ACHIEVING BETTER HEALTH 20

I. INTRODUCTION

20.01 Safeguarding and improving the health status of individuals, families and communities were accorded higher priority during the Eighth Plan period. In this regard, efforts were undertaken to enhance the delivery system and to improve the scope and quality of health care. Emphasis was given to integrating the provision of health care services through greater cooperation between the public and private sectors as well as non-governmental organisations (NGOs).

20.02 Building on past investments in establishing an integrated and comprehensive health system, the Ninth Plan period will focus on achieving better health through consolidation of health services. Towards this end, there will be a shift from the traditional focus on providers, facilities and illnesses to consumer empowerment, health promotion, lifelong wellness as well as disease prevention and control. Delivery of health care will be further improved through greater integration, enhancement in the quality of services and resource optimisation.

II. PROGRESS, 2001-2005

20.03 During the Plan period, the overall objective of improving the health status of the population was continued through increased integration and smart partnerships among health care providers. Health facilities and scope of services were expanded to increase accessibility, affordability and equity. Various health programmes were implemented, in tandem with epidemiological and demographic changes as well as increasing public expectations.

Public Health Services

20.04 The public health services programme continued to focus on prevention and control of diseases. Better integration and coordination with the private sector and NGOs enabled various activities to be implemented effectively. *Health promotion* activities were intensified to further increase public awareness

and knowledge on health and health-related issues. To allow for better coordination and integration in the implementation of health promotion activities, the Health Promotion Foundation, comprising the public and private sectors, NGOs and consumers was formed in 2002. A healthy lifestyle campaign with the theme *Be Healthy for Life* was implemented in 2003. The campaign focused on four elements, namely healthy eating, exercise and physical fitness, abstinence from smoking and stress management.

20.05 The coverage and scope of the *immunisation* programme for children aged one year and below was further improved, as shown in *Table 20-1*. Full coverage of the Bacille Calmette-Guerin (BCG) immunisation was achieved while that of triple antigen vaccine for diphtheria, tetanus and pertussis improved from 94.4 per cent in 2000 to 99.8 per cent in 2005. To further reduce morbidity and mortality among children against vaccine-preventable diseases, new vaccines were incorporated as part of the childhood immunisation programme in July 2002 and provided free in all government facilities. These included the haemophilus influenza B (HiB) and the combined mumps, measles and rubella (MMR) vaccines. In addition, the National Measles Vaccination Programme implemented in 2004 for children aged 7-15 years, achieved coverage of 93.9 per cent. These efforts resulted in the incidence of vaccine-preventable diseases such as whooping cough and measles being reduced while that of poliomyelitis was eliminated.

TABLE 20-1

IMMUNISATION COVERAGE IN MINISTRY OF HEALTH CLINICS, 2000 AND 2005

(% of Population)

Type of Immunisation (under one year)	*2000*	*2005*
BCG	*100.0*	*100.0*
Diphtheria, tetanus and pertusis	*94.4*	*99.8*
Hepatitis B (3rd dose)	*94.4*	*95.0*
Measles	*86.2*	*95.0*
Polio (3rd dose)	*93.4*	*94.0*

Source: Ministry of Health

20.06 The implementation and strengthening of programmes and activities to contain the spread of human immunodeficiency virus/acquired immunodeficiency syndrome (HIV/AIDS) continued to be undertaken. These included education and awareness programmes conducted in schools, health care facilities and work places as well as through the mass media. The mother-to-child transmission (MTCT) programme that involved screening of pregnant women attending government antenatal clinics continued to be implemented. Women found to be HIV-positive were given post-test counselling and free anti-retroviral treatment.

20.07 During the Plan period, effective and efficient response mechanisms were established to deal with the outbreaks of diseases due to emerging and unknown pathogens, such as avian flu and the severe acute respiratory syndrome (SARS). These included the Infectious Disease Surveillance Section in the Ministry of Health in 2001 as well as the Infectious Disease Research Centre and a bio-safety level three laboratory (P3 Lab) at the Institute of Medical Research (IMR) in 2001 and 2002, respectively. In addition, the development and implementation of electronic reporting of notifiable diseases through the communicable disease control information system in all government hospitals and health offices in 2005 further strengthened the surveillance of these diseases.

20.08 The prevention and control of *non-communicable diseases* was included as an element in the provision of basic health care, due to its increasing trend caused by the changing pattern of diseases and lifestyle activities, as shown in *Table 20-2*. Towards this end, all health clinics were provided with the necessary facilities for screening, early diagnosis and appropriate treatment to ensure optimal management of these diseases. Specific and standard guidelines on the management of diabetes, hypertension as well as cardiovascular diseases were also developed and implemented in all health facilities. Cancer prevention and control activities, including screening for breast and cervical cancers were undertaken at the primary level.

TABLE 20-2

SELECTED NON-COMMUNICABLE DISEASES AT MINISTRY OF HEALTH FACILITIES, 2000 AND 2005

Type of Disease	*Number of Discharges*		*Number of Deaths*	
	2000	*2005*	*2000*	*2005*
Hypertensive Disease	32,886	38,445	155	180
Ischaemic Heart Disease	33,623	39,594	2,556	2,948
Other Heart Diseases	17,598	25,362	2,406	2,299
Cerebro-Vascular Disease	13,868	16,896	2,936	3,209
Diabetes Mellitus	27,179	39,762	323	402
Injury	157,823	145,127	2,689	2,661
Suicide and Parasuicide	1,837	2,482	151	156
Cancer	40,244	52,593	2,832	3,800

Source: Ministry of Health

20.09 Implementation of the *occupational safety and health programme* continued to be emphasised through the creation of a safer and healthier work place and culture. Procedures were introduced for the notification of occurrence of occupational diseases and incidents such as accidents, pesticide and chemical

poisoning, skin and lung diseases as well as noise-induced hearing loss. A total of 52 sentinel clinics was identified to enable early warning for deteriorating air quality thus facilitating the early introduction of appropriate health interventions.

