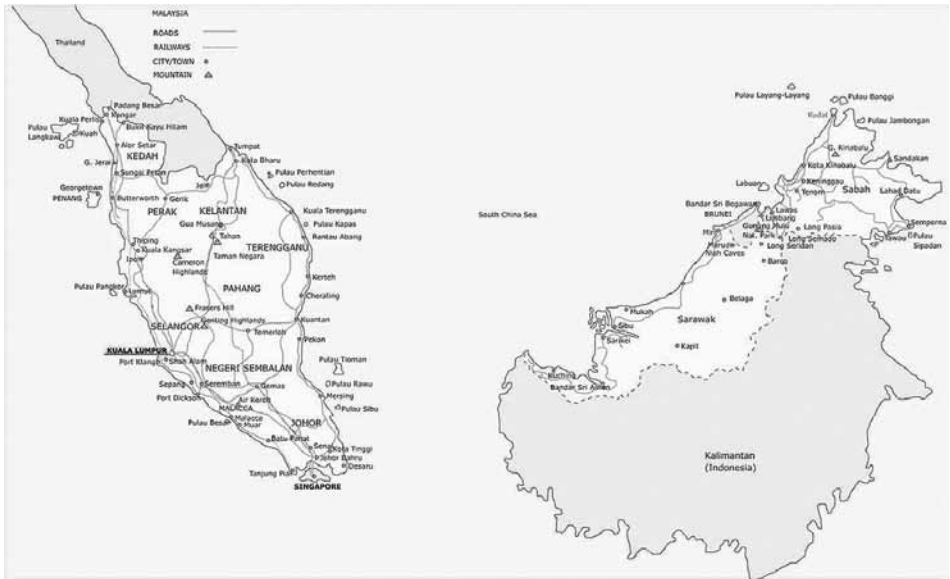
1.1 Section summary

Malaysia is a federation of states and a parliamentary democracy with the prime minister the head of government and the constitutional monarch elected by the sultans. It is a multicultural society and a secular state with Sunni Islam as the official religion. Classified by the World Bank as an upper middle-income country, its society and economy were transformed by rapid economic growth in the latter half of the 20th century. Malaysia's population (now numbering over 28 million) has benefited from a well-developed health care system, good access to clean water and sanitation, and programmes to reduce poverty, increase literacy, improve the status of women, and build a modern infrastructure. Life expectancy at birth is 73 years (2009). Noncommunicable diseases now account for most mortality and morbidity but communicable diseases, such as dengue, and potential pandemics such as avian flu, remain a concern.

1.2 Geography and sociodemography

The federation of Malaysia comprises 13 states (Perlis, Kedah, Pulau Pinang, Perak, Selangor, Negeri Sembilan, Pahang, Melaka, Johor, Kelantan, Terengganu, Sabah and Sarawak) and the federal territories of Kuala Lumpur, Putrajaya and Labuan. Nine of the states are sultanates (the exceptions are Melaka, Penang, Sabah and Sarawak). A tropical country, it has an equatorial climate. The total land area is 330 803 sq. km with Peninsula Malaysia bordered by Thailand to the north, Singapore lies to the south, and East Malaysia is bordered by Kalimantan Indonesia and the Sultanate of Brunei (Figure 1-1).

Figure 1-1 Map of Malaysia



Source: Department of Statistics Malaysia 2011

The population reached 28.31 million in 2009. Although the annual population growth rate has declined to around 2% (Table 1-1), it remains above the 1% growth rate of many high-income countries. Malaysia is undergoing a demographic transition as the fertility rate has fallen to 2.3 births per woman, the population proportion below 15 years of age has fallen to 31.8%, and those aged 65 years and over are increasing. Malaysia has experienced rapid urbanization and with 70% of the population living in urban areas, is the second most urbanized country in South-East Asia after Singapore. While Malaysia is a secular state, Islam (Sunni form) is the official religion (practised by about 60% of the population) and there are sizeable proportions of Buddhists, Hindus, Christians and Taoists. Animism is still practised by some indigenous groups.

Table 1-1 Population distribution and selected sociodemographic indicators, 1970–2009

Indicator	1970	1980	1990	2000	2005	2008	2009
Total population (millions)	10.9	13.9	18.1	23.4	26.1	27.3	28.3
- Population aged 0–14 (% of total)	44.5	39.9	37.4	34.1	32.6	27.5	31.8
- Population aged 65 plus (% of total)	3.3	3.5	3.7	4.0	4.3	4.6	4.5
Average annual pop. growth rate (%)	3.6	2.6	2.5	2.5	2.1	2.1	2.1
Fertility rate (women aged 15–49 years)	4.9	4.0	3.5	3.0	2.4	2.3	...
Birth rate (per 1000 people)	32.4	30.6	27.9	23.4	18.5	17.8	...
Urban % population	27	...	50	62	...	70	...
Adult literacy rate	...	...	...	94	94	94	...

Source: Department of Statistics Malaysia, 2009; WHO, 2010a.

Malaysia promotes multicultural policies given its multiethnic population (Table 1-2). Other Bumiputera groups comprise the ethnic pribumis of Sabah and Sarawak (including *Iban*, *Kadazan*, *Bidayuh*, *Bajau*, *Melanau*, *Murut*) and the *Orang Asli* of Peninsular Malaysia. ‘Others’ include Eurasians and expatriates. Non-citizens consist of nationals from several countries (mainly Indonesia, Philippines, Myanmar, Viet Nam, Cambodia and Bangladesh) who come to seek employment in Malaysia.

Table 1-2 Population distribution by ethnicity, 2009

Ethnicity	Population	% of Total
1. Malays	13 904 800	49.5
2. Chinese	6 423 100	22.9
3. Indians	1 915 000	6.8
4. Other Bumiputeras	3 004 200	10.7
5. Others	354 200	1.3
6. Non- citizens	2 472 000	8.8
Total	28 073 300	100

Source: Department of Statistics, Malaysia, 2009

1.3 Economic context

The economy grew rapidly during the late 20th century with growth averaging around 9% annually, reaching the 10% mark on four occasions: 1973, 1977, 1989 and 1997 (NEAC, 2010). Malaysia's economic growth has transformed its economic and social landscape. The economy has diversified from its initial dependence on natural resources, such as agriculture, tin mining and exports of raw resources, so that industry and services now account for 48% and 42% of GDP, respectively, and agriculture accounts for 10% (Table 1-3). The currency of Malaysia is Ringgit Malaysia (1 RM = 100 sen. The exchange rate in US dollars in October 2011 was US\$ 1 = RM 3.074).

Table 1-3 Macroeconomic indicators of Malaysia, selected years

Indicator	1990	2000	2005	2006	2007	2008	2009	2010 ^a
GDP current prices, RM (billions)	119.1	356.4	522.4	574.4	642.0	740.9	679.7	744.4
PPP value of GDP (current international \$, billions)	87.6	213.4	301.3	329.3	361.0	386.2	393.1	412.3
GDP per capita PPP (current international \$)	4841	9170	11 611	12 478	13 449	14 149	13 800	14 603
GNI per capita (current prices RM)	6298	13 939	19 079	20 911	23 038	25 743	23 494	25 180
GDP average annual growth rate (%)	...	8.7	5.3	5.8	6.2	4.6	-1.7	4.8
National debt (% GDP)	...	...	...	...	...	31.9	34.3	...
Agriculture, value added (% GDP)	15.2	0.9	8.4	8.8	10.2	...	...	...
Industry, value added (% GDP)	42.2	48.3	49.7	49.7	47.7	...	...	...
Services, value added (% GDP)	43	51	42	42	42	...	...	...
Labour force, million persons	7.0	9.7	10.9	11.2	11.5	11.7	12.1	12.2
Unemployment rate (% labour force)	5	3	4	3	3	3.3	3.9	3.9
Population% below national poverty line	16.5	...	...	...	3.6	...	3.8	...
Human Development Index ^b	0.666	...	...	...	0.829	...	...	...
Inflation, average consumer prices (% change)	3.04	1.55	3.05	3.61	2.03	5.4	0.6	2.2
Official exchange rate (RM per US\$)	...	...	3.79	...	...	3.26	3.52	3.19

Source: International Monetary Fund; World Bank, 2010; WHO, 2010a; UNDP, 2009

^a2010 data are estimates

^bHDI is based on life expectancy, adult literacy, enrolment in education and GDP per capita

The Malaysian economy is vulnerable to external shocks and is dependent on external markets, as shown in global economic crises. This is apparent in, for example, the energy crisis of the 1970s, the 1980–1982 recession in the United States, the Asian financial crisis of 1997–1998, the dotcom crash in 2000–2002 and the global financial crisis of 2008. The GDP growth rate nearly halved between 1997 and 2008, dropped further between 2008 and 2010, but is expected to recover to above 5% in 2011 and 2012. Malaysia experienced a sharp drop in investment from a peak of 40% of GDP in the mid-1990s to 20% in 2007 and although recovery from the recent global financial crisis has been slower than some other countries in the Region, the economy began to improve in 2010 (World Bank, 2011).

GNI per capita income in 2010 in current prices was RM 25 180. In 2009, GNI per capita (Atlas method US\$) was \$7530 compared to the \$7495 average for upper and lower middle-income countries (World Bank, 2010). Malaysia is classified by the World Bank as an upper middle-income country and the Government has announced a goal of achieving high-income nation status by 2020.

1.3.1 Malaysia's anti-poverty policies

Against the backdrop of strong economic growth in earlier decades, Malaysia lowered overall poverty levels but has been less successful in reducing income inequality. The New Economic Policy (NEP) (1971–1990) pursued a two-pronged strategy for eradicating poverty and restructuring society, which involved government intervention in the economy and affirmative action policies for disadvantaged groups. For example, the NEP proposed to increase the Malay (*Bumiputera*) share of the country's wealth from 2.4% to 30%. The National Development Policy (NDP) (1990–2000) proposed to reduce 'the wide disparities in economic development among states and between urban and rural areas in the country'.

The proportion of households living below the national poverty line improved dramatically from 49.3% in 1970 to below 4% by 2007. Poverty is measured using a poverty line income based on a basic household needs formula and updated annually against the Consumer Price Index. The population living on less than PPP US\$1.25 per day is below 2%. While absolute poverty has declined, inequality remains a challenge, as the gap between rich and poor has widened. Income growth has been strong for the top 20% of Malaysian income earners, but the bottom 40% of

households earn less than RM1500 monthly, barely one-seventh of that of the richest 20%.

While economic policies have reduced poverty and inter-ethnic differences, they have also created some problems. First, public enterprises set up to increase the share of capital and resources for *Bumiputera* Malays were criticized as involving political patronage (Gomez & Jomo, 1999). Second, broad-based subsidies benefit the well-off despite being intended as a social safety net for vulnerable groups. The prices of essential goods and services, such as food and petrol, do not reflect market prices and such subsidies, mostly funded by petroleum proceeds, are not sustainable. The announced intention in 2010 to reduce subsidies was met with strong opposition from the public, however, and the government is considering better-targeted compensation schemes for the poor.

1.4 Political context

The Malaysian political environment is said to have at least four positive features: elected governments; governments committed to equitable growth; a relatively open social policy process; and a preference for consensus in resolving political issues.

Malaysia has three levels of government: federal, state and local. Federal and state governments are formed following elections every five years and there are calls for the reinstatement of local elections, as was the practice until the 1960s. The powers of state governments are limited by the federal constitution and local governments are appointed by their respective state government. Federal government responsibilities include foreign affairs, security, education and health. State governments control land matters, the state monarchy, religious affairs and natural resources. Local governments manage physical development (e.g. town planning) and local environment issues (e.g. management of solid waste).

The revenue of the federal government comes from taxes and non-tax sources. The bulk of taxes are collected by the federal treasury, such as personal income (with progressive rates up to 26%), corporation taxes, import/export taxes and sales and government taxes, while the states collect revenue pertaining to land matters and royalties from natural resources. The federal government also disburses per capita grants to the states. The local governments collect quit rents (a form of land tax) and charge for services, such as sanitation.

Malaysia practises parliamentary democracy with a constitutional monarchy and three branches of government: the legislative, the judiciary and the executive. The chief of state is the King (*Yang Di-Pertuan Agong*), who is elected for a five-year term from among, and by, the hereditary rulers of nine states. The *Yang Di-Pertuan Agong* safeguards the customs of the Malay people and the administration of the Islamic religion and is also Supreme Commander of the Armed Forces. Malaysian legislative practices at the federal level are similar to the Westminster parliamentary system. Parliament has three components: the *Yang Di-Pertuan Agong*; the Senate/ *Dewan Negara* (Upper House); and the *Dewan Rakyat* (Lower House). Bills presented before the two houses need a simple majority to pass, while a two-thirds majority is needed to amend the constitution. The prime minister appoints the cabinet from among the members of parliament with the consent of the *Yang Di-Pertuan Agong*.

Since independence in 1957 and the election of the first parliament in 1959, the country has been ruled by a coalition of ethnic-based political parties, previously the Alliance Party and the presently called *Barisan Nasional* (National Front). Until recently, the ruling coalition party (made up of 14 parties holding 136 parliamentary seats), maintained a two-thirds majority in parliament. The *Barisan Nasional* (BN) coalition consisted of the United Malays National Organization (UMNO), Malaysian Chinese Association (MCA), Malaysian Indian Congress (MIC) and 11 other political parties. In March 2008 (after the 12th general election), the BN lost its two-thirds majority to an opposition coalition made up of three parties (with 83 seats), with the remaining 3 seats occupied by independents, forming a total of 222 parliamentary seats.

1.5 Health status

Malaysia has made great gains in life expectancy for its people: an increase between 1970 and 2008 for women from 65.6 to 76.4 years and for men from 61.6 to 71.6 years (Table 1-4). Current life expectancy is above that of upper middle-income countries, but below high-income countries (83 years for women and 77 years for men) (WHO, 2010a).

Table 1-4 Life expectancy and mortality rates, 1970–2008

Region	1970	1980	1990	2000	2005	2008
Life expectancy at birth, female (years)	65.6	70.5	73.5	74.7	76.2	76.4
Life expectancy at birth, male (years)	61.6	66.4	68.9	70.0	71.4	71.6
Adult male mortality rate (per 1000)	...	...	209	198	...	177
Adult female mortality rate (per 1000)	....	...	128	112	...	97
Mortality rate, infant under one year (per 1000 live births)	39.4	23.8	13.1	6.5	6.6	6.4
Chronic lower respiratory diseases	---	---	---	---	23.3 (8)	22.7 (8)
Diabetes Mellitus	9.4 (9)	13.0 (9)	14.1 (9)	17.5 (9)	17.5 (9)	19.8 (9)

Source: Department of Statistics, 2009; WHO, 2010a

Malaysia is undergoing an epidemiological transition with causes of mortality shifting from communicable to noncommunicable diseases. This transition is more advanced than in neighbouring countries, but less advanced than in Singapore (Table 1-5). Most deaths in Malaysia now are from noncommunicable diseases, with diseases of the circulatory system (heart and lungs) the most common cause of death (Table 1-6). Malaysia needs better mortality data since some deaths are not medically certified and not all coders use International Classification of Diseases (ICD) codes. Malaysia differs from high-income countries in its higher mortality rates from road traffic accidents, septicaemia and respiratory tract infections.

Table 1-5 Age-standardized mortality rates by cause, per 100 000 population, selected countries, 2004

Cause	Indonesia	Philippines	Thailand	Malaysia	Singapore
Communicable	272	285	225	161	79
Noncommunicable	690	620	516	623	345
Injuries	233	59	92	53	27

Source: WHO, 2010a.

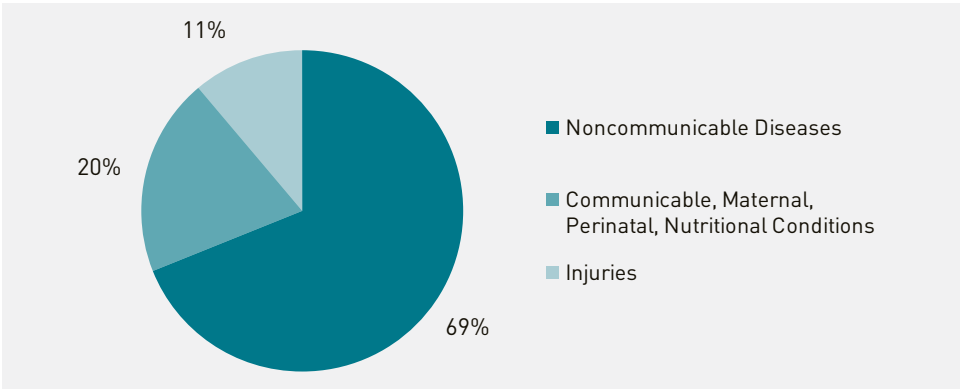
Table 1-6 Five major causes of mortality, 1995-2008.

1995 ^a		2000		2005		2008	
Cause	%	Cause	%	Cause	%	Cause	%
Heart & pulmonary circulation diseases	16	Heart & pulmonary circulation diseases	15	Septicaemia	17	Heart & pulmonary circulation diseases	17
Accidents	10	Septicaemia	14	Heart & pulmonary circulation diseases	14	Septicaemia	13
Cerebro-vascular diseases	10	Malignant neoplasms	9	Malignant neoplasms	10	Malignant neoplasms	11
Septicaemia	10	Cerebro-vascular diseases	9	Cerebro-vascular diseases	8	Pneumonia	9
Malignant neoplasms	9	Accidents	8	Accidents	6	Cerebro-vascular diseases	9

1.5.1 Burden of disease

Noncommunicable diseases dominate the top five ‘burden of disease’ categories. The total burden of disease for the year 2000 (the most recent study) amounted to 2.8 million disability adjusted life years (DALYs). Noncommunicable diseases contributed 69%, communicable diseases 20% and injuries 11% (Figure 1-2). The eight leading contributors, in descending order, were road traffic injuries, cancer, septicaemia, diabetes mellitus and acute lower respiratory tract infections.

Figure 1-2 Major causes of DALYs, 2000



Source: Ministry of Health, 2004

1.5.2 Noncommunicable diseases

Noncommunicable diseases now account for 60% of deaths in South-East Asian countries (Dans et al, 2011). These diseases and their risk factors also have increased in Malaysia, as shown in ten-yearly surveys, the National Health Morbidity Surveys (NHMS). For example, the prevalence of diabetes and hypertension increased markedly between 1986 and 2006 (Table 1-7). An estimated 11.6% of the adult population have diabetes, second only to Brunei among South-East Asian countries (Dans et al, 2011) and an estimated 42.6% of the population aged 30 years and over suffer from hypertension.

Table 1-7 Prevalence of diabetes and hypertension

Disease	NHMS I (1986)	NHMS II (1996)	NHMS III (2006)	NHMS III (2006)
	≥35 years	≥30 years	≥18 years	≥30 years
Diabetes prevalence	6.3%	8.3%	11.6%	14.9%
- Known diabetes	4.5%	6.5%	7.0%	9.5%
- Newly-diagnosed	1.8%	1.8%	4.5%	5.4%
Hypertension prevalence	14.4% (Age ≥25 years)	32.9%	...	42.6%

Source: Ministry of Health, 1986; 1996; 2006

Four major risk factors for noncommunicable diseases have all increased in South-East Asian countries: raised blood pressure; high body mass index; raised blood sugar levels; and abnormal serum lipid concentrations (Dans et al, 2011). The 2006 Malaysian survey (NHMS III) estimated some of the common risk factors (Table 1-8). Nearly 22% of the population aged 18 years and above were smokers, with much higher rates among men than women: 40% of men and 4% of women in 2000 (Morrow & Barraclough, 2003). Nearly 44% of the adult population were physically inactive, higher than in several other South-East Asian countries (Dans et al, 2011) and 43% were overweight or obese.

Table 1-8 Prevalence of risk factors for noncommunicable diseases

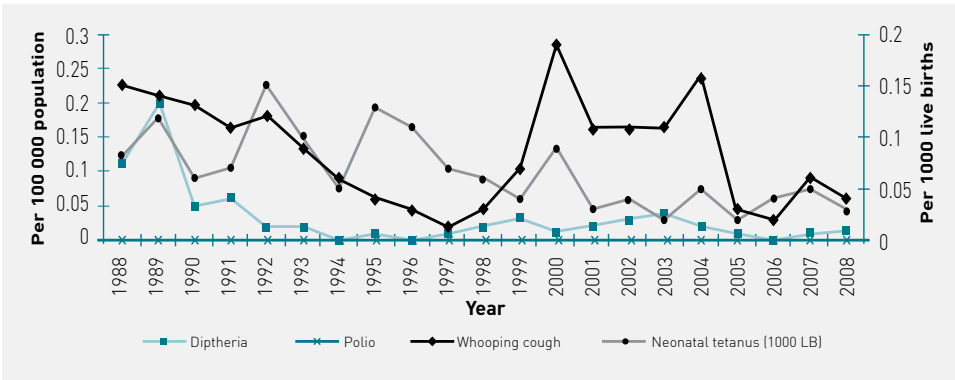
Risk Factor	NHMS II (1996)	NHMS III (2006)
	≥18 years	≥18 years
Smoking	24.8%	21.5%
Physically inactive	88.4%	43.7%
Overweight (BMI ≥25 & <30 kg/m2)	16.6%	29.1%
Obesity (BMI ≥30 kg/m2)	4.4%	14.0%
High blood cholesterol	n/a	20.6%
Current drinker	23.0%	24.1%

Source: Ministry of Health

1.5.3 Communicable diseases

South-East Asia remains a hotspot for emerging infectious diseases despite considerable progress in prevention and control (Coker et al, 2011). However, in response to active vaccination programmes, rates of vaccine preventable diseases have dropped in Malaysia. The incidence of Hepatitis B dropped to 3.2 per 100 000 (886 reported cases) in 2008. Peaks of measles were reported in 2000 and 2004, but the rate declined thereafter to 1.2 per 100 000 (334 cases). The last polio outbreak occurred in 1977, the last wild poliovirus was reported in 1984 and no polio cases were detected until three imported cases in 1992, so that Malaysia was certified a polio-free country in 2000. Incidences of polio, diphtheria and whooping cough (pertussis) have been low for the past 20 years and neonatal tetanus is less than 1 per 100 000 live births (Figure 1-3).

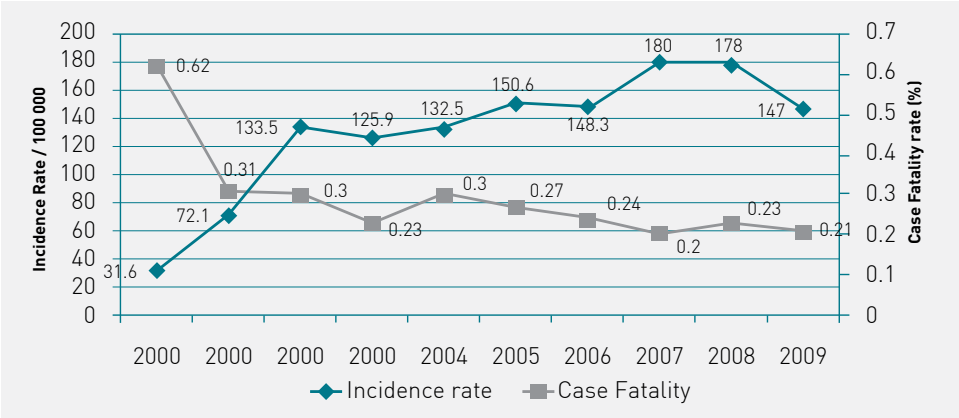
Figure 1-3 Incidence of selected vaccine preventable diseases (per 100 000 population), 1988–2008



Source: Health Informatics Centre, Ministry of Health Malaysia.

Dengue, tuberculosis and malaria remain concerns. The number of reported dengue cases has increased steadily since 2000 (Figure 1-4). In 2008, 49 335 cases and 112 deaths were reported (the highest in the country's history), but the fatality rate dropped to 0.21% of cases in 2009.

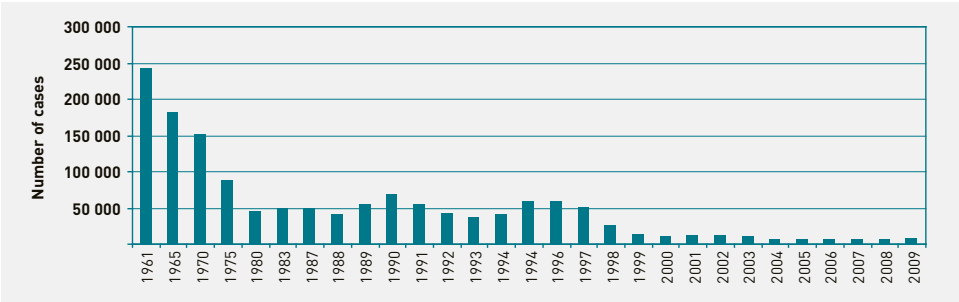
Figure 1-4 Incidence and case fatality rate of dengue, 2000–2009



Source: Health Informatics Centre, Ministry of Health Malaysia.

Malaria remains a problem especially in Sabah, Sarawak and central Peninsular Malaysia, with some cases in 2008 in the previously malaria-free states of Penang and Negeri Sembilan. The incidence of malaria has fallen sharply since the 1960s to 25 per 100 000 and the fatality rate has fallen to 0.4% of reported cases (Figure 1-5).

Figure 1-5 Number of malaria cases, 1961–2009

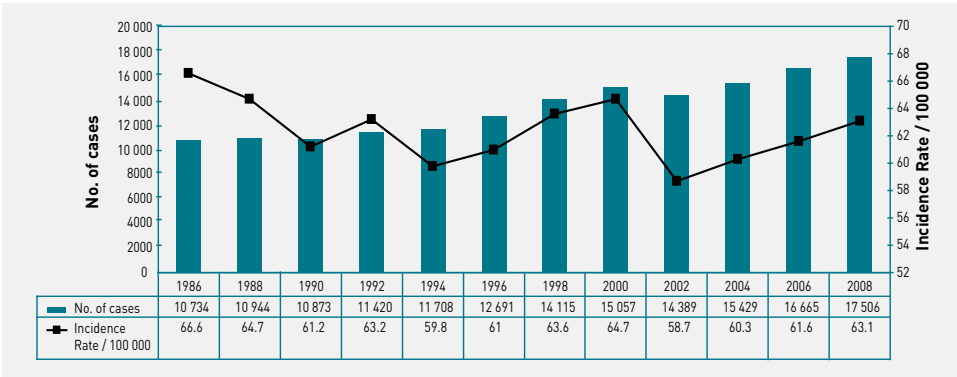


Source: Health Informatics Centre, Ministry of Health Malaysia.

The incidence of tuberculosis has increased from the late 1990s (Figure 1-6). The 2008 incidence rate was 63.1 per 100 000 persons for all forms of TB (16 335 new cases and 1171 recurrent cases), of which 10.2% had HIV co-infection. The incidence of reported HIV new cases has declined

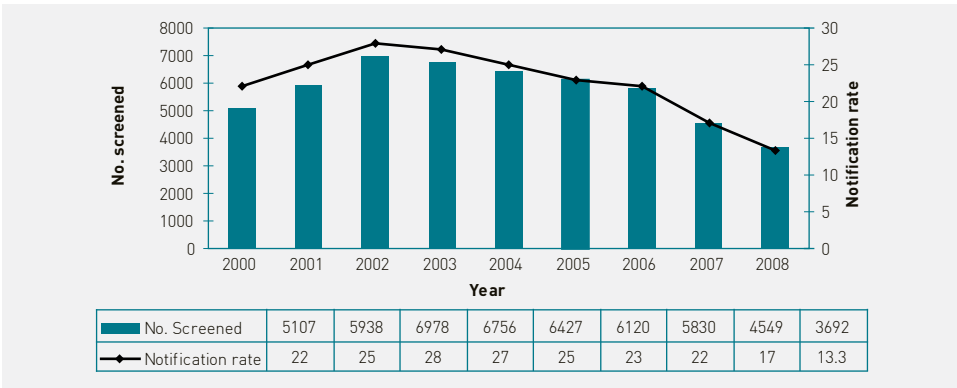
since 2002 (Figure 1-7). During 2008, a total of 84 630 cumulative cases of HIV infection and 3692 new cases were reported, with the decrease since the early 2000s attributed to multi-prong intervention programmes.

Figure 1-6 Incidence of tuberculosis (per 100 000 population), 1985–2008



Source: Health Informatics Centre, Ministry of Health Malaysia.

Figure 1-7 Reported HIV cases and notification rate, 2000–2008



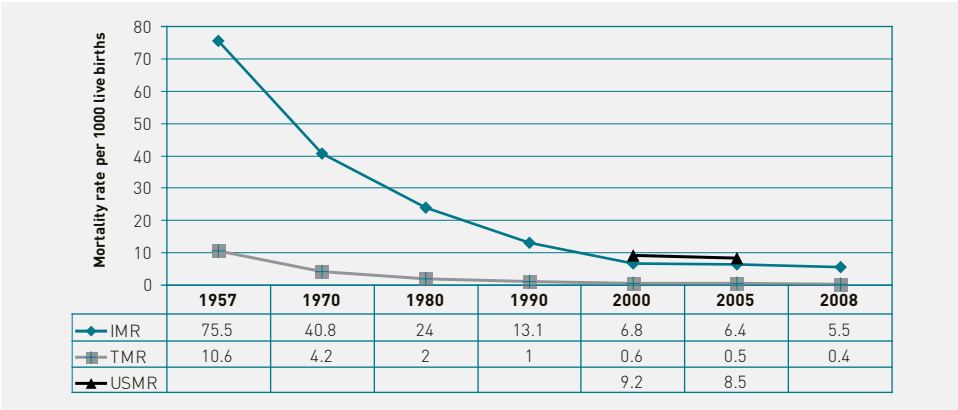
Source: Health Informatics Centre, Ministry of Health Malaysia.

1.5.4 Maternal and child health indicators

The 8 Millennium Development Goals (MDGs) for the world include reducing child mortality (Goal 4) and improving maternal health (Goal 5). Malaysia has reduced differentials in maternal and child mortality between *Bumiputera* and other ethnic groups and among states through more equitable social and economic development and better health services. Infant and child mortality rates have been reduced, for example, to an IMR of 5.5 per 1000 live births in 2008 (Figure 1-8), similar to a high-income country average (WHO, 2010a). Malaysia is one of only three

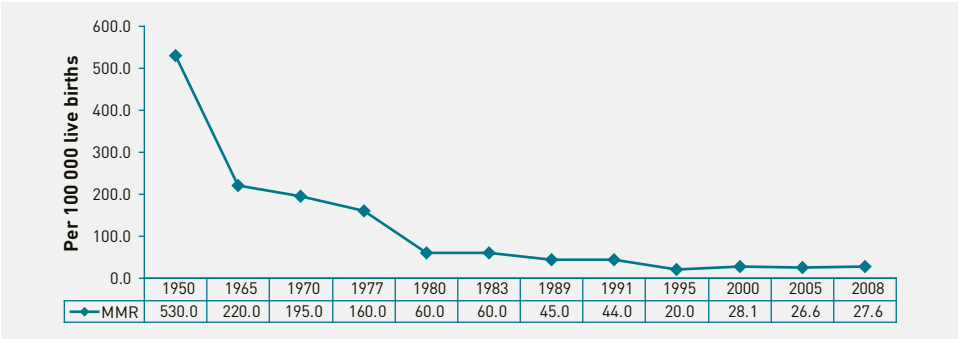
countries in the ten ASEAN nations (the others are Brunei Darussalam and Singapore) with infant and child mortality rates below 10 per 1000 live births (Acuin et al, 2011). The maternal mortality ratio (MMR) has dropped substantially to under 30 per 100 000 live births (Figure 1-9).

Figure 1-8 Infant, toddler & under five mortality rate (per 1000 live births), 1957–2008



Source: Family Health Development Division, Ministry of Health Malaysia.

Figure 1-9 Maternal mortality ratio (per 100 000 live births), 1950–2008



Source: Department of Statistics, 2011

1.5.5 Oral health

Oral health has improved, especially among schoolchildren, as shown in dental surveys from the early 1970s onwards (Ministry of Health, 1972; 1988; 1998). This improvement is attributed to the water fluoridation programme approved by the Malaysian government in 1972, with caries prevalence less in fluoridated states than in states that ceased fluoridation (Norlida et al, 2005) and also to the school dental care programme undertaken since the 1970s (Ministry of Health, 2009a).

2. Organization and governance

2.1 Section summary

The Malaysian health care system consists of tax-funded and government-run universal services and a fast-growing private sector. Public sector health services are organized under a civil service structure and are centrally administered by the Ministry of Health. The Ministry of Health plans and regulates most public sector health services but so far exerts little regulatory power over the private sector. Legislation governing health care professionals requires them to register with statutory professional bodies. The Ministry of Health also regulates the pharmaceutical industry and food safety.

2.2 Overview of the health system

A schematic overview of the health system is shown in Figure 2-1. The public sector provides about 82% of inpatient care and 35% of ambulatory care, and the private sector provides about 18% of inpatient care and 62% of ambulatory care (Hussein, 2009). The MOH offers a comprehensive range of services, including health promotion, disease prevention, curative and rehabilitative care delivered through clinics and hospitals, while special institutions provide long-term care. In addition, several other government ministries provide health-related services.

The private health sector provides health services, mainly in urban areas, through physician clinics and private hospitals with a focus on curative care. Private companies run diagnostic laboratories and some ambulance services. Nongovernment organizations provide some health services for particular groups. Traditional medicine, such as Chinese and Malay practitioners and products, is used by large sections of the population.

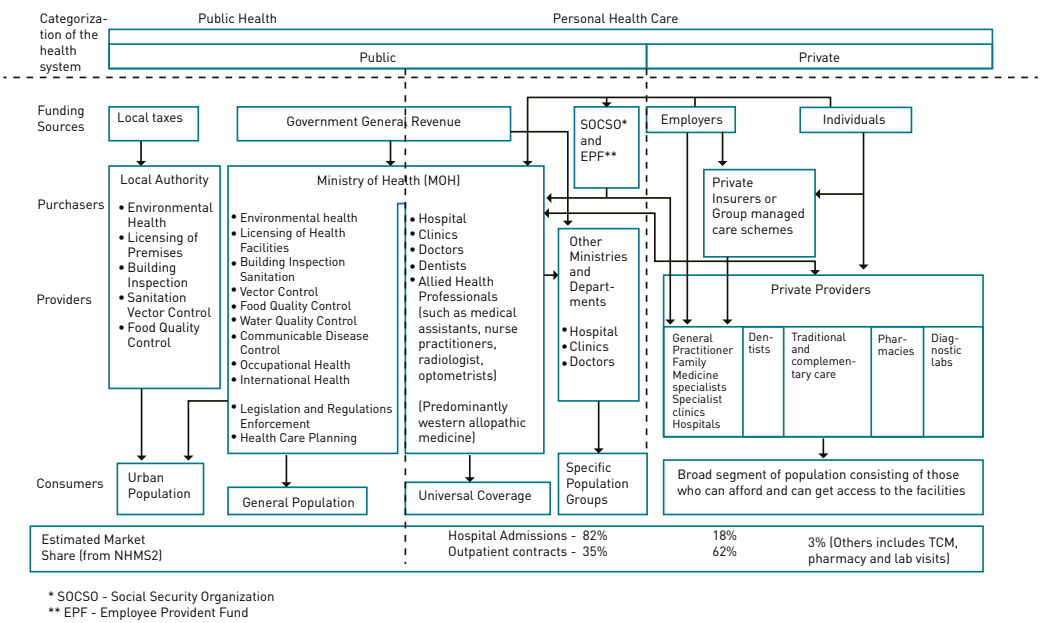
2.3 Historical background

Malaysia inherited a health system from the British upon independence in 1957 but with services based mainly in urban areas. Health care services were expanded as a post-independence priority, particularly for the

economically disadvantaged and the rural population. (A more detailed health system history can be found in Chee & Barraclough, 2007a).

A three-tier primary health care model developed for the public sector from the late 1950s consisted of a health centre, four sub-centres and four midwife clinics for each sub-centre (Table 2-1). The sub-centre tier was abolished in 1970 and midwife posts were replaced with community nurse clinics in order to provide more comprehensive care. Planning guidelines now call for each health clinic to cover 15 000 to 20 000 people and a community clinic to cover 2000 to 4000. Clinics have grown from 7 in 1957 to 2824 in 2008 (Table 2-2).

Figure 2-1 Schematic overview of the Malaysian health system



Source: Hussein, RH, Asia Pacific Region Country Health Financing Profiles: Malaysia, Institute for Health Systems Research

In addition, private doctors have long provided a considerable amount of health care. A register of medical practitioners in 1967 listed 1759 doctors, of whom 1046 (59%) were believed to be in private practice. This number has grown to 30 536 doctors in 2009, with 34% in the private sector.

Table 2-1 Structure of government primary health care

Structure	Level of Service	Staff	Services
Three-tier system (1956-70)	Main health centre (1:50 000)	Doctor, dentist	Priority outpatient care, dental care
	Health subcentre (1:10 000)	Medical assistants and staff nurses	Outpatient screening, MCH care
	Midwife clinics (1:2000)	Midwife	Home delivery and home visits
Two-tier system (1970-present)	Health clinic (1:20 000)	Doctor, dentist, pharmacist, assistant medical officer, public health nurses, assistant pharmacy officer	Outpatient services, dental care, MCH care, health promotion, family planning.
	Community clinic (1:4000)	Community nurse, midwife	MCH care, home care, family planning

Source: Family Health Development Division, Ministry of Health

Table 2-2 Ministry of Health primary health care facilities, 1957–2008

Health facilities	1957	1970	1980	1990	2000	2008
Community clinics	0	943	1509	1880	1924	1927
Health clinics	7	224	725	708	947	897
Total	7	1167	2234	2588	2871	2824

Source: Ministry of Health

At independence in 1957, there were 10 major hospitals and 56 district hospitals, plus 7 institutions for leprosy and mental health patients. From 1960 to 2009, the number of Ministry of Health hospitals nearly doubled (Table 2-3). In addition, nongovernment organizations ran a few hospitals, such as the Penang Adventist Hospital built in 1929. Private hospitals have increased from only a few in the 1950s to 209 (compared to 130 MOH hospitals). Nevertheless, these provide less than one-quarter of the country’s hospital beds.

Public dental services prior to independence were run by British dentists in the large hospitals assisted by locally qualified dentists who also visited districts and towns. Private dental care was provided by about 450 mainly locally trained practitioners. The Government Pharmaceutical Laboratories and Stores were established in 1964 in Petaling Jaya to purchase and manufacture pharmaceuticals for MOH services.

Table 2-3 Number of Ministry of Health hospitals, 1960–2009

Hospitals	1960	1970	1980	1990	2000	2009
District hospitals	56	n/a	70	79	68	75
Large hospitals with specialists	10	n/a	18	16	45	55
Total	66	72	88	95	113	130

Source: Ministry of Health, 1980; 2008d; 2009b

2.4 Organization

Health systems in South-East Asia vary considerably as countries are at different stages of development and have different political systems, but all are engaged in reforming the ways in which their health system is financed and organized (Phua, 2002; Chongsuivavatwong et al, 2011).

Public sector health services in Malaysia are centrally administered by the Ministry of Health through its central, state and district offices. Other government departments also provide health services to specific populations. The Ministry of Higher Education runs the university teaching hospitals, the Ministry of Defence has several military hospitals and medical centres and the Department of Aboriginal (Orang Asli) Affairs provides health services to the indigenous population in collaboration with the Ministry of Health. The Department of Social Welfare provides nursing homes for the elderly, the Ministry of Home Affairs manages the drug rehabilitation centres and the Ministry of Housing and Local Government provides environmental health services and limited health services, such as in the Kuala Lumpur Federal Territory.

Malaysia has an active civil society with many nongovernment organizations. For example, the Red Crescent Society and St. John's Ambulance provide mainly emergency ambulatory and relief services; the Lion's Club contributes to rehabilitative services; and the Family Planning Association provides reproductive health services. Other nongovernment organizations cater to people with special needs, such as Down's syndrome, cancer, autism, thalassaemia and intellectual disabilities among others. Nongovernment organizations also provide cancer and hospice care and run community-based psychosocial and rehabilitation centres, as well as halfway homes.

The private health sector provides mainly curative and diagnostic health services in urban areas. In fact, most primary care in urban areas is currently provided by private practitioners, and there are large numbers

of private dental clinics and retail pharmacies, as well as a growing number of private hospitals. Since independence, the government and the Ministry of Health has emphasized reaching rural areas with services, including primary care and dental services.

2.5 Decentralization and centralization

Malaysia has not administratively decentralized its public sector health care system as some countries have done in the region, such as Indonesia and the Philippines. Policies and programmes are centrally formulated, funded and administered, with the Ministry of Health state offices directing service delivery by their district offices, hospitals and centres. Local managers have limited policy and fiscal freedom, including over the hiring and firing of staff. A health facility receives a fixed annual budget, organized under standard budget lines and linked to performance indicators and targets. The Ministry of Health rationale is that standard programmes facilitate similar and equitable practices across the country and thus, help achieve national goals.

The Mahathir administration embarked on active privatization of the economy, dubbed 'Malaysia Incorporated', particularly under the 7th Malaysia Plan (1996–2000). Although the government announced its intention to corporatize public hospitals, due to opposition, this plan was shelved in 1999, except in the case of a few hospitals. Despite the government's stated intentions, the privatization of health care mostly has been limited to nonmedical support services (with contracts awarded mainly to state-associated enterprises), while constraints on public sector health expenditure during the 1990s allowed the private sector to expand to meet demand from the better-off (Ramesh, 2007). The MOH has some contracts with the private sector for clinical services, mainly to reduce waiting times in the public system and to provide services not available in MOH facilities, such as diagnostic imaging. The main areas of privatization are as follows:

- The General Medical Store that procures medicines for the MOH was privatized in 1993;
- Five support services (laundry, engineering, housekeeping, clinical waste disposal and equipment maintenance) were privatized to three corporate interests in 1997;
- Mandatory health screening of foreign workers was awarded to a company (Fomema);
- The building of new clinics and hospitals was contracted out to private interests;

- The National Heart Institute was made a corporate entity in order to offer services to both public and private patients.

While the National Heart Institute and the University hospitals are the main corporate exception, the government now allows some public hospitals to establish private wards where doctors can retain most of their professional fees for treating private patients. One policy aim is to retain doctors in the public sector and the other policy aim is to promote medical tourism (see section 2.4.1).

Malaysia is subject to strong global pressure to liberalize its economy. As a signatory to the World Trade Organization (WTO) and the ASEAN Framework Agreement on Services (AFAS), Malaysia must open its domestic market to international competition. Medical goods and services were given some protection, however, in a special provision of the General Agreement on Tariffs and Trade (GATT). Globalization has brought an international approach in several areas of the health sector: the management of emerging infectious and new diseases, the movement of medical practitioners, the travel of patients to different countries for medical treatment and foreign investment. As a result, Malaysia is reviewing the following acts: the Telemedicine Act in relation to cross border supply; Private Health Care Facilities and Services Act in relation to health tourism; and the Medical Act and other relevant acts in relation to the movement of professionals.

2.5.1 Medical tourism

The government is vigorously promoting Malaysia as a health tourism destination in order to take advantage of the lucrative and growing international market. The government convened an intersectoral committee on health tourism in 1998 in the wake of the Asian financial crisis and charged the Ministry of Health with cooperating with the Association of Private Hospitals of Malaysia (APHM) to develop and market private hospital care. Another impetus was excess capacity in private hospitals as people reverted to public hospitals during the financial crisis (Chee & Barraclough, 2007b). Under the government's medical tourism initiative, 'top end' public hospitals were also allowed to set up private wings to treat fee-paying patients. The government launched the Malaysia Health Care Travel Council in 2009 with members from both public and private sectors.

The criteria for participating hospitals (35 in 2010) include a license, accreditation and membership in the Association of Private Hospitals of Malaysia. The top facilities listed on a health tourism website (Malaysia Health Care, 2010) include the Penang Adventist Hospital (a nongovernment organization), Twin Towers Medical Centre (a large private outpatient polyclinic) and the National Heart Institute (a corporatized public hospital). The number of medical tourists to Malaysia tripled between 2003 and 2007, with over 341 200 in 2007, mostly from Indonesia (72%), followed by Singapore (10%) and with smaller numbers from India, Europe and other countries (APHM 2011). According to the government's health tourism website: 'there are ten good reasons for making Malaysia your preferred health care destination whether you're looking for a small cosmetic procedure and big holiday or major surgery along with a short getaway' (Malaysia Health Care, 2010). The top listed reasons include lower cost, internationally accredited modern facilities and English-speaking professionals with international credentials (about 90% of doctors in participating hospitals were trained in the UK, USA or Australia).

2.6 Planning

The Malaysian government engages in economic and social planning over three time horizons: long, medium and short term. The current long-term plan, Malaysia 2020 (2010-2020), succeeded the National Vision Policy (2000-2010). The Malaysia Plan in 1956 initiated the medium term five-year horizons followed by the Malaysia Plans from 1966 onwards. Recently, the country has followed the 9th Malaysia Plan (2006-2010) and the 10th Malaysia Plan (10MP) (2011-2015). The short-term horizon takes in the annual budgetary cycle and annual operational plans.

The Malaysia Plans set measurable objectives and evaluate progress. For example, the mid-term review of the 9th Malaysia Plan required government agencies to evaluate whether programmes were meeting national goals. While planning is mainly a top-down exercise, the Ministry of Health requires its state and local staff to conduct a situational analysis to identify challenges pertinent to their areas. Technical working groups then study the prioritized issues and propose goals, plans of action and performance indicators.

Research priorities are set in the five-year Malaysia Plans and health research is funded through three government departments. The Ministry

of Health funds applied and basic research though its lead health research agency, the National Health Institutes, which comprises a network of research institutes. The Ministry of Science, Technology and Innovation and the Ministry of Education also fund applied and basic research.

2.7 Intersectoral relationships

At the inter-country level, Malaysia is harmonizing regulations facilitating the free movement of professionals among countries, as required under the ASEAN Framework Agreement on Services (see 2.4) and is party to many international agreements pertaining to global and national health issues, such as surveillance and control systems for communicable diseases. Within the country, the health sector interacts with other sectors, such as education and trade, as well as nongovernment organizations. Examples of intersectoral cooperation include tobacco control, the school dental programme and adolescent health services. There is little coordination thus far between public and private sector health services, except in relation to medical tourism. The Ministry of Housing and Local Government is responsible for a safe water supply in urban areas and the Ministry of Health and the Ministry of Rural Development in rural areas, with nearly 96% of the population connected to piped water in 2008.

2.8 Health information management

The Malaysian government collects data on population health, health care expenditure and health services. Population surveys include the National Health and Morbidity Survey III of 2006 (Ministry of Health, 2006) and the National Household Health Expenditure Survey 1996 (NHHES, 1999). The Ministry of Health National Health Accounts Unit publishes regular reports on health expenditures using a National Health Accounts framework (WHO, 2008b) based on the OECD System of Health Accounts Classification. The Ministry of Health Informatics Centre gathers data on mortality and morbidity and service activity and collects data from clinical data registries, such as the National Cancer Registry, however, very little data are gathered on private sector services in part because the private sector is not publicly funded.