20.10 The National Nutrition Policy was formulated in 2003 to ensure public access to safe and quality food regardless of location as well as ascertain that food is nutritious for optimal growth, development and the health of the family. *Nutrition* programmes for the prevention and control of nutritional excesses and deficiencies as well as promotion of healthy eating were further enhanced. In this regard, the Food Regulations 1985 was amended in 2004 to include the implementation of mandatory labelling of food content with relevant nutrition information to assist consumers in making informed choices when purchasing food products.

20.11 Various activities were implemented under the *food safety and quality programme* to enhance consumer health and ensure the adoption of an integrated approach throughout the total food production process, that is, from farm to table. In this regard, the National Food Safety Policy and Action Plan were formulated in 2004 to provide direction and guidance and standards on the production process to relevant agencies in the public and private sectors. The implementation of the Food Safety Information System of Malaysia (FoSIM), a comprehensive computerised web-based system, linking the 36 entry points and 11 food quality control laboratories in the country facilitated the inspection of food imports and ensured adherence to food safety regulations.

20.12 *Oral health* activities were implemented to promote awareness on the importance of good oral health practices for improved quality of life. To prevent tooth decay, the fluoridation of water supply continued to be undertaken. In this regard, nine water treatment plants were installed with fluoride feeders in the states of Kedah and Perak, bringing the total of plants fitted with feeders to 249 out of the 440 plants. A comprehensive dental health care programme for school children, aimed at the early identification and treatment of dental problems, continued to be implemented during the Plan period benefiting more than 90 per cent of primary school children.

20.13 During the Plan period, the *water supply and environmental health programme* continued to be implemented. In an effort to reduce water-borne diseases, especially among the rural community, basic amenities such as safe water supply, sanitary latrines and solid waste disposal systems continued to be provided, resulting in improved coverage. In addition, the quality of public water supply continued to be monitored under the National Drinking Water Quality Surveillance Programme. Water quality in islands, resorts as well as estates was also monitored.

Medical and Health Care Services

20.14 Medical and health care services were expanded, upgraded and new programmes introduced during the Plan period. These services, comprising primary, secondary, tertiary and rehabilitative care, continued to be provided through an extensive network of hospitals as well as health and community clinics, as shown in *Table 20-3*. Although the ratio of facility to population in the rural areas generally declined due to relocation of facilities, the quality and delivery of services improved with the upgrading of facilities including the provision of diagnostic and imaging equipment. These contributed to improvements in the speed and quality of diagnosis as well as enhanced patient comfort. In addition, the increasing number of private clinics and hospitals in urban areas complemented the provision of medical care by the public sector.

TABLE 20-3

FACILITIES PROVIDED BY MINISTRY OF HEALTH, 2000 AND 2005

Type of Facility	*Number*		*Ratio of Facility to Population*	
	2000	*2005*	*2000*	*2005*
Rural Health Facilities				
Community Clinics	1,924	1,900	1 : 4,640	1 : 5,085
Health Clinics	474	495	1 : 17,506	1 : 19,520
Mobile Units[1]	204	200	1 : 43,764	1 : 48,312
Mobile Dental Clinics	8	30		
Urban Health Facilities				
Health Clinics[2]	473	462	1 : 30,797	1 : 35,638
Patient Care Services				
Hospitals	119	128	1 : 197,436	1 : 204,140
Total Beds	34,573	35,210	1 : 679	1 : 742
Dental Units[3]	2,597	3,340	1 : 9,047	1 : 7,823

Source: Ministry of Health

Notes: [1] Refers to dispensary services, village health teams, fiying doctor services and mobile dental services.
[2] Includes maternal and child health clinics.
[3] Refer to dental chairs in Government clinics.

20.15 *Primary care services* were provided through an extensive network of health and community clinics as well as mobile units in underserved areas. Efforts to enhance the quality, speed and level of care, especially in the rural areas, included the upgrading and equipping of 123 clinics with laboratory and diagnostic imaging facilities as well as the placement of family medicine specialists. In addition, the integrated clinic concept was introduced to improve the delivery of care through efficient use of human resource and making clinics more patient-friendly. Under this concept, all services were provided on a daily basis rather than the conventional session clinics.

20.16 *Secondary and tertiary care services*, which focused on curative and rehabilitative care, were delivered through the 122 public hospitals including six special medical institutions. During the Plan period, a total of 22 hospitals was built, comprising 14 new and eight replacement hospitals. The completion of new hospitals and the replacement of several existing hospitals further improved access to specialist care in the country. Towards this end, all public hospitals provided at least three essential services namely paediatrics, medicine as well as obstetrics and gynaecology (O&G).

20.17 During the Plan period, two new subspecialty services were introduced, namely emergency and palliative medicine. The introduction of emergency medicine in five regional centres further enhanced the capacity for crisis and disaster response. In addition, disaster management plans were formulated and hospital emergency departments upgraded. In view of the increasing number of chronic and terminal illnesses and the need for proper management, palliative medicine was introduced as a subspecialty. Hospital Selayang in Selangor was designated as the referral centre for palliative care, with services also being provided in 10 state hospitals. In addition, the establishment of the palliative care network in the Klang Valley with the cooperation of NGOs provided enhanced access to palliative care.