2.8.1 Information systems

The Telemedicine Act 1997 promoted the development of information communication technology (ICT) in the health sector. The Ministry of Health aims to manage patient information by linking systems and providers through an ambitious programme of information communication technology set out in its telemedicine plan (Ministry of Health 1997a). This ICT blueprint comprises three broad initiatives:

- Multimedia Super Corridor Flagship initiatives include Telehealth, MyKad (a national registration identification card), HRMIS (human resource management information system), E-Perolehan (electronic procurement system), E-SPKB (electronic financial management system) and PMS (patient management system).
- Facility-based initiatives include rolling out the hospital information system to all hospitals and other national facilities.
- Programme/function-based initiatives include the Nationwide Health Management Information System, Statewide Teleprimary Care and Public/Client Access (Health online).

Achieving these ambitious aims is problematic as there is little ICT funding continuity across the Malaysia Plans. Implementation is slow given the huge investment required in infrastructure, lack of informatics expertise and the need to make informatics relevant to local needs and capacities. There are also technical difficulties with lack of compatibility between ICT programmes and interoperability barriers. For example, interoperability challenges for Teleprimary Care include coding health care data for uniform entry and transfer, safeguarding data security and integrity and protecting patient confidentiality. Successes so far include an interface with the national registration card (MyKad) for registration of patient cases.

2.8.2 Health technology assessment

Health technology assessment for devices used in Ministry of Health facilities (but not the private sector) is undertaken by the Ministry of Health Medical Development Division (MaHTAS), the National Pharmaceutical Control Bureau (NPCB) and the Ministry of Health Medical Device Unit. MaHTAS assesses whether health technology is safe and cost-effective and undertakes rapid reviews before purchases are made. Its scope has been expanded to develop evidence-based clinical practice guidelines. The NPCB assesses pharmaceutical safety, quality and efficacy, although cost-effectiveness is not yet a requirement for listing on the Ministry of Health Drug Formulary (as it is in Australia).

2.9 Regulation

Regulatory strategies range from the enforcement of legislation, to administrative directives, to the dissemination of information. The flurry of health sector legislation enacted mainly in the 1950s was extended from the 1990s onwards and further legislation is being considered in response to globalization, private sector growth and a proposed major health sector reform. The Ministry of Health is the main regulatory actor as the major employer of health professionals and provider of health care services, but has only weak regulatory powers as of yet over the private health sector. The legislative framework (laws and regulations) governing the health sector is set out in Table 2-4 under five areas.

Table 2-4 Legislation regulating the health sector

Funds	Professionals	Facilities & services	Products	Population health
Fees Act 1951	Nurse Act 1950 (amended 1969)	Lunatics Ordinance (Sabah) 1951	Sales of Drugs Act 1952 (amended 1989)	Poisons Act 1952 (amended 1989)
Fees Act 1951 - Fees (Medical) Order 1982 [PU(A)359/1982]	Registration of Pharmacists Act 1951 (amended 1989)	Mental Disorders Ordinance 1952	Dangerous Drugs Act 1952 (amended 1980)	Hydrogen Cyanide (Fumigation) Act 1953 (amended 1981)
Fees Act 1951 - Fees (Medical) (Extension to Federal Territory of Labuan Sabah And Sarawak) Order 1985 [PU(A)67/1985]	Estate Hospitals Assistants (Registration) Act 1965 (amended 1990)	Mental Health Ordinance (Sarawak) 1961	Medicines (Advertisement and Sales) Act 1956 (amended 1983)	Destruction of Disease-Bearing Insects Act 1975
Fees Act 1951 - Fees (Medical) (Amendment) (No. 2) Order 1994 [PU(A)468/1994]	Midwives Act 1966 (amended 1990)	Private Hospitals Act 1971	Human Tissues Act 1974	Prevention and Control of Infectious Diseases Act 1988
Fees Act 1951 - Fees (Medical) (Amendment) Order 1994 [PU(A)5/1994]	Medical Act 1971	Atomic Energy Licensing Act 1984	Food Act 1983	Malaysian Health Promotion Board Act 2006

Funds	Professionals	Facilities & services	Products	Population health
Fees Act 1951 - Fees (Medical) [Amendment] Order 2003 [PU(A)6/2003]	Dental Act 1971	Private Health care Facilities & Services Act 1998	Food Act 1983 [Control of Tobacco Product (Amendment) Regulations 2008]	Persons with Disability Act 2008
	Medical Assistants (Registration) Act 1977h	Mental Health Act 2001	Food Act 1983 - Control of Tobacco Products (Amendment) (No. 2) Regulations 2009	
	Optical Act 1991		Telemedicine Act 1997	

2.9.1 Regulation and governance of third-party payers

The Fees Act 1951 provides for payments for licenses, permits and other matters that can be levied in public offices and subordinate courts. The Fees (Medical) Order 1982 sets small payment charges for patients in government health facilities. It has been amended several times; for example, to allow foreigners to be charged higher rates than Malaysians. The Central Bank (*Bank Negara*) regulates private health insurance companies. The Private Health Care Facilities and Services Act 1998 requires Managed Care Organizations (MCOs) to register and furnish information to the Ministry of Health, and the MCO may be liable to legal action if it engages in unethical conduct.

2.9.2 Regulation and governance of providers

The Ministry of Health is the internal regulator of its own facilities and staff. There is no independent external body (except the statutory health professional boards) with the power to regulate the performance of public facilities (although many other countries have set up external authorities to regulate their health sectors).

The private sector (medical clinics, dental clinics, hospitals and other services) is regulated under the Private Health Care Facilities and Services Act 1998, but this legislation was not enforced until the promulgation of 2006 Regulations. Enforcement has been weak in the

absence of political will and resources (Abdullah, 2007), but there are now proposals to strengthen this legislation to better protect the interests of patients. The Act requires a private proprietor to apply for a licence from the Ministry of Health and to meet basic standards. Ministry of Health authorized officers have powers to inspect and investigate where there are serious concerns. Disciplinary options include the revocation of approval or licence and the levy of a penalty i.e. a fine and/or prison sentence. So far, few private sector providers have been prosecuted.

Hospital accreditation is voluntary, with 40% of Ministry of Health hospitals accredited (54 out of 136) and 10% of private hospitals (21 out of 209) accredited (as of July 2010). Private hospitals geared to medical tourism are accredited, however, according to the Association of Private Hospitals of Malaysia, usually through an international programme, such as the Joint Commission International or International Organization for Standardization (ISO). The Malaysian Society for Quality in Health, the national accreditor, sets standards, assesses hospitals against these standards and is developing standards for primary health care facilities. Most government dental clinics are certified, as 88% in 2009 had ISO certification. There are no data on the number of certified private dental clinics.

Ministry of Health quality initiatives include the production of clinical practice guidelines (130 so far in collaboration with professional bodies) and the conduct of technical audits (usually with professional groups) on the performance of clinical staff and their management of diseases (such as asthma), as well as audits on patient mortality cases and trends in certain conditions. The Ministry of Health sets key performance indicators (KPIs) on hospital clinical services and in other areas, including pharmacy and pathology. For example, General Medicine identified 10 KPIs, with indicators such as waiting time to see a doctor and myocardial infarction case fatality rate. Primary health care services set quality standards in several areas, such as diabetes management; population health service indicators include surveillance activities, such as average notification time for dengue cases.

2.9.3 Regulation and planning of human resources

Legislation requires practising health professionals to register with respective professional statutory bodies (seven in 2010) and hold a current practice certificate. The boards register (and deregister)

professionals, issue practice certificates, approve training degrees, approve premises for training, issue guidelines and standards, conduct examinations and conduct inquiries into malpractice complaints.

Disciplinary matters usually follow a three-stage process. A preliminary inquiry by a board committee establishes whether there is in fact a case in relation to a malpractice complaint about a practitioner. If there is a case to answer, the board conducts an inquiry, followed by its disciplinary response. This consists of dismissing the allegation, reprimanding the person or revoking their registration. A practitioner can appeal a board decision to the high court. About 250 people lodge complaints with the Malaysian Medical Council each year. A criticism of the boards is that they are not accountable enough to the public and tend to be lenient in disciplinary cases involving their peers (Abdullah, 2007). Some other countries, therefore, now refer serious disciplinary matters to independent tribunals.

Medical doctors are registered by the Malaysian Medical Council under the Medical Act 1971. Dental practitioners are registered by the Malaysian Dental Council under the Dental Act 1971. The dental register comprises two lists: Division I practitioners (dental surgeons) and Division II dentists trained through an apprenticeship system prior to 1972. Assistant medical officers are registered by the Medical Assistants Board under the Medical Assistants (Registration) Act 1977. Nurses are registered by the Nursing Board under the Nurses Act 1950 and later amendments and nurses with post-basic training in midwifery and community nurses register with the Midwives Board under the Midwives Act 1966. Pharmacists are registered by the Pharmacy Board under the Registration of Pharmacists Act 1951 and later amendments. Opticians and optometrists are registered by the Optical Council under the Optical Act 1991.

The Ministry of Health sets up technical working groups to advise on future numbers of health personnel. Malaysia is experiencing severe shortages in most categories despite recent increases in numbers of graduates (see Section 4.2). For example, the supply of 1 doctor to 1008 persons in 2009 is well below the 2020 target set by the Ministry of Health of 1 per 600 (Ministry of Health, 2009b).

2.9.4 Regulation and governance of pharmaceuticals

Malaysia has a substantial pharmaceutical industry and the government offers tax incentives for research and development (R&D) and for the production of pharmaceuticals, related products and biotechnology. The acts (and their regulations) that control products and practices include the Poisons Act 1952, Dangerous Drugs Act 1952, Sale of Drugs Act 1952, Registration of Pharmacist Act 1951 and the Medicines (Advertisement and Sale) Act 1956. The legislation covers the following areas: the handling of pharmaceuticals (manufacturing, storage, sale, distribution, use and clinical trials); the licensing of manufacturers, importers and wholesalers; registration of professional pharmacists; the licensing of premises; and the advertising and sale of medical and health care products and medicines.

The Malaysian pharmaceutical industry applies international standards of “good manufacturing practice” and those of the United States Pharmacopoeia and European Pharmacopoeia. The National Pharmaceutical Control Bureau (NPCB) is a member of the international Pharmaceutical Inspection Cooperation Scheme. Internal quality assurance by manufacturers and frequent inspection by the NPCB auditors ensure compliance with international standards. As a WHO Collaborating Centre for Regulatory Control of Pharmaceuticals, the NPCB provides assistance to many countries in the region.

Product registration is handled by the NPCB under the Control of Drugs and Cosmetics Regulations 1984. All pharmaceutical and health products undergo a safety and quality assessment before being registered and marketed. At the end of 2009, 42 502 products were registered in Malaysia (cumulative), of which 30% were prescription products, 23% non-prescription products and 47% natural products and an additional total of nearly 70 000 cosmetic products were notified for use. The NPCB conducts post-marketing surveillance to ensure that products are safe, and regularly samples products to combat problems such as adulteration and counterfeiting. In 2009, 524 product complaints were investigated and 110 recalls were instituted.

The Ministry of Health Pharmaceutical Services Division (PSD) sets policies regarding the use of drugs in Ministry of Health facilities, approves the introduction of new drugs, makes changes to existing drugs and manages the procurement of pharmaceuticals. A National Medicines Policy (acronym DUNAS in the national language) sets goals such as

accessibility, equity and quality use of essential medicines (Ministry of Health, 2007b). The PSD aims to protect consumers from hazardous medicines, misleading advertisements and unscrupulous practices. It controls the import and export of narcotics, psychotropic substances and precursor chemicals in accordance with international conventions, such as the UN Convention against the Illicit Traffic of Narcotics, Drugs and Psychotropic Substances 1988. PSD enforcement officers conduct raids, investigate and prosecute offences and conduct audits in pharmacies, medical clinics, wholesalers and industries. Drug abuse of designer drugs is a growing problem, such as the illicit manufacturing of amphetamine type stimulants from chemicals commonly used in industry or in pharmaceutical products containing precursors, such as ephedrine and pseudoephedrine.

The procurement of pharmaceuticals and other supplies for government facilities is based on the Financial Procedure Act 1957 (amended 1972) and Treasury Instructions 1997 (revised 2008), under the supervision of the Ministry of Finance. The Procurement and Privatization Division is responsible for the central tendering process in the Ministry of Health. Health facilities purchase pharmaceutical products and medical supplies in three main ways: through a company, Pharmaniaga Logistics Sdn. Bhd (the current concession holder); through a central tender for purchases above RM 500 000; and through local purchasing for lower cost products. Pharmaniaga Logistics supplies and manages 571 items that account for about 45% of the total Ministry of Health drug budget.

The Malaysian government claims that the country is well-placed to participate in global drug development given its good clinical infrastructure and qualified investigators. The Clinical Research Centre coordinates clinical trials through 17 centres around the country that have links with over 50 hospitals and 100 health clinics. Clinical trial services also are run by private companies, including Infokinetics Research, Clinresearch and Organon Research.

The Ministry of Health primarily prescribes in its facilities drugs listed on its drug formulary, with 1408 items listed as at June 2009, this list may be supplemented by other drugs. Drugs are classified according to the WHO Anatomical Therapeutic Chemical classification system. Between 2000 and 2007, 1603 applications for listing on the National Drug Formulary were received, with 239 new drugs approved and 269 drugs deleted. In addition, a National Essential Drugs List based on the Ministry of Health Drugs Formulary was updated in 2008.

2.9.5 Regulation of medical devices and aids

The regulation of medical devices is based on recommendations from international bodies, including the ASEAN Consultative Committee for Standards and Quality. The scope of regulatory control covers the life cycle of a device (pre-market, placement on-market and post-market stages), as well as the manufacturers and users. The cabinet approved a regulatory programme in 2005 in order to prevent unsafe devices from reaching the market. A few 'big ticket' technologies must be licensed under various acts, such as the Atomic Energy Licensing Act 1984. The MOH Medical Devices Division licenses all major medical equipment in private and public health facilities; issues licences to manufacture and distribute; inspects facilities; monitors devices on the market; and drafts laws and standards. The draft Medical Device Bill 2008 proposes a new authority within the Ministry of Health to oversee the regulation of all laser and health care equipment.

2.9.6 Regulation of capital investment

The Ministry of Health Planning and Development Division invests in facilities within the budget set out in five year plans and the Ministry of Health annual budget, although politics also can influence planning decisions, such as the building of new health facilities. In addition, large projects can run over time; for example, not all 33 hospital projects approved during the 7th Malaysia Plan (1996–2000) were completed in that time period. The Ministry of Works undertakes most design and construction work, but private companies also are involved in building public and private health facilities, especially for the medical tourism market.

2.10 Patient empowerment

The Ministry of Health mission statement aims to 'help people to take individual responsibility and positive action for their health' and health providers are urged to enable people to participate in their own health care management, for example, by giving people treatment information and choices (Ministry of Health, 2008b).

2.10.1 Patient information

The Ministry of Health health promotion programmes offer information on illness and wellness themes (see Section 5.1). Information technology offers another means of educating the population; for example, the web-

based MyHealth Portal enables individuals to consult doctors on specific health issues (see Section 4.1.4). Staff of the Ministry of Health are expected to provide explanations to patients and must follow informed consent procedures before invasive procedures and any clinical research. Policies and procedures guide the organ donation process and patients and families are informed about their choices.

2.10.2 Patient choice and access

People can choose between public and private services depending on their ability to pay. Patients have little choice of doctor in the public sector since this depends on the availability of clinicians working on a given day. People can choose their private doctor and also their specialist without needing a referral, with waiting times much shorter in the private than in the public system.

People generally have good physical access to health facilities, as 92% of the urban population live within 3km of a health facility and nearly 69% for the rural population, although distances are greater in East Malaysia. Access to public places for people with disabilities is spelled out under the Uniform Building By-Laws Act 133 amended in 2006 and the Persons with Disabilities Act 2008.

2.10.3 Patient rights

As a signatory to the 1978 Alma Ata Declaration, Malaysia affirms health as a fundamental human right, in that no one should be denied because of ethnicity, race or religion. Each public facility displays its patient charter (a guideline rather than an enforceable law) indicating the types of services and quality standards that patients can expect, as well as their responsibilities as patients. Providers respect the values and beliefs of patients. For example, hospitals have places of worship, last rites are performed according to the religion of the dying patient and bodies are handled in the mortuary in accordance with beliefs and customs. The privacy of patient medical records and other health information are legally protected as is disclosure to recognized third parties. Patients' rights also are observed in relation to informed consent, right to cease treatment, right to a second opinion, and a patient's wishes to withhold resuscitation or forgo life-sustaining treatment within the law.

2.10.4 Complaints procedures and adverse incident reporting

Patients can complain to the Ministry of Health, to clinic advisory panels, or in emails to the Malaysian civil service. Public relations officers in large government hospitals respond to complaints ranging from listening to grievance, making an apology, undertaking an informal investigation, conducting an investigation through an internal inquiry board, carrying out an independent investigation, referring the matter to a professional body for disciplinary consideration, or referring criminal matters to the police or the director of public prosecutions. Patients also can complain to the director general, the minister of health, or the Bureau of Public Complaints in the prime minister's department. The Private Health Care Facilities and Services Act 1998 expects private health services to offer complaints procedures. Patients may complain about professionals to the relevant professional body (see 2.8.3). Malaysia does not have an independent and statutory ombudsman, however, for resolving the grievances of citizens. The government recently passed the Whistle Blower Act 2010 to protect employees who complain from reprisals by their employers.

Patients can sue for malpractice under the tort law system and claim compensation in cases of proven negligence. This is not a common avenue, however, since medical negligence is difficult to prove and cases can take years to settle. Most cases are settled out of court so the details are unknown and not all private practitioners have medical indemnity cover (Abdullah, 2007). Where negligence is established in public facilities, the government can make ex-gratia payments (voluntary payments, out of kindness), or pay compensation in response to a court order. The Ministry of Health medico-legal unit handled 22 cases in 2008 with compensation exceeding RM1 million (Ministry of Health, 2008c). There is no information on cases involving the private sector.

A Patient Safety Council established in 2003 (chaired by the Director-General of Health with representatives from the Ministry of Health, private sector, universities and professional associations) advises the Minister of Health on issues and strategies. Malaysia has undertaken several WHO 'Global Patient Safety Challenges' including hand hygiene standards in 2006, infection and antibiotic control in 2008 and the safe surgery checklist in 2009.

The Ministry of Health set up a national adverse event reporting system in 1999 with voluntary reporting by staff on incidents, apart from the

underlying disease or condition, that result in unintended harm to patients. The Quality Section investigates serious incidents to establish causes (root cause analysis) and identifies remedial action. The Ministry of Health requires its staff to report medication incidents, however, and encourages reporting from the private sector. The Medication Error Reporting System takes a non-punitive approach to encourage learning from incidents and experienced a 64% increase to 2572 reports in 2009 attributed to better reporting.

The National Pharmaceutical Control Bureau (NCPB) runs an adverse drug reaction (ADR) monitoring programme. Health professionals and consumers can report adverse drug reactions online and the number of reports has increased from under 1000 in 2000 to nearly 6000 in 2009. ADR reports are forwarded to the WHO Drug Safety database. Under the Sale of Drugs Act 1952 (revised 1989) it is mandatory for a product registration holder, or any person who possesses a registered product, to submit reports of adverse reactions. Through ADR reporting, the following regulatory actions have been taken:

1. Labelling changes made to the product insert/package e.g. warnings, precautions, drug interactions;
2. Restrictions recommended on usage e.g. contraindicated in pregnancy;
3. Advocated control on the sale of particular products;
4. Drug recalls/withdrawal based on safety issues.

2.10.5 Public participation

The Ministry of Health seeks to involve community groups in promoting population health, such as women's groups, youth groups, social clubs, cooperative societies, mutual aid societies and sporting clubs. Also, community leaders are appointed as members of advisory panels of health clinics and boards of hospitals. The Federation of Malaysian Consumers Associations advocates on consumer rights, including on health care. The Ministry of Health also engages the community in the control of communicable and noncommunicable diseases, such as identifying and eradicating the breeding grounds of the Aedes mosquito to combat dengue (see 5.1.3).

2.10.6 Cross-border health care

Malaysia takes in a large number of migrants from other countries, amounting to nearly 11% of the population, many of whom cross the border illegally and are straining health services in states such as

Sabah, Perlis, Kedah and Kelantan. In 2011, the United Nations High Commissioner for Refugees reported that Malaysia had about 90 000 refugees and asylum seekers (92% from Myanmar, followed by Afghanistan, Iraq, Somalia and Sri Lanka) and some 3 million migrants of whom 1.5 million are not registered. Malaysia is not party to the 1951 Refugees Convention or its protocol and has not established its own legislative or administrative framework on the rights of refugees (UNHCR, 2011). The UNHCR has a holding centre for registered refugees awaiting repatriation to receiving countries and the immigration department runs depots to hold refugees being deported back to their countries of origin. Health care services are delivered to refugees mainly by nongovernment organizations and by local government health clinics and visiting health teams. The law requires health workers to report foreigners without documentation to Immigration after attending to their health needs, subjecting them to possible detention and deportation.

3. Financing

3.1 Section summary

Malaysia's public health system is financed mainly through general revenue and taxation collected by the federal government, while the private sector is funded through private health insurance and out-of-pocket payments from consumers. Spending on health (at 4.4% of GDP in 2010) remains below the average for upper middle-income countries. Health expenditure has remained predominantly public spending at 55% of total health expenditure (THE). The main sources of THE in 2009 were the Ministry of Health (46%), followed by household out-of-pocket expenditure at 34%. This pattern of spending are currently being debated for financing options, including the establishment of a social health insurance scheme.

3.2 Health expenditure

Malaysia faces the challenge of rising public expectations and increasing health expenditure, as do most middle and upper-income countries, prompting the government to consider options for future sustainable financing. Total health expenditure rose between 2000 and 2009 (in adjusted ringgit) as a percentage of GDP and doubled as per capita PPP international dollars (Table 3-1). In 2010 the estimated per capita spending on health in PPP international dollars is \$641, a value higher than the average of \$589 for upper middle-income countries in the same year (WHO, 2012). However Malaysia is not a high-spending country on health. The 2010 estimated total health expenditure at 4.4% of GDP was in the middle range of high and middle-income countries in the Asian region but below the 6.1% GDP average for upper middle-income countries internationally (WHO, 2012). The mean annual growth rate in THE has varied considerably since 2000 from 6.4% to 20.8%.

Malaysia recently has reviewed the previous reported National Health Accounts (NHA) for closer adherence to the comparable national health accounts estimation methods as recommended under the System of

Health Accounts (SHA) 2000. In this review the country established a dual database for national reporting under the Malaysia National Health Accounts (MNHA) framework and for international reporting under the System of Health Accounts framework. Much of the data in this section are drawn from the SHA database. Adjusted for inflation, the annual average growth rate of general government health expenditure over the last one decade of around 8.9% was lower than the private expenditure growth rate of 9.2%. While methods of financing vary considerably in South-East Asian countries, Malaysia like several other countries in the region currently relies substantially on private expenditure.

National government expenditure on health rose between 2005 and 2008 in real and nominal terms, but averaged at around 7% of total government spending (Table 3.2). General government health expenditure (GGHE) as a percentage of general government expenditure (GGE) was 8.40% in 2009 (see Table 3.2) compared 9.4% in upper middle-income countries (WHO, 2010a). General government health expenditure (GGHE) as a percentage of total health expenditure (THE) was 55.2% similar to upper middle-income countries (WHO, 2010a).

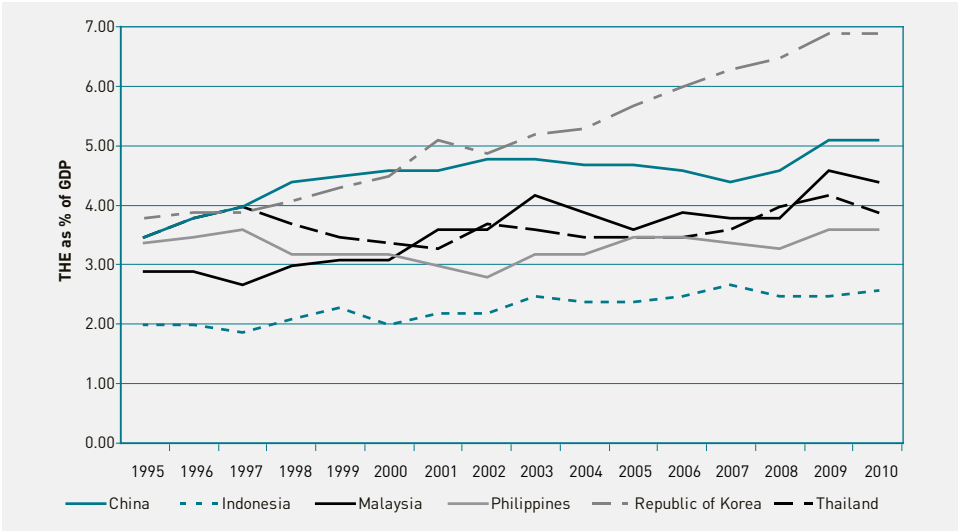
Table 3-1 Trends in health expenditure in Malaysia, 2000–2010

Hospitals	2000	2005	2006	2007	2008	2009	2010
GDP nominal (million Ringgits)	356 401	522 445	574 441	642 049	742 470	679 938	765 965
GDP adjusted to 2009 base year (million Ringgits)	421 761	569 829	626 252	651 654	765 698	679 938	765 965
Total Health expenditure (million Ringgits)	10 745	18 605	22 470	24 357	28 107	31 180	33 657
Total Health expenditure as % GDP	3.0	3.6	3.9	3.8	3.8	4.6	4.4
Mean annual growth rate of adjusted GDP		22.2	9.9	4.1	17.5	-11.2	12.7
Mean annual growth rate THE		6.4	20.8	8.4	15.4	10.9	7.9
General govt. health spending % THE	59.0	52.0	55.9	54.7	55.2	55.7	55.5
Per capita THE (b) (PPPins.\$)	281	411	485	506	533	629	641
Per capita spending USD	125	188	230	262	306	316	368

Hospitals	2000	2005	2006	2007	2008	2009	2010
Private expenditure on health as % THE	41.0	48.0	44.1	45.3	44.8	44.3	44.5
OOP % private expenditure on health	72.2	75.5	76.1	75.8	76.6	76.8	76.8
OOP % THE	29.6	36.2	33.6	34.3	34.3	34.0	34.2

Note: Source: WHO Global Health Database 2012

Figure 3-1 Health expenditure as % of GDP, selected countries, 1995-2010



Source: World Health Statistics 2012

Operating expenditure decreased from 6.69% of total government expenditure in 2006 to 5.91% in 2009 and increased development expenditure from 0.91% to 1.23% (Table 3-2). The Ministry of Health had allocated RM 52.29b as operational budget and RM11.30b for development under the Ninth Malaysia Plan (2006-2010). During the first two years of the Tenth Malaysia Plan (2011-2015), the allocation was RM29.30b as operational budget and RM 3.86b for development.

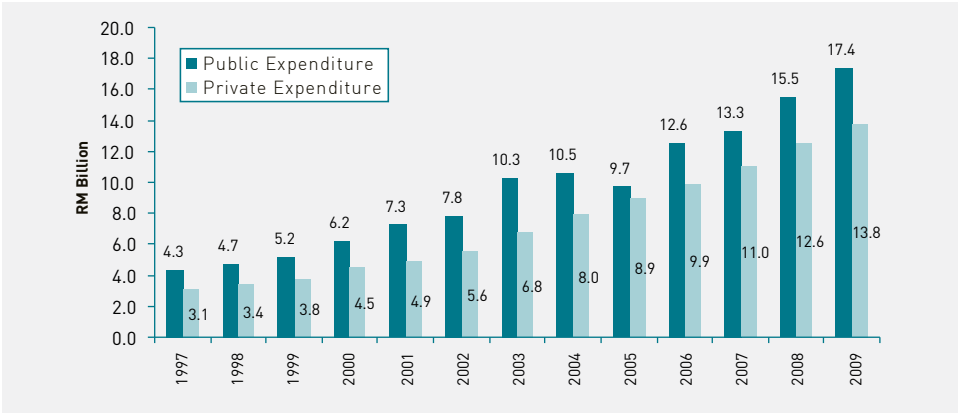
Table 3-2 Federal government health development and operating expenditure, 2005–2009

(RM million) ^a	2005	2006	2007	2008	2009
General government expenditure (GGE)	125 028	142 655	160 544	195 388	206 064
Operating expenditure	6 866	9 538	9 772	11 569	12 173
Operating expenditure % of total govt expenditure	5.49	6.69	6.09	5.92	5.91
Development expenditure	1 194	1 300	1 471	1 467	2 540
Development expenditure % of total govt expenditure	0.96	0.91	0.92	0.75	1.23
Total MOH expenditure	8060	10 838	11 243	13 036	14 713
% of total govt expenditure	6.45	7.60	7.00	6.67	7.14
GGHE as % of General government expenditure	7.70	8.80	8.30	7.90	8.40
General government expenditure on health (GGHE) as % of THE	52.0	55.9	54.7	55.2	55.7

Source: MNHA MOH Sub-account Report 2011, WHO Global Health Database 2012

Both the public and private sector has been growing steadily with a steeper growth in both sectors over the last decade (Figure 3-2). Public health care expenditure in 2009 was RM 17.4b (56% of THE) and private health expenditure was RM 13.9b (44% of THE). Malaysia's spending was lower than the average public sector spending of 62% and higher than the average private sector spending of 41% when compared to high-income countries (WHO, 2012). In the same year Malaysia's out-of-pocket spending was 77% of private sector spending which is twice the high-income country OOP average at 37% of private sector spending.

Figure 3-2 Total expenditure on health by source of financing, 1997–2009



Source: Malaysia National Health Accounts (SHA Database), 2011

Turning to areas of health spending, hospitals took 54% of total health expenditure in 2009 (Table 3-3). The Ministry of Health is the main hospital provider, representing nearly 47% of total expenditure on hospitals. The Ministry of Health spends about 67% of its hospital budget on inpatient care, 31% on outpatient care and 2% on day cases (MNHA SHA database 2011).

Jeong and Rannan-Eliya (2010) have compared health spending in 12 Asia-Pacific economies for the 2002-2007 period (i.e. the year may differ for each country depending on the availability of statistics) using the social health accounts framework. Most countries directed almost half their current health expenditure towards hospitals. In 2009 Malaysia spent slightly higher on hospitals at 54% of THE. In the same year 20% was spent at ambulatory care providers which are slightly less than the average spending of 24% in the 12 Asia-Pacific economies. The private sector spending contributed to 67% of the source of financing for ambulatory care most of which was financed through the private sector and came from out-of-pocket payments by patients (MNHA SHA database, 2011).

Ambulatory oral health expenditure accounted for 2.1% of overall THE, of which 1.0% was in Ministry of Health dental clinics and 1.1% in private clinics (MNHA SHA database, 2011). Ministry of Health oral health expenditure has risen overall, as has the cost of per patient attendance from RM 18 in 2000 to nearly RM 31 in 2008. There are no data for costs per patient in the private sector.

Table 3-3 Total expenditure on health by provider (public and private) of health services, 2009

Providers of health services	RM million	%
Hospitals	16 868	54.1
Providers of ambulatory health care	6 103	19.6
Health administration and insurance	4 580	14.7
Retail sale and other providers of medical goods	2 380	7.6
Provision and administration of public health programmes	1 092	3.5
All other industries (rest of the economy)	116	0.4
Nursing and residential care facilities	25	0.1
Rest of the World	15	0.0
Total	31 180	100.0

Source : Malaysia National Health Accounts (SHA Database), 2011

Prevention and public health services accounted for 5.3% of THE in 2009 (Table 3-4) and falls within the average of 4-6% in the 12 Asia-Pacific countries (Jeong&Rannan-Eliya, 2010). In Malaysia these services are mainly provided by the public sector as it amounts to 9% of this sector spending (MNHA SHA database, 2011).

Table 3-4 Total expenditure on health (public and private) by function of health services, 2009

Function of health services	RM million	%
Services of curative care	19,079	61.2
Health administration and health insurance	3,454	11.1
Medical goods dispensed to out-patients	3,140	10.1
Health administration and health insurance: private	2,757	8.8
Prevention and public health services	1,652	5.3
Ancillary services to health care	868	2.8
Services of long-term nursing care	147	0.5
Services of rehabilitative care	84	0.3
Total	31 180	100.0

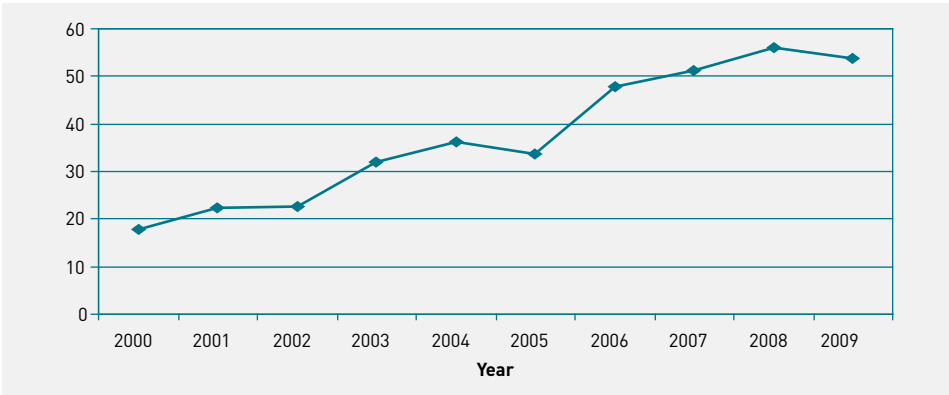
Source : Malaysia National Health Accounts (SHA Database), 2011

In 2009, medical goods (mostly pharmaceuticals) in Malaysia accounted for between 8%-10% of THE by provider and function classifications (Table 3.3, Table 3.4). In the same year, the total Ministry of Health expenditure on drugs and supplies was around RM 2.1 billion, while private expenditure for this was around RM 1.6 billion (MNHA database & MNHA MOH sub-accounts database, 2011). This is a conservative figure as often

pharmaceuticals in this country are packaged together with curative care services. Furthermore the private sector pharmaceutical data consist mainly of retail prices and not the actual cost to the purchasers. Over the period 2002-2007, medical goods averaged 19% of THE in 12 Asia-Pacific countries but with wide variation in most countries (Jeong&Rannan-Eliya, 2010). In these countries the role of private funding was more important in financing medical goods than in paying for inpatient and out-patient care.

In Malaysia, Ministry of Health pharmaceutical expenditure alone rose from RM 891 million in 2005 to RM 1.5 billion in 2009 which accounted for 18% of the operating expenditure (MNHA MOH sub-accounts database, 2011). The per capita expenditure also increased (Figure 3-3). The rise in Ministry of Health spending is due to growth in prescription volume, drug costs and the expansion of public health programmes, such as vaccination, and often fully subsidized treatments such as cancer and ARV treatments. The public system currently supplies most drugs free-of-charge to patients, but people who use private health care pay for their medicine and these costs can be substantial.

Figure 3-3 Per capita expenditure on pharmaceuticals in the Ministry of Health, 2000–2009



Source: Malaysia National Health Accounts (MOH Sub-accounts Database), 2011

The government is considering price controls on pharmaceuticals to stem the costs incurred by the population. In addition to the Malaysia National Health Accounts estimates, the Pharmaceutical Services Division of the Ministry of Health collects data on the price of medicines in public and private pharmacies. Prices in the private sector are higher than in the public sector and the International Reference Price. Surveys from 2006

onwards have accumulated data on about 100 types of medicines. The baseline survey in 2006 for 30 commonly used medicines found that brand name and generic medicines were much cheaper in the public than in the private sector. Medicines bought by the Ministry of Health from the local concession company and by tender were 60% cheaper than from the private sector. However, it was still 1.3 times higher than the International Reference Price. As dispensing doctors and private retail pharmacies apply high mark-ups, the practice of price control and greater use of generic medicines are required if the Malaysian public is to obtain affordable medicines. For example, people currently pay about an average of one week's wages to purchase one month of treatment for peptic ulcers or for hypertension (Babar et al, 2007).

3.3 Sources of revenue and financial flows

Public revenue for the health system comes from general taxes (direct and indirect) and non-tax revenues collected by the federal government. The allocation of funds by the Treasury to the Ministry of Health is based on past spending plus any additional increment determined by estimated rises in the Consumer Price Index. The Treasury also provides additional funds in times of need, such as during disease outbreaks. The Ministry of Health was the main source of public sector health expenditure in 2009 followed by other national agencies and the Ministry of Education (Table 3-5). In 2009 the Ministry of Health accounted for 82% of public expenditure (RM14.32b); the Ministry of Higher Education: 10.2%, other federal agencies: 5.3%; with smaller amounts expended by other agencies, including the two main social security funds.

Table 3-5 Public health expenditure by source of financing, 2009

Source	RM million	%
Ministry of Health (MOH)	14 322	82.4
Ministry of Higher Education (MOHE)	1 766	10.2
Other federal agencies (including statutory bodies)	926	5.3
Local authorities	129	0.7
Social Security Organization (SOCSSO)	93	0.5
Ministry of Defence (MOD)	57	0.3
Employee Provident Funds (EPF)	40	0.2
(General) State Government	27	0.2
Other state agencies (including statutory bodies)	10	0.1
Total	17 371	100

Source : Malaysia National Health Accounts (SHA Database), 2011

Private sector sources of finance are household out-of-pocket payments (nearly 77%) followed by private insurance and corporations that arrange health cover for their employees (Table 3-6). Private sector gross revenue was very substantial in 2007, with private hospitals accounting for RM 4.2 billion and private clinics RM 2.9 billion.

Table 3-6 Private health expenditure by source of financing, 2009

Source	RM million	%
Private household out-of-pocket expenditures	10 607	76.81
Private insurance enterprises (other than social insurance)	1 968	14.25
All Corporations (other than health insurance)	804	5.82
Non-profit organisations serving households	365	2.64
Private MCOs and other similar entities	66	0.48
Total	13 809	100.0

Source : Malaysia National Health Accounts (SHA Database), 2011

3.4 Overview of the statutory financing system

Malaysia funds its public sector health services mainly from general tax revenue.

3.4.1 Coverage

Coverage of the population for health care can be considered in terms of breadth (who is covered), scope (what is covered) and depth (how much of the cost is covered). In relation to breadth, Malaysia offers public sector health services to the whole population, although under-staffing and long waits mean that many people instead use private services, especially for visits to a doctor, pay out-of-pocket for consultations and for medicines and pay for coverage through private health insurance schemes. Successive NHMS surveys show that lower income groups are more likely to use government services than better off groups.

In relation to scope, the Ministry of Health offers comprehensive services ranging from preventive and primary health care to tertiary hospital care. The large private sector runs medical practitioner clinics and hospitals, mainly in urban areas. As one indicator of health service coverage, 98% of births in Malaysia (MOH 2010) are attended by skilled health personnel compared to 92% in the WHO Western Pacific Region (WHO, 2010a).

In relation to depth, public sector services are highly subsidized with goods and services free to the user or with small co-payments, so that only 2%-3% of Ministry of Health expenditure is recouped from patient charges. The government sets a fee schedule for public sector charges whereby Malaysian citizens pay RM 1 (US\$ 0.30) for a general outpatient consultation and RM 5 (US\$ 1.50) for a specialist consultation. Non-citizens, however, pay RM 15 (US\$ 4.50) and RM 60 (US\$ 18), respectively. Many people leave health care facilities without settling their bills, and this led to unpaid bills in 2006 amounting to RM 26.1 million (around 0.3% of the Ministry of Health's recurrent budget). Public facilities cannot refuse services to people who cannot pay. Many groups are exempt or are charged minimal amounts, including public sector employees and their dependents under employer-employee collective agreements (Kananatu, 2002). For dental services, all Malaysians regardless of income can use public services for a nominal charge, while the following groups are entitled to basic services at no charge: preschool children; schoolchildren up to 17 years; pregnant women; civil servants and their dependents under 21 years of age; and physically, mentally and economically disadvantaged people.

3.4.2 Collection

Government taxes are collected by the Treasury and funds allocated to the Ministry of Health under the framework of five-year plans and annual budgets. Public funds partly are pooled in that the Ministry of Health handles the largest share of public sector health funds. Private sector services are funded mostly through out-of-pocket payments by the public, corporation arrangements and some private health insurance. The Ministry of Health has purchaser-provider arrangements for a small number of outsourced mostly non-medical support services (see Section 2.4).

3.5 Out-of-pocket payments

Out-of-pocket (OOP) payments are the principal means of financing health care throughout much of Asia. In middle-income Asian countries, including Malaysia, the catastrophic impact of health costs on the poor that push households into poverty are better constrained than in poor countries and better-off households spend more on health care than the poor (Van Doorslaer et al, 2006; 2007). WHO defines expenditure as 'catastrophic' if a household's health care costs exceed 40% of income remaining after subsistence needs are met. OOP payments in Malaysia at 34% of THE in 2009 are above the 30.9% average for upper middle-income countries internationally (Tangcharoensathien et al, 2011). High-income countries,

most of which have social health insurance, have a low percentage of OOP payments at around 18%, compared to upper middle income countries at around 30% (WHO, 2010a). OOP payments increased through the 1990s and more than doubled between 2001 and 2009, from RM 3.48b to RM 10.61b. OOP expenditure. The Malaysian household income and expenditure survey (HES) in 2004 and 2005 found that the lowest income decile of the population spent a higher proportion (but not a higher amount) of their income on OOP health payments than the richest deciles (Department of Statistics, 2005). People with medical coverage provided through government, employers or private insurance funds were better able to use private health care and had higher mean household expenditure on health (RM 1193) than those not covered (RM 721). A significant amount of OOP expenditure by households in 2009 was by payments to hospitals (nearly RM 5.00b) followed by ambulatory health care (RM 3.44b), mainly to see private medical practitioners and dentists and traditional and complementary care practitioners, and for retail sales including pharmaceuticals (Table 3-7).

Table 3-7 Out-of-pocket expenditure by household by provider of health services, 2009

Source	RM million	%
Hospitals	4 975	46.90
Providers of ambulatory health care	3 438	32.42
Retail sale and other providers of medical goods	2 194	20.68
Total	10 607	100.00

Source : Malaysia National Health Accounts (SHA Database), 2011

The private dental health care used by 14.6% of Malaysian residents requires OOP payments since this is not covered by private insurance. Mean OOP payments were much higher at private dental clinics (RM 79.73 per episode) than at public facilities (RM 9.11 per episode). Over the decade between the National Health and Morbidity Surveys II and III (1996-2006), OOP expenditure per person was highest for the group aged 65 years and above.

3.6 Voluntary health insurance

Countries vary in their mix of financing arrangements regarding taxes, social insurance and private payments. Thus far, Malaysia does not have a national social health insurance scheme (see 6.2). Social health insurance (non-profit-making schemes) accounted for 21% of THE in upper middle

income countries in 2007, but less than 0.8% in Malaysia (WHO, 2012). The two main social security funds that provide some health coverage for employees in the private sector are the Social Security Organization (SOCSO) and the Employee Provident Funds (EPF). Private health insurance is voluntary and is taken out mainly to cover private hospital costs: 70% of health insurance expenditure is on hospital care. Between 2000 and 2007, private funds in Malaysia grew from 12.5% to 14.7% of private expenditure (WHO, 2011). These funds provide life insurance and other varieties of insurance in addition to health insurance. The main companies include ING Insurance, National Insurance Association of Malaysia, Life Insurance Association of Malaysia and Private Insurance Association of Malaysia. Some international companies, as well as Malaysian companies, offer health insurance although their cover varies considerably. Private funds apply risk rating, not community rating, in setting eligibility and premiums, selecting healthier members who do not have pre-existing illnesses and who are likely to make fewer claims. For example, the Employees' Provident Fund (EPF) in 2000 entered into an agreement with the Life Insurers' Association of Malaysia to cover a range of specified conditions with premiums rising with age.

3.7 Other financing

Other sources of financing are minor (as shown in Table 3-6), such as corporations and managed care organizations (MCOs). 'Managed care' is provided by selected clinics and hospitals under contracts with private health insurance companies, which offer a defined package of health care to policy holders who pay a predetermined monthly premium. MCOs manage prepaid funds within a capped budget. There were 25 registered MCOs in 2008. Some foreign companies have set up MCOs or have partnered with local companies to provide managed care.

3.8 Payment mechanisms

The Ministry of Health funds its public health care facilities through global budgets based on historical spending, while private sector funders mainly use fee-for-service to pay facilities. Such payment mechanisms offer little incentive to improve cost effectiveness. The Malaysian government publishes guidelines (with limited enforcement) on professional fees under the Private Health Care Facilities and Services Act 1998 and its 2006 Regulations and the Malaysian Medical Association issues a recommended fee schedule. There are regulations or guidelines on private hospital charges. Public sector personnel, including doctors, are

paid salaries at civil service rates. Patients pay private physicians and private hospitals on a fee-for-service basis. Private oral health care is largely fee-for-service and costs are not regulated, although indicative fees are suggested. The Private Health Care Facilities and Services Act 1998 and its 2006 Regulations set out a dental fee schedule with a limited list of procedures and the Malaysian Dental Association recommends a fee schedule of dental charges.

4. Physical and human resources

4.1 Section summary

The number of primary care clinics and dental clinics has increased in both public and private sectors, as have the number of hospital beds, although the population ratio of beds has declined slightly since 1980. The supply of health professionals, however, remains seriously below the required number, although the government has increased the number of training places.

4.2 Physical resources

4.2.1 *Capital stock and investments*

Most beds (77%) are in government hospitals and the remainder are in private hospitals (Table 4-1). While the 209 private hospitals outnumber the 143 government hospitals, they generally are smaller and contribute only 11 000 beds. The Ministry of Health development budget struggles to maintain ageing hospitals and maintenance and infrastructure failings have in the past resulted in the shutting down of government hospital wings (Quek, 2009). Investment in the private sector has increased, particularly with the growth of medical tourism and global corporations. For example, some profit-making hospitals have been taken over by large companies, such as Parkway Holdings, Pantai and KPJ Healthcare – the latter, a state corporation (Chee & Barraclough, 2007b). The Columbia group, based in Seattle, runs Columbia Asia in four Asian countries, including several hospitals in Malaysia. Public-private partnerships also are being formed, such as the private Putra Specialist Hospital in which the Melaka state government has a large stake.

Table 4-1 Secondary care health facilities, 2008

Secondary care health facility	No.	Beds	% total beds
MOH hospitals	130	33 004	61.7
MOH special medical institutions	6	5 000	9.4
Non-MOH government hospitals	7	3 245	6.1
Private hospitals	209	11 689	21.9
Private maternity homes	22	174	0.3
Private nursing homes	12	274	0.5
Private hospice	3	28	0.1
Total	389	53 414	100

Source: Ministry of Health Malaysia, 2008c

4.2.2 Infrastructure

Acute care public hospital beds increased between 1970 and 1980 when large MOH hospitals were built, but have experienced slower growth since then (Table 4-2). The big increase is in private sector beds, a 170% increase between 1990 and 2009. The number of private hospitals grew from 10 in 1980 to 128 in 2003 (Chee & Barraclough, 2007b) and now number 209. These include several not-for-profit-making hospitals, such as the Penang Adventist Hospital and the 700-bed Lam Wah Ee Hospital in Penang, established by the Chinese community in the 19th century, which offers traditional Chinese medicine plus western medicine.

Beds (public and private) per 1000 persons have declined from 2.4 beds per 1000 in 1980 to 1.8 beds per 1000 in 2009, as the supply has not kept pace with population growth. Malaysia intends to provide more day surgery facilities, however, rather than significantly expand public hospital inpatient beds.