20.18 Accessibility to cardiology, cardiothoracic and cardiac rehabilitation services were further improved during the Plan period. More specialists were placed at regional cardiac centres in Hospital Kuching, Hospital Pulau Pinang and Hospital Sultanah Aminah, Johor Bahru. The scope of orthopaedic services was also expanded with the introduction of seven subspecialties at all state hospitals. These included paediatric and geriatric orthopaedics, spinal care, sports medicine and bone bank services.

20.19 Specialised services in various disciplines continued to be provided and expanded. Nuclear medicine was consolidated to include research as well as diagnostic and therapeutic services and provided in four hospitals. In addition, the procurement of two positron emission tomography (PET) scan machines in Hospital Pulau Pinang and Hospital Putrajaya further enhanced the quality of care provided. Hospital Selayang was developed as the national centre for

hepatobiliary surgery and liver transplant services were also provided during the Plan period. Hospital Putrajaya was developed as the centre for breast and endocrine services. In addition, urology services were improved with the introduction of minimal invasive surgery at Hospital Kuala Lumpur (HKL) and Hospital Sultanah Aminah, Johor Bahru in 2004.

20.20 Efforts were undertaken to maintain the quality of blood and blood products. Towards this end, the existing 59 blood screening centres were consolidated to 16 centres fully equipped with the necessary equipment. Blood bank services were further improved with the completion of the National Blood Transfusion Centre at Wilayah Persekutuan Kuala Lumpur in 2003. To ensure the provision of safe blood and blood products to patients in private hospitals, agreements were signed for the supply of these products from public facilities.

20.21 Taking cognisance of the increasing elderly population, geriatric medicine was integrated into the medical care programme. Specialist geriatric services, which were only provided at Hospital Seremban, Negeri Sembilan, were extended to HKL and Hospital Selayang. In addition, neurophysiology services were provided in five regional centres through teleneuro-consultation linkages with HKL. A stroke registry was established at HKL in 2002 to enable more effective planning of programmes for stroke patients. Efforts were also undertaken to provide improved rehabilitative care such as physiotherapy, audiology, speech and occupational therapy services for people with special needs.

20.22 During the Plan period, ambulatory care centres (ACC) were established in five state hospitals, namely Hospital Ipoh; Hospital Tengku Ampuan Rahimah, Klang; Hospital Tengku Ampuan Afzan, Kuantan; Hospital Kuala Terengganu and Hospital Pulau Pinang. Through the ACCs, day care that included medical, surgical, paediatric and endoscopic services were provided, thus reducing hospitalisation as well as congestion in hospital wards. Extended health services were provided for the elderly and people with special needs. In this regard, home care nursing was introduced on a pilot basis in three districts, namely Klang, Selangor; Kota Bharu, Kelantan and Kuala Kangsar, Perak.

20.23 Various measures were implemented to improve accessibility to specialist services. These included regular visits by specialists to hospitals without resident specialists and hospital networking where resources were pooled for optimal utilisation. A network concept, known as the Klang Valley Intensive Care Unit (ICU) Network was introduced. Under this concept, ICU beds in Hospital Kajang, HKL, Hospital Selayang, Hospital Seremban, Hospital Tengku Ampuan Rahimah, Klang and Hospital Putrajaya, were managed as one network. A similar networking arrangement for surgery and orthopaedic services was implemented in Hospital Kota Bharu, Kelantan and the surrounding district hospitals. In addition, networking for vascular surgery was also established between HKL, Hospital Kuching and Hospital Alor Setar.

20.24 Specialist *oral health* care services, including oral surgery, paediatric dentistry, periodontics and orthodontics continued to be provided. These services were expanded during the Plan period to include restorative and forensic dentistry. To cater for this expansion and to provide improved specialist care, existing dental facilities were upgraded and new hospitals with more than 108 beds were provided with oral surgery and paediatric dentistry units.

20.25 The *pharmaceutical care service*, aimed at providing optimum drug therapy through the proper preparation, manufacture, supply and control of medicines remained an integral component of the medical care programme. Information and advice on the appropriate use of pharmaceutical products were provided. The Integrated Drug Dispensing System was implemented in selected health clinics, whereby patients discharged from hospitals were able to obtain follow-up medication from these clinics that were located closer to their homes.

20.26 In line with the Plan objective of greater integration through smart partnerships in providing health care, various activities were implemented with the cooperation of the private sector and NGOs. These included the provision and procurement of services in haemodialysis, radiotherapy and diagnostic imaging from private health care providers. NGOs continued to complement Government efforts in implementing various rehabilitative and palliative care programmes to ease the suffering of terminally and chronically ill patients as well as provide support for their families.

20.27 The rapid development of the health sector that provided quality yet affordable care, created a conducive environment for the promotion of health tourism. During the Plan period, about 450,000 foreign patients obtained treatment from private hospitals for various illnesses as well as utilised diagnostic and therapeutic services such as endoscopy, haemodialysis and magnetic resonance imaging. In addition, medical screening incorporating the wellness concept, ophthalmology and endocrinology were identified as niche disciplines for the promotion of health tourism.

Human Resource Development

20.28 Measures were undertaken during the Plan period to ensure an adequate supply of human resource to support the expansion and delivery of health services. Training capacity in seven public universities and five private medical colleges was expanded to train more doctors, dentists and pharmacists. These efforts resulted in an improvement in the ratio of health personnel to population, as shown in *Table 20-4.* Although the doctor-population ratio improved from 1:1,413 in 2000 to 1:1,387 in 2005, disparities between states still remained high, as shown in *Table 20-5.* To enable the medical profession to provide higher levels of care, emphasis was given to post-graduate training in various specialty and subspecialty disciplines such as emergency, palliative and rehabilitative medicine, psychiatry, head and neck surgery as well as family medicine. A total of 1,855 doctors and 278 specialists underwent specialty and subspecialty training, respectively.