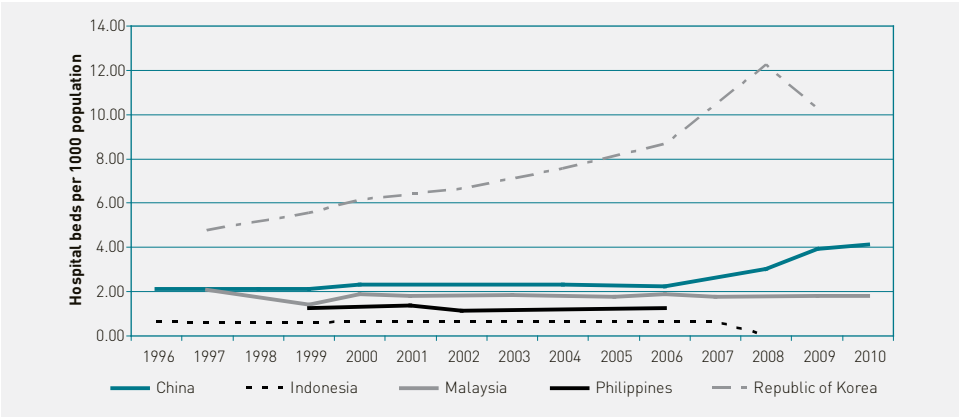
Table 4-2 Number of beds in acute care hospitals, 1970–2009

Hospital beds	1970	1980	1990	2000	2009
Public sector (MOH) acute hospital beds	17 063	33 901	33 400	34 573	38 057
Private sector acute hospital beds	...	...	4 675	9 547	12 619
Total	17 063	33 901	38 075	44 120	50 676
Beds per 1000 persons	1.6	2.4	2.1	1.9	1.8

Source: Ministry of Health 1972a; 1990; 2000b; 2009b

The most current ratio of hospital beds per 1000 population is lower than that of 3.6 for upper middle-income countries internationally (WHO, 2011). Bed ratios differ considerably across countries, however, depending on the priority given to inpatient versus ambulatory care. The population ratio of beds in Malaysia is similar to several other countries in the WHO Western Pacific region; the Republic of Korea is an outlier with its high ratio of beds (Figure 4-1).

Figure 4-1 Ratio of hospital beds per 1000 population, 1995–2010



Source: WHO Regional Office for the Western Pacific; Health indicators database; and Indonesia Health Profile reports.

Most primary health care is offered in the private sector in urban areas, while the public primary health care facilities are mainly located in rural areas. There are 6371 private clinics compared to 802 Ministry of Health clinics (Table 4-3), although the private clinics are mainly small practices with single practitioner or a few with small group arrangements.

Table 4-3 Primary care health facilities, 2008

Primary care health facility	MOH	Private
Health clinics	802	6371
Community clinics	1927	...
Maternal & child health clinics	95	...
Dental clinics	1707 ^a	1435

Source: Ministry of Health, 2008d

^acommunity and school-based

MOH dental facilities have grown steadily since 1970 (Table 4-4) located in health facilities, schools and as stand-alone centres. Private dental clinics mostly (80%) are single-practitioner practices. About 45% of private dental clinics are in the urbanized states of Selangor and the Federal Territories of Kuala Lumpur and Putrajaya.

Government pharmaceutical services are located in hospitals and health clinics. The majority of the 1700 or so private retail pharmacies are concentrated in the major towns (Table 4-5).

Table 4-4 Dental facilities, Ministry of Health, 1970–2009

Hospital beds	Year					
	1970	1980	1990	2000	2007	2009
Dental specialist clinic	14	16	19	38	109	129
Main dental clinic	48	87	119	138	128	93
Community dental clinic	190	329	395	425	440	518
School dental clinic	120	431	636	787	901	921
School dental centre	6	13	22	21	17	16
Mobile dental clinic	13	13	10	8	21	20
Mobile dental team	0	49	100	204	417	404
Preschool mobile dental team	-	-	16	65	102	136
Others ^a	7	14	39	47	33	39
Total	398	952	1356	173	2168	2276

Source: Ministry of Health, 2010b
^aOthers' includes dental clinics in institutions and Maternal and Child Health Clinics.

Table 4-5 Distribution of retail pharmacies by state, 2007–2008

State	Number of community pharmacies (2008)	Number of pharmacies in capital of state (2007)
Perlis	12	10 (Kangar)
Kedah	125	25 (Alor Sar)
P. Pinang	280	76 (Georgetown)
Perak	146	71 (Ipoh)
Kelantan	70	40 (Kota Bharu)
Terengganu	25	10 (Kuala Terengganu)
Pahang	55	23 (Kuantan)
Selangor	365	24 (Klang)
Melaka	50	44 (Melaka)
N. Sembilan	51	27 (Seremban)
Johor	148	26 (Johor Bahru)
Sabah	106	69 (Kota Kinabalu)
Sarawak	161	31 (Kuching)
W.P Kuala Lumpur	169	166 (Kuala Lumpur)
W.P Labuan	6	6 (Labuan)
Total	1 769	648

Source: Ministry of Health, 2008d

4.2.3 Medical equipment

The Ministry of Health procures major pieces of medical technology centrally through development funds and smaller devices through recurrent budgets. Very expensive equipment is concentrated in large hospitals. The National Medical Devices Survey in both public and private sectors in 2007 found 2 Magnetic Resonance Imaging (MRI) machines per million population and 4 per million Computerized Tomography (CT) scanners, (Ministry of Health, 2007a). These represent lower ratios than most OECD countries (OECD, 2011). However, the private hospital sector has a much higher ratio of expensive scanners. The government is keen not to duplicate expensive diagnostic and imaging facilities already available in private hospitals in close proximity to public hospitals.

4.2.4 Information technology

The MOH is gradually converting its facilities from paper-based information to an electronic system (see Section 2.7.1). Computerized information systems are being installed in government hospitals (14 out of 138 in 2010) and in government dental clinics. No information is available on IT use in the private sector. In seeking to improve health literacy and service access, the Ministry of Health additionally has adopted an E-health strategy, given the country's expanding internet penetration from 15% of the population in 2000 to nearly 65% in 2010 (Internet World Statistics, 2010). Telehealth technology is an emerging strategy in Asian countries that aims to increase population access to health care and to provide clinical decision support to primary care practitioners (Durrani & Khoja, 2009). There are three examples of information communication technology (ICT) use in Malaysia: Teleprimary Care; Teleprimary Care Kiosks; and e-KL.

Teleprimary Care is an electronic clinic management and information system that links primary and secondary care, enables primary providers to consult specialists and facilitates staff access to clinical guidelines. By December 2009, it had been implemented in five states (Johor, Sarawak, Perlis, Selangor, the Federal Territory of Kuala Lumpur).

A Teleprimary Care Kiosk is a terminal installed in Ministry of Health primary care clinics that offers information to patients on clinic services and offers access to an offline version of the MyHealth portal, the Ministry of Health web-based patient education module. Pilot kiosks were installed in 2007 in Johor (three clinics), Sarawak (eight clinics), Perlis (five clinics) and Selangor (18 clinics).

The eKL project, implemented in the Federal Territory of Kuala Lumpur in 2007, enables the population in the Klang Valley to change and check appointments online in an e-appointment system.

4.3 Human resources

Registered nurses are the largest group of health professionals, numbering over 75 000, including community and dental nurses (Table 4-6). A larger number of doctors work in the public than in the private sector, but mostly in hospitals, since only 1192 of public sector doctors (about 7%) work in primary health care. Likewise, family medicine specialists are few despite the Ministry of Health goal of expanding primary health care to undertake a larger role in treatment. For example, the MOH has only 162 family medicine specialists in primary health care in 2008 (Table 4-7). The employment of dental nurses (therapists) is restricted to the public sector under the Dental Act 1971, where they mostly deliver oral health care to schoolchildren under the supervision of dentists. Nevertheless, their role is supported by other members of the primary health care team, including doctors, nurses, etc. in the various health clinics.

Table 4-6 Health professionals in the public and private sector, 2008

Health professionals	Public	Private	Total	Provider: population ratio
Doctors	15 096	10 006	25 102	1:1 105
Dentists	1 692	1 673	3 365	1:7 618
Pharmacists	3 070	3 327	6 397	1:4 335
Opticians	...	2 514	2 514	1:11 030
Optometrists	159	532	691	1:40 128
Asst. Medical Officers	8 310	768	9 078	1:3 054
Asst Pharmacy Officers	2 778	...	2 778	1:9 982
Asst. Environmental Health Officers	2 566	...	2 566	1:10 806
Medical Lab Technologists	4 039	...	4 039	1:6 865
Occupational therapists	426	...	426	1:1:65 091
Physiotherapists	593	...	593	1:46 760
Radiographers	1 518	...	1 518	1:18 267
Nurses	38 575	15 633	54 208	1:512
Dental nurses ^a	2 679	...	2 679	1 :3 105 ^b
Community nurses	18 143	500	18 643	1:1 487
Dental technicians	772	704	1 476	1:18 786
Dental surgery assistants	2 970	...	2 970	1:9 336
Complementary medicine practitioners	...	...	873	1:3 173

Source: Ministry of Health, 2009b
^aDental nurses, equivalent to Dental Therapists, provide public sector services for population under 18 years of age
^bBased on population aged under 18 years

Table 4-7 Categories of health professionals in primary health care employed by the Ministry of Health, 2008

Category of personnel	Number
Family medicine specialists	162
Medical and health officers	1 030
Dentists (Public/MOH)	1 507
Pharmacists	262
Nurses	5 337
Dental nurses (only MOH)	2 679
Assistant medical officers	2 388
Lab technicians	803
Dental technologists (MOH)	702
Community nurses	9 922
Radiographers	155
Assistant pharmacy officers	1 046
Dental surgery assistants (MOH)	2 722
Total	28 604

Source: Ministry of Health, 2009b

4.3.1 Health workforce trends

The Malaysian health system, and the public sector in particular, is being seriously constrained by shortages of health professionals, as in many South-East Asian countries (Kanchanachitra et al 2011). Malaysia has 0.9 physicians per 1000 population compared to 2.2 in upper middle income-countries internationally (WHO, 2011). Malaysia has fewer doctors for its population than the Philippines, but more than Thailand (Figure 4-2).

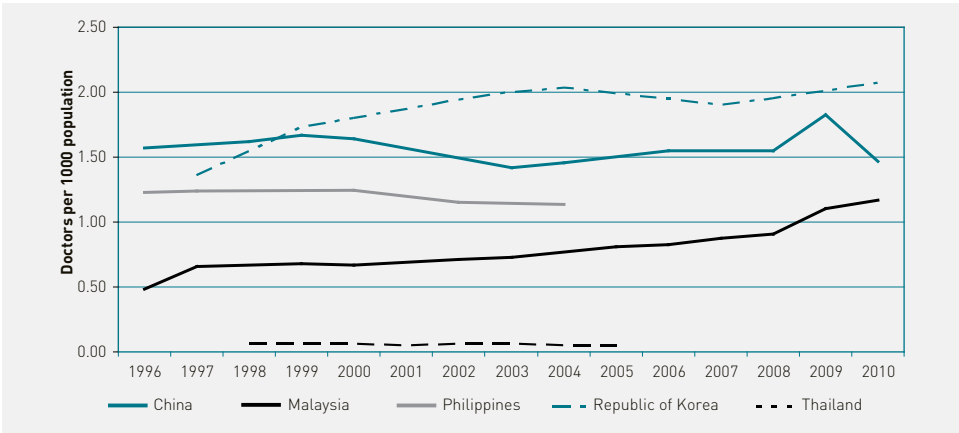
Malaysia has 2.45 registered nurses per 1000 population (Ministry of Health, 2010c) or 2.73 nurses and midwifery personnel combined (WHO, 2011), compared to the average of 4.4 nurses and midwifery personnel for upper middle-income countries (WHO, 2011). The ratio is larger than Thailand, but smaller than the Philippines, with over 4 per 1000 (Figure 4-3).

Malaysia has 0.14 dentists per 1000 population, compared to 0.7 for upper middle-income countries (WHO, 2011). The ratio is smaller than Thailand and the Philippines (Figure 4-4).

Malaysia has 2.10 registered nurses for every one doctor, although most countries in the WHO Western Pacific Region have a higher ratio of nurses

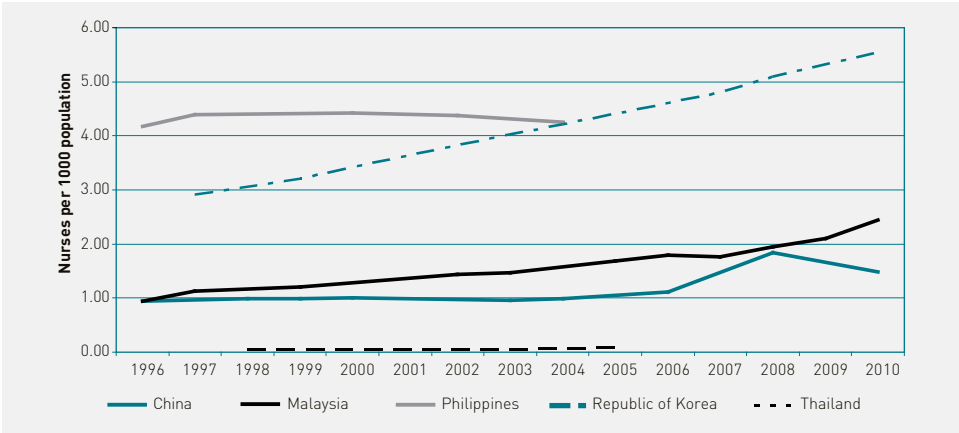
to doctors (Figure 4-5). For example, the Philippines has 3.75 nurses to one doctor and the Republic of Korea has 2.66. Malaysia, however, also has a large number of assistant medical officers (over 9000) that carry out some tasks performed by nurses in other countries.

Figure 4-2 Ratio of doctors per 1000 population, 1996–2010



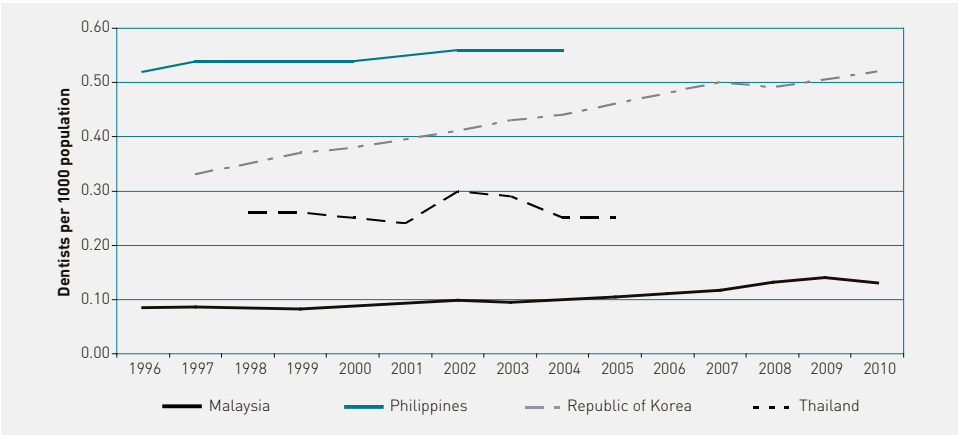
Source: WHO Regional Office for the Western Pacific, Health indicators database; and Thailand Health Profile reports.

Figure 4-3 Ratio of nurses per 1000 population, 1996–2010



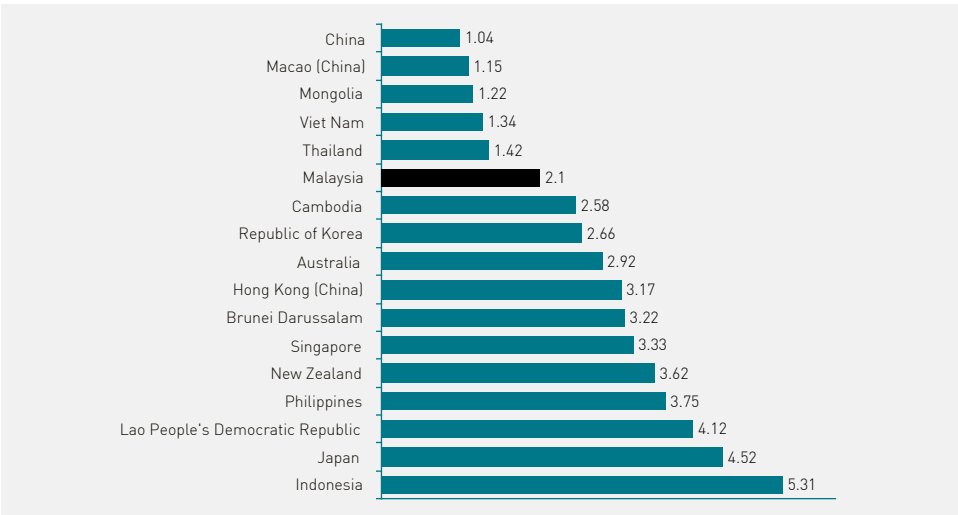
Source: WHO Regional Office for the Western Pacific, Health indicators database; and Thailand Health Profile reports.

Figure 4-4 Ratio of dentists per 1000 population, 1996–2010



Source: WHO Regional Office for the Western Pacific, Health indicators database; and Thailand Health Profile reports.

Figure 4-5 Ratio of nurses to doctors, countries of the Western Pacific, 2004–2010



Source: Western pacific country health information profiles 2011 revision. Manila, World Health Organization Regional Office for the Western Pacific, 2011; Indonesia Health Profile 2010, MOH; and Thailand Health Profile reports.

The Ministry of Health was able to fill only 64% of positions for doctors in 2009, 60% for dentists and 77% for pharmacists. In particular, in primary health care, only 55% of posts were filled for family medicine specialists, 40% for doctors, 57% for pharmacists, 79% for assistant medical officers and 85% for nurses. The Ministry of Health expects shortages of doctors and dentists to continue through to 2020. Health systems generally find it difficult to recruit and retain physicians in primary health care, given its

lower status than hospital practice and its location in rural versus urban areas (WHO, 2010c).

Malaysia is experiencing a 'brain drain' of highly-educated people across many sectors of the economy, many of whom are moving to OECD countries (Schellekens, 2011). Within Malaysia's public health sector, shortages also are due to the fact that health professionals move to better-paid private sector positions. Several strategies are underway to try to curb this. First, compulsory service in the government sector was introduced in the 1970s for newly-registered doctors, who must complete three years in the public sector before being allowed to work in the private sector. This was initiated for dental graduates beginning in 2001 and for pharmacy graduates from 2004. Mandatory posting to rural areas upon graduation is a common strategy in many countries to improve access, although health personnel generally return to urban areas upon completion of their posting (WHO, 2008a). Second, the Ministry of Health now offers short-term contracts to 4.7% of its professionals overall and to 12% of its specialists (Ministry of Health, 2008c) and contracts some services from private practitioners. Third, the retirement age for civil servants has been increased gradually from 55 to 58 years (compared to 65 years or older in many OECD countries).

Fourth, the government is increasing the number of places in both public and private training colleges. Finally, financial strategies have been initiated to counter pull factors from private sector and overseas employment. The Ministry of Health permits some doctors to do locum work when not on duty in public facilities. Doctors in public hospitals with private wards can retain part of the fee for treating private patients. Salaries were increased in 2002 and 2007, but a proposal to establish a separate, more competitive salary scheme for health personnel within the civil service was not accepted. Governments in some other countries offer higher salaries to retain doctors in the public sector.

4.3.2 Distribution of health workers

There were 20 192 doctors in the public sector and 10 344 (one-third of total doctors) in the private sector in 2009. The number of doctors in both the public and private sector has grown since 1970 (Table 4-8). In fact, despite concern about a shift from the public to the private sector, the number of doctors in the public sector actually has grown faster than that of the private sector. The steep rise in public medical officers between

2000 and 2009 is the result of an increase in production within the country together with a marked increase in medical graduates from overseas.

Table 4-8 Distribution of medical doctors, 1970–2009

Medical doctor	1970	1980	1990	2000	2009
Public	807	1 797	3 021	8 410	20 192
Private	1 563	1 717	3 991	7 209	10 344
Total	2 370	3 514	7 012	15 619	30 536
% of doctors in private sector	65.9	48.9	56.9	46.1	33.8

Source: Ministry of Health, 1972a; 1980; 1990; 2000b; 2009b
 1970 figures do not include doctors in Sabah and Sarawak

Slightly more dental practitioners work in the public than the private sector (1692 compared to 1673) (Table 4-9). The number of tertiary-trained dentists (Division I dentists) has kept pace with population growth, with a dentist to population ratio of 1 to 8240 in 2008. Division II practitioners who trained under the local apprenticeship system and registered prior to 1972 have dropped steadily with retirements.

Table 4-9 Distribution of dental practitioners, 1970–2008

Year	Division I Practitioners					Division II Practitioners
	Public sector		Private sector		Total	
	No.	%	No.	%		
1970	155	59.8	104	40.2	259	359
1980	387	59.9	259	40.1	646	365
1990	655	46.8	746	53.2	1401	236
2000	750	35.0	1394	65.0	2144	101
2008	1692	50.3	1673	49.7	3365	45

Source: Ministry of Health, 2009a

4.3.3 Training of health care workers

The Ministry of Higher Education has increased the acceptance of medical students into approved universities and training colleges and the Ministry of Health has accredited more “houseman” (two-year training period) places in hospitals. Medical courses are offered in both public and private training institutions (30 in total) (Table 4-10). In addition, the government and government-linked bodies subsidize students to study overseas, while some students pay privately to attend foreign medical schools. Dental programmes (five-year degrees) are offered in 6 public and 5 private universities and about 30 dental graduates return each year after

training abroad. Pharmacists are trained at 15 (5 public and 10 private) universities and colleges.

Table 4-10 Distribution of health care workers by training institutions, 2008

Category	Training institution		Annual graduates (2006)	Total number in training (2008)
	Public	Private		
Physicians	8	8	3459	25 102
Dentists	6	5	-	288 (undergrad) 40 (postgrad)
Nurses	16	35	2206	54 208
Community nurses	12	...	1126	18 643
Assistant medical officers	4	1	500	9078
Pharmacists	5	10	500	

Source: Ministry of Health, 2009b

Post-basic training is conducted by universities, allied health colleges and the Public Health Institute. Doctors and dentists who finish postgraduate studies go through a further period of supervision before they are conferred the title of specialist. The quota of doctors and dentists undertaking specialty training in local and overseas institutions has increased from 400 to 600 per year. Given increasing requirements for specialty training, the number of Ministry of Health personnel in PhD and Masters level programmes is expected to increase from 2800 in 2008 to over 3400 in 2015.

Paramedical and auxiliary training is located in public hospitals. In 2008, 37 government training schools provided basic, post-basic and in-service training and several private hospitals and university hospitals conduct courses based on a Ministry of Health syllabus and approved by respective professional boards. Approved programmes include three-year diploma programmes for allied health occupations, certificate programmes (6 -12 months or more) for post-basic training for nurses and medical assistants and a two-year certificate programme for dental surgery assistants (Table 4-11). In addition, the Ministry of Health runs in-service training and induction programmes.

Nurses graduate with a three-year diploma or a four-year degree, with more now opting for a degree given its better career prospects. The

nursing diploma is offered by 16 colleges under the Ministry of Health and over 50 private colleges. All colleges are accredited by the Ministry of Higher Education and approved by the Nursing Board. Community nurses undertake a two-year certificate course. Midwives and assistant nurses are being phased out or retrained as nurses.

Table 4-11 Number of admissions for basic training, 2007

Profession	No. of admissions
Nurses	2481
Community nurses	1322
Assistant medical officers	664
Assistant pharmacy officers	112
Assistant environmental health officers	224
Medical laboratory technologists	273
Radiographers	121
Dental nurses	118
Dental technologists	46
Physiotherapists	77
Occupational therapists	78
Dental surgery assistants	141
Public health assistants	264
Total	5921

Source: Ministry of Health, 2009b

Assistant Medical Officers (AMOs) are similar to physician assistants or nurse practitioners in other countries. The three-year diploma is offered in five training colleges under the Ministry of Health and six private colleges. Their basic diagnostic and curative skills enable them to assist doctors, initiate care plans for minor ailments and emergency care and carry out simple procedures. In rural areas with no resident doctors, AMOs provide basic primary care for the population. In hospitals and urban clinics, they assist doctors by triaging cases and by carrying out basic procedures. AMOs can undertake post-basic training as diabetes educators, in such disciplines as orthopaedics, and in procedures such as haemodialysis.

Dental nurses and technologists are trained at the Dental Training College in Penang for a three-year diploma and dental technologists also are trained in one private institution. Dental technologists make and repair dental prostheses and appliances and maintain dental equipment.

Some are trained in the fabrication of special prostheses for oro-maxillofacial reconstruction. Dental surgery assistants (DSAs) undertake a two-year certificate at the Dental Training College and in two private training institutions. Dental auxiliaries perform basic procedures to assist the clinical dental specialist.

Assistant pharmacy officers are trained in a diploma-level course by the College of Allied Health Sciences. They manage dispensaries in government hospitals and rural health clinics and dispense medicines to patients with supervision by district pharmacists.

4.3.4 Continuing professional development

Malaysia promotes continuous professional development (CPD) to ensure that the knowledge and skills of its health care workforce are up-to-date. CPD is mandatory for Ministry of Health staff but voluntary for private professionals. However, many professional boards now require CPD for renewing professional registration. Doctors, pharmacists, dentists and allied health personnel must attain a certain number of credit points each year through CPD programmes, which include formal courses and various professional activities. Professional boards issue an Annual Practicing Certificate based on a required number of CPD credit points. A website for online monitoring of CPD activities, *myCPD*, was set up in 2007.

The Ministry of Health is in the process of integrating CPD with the Malaysian Civil Service ‘competency level assessment’ that evaluates personnel on core competencies.

4.3.5 Career paths for doctors, dentists and pharmacists

In 2009, the Ministry of Health announced a five-step career pathway for doctors. The two-year “houseman” training period is followed by automatic promotion from UD41 to UD44 grade (“UD” is the public service grading system) and those who complete their two-year compulsory public service are offered an automatic promotion to UD48. After three years, doctors can apply for promotion to UD52 and after another three years, to UD54 level based on work performance. Doctors who pass their postgraduate specialist examination are promoted to the UD48 grade and are advanced to UD52 when they receive the title of specialist. After two more years, they can apply for promotion to UD54 and those who complete sub-specialty training are promoted to UD54 even from a UD48 grade.

Dental officers (beginning at U41 grade) may choose to specialize in clinical or public health disciplines and seek promotion to senior clinical or administrative positions (grade U52 and above). A dental or medical officer in the Armed Forces holds the initial rank of captain and after four years is automatically promoted to Major.

Pharmacists in the Ministry of Health do not yet have an established career pathway for specialization as in medicine and dentistry.

4.3.6 Other health workers' career paths

Career paths for paramedics are being upgraded to differentiate staff with degree or diploma level qualifications. The Ministry of Health has upgraded the posts of nurses (as universities now offer degrees in nursing) and other paramedics into the professional scheme.

5. Provision of services

5.1 Section summary

National health policies stress public health and health promotion, that is, a so-called 'wellness' approach as well as a 'disease' perspective. Public primary care services are under considerable strain with staff shortages so that patients often encounter long waits. Primary care only partially fulfils a gatekeeper function since people can bypass a referral from a public or private general practitioner, and for a small additional fee can go directly to specialists and hospitals. Hospital policy currently has two main thrusts: strengthening speciality care in large hospitals; and increasing the number of ambulatory centres. Malaysia has a large pharmaceutical manufacturing sector, which supplies 30% of domestic demand and exports to other countries.

5.2 Public health

Population health programmes seek to reduce disease prevalence and health inequalities through individual and population-level health promotion and disease prevention. Public health activities are undertaken at several levels of society and are implemented through various actors: Ministry of Health divisions, local health authorities, nongovernment organizations and the private sector. Nine essential functions of public health (Table 5-1) are undertaken across six core areas of activity: promoting health and equitable health gain, health protection, combating threats to public health, injury prevention, disease control and food safety. These functions are mainly undertaken by the public sector in Malaysia and in large part by the Ministry of Health. The areas of activity are reviewed in the following sections.

Table 5-1 Nine essential public health functions

1	Health situation monitoring and analysis
2	Epidemiological surveillance / disease prevention and control
3	Development of policies and planning in public health
4	Legislation and enforcement to protect public health
5	Strategic management of health systems for population health gain
6	Health promotion, social participation and empowerment
7	Human resource development and planning in public health
8	Ensuring the quality of personal and population-based health services
9	Research & development and implementation of innovative solutions

Source: WHO Regional Office for the Western Pacific; Ministry of Health Malaysia, 2001

5.2.1 Promoting health and equitable health gain

The Ministry of Health undertakes healthy lifestyle campaigns with annual themes (Table 5-2). Phase 1 (1991-1996) focused on disease prevention. Phase 2 (1997-2007) focused on promoting healthy life styles, that is, on encouraging individuals to adopt healthy behaviour by targeting risk factors such as unhealthy eating, lack of exercise, smoking and alcohol abuse and high stress levels. Each annual theme is launched at national, state and local levels using multiple media outlets, with information provided in Malay, English, Chinese, Tamil and vernacular languages of ethnic groups. Free health clinic sessions offer basic medical examinations, screening and health education.

Table 5-2 Healthy Lifestyle campaign areas

1991	Cardiovascular disease
1992	AIDS/STD
1993	Food poisoning
1994	Children's health
1995	Cancer
1996	Diabetes
1997	Healthy Eating
1998	Physical Exercise
1999	Injury Prevention
2000	Mental Health
2001	Healthy Family
2002	Healthy Environment Promotion
2003-04	Healthy School Promotion
2005-07	Healthy Workplace Promotion

Health promotion campaigns aim to provide information about healthy choices and to encourage individuals to take more responsibility for their own health. The Ministry of Health Division for Health Education seeks input from other agencies and sectors. For example, the 'Young Doctors' programme in primary schools trains students to promote good health among their peers with programmes in 1058 schools in 2009.

5.2.2 Health protection

The Ministry of Health early childhood health programmes give priority to localities with high infant and under five mortality rates and to areas with difficult access to health care services. These programmes use guidelines developed by WHO and UNICEF that integrate the management of childhood illness with aspects of nutrition, immunization and prevention of diseases, such as pneumonia and diarrhoea. The Child Health Record provides an age-based developmental assessment for children up to seven years of age (WHO, 2006), including an immunization schedule, nutritional guidelines and guidance on health and dental services.

The Adolescent Health Programme, offered in about half of Ministry of Health centres, provided health services and screening for 297 080 adolescents in 2008. PROSTAR (*Programme Sihat Tanpa AIDS untuk Remaja*/Health without AIDS Program for Adolescents) trains adolescents as peer educators. Initially aimed at HIV/AIDS prevention, by 2008, the 1664 PROSTAR clubs throughout the country covered a range of health issues. The Ministry of Education has adopted the WHO 'Health Promoting School Concept' that involves other health-related agencies. The Department of Social Welfare provides rehabilitation for adolescents involved in offences, including in 18 juvenile correctional institutions, *Sekolah Tunas Bakti* and *Asrama Akhlak*.

The National Plan of Action on Nutrition aims to provide information and adequate, nutritious and safe food for all. The Ministry of Health runs Nutrition Information Centres (14 in 2008) and Healthy Community Kitchens in health centres (48 in 2008) to educate the community on food choices and cooking methods in response to dramatic increases in diet-related health problems, such as diabetes.

The National Breastfeeding Policy, in accordance with WHO guidelines, recommends exclusive breastfeeding for the first six months of a child's life and supplementary breastfeeding up to two years. The Ministry of

Health has a pro-breastfeeding policy in its 128 baby-friendly hospitals and aims to protect breastfeeding practices from the marketing strategies of breastmilk substitutes. The breastfeeding of infants below four months, however, has decreased from 29% in 1996 to 19% in 2006 (Ministry of Health, 1996; 2006).

The government offers routine medical examinations to government servants aged 40 years and above. In 2006, of the 22 759 staff examined, 26% had at least one medical condition and common risk factors included high blood pressure, high blood sugar and high cholesterol levels.

5.2.3 Combating threats to public health

Malaysia has a long history of free immunization services for children delivered through maternal and child health services (see 1.4.3). Diphtheria, pertussis and tetanus (DPT) was introduced in the 1950s, tetanus toxoid against neonatal tetanus in 1974, the Bacillus Calmette-Guerin (BCG) against tuberculosis in 1961, poliomyelitis immunization in 1972, measles immunization in 1982, rubella for girls in 1986, viral hepatitis B immunization for all newborns in 1989, haemophilus influenza type B or Hib vaccine in 2002, combination vaccine for measles, mumps and rubella or MMR (2002) and the injectable polio vaccine (DTwP-Hep B + Hib) (2008). Immunization coverage of infants and children is at 95% (2008).

Malaysia has signed up to the WHO Framework Convention on Tobacco Control. Tobacco control has been contested vigorously in Malaysia, which is a tobacco-producing and manufacturing country. The Control of Tobacco Products Regulations 1993 partially limits smoking in public places, restricts misleading descriptions such as 'low tar' from packaging and requires health warnings on cigarette packets. The government has increased taxation on tobacco products to about 40% of the retail price. Experience from other countries suggests that taxes need to be much higher to significantly impact smoking behaviour, however, and WHO and the World Bank recommend a tax level between 65%-85%. The stop smoking campaign 'Kempen Tak Nak Merokok' or 'TAK NAK' was publicized widely through the mass media and there is some evidence that the campaign influenced smokers to quit or reduce smoking. For example, the Global Youth Tobacco Survey found that smoking among 13-15 year olds in Malaysian schools fell from 36.3% in 2008 to 30.9% in 2009 among boys, but it rose among girls from 4.2% to 5.3%.

Many low income countries supplement the delivery of primary health care to people in rural areas through the use of lay workers and volunteers, although their effectiveness depends upon the extent to which they are trained and supported (WHO, 2008a). Malaysia has several programmes that train and support volunteers. For example, Communication for Behavioural Impact (COMBI) aims to mobilize the community to combat threats to public health with 421 of 575 COMBI projects active in early 2009. This approach has been used with some success to mobilize the community in dengue prone areas. Among the 470 localities enrolled in COMBI projects in 2009 compared to 2008, 72% showed fewer dengue cases, 22% remained the same and 6% had more cases. Other examples are in Sarawak and Sabah, where village members selected by their communities have been trained in health promotion since the 1980s. Although the main focus in Sarawak is public health, such as maintaining village sanitation and water supply, they are trained to dispense over-the-counter drugs, such as oral rehydrating salts, and to make referrals to the nearest health clinic. In Sabah, villagers receive basic training as primary health care volunteers to assist in malaria surveillance under the supervision of professional personnel. Sabah has seen a rapid decline in malaria cases since the early 1990s due in part to the role played by volunteers.

5.2.4 Injury prevention

Road traffic accidents are a major cause of death and injury in Malaysia [see 1.4].

Injury prevention requires an intersectoral approach. For example, the Ministry of Health liaises with the Road Transport Department, especially during national festivities when more cars on the roads increase the risk of traffic accidents. Some public hospitals offer a one-stop crisis centre to manage cases of domestic violence, sexual assaults and child abuse and to prevent further trauma. These multi-agency centres offer medical treatment, police investigations, social services.

5.2.5 Disease control programmes and strategies

During the late 1990s, outbreaks of leptospirosis, enterovirus 71 encephalitis, chikungunya polyarthritis and nipah encephalitis showed that Malaysia must improve its capacity to investigate and control such outbreaks with the help of international partners (Kit, 2002). The country's surveillance system is continuously being strengthened

to monitor re-emerging infections and to detect new pathogens. Infrastructure also has been strengthened: fever clinics established in hospitals; appropriate drugs stockpiled; and guidelines for health personnel distributed. The Ministry of Health Epidemic Intelligence Programme trains public health doctors in the detection, investigation and response to outbreaks and the Public Health Institute trains staff on how to communicate information to the public on health risks and health crises.

The Ministry of Health has strengthened laboratory-based surveillance in identifying unknown etiologic agents in outbreaks. The Infectious Disease Research Centre at the Institute for Medical Research trains health professionals in all aspects of infectious diseases and its biosafety level 3 facility enables diagnostic and research work on hazardous pathogens. The National Outbreak Preparedness Plan aims to respond quickly to health crises, including epidemics and bioterrorist attacks, through rapid response teams. For example, the National Influenza Pandemic Preparedness Plan was put to the test in the H1N1 influenza pandemic and was found to work reasonably well.

The National Strategic Plan for Emerging Diseases (MYSED) was developed in response to several outbreaks of infectious diseases, such as the Nipah virus, severe acute respiratory syndrome (SARS), swine flu (H1N1) and avian influenza (H5N1). These epidemics had a serious adverse impact on Malaysia in terms of human and animal health, as well as on the economy, and thus underlined the importance of early detection and rapid response.

The National Dengue Strategic Plan (2009-2013) consists of six programme areas: surveillance; integrated vector management; case management; laboratory diagnostics; social mobilization and communication; and outbreak response. The Ministry of Health also aims to strengthen prevention and control by local authorities.

The National Malaria Elimination Strategic Plan aims to eliminate malaria (defined as no local transmission) in Peninsular Malaysia by 2015 and in East Malaysia by 2020. The eight main strategies are as follows: stratification of geographical areas based on malaria incidence, early detection and rapid treatment, integrated vector management, outbreak preparedness and response, research, international and interagency collaboration, monitoring and evaluation and social mobilization.

The National Programme to Eliminate Lymphatic Filariasis aims to eliminate the disease by 2013. Drugs are administered to those who are infected and 'at risk' populations and they are then monitored for five years.

The HIV Control Strategy focuses on groups where HIV prevalence is concentrated: injecting drug users; men who have sex with men; and sex workers (female and transsexual). Voluntary HIV testing is offered at government clinics and the Ministry of Health Harm Reduction Programme for intravenous drug users incorporates methadone maintenance therapy, needle syringe exchange and condom use. These programmes are carried out in sponsorship and partnership with nongovernment organizations as these agencies can be more responsive to the target groups, as they are less culturally, legally and politically constrained than government agencies. The initial response of government agencies to HIV/AIDS was criticized as overly moralistic (Huang & Taib, 2007).

The National Plan on Noncommunicable Diseases, based on WHO action plans, aims to counter the rising rates of noncommunicable conditions, such as cardiovascular and cerebrovascular diseases, diabetes, mental illness, substance abuse and road accidents.

5.2.6 Food safety and quality programme

Food safety surveillance aims to ensure that food is safe to export and that food in the domestic market is safe to consume. Malaysia has passed legislation, meets international standards, has established a Food Safety Board, is strengthening its food safety programme and educates public institutions on food safety primarily through its schools programme. The emergence of new diseases and resistant microbial strains, however, is testing Malaysia's capacity in food safety.

Regulatory activities for the domestic market include systems for recalls, alerts, crisis responses, pre-market approval, product registration, cross-checks between agency and foreign audits and control of food stalls and street hawkers. The export control system includes approvals and inspections of exporter premises, food export surveillance, access to importing country requirements and response notifications. As the ASEAN Free Trade Area (AFTA) has resulted in increased food imports, the MOH has established electronic links between MOH enforcement officers at entry points, food safety and quality division laboratories, food importers and customs.

Foods are examined and analyzed under the powers of the Food Act 1983 and its 1985 regulations. National standards are being revised in order to strengthen enforcement activities and require compliance from industry. In addition, risk assessment is being stepped up and better labelling information is demanded, including country-of-origin and information on food additives. Malaysia is a member of the international Codex Alimentarius Commission (CAC), has been on numerous Codex committees and working groups and contributes to Codex standards, guidelines and codes of practice, such as guideline for use of the term 'halal'.

The Ministry of Health undertakes public education to improve awareness of the risks of food poisoning. The Ministry of Health and the Ministry of Education cooperate in training staff in school canteens and kitchens on food hygiene and safety and they grade canteens. Seventy-five percent of school canteens were involved in 2009. The incidence of food poisoning in schools decreased from 230 episodes in 2008 to 123 episodes in 2009.

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5.3 Patient pathways

Patients go to public and private clinics through various pathways. For example, a significant (but unknown) proportion of the population consult unregistered traditional medicine practitioners, such as Malay, Chinese or Indian practitioners. Most primary care in urban areas is provided by private general and specialist doctors who either treat or refer patients to hospitals. In the Ministry of Health health clinics (the next step up from nurse-run community clinics), patients go through a process of registration, pre-consultation, risk investigation consultation, diagnostic tests, diagnosis and intervention. Doctors (with support from other staff) may treat patients, follow-up later to check their condition, or refer them for to hospitals for secondary and tertiary treatment.

Since primary health care providers use agreed referral guidelines to specialists and hospitals, they have a limited gatekeeper role. However,

the Ministry of Health has an 'open door' policy on outpatient services and hospital admissions. Patients can bypass primary care clinics and go directly to hospital outpatient care and pay the small charges imposed for walk-in patients (although for many these charges are waived). Discharge planning from hospital to primary care is being improved through individual care plans and by identifying the key workers.

5.4 Primary/ambulatory care

The private sector offers fee-for-service care by generalist and specialist doctors mainly as curative health services (primary and secondary ambulatory care) and largely in urban areas. The 6371 private doctor clinics outnumber the 802 health centres, although most private clinics are single practitioners or a few small group practices (see Section 4.1.2).

The Ministry of Health health clinics provide four components of primary health care: curative, preventive, promotive and rehabilitative services. Community clinics (1927 in 2008) are staffed by community nurses who provide mainly basic curative services and maternal and child health services. To increase access in remote areas, mobile clinics (193 health clinics and 493 dental services) deliver care by land, river or air transportation.

Curative services in the Ministry of Health clinics include: basic medical care, minor surgery, circumcision, care of chronic conditions, detection of malaria and tuberculosis, detection and early intervention of diabetes, cancer, sexually transmitted diseases and HIV. They also include rest beds in the centre for observation before referral to the next level of care, as well as referral to specialists.

The Ministry of Health preventive programmes encompass all ages: screening for child development, for women's health concerns (such as pap smears and breast screening), screening those above 40 years old for cardiovascular risk factors and offer thalassaemia screening, tobacco cessation programmes, blindness prevention, mental health services, elderly and adolescent health programmes, premarital screening for HIV and school health services among others. District health offices also are responsible for community-level preventive programmes, such as communicable and vector-borne disease control, as well as environmental sanitation. Health promotion programmes include health education and nutrition. Rehabilitative programmes include community-based rehabilitation for children with special needs.

The Ministry of Health family health services include maternal and child health services, such as antenatal and postnatal care, clinic and home delivery, family planning and health education. Alternative birthing centres offer a 'baby friendly' and 'father friendly' environment as an alternative to hospital birth for mothers with low obstetric risk factors, backed up by rapid access to specialist care in emergencies. The family planning emphasis is upon spacing the birth interval, but nongovernment organizations have a wider influence. The Advisory Coordinating Committee on Reproductive Health (ACCRH), a multisectoral body comprising government and nongovernment bodies, coordinates reproductive health programmes. The National Population and Family Development Board offers reproductive health services, including pap smears, as well as information, education and research, while the Federation of Family Planning Association Malaysia and the All Women's Action Society also are active in the area of family planning. The Ministry of Education collaborated with several nongovernment organizations in developing 'Guidelines for Reproductive Health and Sexuality Education' for adolescents and the Federation of Family Planning Association Malaysia developed a sex education module for Muslim youth.

5.5 Specialized ambulatory care/inpatient care

Malaysia has 143 public sector hospitals (see Table 4-1): 136 Ministry of Health hospitals and 7 other government hospitals. Several public and private hospitals are associated with medical schools. The three university teaching hospitals under the Ministry of Higher Education are the University Malaya Medical Centre (UMMC), Universiti Sains Malaysia Medical Centre (USMMC) and Hospital Universiti Kebangsaan Malaysia (HUKM). In 2008, the HUKM and Faculty of Medicine combined to form a new entity, Pusat Perubatan UKM (PPUKM) or UKM Medical Centre (UKMMC), which offers patient care under 16 clinical departments, undergraduate and postgraduate medical training and research programmes. Private teaching hospitals associated with medical schools include the International Medical University and Penang Medical College.

Private hospitals numbered 209 in 2008 with the larger hospitals involved in medical tourism (see 2.4.1). The Association of Private Hospitals of Malaysia lists 35 private hospitals and medical centres on its medical tourism website. For example, the Gleneagles Hospital Kuala Lumpur houses a 330-bed private hospital, 110 specialist consulting suites, a 180-seat auditorium, a retail pharmacy and a bank.

The Ministry of Health hospitals are classified in five levels: (i) small district hospitals (visiting specialists only); (ii) larger district hospitals with resident specialists; (iii) state-level general hospitals with resident specialists; (iv) hospitals with multiple specialties including regional hospitals (that cover several states) and national hospitals; and (v) specialist hospitals or institutions (e.g. for cancer or leprosy). Large district hospitals have at least 6 specialties (general medicine, general surgery, paediatrics, orthopaedics, obstetrics & gynaecology and anesthesiology). State-level hospitals have up to 15 specialty and subspecialty services (Table 5-3).

Table 5-3 Specialty and subspecialty services in Ministry of Health hospitals, 2009

Hospitals	Specialty services
Hospital KL and state hospitals (14) <i>Kuala Lumpur Hospital; Tuanku Fauziah H. Kangar; Sultanah Bahiyah H. Alor Star; Pulau Pinang H.; Raja Permaisuri Bainun H. Ipoh; Tengku Ampuan Rahimah H. Klang; Tuanku Jaafar H. Seremban; Malacca H.; Sultanah Aminah H. Johor Bahru; Tengku Ampuan Afzan H. Kuantan; Sultanah Nur Zahirah H. Kuala Trengganu; Raja Perempuan Zainab II H. Kota Bahru; Hospital Umum Kuching; Kota Kinabalu</i>	15 resident specialist services: general medicine, general surgery, paediatrics, orthopaedics, obstetric care & gynaecology, anesthesiology, radiology, pathology, ophthalmology, ENT, emergency
Major specialist hospitals (21) <i>Putrajaya H.; Sultan Abdul Halim H. Sungai Petani; Seberang Jaya H.; Taiping H.; Selayang H.; Serdang H.; Ampang H.; Sg Buloh H.; Kajang H.; Tuanku Ampuan Najihah H.; Kuala Pilah; Specialist Sultanah Fatimah H. Muar; Sultan Ismail H. Johore; Batu Pahat H.; Sultan Haji Ahmad Shah H. Temerloh; Kemaman H.; Kuala Krai H.; Sibul H.; Dutchess of Kent H. Sandakan.; Tawau H</i>	medicine, psychiatry, dental, dermatology and nephrology
Minor specialist hospitals (20)	6 basic specialties
Hospitals with visiting specialists (75)	Regular sessions
Institutes (6) <i>Bahagia H, Perak.; Permai H, Johor.; Mesra H, Bukit Padang; Sentosa H.; National Leprosy Centre, Sg Buloh; Institut Perubatan Respiratori (Institute for Respiratory Medicine)</i>	Chronic mental health, leprosy and respiratory cases

More complex care, such as cardiothoracic, neurosurgery and vascular surgery are provided in regional hospitals in north, central, east and south Peninsular Malaysia and in Sabah and Sarawak. Designated specialty national and regional hospitals take referrals from around the country. For example, Hospital Selayang specializes in microsurgery and

in kidney and liver conditions; and Hospital Sungai Buluh provides trauma care and care for infectious diseases. Kuala Lumpur Hospital, the oldest and biggest hospital in Malaysia, has over 2000 beds and is a national referral centre for advanced tertiary care.