TABLE 20-4

HEALTH PERSONNEL: POPULATION RATIO, 2000 AND 2005

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

Source: Ministry of Health

Notes: [1] Includes public and private sectors.
[2] Refers to the ratio and requirement of the Ministry of Health only.

TABLE 20-5

SUPPLY OF DOCTORS BY STATE, 2005

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

Source: Ministry of Health

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

20.29 In spite of these efforts, the country continued to face shortages of medical personnel. Measures undertaken to alleviate these shortages included the recruitment of 871 foreign doctors and dentists. A total of 873 retired specialists, doctors and dentists were re-employed on contract basis. Private sector specialists were also recruited on sessional basis in public hospitals and general practitioners encouraged to serve in public health clinics. In addition, dental officers and pharmacists were required to serve three years compulsory service.

20.30 Measures were undertaken to increase the number of allied health science personnel (AHSP). In this regard, two new training colleges were established in Sg. Buloh, Selangor and Kuching, Sarawak. A total of 22,000 AHSP were trained during the Plan period. However, there were still shortages of various categories of AHSP. To ease these shortages, training of AHSP was outsourced to private institutions of higher learning. In addition, 440 AHSP were employed on contract basis. In an effort to continuously upgrade and improve the level of expertise among AHSP, post-basic training was provided in various disciplines. To ensure optimal utilisation of available resources, a total of 19,488 health attendants underwent basic clinical and administrative training to enable them to undertake multiple tasks.

Research and Development

20.31 During the Plan period, research and development (R&D) activities continued to be undertaken to strengthen, develop and support services provided by the health sector. Emphasis was given to strengthen institutional capacity and promote research in priority areas to support evidence-based practices. Towards this end, the scope of the existing five institutes under the National Institutes of Health (NIH) was streamlined and expanded to seven, thus allowing for increased focus in the following priority areas:

Scope	*Institute*
Biomedical	Institute of Medical Research (IMR)
Clinical	Clinical Research Centre (CRC)
Public health	Institute of Public Health (IPH)
Health systems	Institute of Health Systems Research (IHSR)
Health management	Institute of Health Management (IHM)
Health promotion	Institute of Health Promotion (IHP)
Natural products, vaccines and biologicals	National Institute of Natural Products, Vaccines and Biologicals (NINPVB)

20.32 Biomedical research undertaken at the IMR included cancer, cardiovascular, diabetes, nutrition and infectious diseases as well as the development and production of viral infectious clones. As a result, five patents were registered and four products were commercialised. IMR was designated as the focal point for the WHO Collaborative Surveillance Programme on Antibiotic Resistance in the Western Pacific Region and the WHO National Influenza Centre. IMR also secured WHO certification as the Centre for Global Eradication Programme for Poliomyelitis. During the Plan period, IPH conducted the National Disease Burden Study that provided a comprehensive assessment of premature mortality and morbidity attributable to diseases, injuries and various other risk factors. This Study provided information on major health challenges that formed the basis of future health programmes to promote a healthier Malaysia.

20.33 Realising the potential in Malaysia's rich biodiversity and the increasing use of traditional and complementary medicine (T/CM) as well as the need to ensure vaccine self-sufficiency, the Government approved the establishment of NINPVB. The objective of NINPVB was to transform natural products into commercialised products as well as utilise biotechnology in vaccine development for infectious diseases. In addition, NINPVB was selected as the focal point for vaccine development among the Organisation of Islamic Countries (OIC). R&D activities in vaccines and herbal medicine were undertaken in smart partnership with the private sector.

Information and Communications Technology

20.34 The delivery of health care continued to be transformed and enhanced with the utilisation of information and communications technology (ICT). During the Plan period, the teleconsultation component under the Telehealth project was implemented to enable health care providers obtain medical knowledge and information to support decision-making. In this regard, teleconsultation enabled primary care providers, especially in rural areas, to consult with specialists in urban areas, thus providing patients with higher levels of care. The scope of the Telehealth project was subsequently revised according to priority needs and implementation capabilities. Emphasis was given to the implementation of seven components, namely lifetime health records, lifetime health plan services, mass customised personalised health information and education, continuing professional development (CPD), teleconsultation, call centre/customer relation management and group data services.

20.35 The scope and implementation of the total hospital information system, an electronic system that supported the function of patient care and the services that facilitated this function, was reviewed during the Plan period. In this regard, emphasis was given to institutional computerisation for end-to-end patient management. To ensure optimal utilisation of resources in providing efficient and quality patient care, Hospital Kepala Batas in Pulau Pinang and Hospital Lahad Datu in Sabah were equipped with basic and intermediate information systems, respectively.

20.36 Efforts were undertaken to equip primary care facilities with ICT to provide health information and facilitate early disease identification and intervention. Towards this end, Teleprimary Care was launched as a pilot project in 41 sites in the states of Johor and Sarawak. Through this initiative, health care providers in rural areas were assisted in decision-making by specialists in hospitals through a system-wide clinical information and support system. In addition, to further improve the collection of data, the health management information system was upgraded to establish links with health offices at the district levels.

Governance

20.37 Efforts continued to be undertaken to ensure that the population had access to safe, comprehensive, affordable and quality care. In this regard, the Malaysian Patient Safety Council was established in 2003 to develop policies, strategies and programmes to enhance the safety of patients and medical personnel in the public sector. In addition, a surveillance system for the monitoring and control of hospital-acquired infections was introduced in all public hospitals. Quality improvement initiatives implemented included the Hospital Accreditation Certification, for which a total of 50 public and private hospitals received accreditation. The National Health Fund was established in 2002 to coordinate and provide financial assistance for patients to secure medical services from private hospitals.