The Ministry of Health is expanding the scope of speciality care in its larger hospitals (see Section 4). But rising costs are increasing the pressure to shift from inpatient to other forms of health care. In line with international trends, the Ministry of Health intends to increase the number of ambulatory care centres (ACCs), that is, day surgery hospitals, which are estimated to have 30% lower recurrent costs than inpatient care. A typical Ministry of Health ACC has 40 to 50 day beds, 6 operating theatres, clinics for 5 to 6 specialties, 4 endoscopic suites, 1 outpatient pharmacy and other support facilities. In 2009, 15 ACCs were attached to government hospitals, including 3 under construction and there were 13 private ACCs. The government plans to build 6 more ACCs under the 10th Malaysia Plan (10MP) and to encourage more in the private sector.

The demand for public hospital care has grown since 2000 with rising numbers of discharges (although at 7321 discharges per 100 000 population Malaysia is half that of many OECD countries), while the average length of stay in days (under five days) is similar to OECD countries (OECD, 2011). Bed occupancy at below 66% appears low, however, and suggests unused capacity, perhaps reflecting staff shortages (Table 5-4). For example, the bed occupancy rate in acute care hospitals in Australia is around 74%. Also, outpatient visits have increased by 33% between 2000 and 2008, perhaps because people are bypassing public primary care centres in order to see specialists.

Table 5-4 Trends in public hospital activity, Malaysia, 2000–2008

Hospital activity	2000	2002	2004	2006	2008
Total admissions	1 585 500	1 700 721	1 804 697	1 905 089	2 072 633
Total discharges	1 587 935	1 699 497	1 807 429	1 905 819	2 072 449
Total outpatients	28 988 249	28 548 526	32 451 753	34 703 057	38 435 887
Average length of stay	4.7	4.6	4.5	4.4	4.4
Bed occupancy %	61.1	62.8	64.9	53.3	65.5

Source: Ministry of Health

The waiting time for elective surgery in Ministry of Health hospitals is not publicly available on its website, although hospitals set waiting times as one of their key performance indicators (KPIs). Shortages of some types of specialists mean long waiting times; for example, 23 weeks for orthopaedic surgery in public hospitals (Sharifa Ezzat et al, 2009), and 88% of patients at the University of Malaya Medical Centre diagnosed with rectal cancer are operated upon within 4 weeks (Law & Roslani, 2009).

5.6 Emergency care

The Ministry of Health health clinics provide basic emergency services managed by paramedics (i.e. assistant medical officers) and 90% of clinics are equipped with ambulances. Strengthening capacity to respond to increasing numbers of accidents and emergencies requires standardizing clinical treatment and referral protocols and providing better tools (ambulances, equipment and drugs). Facilities are linked to the national emergency call centre network, which directs emergency calls from the public in the Klang Valley, coordinates ambulance services (Ministry of Health, Red Crescent, St Johns' Ambulance, Civil Defence Department, JPA 3), arranges communications between hospital emergency departments, organizes telemedicine activities and has mobile medical teams. Larger hospitals have emergency departments and emergency medicine specialists have been trained in Malaysia since 2003.

5.7 Pharmaceutical care

Malaysia has over 1760 private retail pharmacies mainly in urban areas (see Table 4.5). Pharmacists also work in government hospitals and the larger government health clinics. Assistant pharmacists or dispensers work in the smaller health clinics, while dispensing in rural clinics is done mainly by paramedics, assistant medical officers and community nurses. Pharmacy practice in the government has evolved from a product-oriented to a more patient-oriented service. Patients are counselled to ensure medication understanding; pharmacists are part of health care teams and are experts in drug safety. Pharmacists in the major hospitals offer drugs and poison information as do the National Poisons Centre at the University of Science Malaysia and the National Drug Information Centre at Hospital Kuala Lumpur.

In the Ministry of Health doctors prescribe (usually generic drugs) according to the Drug Formulary and prioritise using generics. Doctors in the private sector can prescribe and dispense medicines with no restrictions on indications or frequency and brand prescribing is the norm. Over-prescribing by private doctors is regarded as a major problem. The National Medicines Policy states that 'ultimately, to improve the quality use of medicines, prescribing and dispensing functions must be separated.' The government has been considering this move, but would face vigorous opposition from private physicians.

Malaysia has a large pharmaceutical manufacturing sector that produces medicines in all dosage forms. Local manufacturers develop and market their own brands of off-patent generics and herbal products. In 2008, the local industry supplied about 30% of domestic demand and exported to other countries, with total exports in 2008 amounting to RM 513 million (US\$ 142 million). A total of 234 pharmaceutical companies with good manufacturing practice certification were registered with the drug control authority. About 67 companies produce modern medicines and 167 companies manufacture traditional and herbal medicines.

Malaysia's intellectual property laws conform to international standards. The Intellectual Property Corporation of Malaysia was formed in 2003. Malaysia is a signatory to the Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS) and to the Patent Cooperation Treaty that protects international patents. The Patent Act 1983 under section 52 provides for compulsory licensing, section 58 for parallel importing and section 84 allows the government to override a patent in a national emergency or in the public interest. The cabinet authorized the Ministry of Health to invoke section 84 when drug suppliers failed to reduce the prices of antiretrovirals (ARVs). The government then undertook parallel importing, issued compulsory licenses and in 2005, a local manufacturer produced a triple combination ARV drug and paid royalties to the patent holder of one of the ingredients (Lamivudine).

5.8 Rehabilitation/intermediate care

Rehabilitation services are provided in most government health clinics and hospitals, such as assistance with sight and hearing disabilities, screening for autism and counselling on the management of children with special needs. Staff do outreach sessions at smaller clinics and visit parents and caregivers at home. Far fewer people are registered

for assistance with the Ministry of Health and the Department of Social Welfare, however, than the estimated population numbers with disabilities (Amar, 2008). The states, therefore, have been asked to expand their disability data collection on children to all public and private hospitals with paediatric clinics.

The National Anti-Drug Agency under the Ministry of Home Affairs runs 20 drug rehabilitation centres that receive inmates through the legal system and provide 'cold turkey' detoxification and 2 centers that provide methadone maintenance therapy. In addition, 5 cure & care clinics take patients who voluntarily seek treatment. A few private drug rehabilitation centres provide treatment and government hospitals provide medical detoxification as part of psychiatry services.

5.9 Long-term care

Malaysia has been slow to develop health and social care services for its growing elderly population (Ong, 2007), although health facilities now are responding more to the growing number of elderly. A few hospitals have engaged geriatricians and have set up geriatric services. The government promotes an intersectoral and community-based approach to help the elderly to remain living at home; for example, district and clinic-level committees plan activities and encourage healthy older people to assist the less healthy, such as through the 225 Clubs for Elders 'Kelab Warga Emas' based in government health clinics.

The Department of Social Welfare provides long-term care homes for dependent people who have no family support with outreach medical services from nearby Ministry of Health facilities. Nongovernment organizations also run long term care homes supported by government grants and community donations. Private nursing homes must register under the Private Health Care Facilities & Services Act 1988, (12 homes with 273 places in 2009) and private residential homes cater for elderly people who are able to pay.

5.10 Services for informal carers

Community services for family carers of members with special needs and the elderly are not well developed. Some Ministry of Health health clinics have begun to offer training programmes for carers.

5.11 Palliative care

A ministry directive expects government hospitals to set up palliative care units (with 6 or more beds) or teams (with 4-6 beds) but so far only 13 units and 48 teams have been established. The first palliative care unit was established in 1995 in the Queen Elizabeth Hospital in Kota Kinabalu and palliative medicine was further developed at the Selayang Hospital. Community-based palliative care is provided mainly by NGOs, such as Hospice Malaysia and the National Cancer Society of Malaysia (Penang & Sabah branches). These programmes are run mainly by volunteers, although several now employ full-time nursing staff and part-time doctors. Since these nongovernment organizations operate mainly in urban areas, the Ministry of Health needs to train more staff in rural areas in palliative care skills.

5.12 Mental health care

Psychiatric services were decentralized after the development of psychotropic drugs and a policy on community mental health was formulated in 1997. The Mental Health Act 2001 and its regulations cover services in government and private psychiatric facilities, psychiatric nursing homes and community mental health centres. They also regulate the care of those with mental disorders and the treatment and discharge of voluntary and involuntary patients. The Act sets standards for emergency services, inpatient care, residential care, electroconvulsive therapy, community services and patients' rights. Community mental health centres offer screening, diagnosis, treatment and rehabilitation. Follow-up is undertaken by the government health clinics for medications and psychosocial rehabilitation.

5.13 Oral health care

Dental care is provided through 1707 public clinics and 1435 private clinics (see Table 4.3). Services are delivered in dental clinics, school clinics and by mobile teams. Some larger centres provide specialist care in orthodontics, periodontology and restorative dentistry. Government clinics give priority to groups, such as preschoolers, schoolchildren, antenatal mothers, the elderly and disadvantaged groups (mental, physical and economic). Public care is heavily subsidized and most target groups are entitled to basic care at no charge.

One indicator of the success of the school programme is that five-year-olds in Malaysia have a lower prevalence of caries (dental decay) than those in neighbouring countries. The picture for adults is less positive, however, according to the Global Oral Health Database (WHO, 2009), as caries prevalence and DMFT status for Malaysian teenagers and for adults aged 35-44 years are higher than for their counterparts in Singapore and Thailand (WHO, 2010b). [The DMFT Index is the sum total of the number of teeth decayed (D), missing/extracted (M) or filled (F)].

Although the prevalence of oral cancer is low at 0.04% of the population, the Ministry of Health runs an oral cancer programme as oral lesions occur predominantly among particular communities; for example, the Indian ethnic group comprises about 8% of the population, yet exhibits 60% of oral cancer cases and there is also a higher prevalence among indigenous groups. Members of these communities practise risky habits associated with oral lesions, namely quid chewing and tobacco use.

5.14 Complementary and alternative medicine

Traditional healers and medicines are widely used in Asian countries and are often the first point of health care contact, so that several governments now seek to better regulate these practitioners and products (WHO SEARO, 2004). Malay, Chinese and Indian medicine, homeopathy and complementary medicines are widely used in Malaysia and there are several associations of practitioners, such as the 2000-member Chinese Physicians Association of Malaysia (Pillay, 2006). Government policies now aim to regulate, and to some extent integrate, such products, practitioners and practices. With this aim, a Traditional & Complementary Bill is being drafted. A Traditional and Complementary Medicine T/CM Standing Committee advises the Ministry of Health on policies and activities and a national policy identified five areas for intervention: practice, products, education/ training, research and international collaboration.

In relation to practice, in 2006 the Cabinet approved a limited introduction of proven safe and effective T/CM practices, with pilot T/CM units set up in three government hospitals that offer acupuncture, reflexology, naturopathy and post natal massage, with plans for two others in Kota Kinabalu and Kuching. Products are offered through a herbal medicine service in one hospital, mainly as an adjunct therapy in treating cancer, with a herbal medicine oncologist from China providing consultation

and training. Training for T/CM practitioners is undertaken in accredited institutions and practitioners must be registered to practise legally. The Ministry of Health T/CM Division organizes public education on modalities and practices and the inspectorate and enforcement section is responsible for consumer protection. More research is being promoted and Malaysia has established an electronic database, the global info-hub on integrated medicine, to improve T/CM practice and promote its integration with allopathic medicine.

5.15 Health services for specific populations

Populations with difficulties of access include the *Orang Asli* and *Penans*, the poor in urban and rural areas, estate workers and populations on small islands. The Department of Aboriginal (*Orang Asli*) Affairs provides health services in special hospitals (Hospital *Orang Asli*) and health posts, although these services are criticized as inadequate (Nicholas & Baer, 2007). Additional expenditure is required to cover needy population groups in remote areas where access to services is the most problematic and where services are the most expensive per capita to provide. Despite the challenge of remote populations, Sarawak is regarded as delivering good health care (Khoo, 2007). Two programmes are particularly notable in improving access to care: the flying doctor service; and MOH mobile health teams.

The flying doctor service (FDS) began in 1973 in Sarawak as a combined effort by the Sarawak state government, the Royal Air Force and the Sarawak health department. The FDS reaches 970 locations in Sarawak and 51 locations in Sabah and The Royal Air Force assists *Orang Asli* health services in Kelantan. Average patient attendances range from 75 000 to 95 000 per year including 300–400 emergency medical evacuation cases.

Malaysia had 193 mobile health teams providing outreach services to remote populations in 2008, such as the *Penan* people in Sarawak, where about 10 000 formerly nomadic people now are permanently settled or semi-settled in remote locations. Services include curative care, preventive care such as immunization, antenatal care, nutritional assessments of toddlers, health screening, health education, dental services and environmental sanitation.

6. Principal health reforms

6.1 Section summary

While the Ministry of Health has consolidated its primary health care facilities and upgraded its hospitals, supply has not kept pace with population growth and demand. The government has increased training places to counter shortages of health professionals, has strengthened the regulation of food and drugs safety, has stepped up its surveillance and early response to infectious disease outbreaks, is considering price regulation of pharmaceuticals, is positioning the country as a medical tourism destination and has revived the debate over more sustainable health financing methods to improve quality and access to care by maximising the potential of all health care products in both the public and private sectors.

6.2 Analysis of recent reforms

Six areas of reform over the five years (2006-2010) of the 9th Malaysian Plan (9MP) are summarized in the following sections and future developments are indicated.

6.2.1 Training more health care personnel

Malaysia is below the international norm in its population ratio of doctors, dentists, nurses and other health workers (WHO, 2010a). In response, the government has increased places in public and private education institutions, doubled numbers of nursing and medical graduates and increased post-basic and specialist training. Clinical training opportunities are now offered in most health centres and hospitals and in large private hospitals. However, serious shortages still persist, particularly in the public sector as many providers leave for the private sector or go abroad. The following strategies to recruit and retain health professionals in the public sector have had a minor impact: compulsory service terms, the recruiting of foreign professionals; reemploying retired professionals; and allowing public hospital doctors to retain some private patient fees.

6.2.2 Strengthening public health and primary health care delivery

The demographic transition (ageing and urbanization of the population) and the epidemiological transition (burden of disease shifting from infectious to noninfectious diseases) present challenges for public health and primary health care. The Malaysian society and economy were adversely affected in recent years by the resurgence of some communicable diseases, such as influenza pandemics. In response, surveillance and early intervention are being strengthened in partnership with international networks. The government has stepped up health promotion in relation to noncommunicable diseases and their risk factors, such as health warnings on tobacco advertising. The delivery of primary health care is due for reform, however, as the growth in government facilities which occurred in previous decades was mainly in rural areas. Now there are insufficient staff and a shortage of public facilities in urban areas. Primary health care services are also responding to the changing patient demography (such as increasing numbers of youth and adults and less focus on maternal and child care, given the dropping birth rate) and the shift in the burden of disease from infectious to noncommunicable, chronic diseases. Private health care has expanded to meet demand in urban areas but people must pay out of pocket to use private doctors, dentists and pharmacies. The Ministry of Health dental care focus remains more on children and preventive care rather than on the adult and older population, while high demand makes it difficult to sustain preventive approaches, especially given the shortage of dentists.

6.2.3 Rationalizing secondary and tertiary care delivery

The Ministry of Health has rationalized the distribution of its hospitals and their levels of clinical treatment; for example, specialists are assigned to six geographical regions with complex specialties located in regional (multi-state) hospitals. The government plans to build more day surgery hospitals under the 10th Malaysia Plan (10MP) and to encourage more in the private sector. The government is promoting health tourism in approved private hospitals in order to position Malaysia as a regional health care hub.

6.2.4 Regulating pharmaceutical services and food safety

Malaysia maintains international standards in pharmaceutical manufacturing given its large export and domestic markets. In the domestic market, surveillance has been intensified to combat problems

such as adulteration and counterfeiting, especially in traditional medicines and health supplements. The National Medicine Policy aims to improve the rational use of medicines through product registration, monitoring distribution and usage, advertising controls and consumer education. The high price of pharmaceuticals and over-prescribing in the private sector are major issues, however, and the government is considering whether to regulate prices. The regulation of food safety is critical for the domestic and export markets and the Ministry of Health has stepped up monitoring and testing and has harmonized legislation with Codex standards.

6.2.5 Improving health care quality and patient safety

The Ministry of Health aims to roll out information communication technology across all health care providers in order to improve the quality and efficiency of health care. Progress is slow as this has proved to be a huge technical and political task that requires more funds for infrastructure and workforce training. Strategies to improve health care quality include developing and monitoring standards and guidelines, reporting adverse incidents, monitoring quality indicators in government facilities, conducting peer reviews and setting up the National Patient Safety Council. The Ministry of Health is reviewing its powers under the Private Health Care Facilities and Services Act 1998 to regulate quality in the private health care sector.

6.3 Future developments – health financing

Over the last three decades, Malaysia has engaged in debates over financing principles and mechanisms (Kananatu, 2002). While some countries maintain mainly tax-funded health systems (e.g. United Kingdom, Australia), others fund health care in a mixed approach with a large part funded through social insurance schemes, usually raised through payroll tax from public sector employees as well as from private sector employees where formal employment is established. Social health insurance schemes have been established in several South-East Asian countries: Indonesia, Philippines, Thailand, and Viet Nam (Tangcharoensathien et al, 2011).

The Malaysian public health care system built on tax-based financing and universal provision of public services is under pressure from rising expenditures (although not more than other similar economies), shortages in public services, the growth of private health care and rising

out-of-pocket payments. The government commissioned five reviews between 1985 and 1996, which recommended the establishment of a national health financing scheme, based on social health insurance principles, to pool public and private funds and to provide financial risk protection for the population. Discussions were restarted in 2000 with a range of stakeholders. While no decision was made, subsequent Malaysia Plans endorsed the need for some type of national mechanism and a project team was set to work on a design. While several proposals are being considered, by late 2011, the shape of this reform had not yet been agreed.

In 2009, the Ministry of Health proposed a health transformation concept. This proposal considered various sources of finance: general revenue from Government, payroll taxes and insurance contributions. For example, the government as an employer might cover payroll contributions for civil servants and subsidize fully services for the poor. Services covered in the benefits package and those excluded should be clearly defined and a safety net mechanism should cover high cost care that exceeds the ceiling. People could supplement the public scheme with private insurance and/or out-of-pocket payments. Reimbursement mechanisms for health providers might include global budgets, fee-for-service or pre-paid capitation. But the financing aspect of health systems is regarded as the tool to implement system-wide reforms of the health care delivery systems, and the necessary organisational changes needed to facilitate and effect transformation. The Ministry of Health established technical working groups to study all facets of a scheme in consultation with multiple stakeholders and the public.

7. Assessment of the health system

7.1 Section summary

Malaysia's total health expenditure reached 4.6% of GDP in 2009 and thus is within the range for upper middle-income countries. Successive administrators have stressed the provision of cost-effective, preventive and mainly free primary health care in public facilities, but this is now under-resourced. Private health spending has risen faster than public spending, including out-of-pocket payments, with the government share (from general revenue) just above half (55%) of health expenditure in 2009 (MNHA).

7.2 Stated objectives of the health system

The government set out ambitious goals for the health system in its 'Vision for Health': 'Malaysia is to be a nation of healthy individuals, families and communities through a health system that is equitable, affordable, efficient, technologically appropriate, environmentally adaptable and consumer-friendly. This includes emphasis on quality, innovation, health promotion and respect for human dignity, promoting individual's responsibility and community participation towards an enhanced quality of life'. The following sections assess progress in equity, health outcomes, efficiency and accountability.

7.3 Equity in financing and access

A decade ago, the Malaysian health system compared well to countries of similar economic status in building a system that produced well-being at a low cost to society (Merican & bin Yon, 2002). Public sector provision funded through general revenue produced good health care for a relatively low total cost. The goal was and still is universal access with a focus on low-cost but high-benefit preventive health care programmes. The government also provided access (with very nominal payments) to public secondary and tertiary care facilities.

Against these major achievements, however, the public system has not kept pace with population growth, especially in urban areas. The growth of the private health services means that better-off people enjoy quicker access to private health care, while poorer people must rely on government services. People with the ability to pay go to private doctors and dentists, either due to pull factors, such as perceived good quality, responsive care and choice of doctor, or push factors, such as avoiding long waits in public clinics and hospitals and limited public clinic working hours. A two-tier system has developed with the private sector serving mostly urban regions and better-off patients with fee-for-service curative primary and secondary care, while the public sector maintains its social equity mission, including primary care services for poor and rural populations. The perception of the public, rightly or wrongly, is that private health services are of higher quality than public service (Quek, 2009). Policy concerns include the growth of a two-tier system (public care for the poor and private care for the rich), an outflow of professionals from the public to the private sector, the lack of integration between public and private health care, poor regulation on quality of care and the absence of private sector engagement in population health activities, such as reporting of infections, as well as more promotive preventive care.

Malaysia's total health expenditure reached 4.4% of GDP in 2010, which is not high compared to other upper middle-income countries. The government is concerned about sustainable health financing, since total health expenditure (THE) increased by an average annual growth rate of about 9% between 2005 and 2010. A key equity concern is that out-of-pocket payments by patients has been at an average value of 34% of THE from 2005–2010. Out-of-pocket expenditure is a regressive method of financing and a safety net is needed to ensure fairness in financing and protection of the vulnerable, especially the poor (WHO, 2002). The government is in the process of examining health financing options, including a safety net to cover services not funded by the government. A counter argument is that Malaysia's two-tier system, with virtually free public services for the poor and user charges in the private sector for the better off, is reasonably progressive (Yu et al, 2008). But the concern is whether this is getting less progressive over time, coupled with limited funding of prostheses from public financing and long waiting times.

The Ministry of Health is rightly proud of the achievements of its comprehensive primary health care system in reaching the poor, people

in rural areas and different ethnic groups and in reducing infectious diseases and helping increase life expectancy. The majority of hospital beds and admissions are to the public sector, where fees are highly subsidized particularly for third-class ward admissions. The more ambitious goals have not been fully realized, however, such as integration across health services, holistic patient management and fewer hospital admissions. Barriers include insufficient facilities and services to cope with increasing patient numbers, shortages of primary health care staff and insufficient medical equipment to undertake additional diagnostic and treatment procedures. Government clinics are under strain from growing public demand and insufficient supply; for example, a shortage of clinics in densely populated areas, such as the Klang Valley, means that people face long waiting times. The population ratio for MOH health clinics of 1:33 600 has not met the target of 1:20 000. The lack of health professionals, particularly doctors, is a major problem, with over half of Ministry of Health positions unfilled in 2008 and an average of about only one doctor for each of the 802 government health clinics.

7.4 Health outcomes

Population health outcomes have improved dramatically over recent decades. Life expectancy at birth rose by ten years between 1970 and 2008, from 61.6 to 71.6 years for men and from 65.6 to 76.4 years for women. Infant mortality dropped substantially over that period from 39.4 to 6.4 deaths per 1000 live births. Health services are in the process of responding to an epidemiological transition with causes of mortality shifting from communicable to noncommunicable diseases. Health outcome disparities between urban and rural states have been narrowed, with accompanying improvements in disparities between ethnic groups, with significant improvements in life expectancy and in other population health indicators, such as maternal and infant mortality. Data on health outcomes and service use generally are presented in government documents in terms of state, rural and urban differences, however, rather than ethnic and income differences.

Noncommunicable diseases, such as heart disease and diabetes, and their associated risk factors, such as obesity and inactivity, are increasing and have become major health problems, as in many countries. Campaigns promoting positive health behaviours by individuals are insufficient to counter these trends, since addressing complex causes requires a whole-of-system approach and also changes

to the environment to support healthy choices, such as controls on the advertising of obesogenic foods, especially junk food, advertising to children and urban planning that facilitates more physical activity. Smoking remains a major risk factor and the Malaysian Health Promotion Board could do more to facilitate community action for tobacco-free settings, including calling for greater transparency in government interactions with the tobacco industry.