20.38 Systematic regulatory control measures of pharmaceutical as well as health and personal care products were undertaken to ensure their quality, safety and efficacy. Online registration to enable speedier approval of cosmetics commenced in 2002, generic and non-generic prescription drugs in 2003 and traditional medicine in 2004. Increased surveillance, enforcement and more stringent inspection of manufacturing premises were undertaken to ensure compliance to good manufacturing practices (GMP). In order to ensure the quality and efficacy of generic prescription medicines, compulsory bioequivalence studies were conducted on products containing specified active ingredients.

20.39 Post-marketing surveillance continued to be undertaken to counter the availability of counterfeit, adulterated and substandard pharmaceutical products. In addition, to streamline the manufacture, import, registration and sale of genuine pharmaceutical products, including over-the-counter external personal care and traditional products as well as health supplements, the Government embarked on the phased implementation of the hologram security device.

20.40 Health technology assessment (HTA) continued to be undertaken to ensure the use of safe and appropriate technology that was evidence-based. In this regard, it was mandatory for HTA to be carried out prior to acquisition of all medical equipment involving new technologies costing more than RM200,000 per unit. The extensive work in promoting evidence-based policy and decision-making through HTA resulted in Malaysia being designated as the WHO Collaborating Centre for Evidence-based Practice in Healthcare for the Asia Pacific region in 2004.

20.41 The provision of accessible and affordable health care through a comprehensive network of facilities and the implementation of various programmes resulted in improved health status of the Malaysian population. The indicators, as shown in *Table 20-6*, were comparable with that of developed countries.

TABLE 20-6

SELECTED INDICATORS OF HEALTH STATUS, 2000 AND 2005

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

Source: Ministry of Health

III. PROSPECTS, 2006-2010

20.42 Health is an important asset in the development of human capital. During the Ninth Plan period, while the Government will continue to provide facilities and implement programmes to improve the health status of the population, greater individual responsibility is crucial for achieving better health. Towards this end, efforts will be undertaken to promote lifelong wellness as a proactive approach to maintain health, reduce the disease burden and harness resources available for the optimum benefit of the population. Emphasis will also be given to the consolidation and integration of services to further improve efficiency, quality, accessibility and equity in health care delivery. Thus, health sector development will be guided by the following strategies:

- ❒ *preventing and reducing the disease burden to further improve the health status;*
- ❒ *enhancing the health care delivery system to increase accessibility to quality care;*
- ❒ *optimising resources through consolidation and integration;*

- ❒ *enhancing research and development to support evidence-based decision-making;*
- ❒ *managing health-related crisis and disasters effectively;*
- ❒ *enhancing human resource development; and*
- ❒ *strengthening health information and management systems.*

Public Health Services

20.43 Good population health is a critical input for economic growth and human development. Towards this end, greater efforts will be undertaken to ensure the promotion and maintenance of a healthy population. Based on the findings of the Disease Burden Study that indicated non-communicable diseases to be the leading burden of disease, efforts will be undertaken to prevent or postpone the occurrence of these diseases by modifying individual risk behaviour or intervening in societal risk factors.

20.44 *Health promotion* will be given greater emphasis to enable people to increase control over and improve their health in order to achieve their health potential. Health promotion and education activities will be increased to provide the necessary knowledge and information as well as inculcate healthy behavioural practices. In this regard, individuals, families and communities will be empowered to take greater responsibility to enhance their overall health and well-being. The promotion of healthy lifestyle in selected settings will be further strengthened. School canteens and hostels will be encouraged to provide healthy and nutritious food. In addition, various other health promotion and disease prevention activities, including counselling, will be implemented with increased collaboration and networking among government agencies, the private sector as well as NGOs.

20.45 The prevention and control of *communicable diseases* will be further emphasised during the Plan period. Towards this end, the Communicable Disease Centre (CDC) will be established in Sg. Buloh, Selangor to enhance the ability to cope and deal with the changing and widening scope of these diseases as well as outbreaks of newly emerging and re-emerging diseases. The CDC will be equipped with surveillance systems to enable prompt and timely notification as well as provide adequate laboratory support for early diagnosis and confirmation. The epidemic intelligence programme will be further strengthened to equip medical personnel at the state and district levels to respond immediately and efficiently to disease outbreaks. In addition, community participation and involvement will be enhanced to assist in the control of vector-borne diseases such as dengue and malaria.

20.46 To further reduce HIV transmission in the country and to achieve the Millennium Development Goal (MDG) with regard to HIV/AIDS, the National Strategic Plan (NSP) for HIV/AIDS will be implemented. The NSP will provide the general framework for a nationally driven and expanded HIV/AIDS initiative

over the next five years and will adopt the 'three ones' as the guiding principles for improving the country's response to HIV/AIDS. This will involve the establishment of one comprehensive national AIDS framework, one national AIDS coordinating authority and one national monitoring and evaluation system. In addition, the harm reduction programme will be implemented throughout the country.

20.47 In an effort to reduce the transmission of communicable diseases by foreigners, notably tuberculosis, sexually transmitted diseases and zoonotic diseases, efforts will be undertaken to check, monitor and control the spread of these diseases. These include the establishment of travel health clinics in each state to provide services such as screening, vaccination and prophylaxis as well as health information to foreigners. Enhanced laboratory support will be provided with the construction of four public health laboratories in the states of Kedah, Kelantan, Melaka and Sarawak.

20.48 The rise in *non-communicable diseases* in the country is largely related to lifestyle and behaviour as well as demographic changes. In this regard, efforts will be undertaken to encourage individuals to acquire knowledge and take necessary actions to stay healthy always. Greater emphasis will be given to preventive medicine such as practising healthy lifestyles and regular screening as well as early risk factor identification and modification. Towards this end, a registry for non-communicable diseases will be established to enable more effective broad-based interventions to be undertaken to control and prevent these diseases.