7.5 Health system efficiency

Health costs in the tax-funded public sector are low; however, the unregulated growth of private health care is likely to increase costs in Malaysia (Ramesh, 2007). The government, therefore, is looking for ways to pool both public and private health revenue, one strategy being via a social health insurance scheme.

Resources are not cost-effectively allocated across the health system. Although the public sector caters to the bulk of the population (65% in some estimates), it is served by only 45% of registered doctors and even fewer specialists (Quek, 2009). The 2006 National Health and Morbidity Survey (NHMS III) indicated that government hospitals have four times more admissions than private hospitals, but spend only 1.25 times more. Malaysia is suffering from an acute shortage of health professionals that will take years to fix.

Public health facilities are funded mostly through historical line item budgets that do not reward cost-effective service delivery through better patient management like increasing hospital bed occupancy levels, reducing the length of stay and reducing costly adverse events and complications (such as hospital acquired infections and readmissions within 24 hours of discharge). This is because any savings or revenue gained cannot be retained at facility level. Instead these issues are addressed by various KPIs and quality assurance processes. New provider payment mechanisms to improve efficiency in both the public and the private sector are being discussed, such as shifting the bulk of hospital funding to diagnosis-related groupings (DRGs) and using capitation funding for primary care clinics rather than the fee-for-service payment method that encourages over-servicing. The lack of coordination between public and private health services results in duplication, lack of continuity and some underutilization of high-end expensive technology.

The Ministry of Health stresses cost-effective preventive services in primary care and employs more medical assistants and nurses than expensive doctors. It also plans to shift more care from expensive inpatient hospital care for some conditions and procedures to less expensive and more efficient day care hospital in line with international trends. The Ministry of Health sees information communication technology (ICT) as an important mechanism for improving the quality and efficiency of health services, but ICT is expensive and its roll-out has been problematic and slow.

7.6 Governance

The government is considering whether to give public providers more autonomy to manage their own activities, budgets and to retain any residual claims so as to make them more accountable for achieving efficient and effective outcomes. The Ministry of Health has internal accountability mechanisms within its hierarchical system of management, but there is little external accountability and very little transparency, such as the publication of clinical performance indicators. Malaysia has no independent complaints procedures available to the public, such as ombudsmen and the professional boards lack external accountability to the state and to the public. The private sector is accountable only to its investors and customers, with as yet, few external accountability requirements.

8. Conclusions

Malaysia offers several lessons, both positive and negative, for other health care systems.* First, Malaysia has achieved impressive health gains for its population with a low-cost health care system that provides universal and comprehensive services, funded through general revenue. Second, Malaysia has developed a much-admired model of comprehensive public primary health care that includes outreach services for remote areas. Third, with 75% of hospitals within the highly subsidized public sector, the population enjoys fairly good financial risk protection from ill health. Fourth, like many other countries, Malaysia could not produce an adequate supply of health professionals, which undermines public sector services in particular. Fifth, the long-standing public policy of universal health coverage has created a sense of entitlement to free health services so that the Ministry of Health has found it difficult to collect or to raise co-payments for public goods and services. Sixth, Malaysia has been unable to integrate and regulate its rapidly growing private health sector that has expanded in urban areas and allows those with higher purchasing power to choose private rather than public doctors and hospitals, leaving the public sector with poorer and sicker patients.

There are several future challenges. The equity challenge is that the growth of out-of-pocket payments is undermining the fundamental principle upon which Malaysia's health care system has been based – that access to quality health care should not depend upon ability to pay. Spending projections suggest that the two-tiered Malaysian health care system will become more pronounced with rising out-of-pocket payments, where the poor use government services and middle and higher-income people opt for private services. An argument in favour of a two-tier system, however, is that while the private sector concentrates on illness management among better-off urban people (thus reducing

* These conclusions are based upon the data and evidence contained in this report, which was written in 2010, and at the time of its release, is in some instances out-of-date.

government outlays on this group), this frees the public sector to provide health care for the poor. The opting out by the 'better off' from public health services, thus, could improve the capacity of the public health system to extend increased access to poor people.

The financing challenge is to agree on a scheme for fair and sustainable funding, whether through an increased share of general revenue or through the establishment of a social health insurance scheme. Malaysia has the capacity to expand its tax-funded health care system. The government is also considering an alternative strategy of setting up a long-debated national social health insurance scheme, but by the end of 2011, the government had reached no decision. A related financial challenge is to institute payment methods for health care providers that reward cost-effective service delivery. The regulatory challenge is that the government needs to strengthen its governance of the private sector in order to ensure quality and safety and fair charges. It also needs to establish more transparent regulation of clinical performance, as the Ministry of Health, as the major employer, is not an independent and external regulator. The structural challenge is to determine the balance between public and private sector delivery and to engage in a more productive partnership between public and private sectors. The administrative challenge is to consider whether a centralized health system has served its purpose or whether the community would be better served by more decentralized and responsive public facilities.

As the country approaches developed nation status, as demographic and epidemiological transitions continue and as new technology expands the possibilities for intervention, the demand for health care by the population will continue to rise. Increasing affluence will heighten expectations for more care of even higher quality. The government will need to address the growing concerns of equity, efficiency, budgetary constraints with the rising total health care costs and also balance conflicting policy principles. Pressures are building up for health reform in Malaysia looking towards the year 2020 and beyond.

9. Appendices

9.1 References

Abdullah, Nik Rosnah Wan (2007). 'Regulating Malaysia's Private Health Care Sector' in Leng CH and Barraclough S (eds) *Health Care in Malaysia: The dynamics of provision, financing and access* London and New York: Routledge.

Acuin C et al (2011) 'Maternal, Neonatal, and Child Health in Southeast Asia: Towards Greater Regional Collaboration' *Health in Southeast Asia* 2. *The Lancet* 377(5 February): 516-525.

Amar HSS (2008) 'Meeting the Needs of Children with Disability in Malaysia' *Medical Journal of Malaysia* 63(1): 1-7.

Association of Private Hospitals of Malaysia (2011) APHM website. <http://www.hospitals-malaysia.org/portal/index.asp> accessed 7 July 2011.

Babar ZUD, Ibrahim MIM, Singh H, Bukahri NI, Creese A (2007). Evaluating Drug Prices, Availability, Affordability, and Price Components: Implications for Access to Drugs in Malaysia. *PloS Medicine*, 4:3.

Chee, Heng Leng and Barraclough, Simon (2007a). 'Introduction: The Transformation of Health Care in Malaysia' in Chee HL and Barraclough S (eds) *Health Care in Malaysia: The Dynamics of Provision, Financing and Access* London and New York: Routledge.

Chee Heng Leng, Barraclough, Simon (2007b) 'The Growth of Corporate Health Care in Malaysia' in Chee HL and Barraclough S (eds) *Health Care in Malaysia: The Dynamics of Provision, Financing and Access* London and New York: Routledge.

Chongsuwanvong V et al (2011) 'Health and Health-care Systems in South-East Asia: Diversity and Transitions' *Health in South-East Asia* 1. *The Lancet* 377(29 January): 429-437.

Coker R et al (2011) 'Emerging Infectious Diseases in Southeast Asia: Regional Challenges to Control' Health in Southeast Asia 3. The Lancet 377(12 February): 599-609.

Dans A et al (2011) 'The Rise of Chronic Non Communicable Diseases in Southeast Asia: Time for Action' Health in Southeast Asia 6. The Lancet 377(19 February): 680-689.

Department of Statistics (2005). Household Income and Expenditure Survey 2004-2005. Kuala Lumpur, Department of Statistics.

Department of Statistics (2009) [website]. 'Time Series Data – Population Statistics'. Malaysia, Department of Statistics (http://www.statistics.gov.my/portal/index.php?option=com_content&view=article&id=551&Itemid=67&lang=en, accessed 24 August 2010).

Department of Statistics (2011) [website]. Kuala Lumpur, Department of Statistics (<http://www.statistics.gov.my>, accessed 24 January 2011).

Durrani H and Khoja S (2009) 'A Systematic Review of the Use of Telehealth in Asian Countries' Journal of Telemedicine and Telecare 12: 175-181.

Economic Planning Unit (2009) [website]. The Malaysian Economy in Figures. Kuala Lumpur, Economic Planning Unit, Prime Minister's Department (<http://www.epu.gov.my>, accessed 24 August 2010).

Gomez ET and Jomo KS (1999) Malaysia's Political Economy: Politics, Patronage and Profits. Cambridge: Cambridge University Press.

Huang MSL and Taib MNM (2007) 'HIV/AIDS Health Care Policy and Practice in Malaysia' in Chee HL and Barraclough S (eds) Health Care in Malaysia: The Dynamics of Provision, Financing and Access London and New York: Routledge.

Hussein, RH (n.d.) Asia Pacific Region Country Health Financing Profile: Malaysia. Kuala Lumpur, World Health Organization.

Internet World Statistics (2010) [website] Malaysia Internet Usage and Telecommunication Report, 24th June 2010. <http://www.internetworldstats.com/asia/my.htm> accessed 29 September 2010).

Jeong, Hyoung-sun and Rannan-Eliya, Ravi P (2010) 'SHA-Based Health Accounts in Twelve Asia-Pacific Economies: A Comparative Analysis'. SHA Technical Paper 10, Seoul: OECD/Korea Policy Centre.

Kananatu K (2002). Healthcare Financing in Malaysia. *Asia Pacific Journal of Public Health*, 14:23-25.

Kanchanachitra C et al (2011) 'Human Resources for Health in Southeast Asia: Shortages, Distributional Challenges, and International Trade in Health Services' *Health in Southeast Asia* 6. *The Lancet* 377(26 February): 769-781.

Khoo KJ (2007) 'Health Care in Sarawak: Model of a Public System' in Chee HL And Barraclough S (Eds) *Health Care in Malaysia: The Dynamics of Provision, Financing and Access*. London and New York: Routledge.

Kit LS (2002). Emerging and Re-Emerging Diseases in Malaysia. *Asia Pacific Journal of Public Health*, 14:6-8.

Law CW, Roslani AC, Ng LLC (2009) 'Treatment Delay in Rectal Cancer' *Medical Journal of Malaysia* 64(2): 163-166.

Malaysia Healthcare (2010) [website] Reasons to Choose Malaysia as a Health Tourism Destination. <http://www.myhealthcare.gov.my> accessed 7 July 2011.

Malaysia National Health Accounts (2009). *Health Expenditure Report (2007-2008)*. Kuala Lumpur, National Health Accounts Unit, Planning and Development Division, Ministry of Health Malaysia.

Malaysia National Health Accounts (2008). *Health Expenditure Report (1997-2008)*. Kuala Lumpur, National Health Accounts Unit, Planning and Development Division, Ministry of Health Malaysia.

Merican HMI, Yon bin R (2002) Health Care Reform and Changes: The Malaysian Experience. *Asia Pacific Journal of Public Health*, 14(1):17-22.

Ministry of Health (2010). *Indonesia Health Profile 2010*. Ministry of Health Indonesia. Accessed on November 2011 from [<http://www.depkes.go.id/downloads/publikasi/icp2010.pdf>]

Ministry of Health (1972). Dental Epidemiological Survey of School Children in West Malaysia 1970-1971. Kuala Lumpur, Dental Division, Ministry of Health Malaysia.

Ministry of Health (1972a). Annual Report. Kuala Lumpur, Ministry of Health Malaysia.

Ministry of Health (1980). Annual Report. Kuala Lumpur, Ministry of Health Malaysia.

Ministry of Health (1986). National Health and Morbidity Survey I. Kuala Lumpur, Ministry of Health Malaysia.

Ministry of Health (1988). Dental Epidemiological Survey of School Children in Peninsular Malaysia. Kuala Lumpur, Dental Division, Ministry of Health Malaysia.

Ministry of Health (1990). Annual Report. Ministry of Health Malaysia, Kuala Lumpur.

Ministry of Health (1996). National Health and Morbidity Survey II. Kuala Lumpur, Ministry of Health Malaysia.

Ministry of Health (1997a). Telemedicine Flagship Application, Malaysia's Telemedicine Blueprint : Leading Health Care into the Information Age. Kuala Lumpur, Ministry of Health Malaysia.

Ministry of Health (1997b). Report of the Second National Health and Morbidity Survey Conference. Kuala Lumpur, Ministry of Health Malaysia.

Ministry of Health (1998). National Oral Health Survey of School Children. Kuala Lumpur, Oral Health Division, Ministry of Health Malaysia.

Ministry of Health (2000a). National Oral Health Survey of Adults 2000 (NOHSA). Kuala Lumpur, Oral Health Division, Ministry of Health Malaysia.

Ministry of Health (2000b) Health Facts 2000. Kuala Lumpur, Health Informatics Centre, Ministry of Health Malaysia.

Ministry of Health (2003). Malaysian Adult Nutrition Survey. Kuala Lumpur, Ministry of Health Malaysia.

Ministry of Health (2004). Malaysian Burden of Disease and Injury Study. Kuala Lumpur, Ministry of Health Malaysia.

Ministry of Health (2006). National Health and Morbidity Survey III, 2006 (NHMS III). Kuala Lumpur, Ministry of Health Malaysia.

Ministry of Health (2007a). Statistics on Medical Devices. Kuala Lumpur, Engineering Services Division, Medical Device Bureau and Clinical Research Centre, Ministry of Health.

Ministry of Health (2007b). National Medicines Policy. Kuala Lumpur, Ministry of Health Malaysia.

Ministry of Health (2008a). Dentistry of Oral Health. Kuala Lumpur, Oral Health Division, Ministry of Health Malaysia.

Ministry of Health (2008b). Patient Empowerment in Malaysia: The Doctor's Perspective. Kuala Lumpur, Ministry of Health Malaysia.

Ministry of Health (2008c). Annual Report. Kuala Lumpur, Ministry of Health Malaysia.

Ministry of Health (2008d). Health Facts 2008. Kuala Lumpur, Health Informatics Centre, Ministry of Health Malaysia.

Ministry of Health (2009a). Milestones of Dentistry in Malaysia. Kuala Lumpur, Oral Health Division, Ministry of Health Malaysia.

Ministry of Health (2009b). Health Facts 2009. Kuala Lumpur, Health Informatics Centre, Ministry of Health Malaysia.

Ministry of Health (2010a). Operating Budget. Kuala Lumpur, Ministry of Health Malaysia.

Ministry of Health (2010b). Dental Facilities 1970-2009. Kuala Lumpur, Health Informatics Centre, Ministry of Health Malaysia.

Ministry of Health (2010c) Health Facts 2010. Kuala Lumpur, Health Informatics Centre, Ministry of Health Malaysia.

Ministry of Health. Thailand Health Profile Report 2005-2007. Ministry of Health, Thailand. Accessed on November 2011 from [http://www.moph.go.th/ops/thp/index.php?option=com_content&task=view&id=6&Itemid=2]

Morrow M, Barraclough S (2003). Tobacco Control and Gender in Southeast Asia. Part 1: Malaysia and the Philippines. *Health Promotion International*, 18(3):255-264.

National Economic Advisory Council (NEAC) (2010). National Economic Advisory Council Report 2010: New Economic Model for Malaysia, Part 1. Kuala Lumpur, National Economic Advisory Council.

NHHES (1999). National Household Health Expenditure Survey 1996: Final Report. Kuala Lumpur, Department of Social and Preventive Medicine, Faculty of Medicine, University of Malaya.

Nicholas C and Baer A (2007) 'Health Care for the Orang Asli: Consequences of Paternalism and Non-Recognition' in Chee HL and Barraclough S (eds) *Health Care in Malaysia: The Dynamics of Provision, Financing and Access* London and New York: Routledge.

Norlida A, Wan MN, Khairiyah AM, Natifah CS, Mahrusah J, Azizah Y, Rosli I (2005). Effects of Cessation of Fluoridation in Kelantan and Terengganu on Caries Experiences of 11- to 12-year-olds. Paper presented at the National QA Convention 2005, Subang Jaya, Selangor, 14-15 November 2005.

OECD (2011) [website] Health Data 2011. http://www.oecd.org/document/30/0,3746,en_2649_37407_12968734_1_1_1_37407,00.html. accessed 25 August 2011.

Ong FS (2007) 'Health Care and Long-Term Issues for the Elderly' in Chee HL and Barraclough S (eds) *Health Care in Malaysia: The Dynamics of Provision, Financing and Access* London and New York: Routledge.

Phua Kai Hong, (2002). Towards a Comparative Analysis of Health Systems Reforms in the Asia-Pacific Region. *Asia-Pacific Journal of Public Health*, 14(1):9-16.

Pillay MS (2006) 'Traditional and Complementary Medicine in Malaysia' Presentation to the International Conclave on Traditional Medicine, New Delhi, India 16-17 November 2006.

Quek D, (2009). The Malaysian Health Care System: A Review. Kuala Lumpur, Malaysian Medical Association.

Ramesh M (2007). 'Malaysian Health Policy in Comparative Perspective' in Chee HL and Barraclough S (Eds) *Health Care in Malaysia: The Dynamics of Provision, Financing and Access* London and New York: Routledge.

Sharifa Ezzat WP, Azimatun NA, Jasmin NM, Aljunid S (2009) 'Waiting Times for Elective Orthopaedic Surgeries in a Teaching Hospital and Their Influencing Factors' *Medicine Health* 4: 53-60.

Schellekens P (2011) 'Whither Malaysia's Brain Drain?' World Bank, Malaysia Economic Monitor 21 April 2011 (<http://www.worldbank.org/my>) Accessed 1 July 2011.

Tangcharoensathien V et al (2011) 'Health-financing Reforms in Southeast Asia: Challenges in Achieving Universal Coverage' *Health in Southeast Asia* 6. The Lancet 377(5 March): 863-873.

United Nations High Commissioner for Refugees (2011). Malaysia: 2011 UNHCR Country Operations Profile. <http://www.unhcr.org/my> [accessed 4 August 2011].

United Nations Development Program (UNDP) (2009). Human Development Report 2009. New York, Palgrave MacMillan.

Van Doorslaer E, O'Donnell O, Rannan-Eliya R et al (2006) 'Effects of Payments for Health Care on Poverty Estimates in 11 Countries in Asia: An Analysis of Household Survey Data' *The Lancet* 368: 1357-1364.

Van Doorslaer E, O'Donnell O, Rannan-Eliya R et al (2007) 'Catastrophic Payments for Health Care in Asia' *Health Economics*, 16: 1159-1184.

World Bank (2010) [website]. World Development Indicators 2010. Washington, World Bank (<http://data.worldbank.org/data-catalog/world-development-indicators/wdi-2010>, accessed 22 September 2010).

World Bank (2011) Malaysia Economic Monitor, April 2011 <http://web.worldbank.org/>. [accessed 2 August 2011].

World Health Organization (WHO) (2002). Country Report for Malaysia, Volume IV. World Health Organization, Geneva.

World Health Organization (WHO) (2003). Malaysian Burden of Disease and Injury Study. Geneva, World Health Organization.

World Health Organization (WHO) (2006). Growth Standard 2006. Geneva, World Health Organization.

World Health Organization (WHO) (2008a). World Health Report: Primary Health Care. Geneva, World Health Organization.

World Health Organization (WHO) (2009).[website] Oral Health Country/Area Profile Program. World Health Organization. ([www.whocollab.od.mah.se / index.html](http://www.whocollab.od.mah.se/index.html) accessed on 12 March 2009)

World Health Organization (WHO) (2010a). World Health Statistics 2010. Geneva, World Health Organization.

World Health Organization (WHO) (2010b). [website]. Global Oral Health Database. World Health Organization, Geneva. http://www.who.int/oral_health/databases/global/en/index.html/ accessed 21 September 2010).

World Health Organization (WHO) (2010c). Increasing Access to Health Workers in Remote and Rural Areas Through Improved Retention: Global Policy Recommendations. Geneva, WHO.

World Health Organization (WHO) (2011). World Health Statistics 2011. Geneva, World Health Organization

World Health Organization (WHO) (2011) [website]. National Health Accounts: Country Information. World Health Organization, Geneva. Accessed on November 2011 [<http://www.who.int/nha/country/en/index.html>]

World Health Organization Western Pacific Region, Ministry of Health Malaysia (2001). The Structure and Sustainable Delivery of Essential Public Health Functions in the Western Pacific Region. Kuala Lumpur, Ministry of Health Malaysia.

World Health Organization Western Pacific Region (2009). WPRO Statistics. Manila, World Health Organization.

World Health Organization Western Pacific Region (2010a). [website] Ninth Malaysia Plan 2006-2010. Manila, World Health Organization. <http://www.wpro.who.int/NR/rdonlyres/BECB2D43-06FC-4DAE-B0BC-3F29EC8E500A/0/Malaysiatotalplan.pdf>

World Health Organization Western Pacific Region (2010b). [website]. Country Health Information Profile – Malaysia. World Health Organization, Manila. (<http://www.wpro.who.int/countries/2010/maa/> accessed 21 September 2010).

World Health Organization South East Regional Office (2004). Review of Traditional Medicine in the South East Asia Region. New Delhi, SEARO.

Yu CP, Whynes DK, Sach TH (2008). Equity in Health Care Financing: The Case of Malaysia. *International Journal for Equity in Health*, 7:15-31.

Zailan A (2008). National Health Accounts (1997-2006). Paper presented at the Malaysia National Health Accounts Workshop, 23-24 June 2008.

9.2 Useful Malaysian websites

www.moh.gov.my

www.pharmacy.gov.my

www.bpfk.gov.my

www.mida.gov.my

www.treasury.gov.my

www.myhealthcare.gov.my

9.3 HiT methodology and production process

HiTs are produced by country experts in collaboration with an external editor and the Secretariat of the Asia Pacific Observatory, based in WHO's Western Pacific Regional Office in Manila. HiTs are based on a template developed by the European Observatory on Health Systems

and Policies that, revised periodically, provides detailed guidelines and specific questions, definitions, suggestions for data sources and examples needed to compile reviews. While the template offers a comprehensive set of questions, it is intended to be used in a flexible way to allow authors and editors to adapt it to their particular national context. The most recent template is available online at: <http://www.euro.who.int/en/home/projects/observatory/publications/health-system-profiles-hits/hit-template-2010>.

Authors draw on multiple data sources for the compilation of HiTs, ranging from national statistics, national and regional policy documents to published literature. Data are drawn from information collected by national statistical bureaux and health ministries. Furthermore, international data sources may be incorporated, such as the World Development Indicators of the World Bank.

In addition to the information and data provided by the country experts, WHO supplies quantitative data in the form of a set of standard comparative figures for each country, drawing on the Western Pacific Country Health Information Profiles (CHIPs) and the WHO Statistical Information System (WHOSIS). HiT authors are encouraged to discuss the data in the text in detail, including the standard figures prepared by the Observatory staff, especially if there are concerns about discrepancies between the data available from different sources.

The quality of HiTs is of real importance since they inform policy-making and meta-analysis. HiTs are the subject of wide consultation throughout the writing and editing process, which involves multiple iterations. They are then subject to the following.

- A rigorous review process consisting of at three stages. Initially the text of the HiT is checked, reviewed and approved by the APO Secretariat. It is then sent for review to at least two independent experts, and their comments and amendments are incorporated into the text, and modifications are made accordingly. The text is then submitted to the relevant ministry of health, or appropriate authority, and policy-makers within those bodies are to check for factual errors within the HiT.
- There are further efforts to ensure quality while the report is finalized that focus on copy-editing and proofreading.
- HiTs are disseminated (hard copies, electronic publication, translations and launches). The editor supports the authors throughout the

production process and in close consultation with the authors ensures that all stages of the process are taken forward as effectively as possible.

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The Asia Pacific Observatory on Health Systems and Policies is a collaborative partnership which supports and promotes evidence-based health policy making in the Asia Pacific Region. Based in WHO's Regional Office for the Western Pacific it brings together governments, international agencies, foundations, civil society and the research community with the aim of linking systematic and scientific analysis of health systems in the Asia Pacific Region with the decision-makers who shape policy and practice.



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