20.49 Health-related *crisis and disaster management* will be further strengthened to increase the level of preparedness and to develop strategies to address public health issues and rehabilitation in the event of disasters. Towards this end, a National Crisis (Health) Preparedness and Response Centre will be established. This Centre will coordinate all health-related activities to ensure effective and immediate response aimed at reducing morbidity and mortality before, during and after the event through the adoption of an inter-sectoral approach. Collaboration and coordination with international organisations, NGOs and the private sector, including pharmaceutical companies and laboratories, will be enhanced.

20.50 Mental health services will be further strengthened at the primary care and community levels. In this regard, comprehensive and integrated mental health services will be developed for specific target groups such as adolescents and older persons. Prevention and control of mental illness will be undertaken through enhanced and early screening of problems such as stress, anxiety, depression and abuse. To improve the functioning of persons with mental illness and ensure their integration into society, psychosocial rehabilitation services will be provided at the primary care level. In addition, family and community intervention as well as support programmes including training will be developed.

20.51 The implementation of the *water supply and environmental health programme* will be continued. In this regard, the provision of sanitary latrines, safe water, proper sullage and solid waste disposal systems will be expanded for the benefit of the rural population. The quality of drinking water will continue to be monitored to ensure that it meets national and international standards. Epidemiological and health risk assessment strategies will also be introduced to monitor the impact of environmental pollution on health.

Medical and Health Care Services

20.52 The medical and health service programme that provides primary, secondary, tertiary and rehabilitative care will be consolidated to improve the delivery of health care. Strategies for the prevention of diseases and health promotion will be implemented to enable individuals to make the right lifestyle choices to promote wellness. Towards this end, wellness and health promotion facilities will be established at existing clinics and hospitals, while programmes involving patients and their families as well as the community will be implemented. In recognising the role of T/CM in health care delivery, integrated services to include selected T/CM practices will be piloted in three hospitals.

20.53 During the Plan period, greater efforts will be undertaken to strengthen services provided at the *primary care* level. Existing facilities will be upgraded while new facilities will be built to provide a comprehensive package of services. In a further effort to increase accessibility, mobile clinics will be provided in densely populated urban areas where suitable land is unavailable for the construction of health facilities. Access to health care in the remote and underserved areas will be improved through the provision of more mobile clinics equipped with necessary diagnostic equipment.

20.54 New programmes that include screening for specific diseases and risk factors, early intervention and treatment as well as reducing disability will be implemented. In this regard, an integrated and comprehensive health risk management programme aimed at early detection of diseases will be implemented. The screening programme for congenital hypothyroidism among newborns will be further expanded. Services for children with special needs will be expanded and introduced in every district. Thalassaemia screening will be implemented to ensure early detection of blood disorders.

20.55 In view of the increasing incidences of communicable and non-communicable diseases, primary care facilities will be further equipped to detect, treat as well as manage these diseases. Family medicine specialists and AHSP will be trained in multi-disciplines to identify emerging infections and ensure that standard operating protocols are adhered to in their treatment. Screening programmes to detect diseases such as respiratory illnesses, cancer and cardiovascular diseases will be instituted in all clinics. For patients suffering from these diseases, individualised intervention packages will be provided. As

part of the smoking cessation programme, more quit smoking clinics will be established and standardised clinical practice guidelines introduced.

20.56 In an effort to enhance and continuously improve the delivery of care, medical care services provided at the primary care level will be reviewed and expanded. Emergency and diagnostic services will be further developed and upgraded to facilitate early and effective diagnosis. Emphasis will be given to providing medical care to specific target groups such as the Orang Asli, urban poor, elderly and children with special needs. The integrated clinic concept will be continued with the daily provision of all services to improve the delivery of care and increase the comfort of patients. To further improve the speed and quality of diagnosis, all clinics will be provided with relevant support services and diagnostic equipment. These include pathology, radiology and pharmaceutical services.

20.57 Various measures will be undertaken to improve and consolidate the provision of *secondary and tertiary care*. Through an efficient and effective referral system, seamless care will be provided with no distinct boundary between primary, secondary and tertiary care. Appropriate services will be identified and relocated to bring care closer to home and optimise resources. In this regard, family medicine specialists serving at the primary care level will follow-up on patients discharged from hospitals or receiving treatment from specialist clinics. These patients will also be able to obtain their follow-up medical supplies from health facilities located nearest to them. These initiatives will enable patients to receive care in a more comfortable environment including shorter waiting time. For patients with chronic debilitating and terminal illnesses, home care services will be provided with the support and cooperation of the community and NGOs.

20.58 To reduce the number of admissions and hospitalisation, efforts will be undertaken to increase the efficiency and improve the delivery of pre-hospital, emergency and ambulatory care services. Pre-hospital care will be enhanced through the establishment of more ambulance call centres while emergency response teams will be provided with better-equipped ambulances. In addition, paramedic emergency response teams (motorcycle squads) will be established to enable reaching the emergency site and providing treatment as quickly as possible. ACCs will also be established at all state and selected district hospitals.

20.59 During the Plan period, new and replacement hospitals will be built to provide greater accessibility and higher quality care. These include a hospital for women and children and a rehabilitation hospital. The National Institute of Cancer will be established at Hospital Putrajaya to provide comprehensive cancer care. To ensure better planning, coordination and management of forensic services in the country, a National Forensic Institute and regional centres will be established. In addition, specialist oral care services will be further strengthened with the establishment of the National Institute for Oral Health. Towards this end, an allocation of RM1.3 billion will be provided.

20.60 The provision of cardiology services will be improved with the expansion of these services to more state hospitals, namely Hospital Alor Setar, Hospital Tengku Ampuan Afzan, Kuantan and Hospital Queen Elizabeth, Kota Kinabalu. Neurosurgical services will also be provided in more hospitals including Hospital Kuala Terengganu, Hospital Melaka and Hospital Tengku Ampuan Rahimah, Klang. Radiotherapy and oncology services will be improved and expanded to Hospital Pandan in Johor, Hospital Pulau Pinang and Hospital Likas in Sabah.

20.61 Efforts will also be undertaken to increase the capacity and quality of critical care units in all hospitals, with priority being given to upgrading existing intensive care facilities at all state and some district hospitals. These units will be equipped with comprehensive intensive care services for all disciplines and age groups. In addition, sophisticated and specific tertiary services will be provided on a regional basis through the establishment of centres of excellence in areas such as forensic medicine, tissue and stem cell development as well as genetics. To ensure efficient management of infectious diseases, regional centres will be established at Hospital Kota Bharu, Kelantan; Hospital Sg. Buloh, Selangor; Hospital Pulau Pinang and Hospital Sultanah Aminah, Johor Bahru. The establishment of such centres will enable higher quality care as well as provide a conducive environment for training and research activities.

20.62 Various efforts will be undertaken to optimise resources available in under-utilised facilities. In this regard, hospitals with low bed occupancy will be used for patients suffering from chronic and terminal illnesses as well as those requiring rehabilitation. Palliative and day care centres as well as halfway houses for mental patients will be set up in these facilities. Training programmes will be implemented to train sufficient personnel in rehabilitative care, including from NGOs and the community, who will also be encouraged to participate in hospital volunteer programmes.

20.63 During the Plan period, *pharmacy service*s will continue to be strengthened. The National Medicine Policy will be formulated to promote the rational use of safe, effective and affordable drugs for improved health outcomes. In addition, consumers will be provided with accurate and evidence-based information online as well as through the media to assist in the selection and usage of medical products. More educational and awareness campaigns will be organised to enable the public to make informed decisions and reduce the consumption of unregistered products. With the introduction of medication counselling and adherence clinics in major hospitals, patients suffering from chronic illnesses such as diabetes mellitus, asthma, cardiovascular diseases and HIV/AIDS will be provided with enhanced pharmaceutical care. The role of pharmacists will be expanded to include their involvement in inpatient care to optimise drug therapy and improve health outcomes.

20.64 Efforts will continue to be undertaken to strengthen cooperation and collaboration between public and private health care providers to ensure the efficient and optimal utilisation of health care services. In this regard, outsourcing

of medical services, provision of services in public facilities by private practitioners, leasing of public facilities to private practitioners as well as collaborating with private medical institutions in the training of medical and allied health personnel will be undertaken. In addition, private providers will be encouraged to give greater emphasis to disease prevention and the promotion of a healthy lifestyle.

20.65 Health tourism will continue to be promoted during the Plan period with greater involvement of the private health sector. In this regard, a comprehensive package of services for which Malaysia has the comparative advantage will be developed. These include T/CM, spas as well as cosmetic services. Efforts will also be undertaken to further develop health care services at popular tourist destinations including emergency and evacuation facilities for high risk or extreme sports activities. Health promotion and wellness activities including affordable screening at selected hospitals and clinics will be marketed to attract more tourists to utilise these services. In addition, centres of excellence in ophthalmology at Hospital Selayang in Selangor and endocrinology at Hospital Putrajaya will be promoted. Towards this end, promotional efforts will be further enhanced with the creation of a Malaysian brand of services known as Health Malaysia.

Human Resource Development

20.66 Human resource development will be given higher priority during the Plan period to address acute shortages in various categories of medical and health personnel. An allocation of RM1 billion will be provided. A blueprint will be formulated to improve human resource development as well as address issues relating to the acquisition, training, supply, utilisation and deployment of health personnel. To this effect, the training of medical, dental and pharmacy undergraduates and postgraduates will be further strengthened to meet the demands of the health sector in the country. Collaboration mechanisms will be instituted with relevant government agencies and the private sector to increase training capacities. In this regard, selected public hospitals will also be utilised as teaching hospitals. In addition, students will be sent overseas to complement training undertaken by local institutions.

20.67 The continuous professional development (CPD) programme will be further strengthened through the provision of online facilities to develop the skills and competencies of medical personnel. CPD activities will be monitored to ensure enhanced quality, professionalism and will be matched with the required competency tests. In addition, efforts will be undertaken to enhance the knowledge and competencies of medical personnel in new areas of specialisation and subspecialties such as vaccine development and health-related disaster management, through in-service training. Priority will also be given to ensuring sufficient supply of trained personnel to address the behavioural component of lifestyle issues.

20.68 Efforts will be undertaken to attract and retain personnel through improvements in terms and conditions of service. These include extending the retirement age of doctors, improving career advancement opportunities, increasing allowances as well as providing a more conducive working environment through the upgrading of facilities. Additional and improved accommodation facilities will also be provided in rural and remote areas as well as in major towns where rentals are high.

20.69 The completion of seven training colleges for AHSP during the Plan period will enable an additional 25,000 personnel to be trained. To further improve and upgrade the skills and knowledge of trained personnel, post basic training in new and priority disciplines will be conducted. In addition, the development of soft skills, including the inculcation of good ethics, values as well as a caring attitude will be given greater emphasis. Measures will also be undertaken to increase the number of tutors as well as upgrade their skills.

Research and Development

20.70 R&D in health will continue to be undertaken to provide the impetus for improving the quality of health care and health outcomes. The research capacity and capability of institutes under NIH will be strengthened to enable the formulation and development of more effective programmes for the prevention, diagnosis, treatment and control of public health problems.

20.71 Various epidemiological studies will be conducted, including a second Disease Burden Study and the third National Health and Morbidity Survey. Research addressing the risk factors of prevalent diseases and ways to reduce the disease burden will be given priority. Research activities on emerging and re-emerging diseases will be intensified in the light of their increasing occurrences. In this regard, efforts will continue to be undertaken to accelerate the production of diagnostic kits for dengue and *nipah* infections.

20.72 Recognising the potential of revolutionising therapy in the form of cell replacement, stem cell research will be given greater priority. The establishment of NINPVB during the Plan period will enable research to be conducted on drug and vaccine development, including *halal* vaccines, from local resources. In addition, NINPVB will undertake the manufacture of basic childhood vaccines for local consumption as well as for export. To facilitate the incorporation of T/CM into the health care system, studies on the safety and efficacy of medicinal plant products will be undertaken to provide evidence for the specific treatment of diseases.

Information and Communications Technology

20.73 During the Plan period, a nation-wide information system will be introduced to link public and private health facilities to enable the provision of timely, quality and reliable information. In this regard, a National Health Informatics Centre will be established to ensure that all health and health-related information will be processed centrally. Priority will also be given to the implementation of Telehealth services that will enable the interoperability and sharing of information through Lifetime Health Record (LHR) and Lifetime Health Plan (LHP) services. The LHR facilitates integration between providers and enables the provision of seamless and continuous care, while the LHP provides information in relation to various anticipated events in an individual's life including disease prevention and illness management. The LHR and LHP will be implemented on a pilot basis in Seberang Perai in Pulau Pinang.

20.74 Teleconsultation services will be further expanded to enable the provision of specialist services for the rural population, especially in the states of Sabah and Sarawak, thus contributing to optimisation of resources and providing higher quality care. The use of ICT in the delivery of primary care services will be expanded with the increased coverage of the teleprimary care project to more districts. A system-wide information system will be introduced to link public and private facilities, thus allowing the transfer of patient information between providers whenever and wherever required to enable the provision of borderless and continuous care. The implementation of the hospital information system (HIS) in selected hospitals will further improve health care delivery by providing accurate and complete patient information online. HIS implementation will be undertaken in phases and will include all new and existing hospitals and clinics.

20.75 Population health surveillance will be further strengthened through improvements and upgrading of existing information systems for various programmes such as disease surveillance as well as food and water quality control. In addition, national registries for specific diseases such as HIV/AIDS, diabetes and mental illnesses will be strengthened towards providing more comprehensive coverage. Information from these registries will contribute towards the formulation of effective and improved programmes as well as enhance research in these areas.

Governance

20.76 During the Plan period, good governance through the proper control of healthcare personnel, facilities, products and devices will ensure that quality and affordable health care is provided. Greater synergy will be achieved through harmonization of quality improvement initiatives that will contribute towards institutionalising the culture of quality and professionalism among health personnel at all levels. More hospitals will be encouraged to institute measures to qualify

for Hospital Accreditation Certification. Emphasis will also be given to enhancing the quality of the soft component of care, including improving responsiveness to patient needs and expectations as well as ensuring staff competency and capability. International evidence-based indicators and quality improvement measures will be used as benchmarks in determining the quality of service. For more effective planning and efficient resource allocation, efforts will be undertaken to ensure the annual compilation of the National Health Accounts to provide information on the levels and trends of financial resources available in the health sector.

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

20.78 New and existing health legislation will be introduced and reviewed to regulate and monitor the health sector. The Medical Devices Act will be formulated to regulate and ensure equipment used is of high quality, appropriate and safe. In addition, the compulsory registration of beauty and cosmetic saloons will be undertaken to protect consumer interests. Health technology assessments will continue to be undertaken prior to the introduction of new services and technologies such as screening for and early diagnosis of specific diseases, treatment and interventions. The Traditional and Complementary Medicine Act will be formulated to ensure safe practice of T/CM practitioners. At the same time, public awareness and education programme will be undertaken to inform consumers on safe T/CM. To ensure compliance with the principles and ethical standards of biomedical and clinical research, especially in safeguarding the dignity, safety and well-being of patients, the National Ethics Board will be established during the Plan period.

IV. INSTITUTIONAL SUPPORT AND ALLOCATION

20.79 The Ministry of Health will continue to be the lead agency and the main provider of health care services for the nation. The provision of health services will be undertaken in collaboration with other relevant ministries and agencies as well as the private sector and NGOs. During the Ninth Plan period, a sum of RM10.28 billion will be allocated for health sector development, as shown in *Table 20-7.* A major portion of this allocation will be set aside for the implementation of public health programmes that include health promotion and disease prevention as well as enhancing human resource development. R&D as well as the upgrading and renovation of existing health care facilities will also be given emphasis.

TABLE 20-7

DEVELOPMENT EXPENDITURE AND ALLOCATION FOR HEALTH SERVICES, 2001-2010
(RM million)

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

Source: Economic Planning Unit

Notes: [1] Excludes allocation under IRPA.

V. CONCLUSION

20.80 During the Eighth Plan period, emphasis was given to further improve the quality of life. Priority was given to facility expansion and upgrading as well as expanding the scope of health care. During the Ninth Plan period, efforts will be undertaken to consolidate health care services, enhance human resource development and optimise resource utilisation. Improvements in the delivery system will be undertaken with the greater involvement of the private sector and NGOs. While efforts will be undertaken to protect the population from communicable and non-communicable diseases, the responsibility and cooperation of individuals, families and the community in disease prevention and control as well as practising a healthy lifestyle is crucial towards achieving better health and wellness.