Chapter 17

Health

17 HEALTH

I. INTRODUCTION

17.01 The development of the health sector is an integral part of socio-economic development in the country. During the Sixth Plan period, health programmes were implemented to further improve the health status of the people through the provision of a more equitable distribution of facilities and efficient health services. In the Seventh Plan, the expansion and improvement of health services will continue to be undertaken so as to achieve a standard of health that will enable Malaysians to enjoy a better quality of life. Corporatization and privatization of health facilities and services will also be an important aspect of health care planning during the Seventh Plan period.

II. PROGRESS, 1991-95

17.02 The overall objective of the health sector development programme to upgrade the health status of the population continued to be implemented during the Sixth Plan period. Emphasis was given to health promotion and the maintenance of efficient and equitable health services. In this regard, efforts were continued to provide affordable health care and strengthen the quality of preventive and curative health programmes with the expansion of support services. In addition, steps were taken to further increase the supply of trained health manpower.

Promotive and Preventive Health Services

17.03 During the Sixth Plan period, promotive and preventive health programmes such as health education, immunization, control of communicable and non-communicable diseases, environmental health and sanitation, nutrition,

and occupational safety and health were implemented. Due to changing lifestyles and behaviour, as well as the effect of demographic transition, the pattern of diseases changed with an increase in the occurrence of non-communicable diseases. As a result, heart and pulmonary diseases constituted the main cause of death and the most common cause of admission in hospitals, followed by cases of accidents, cerebrovascular diseases and cancer. *Health education programmes* were, therefore, intensified to provide knowledge and information towards ensuring a healthy lifestyle. These education programmes included efforts to eradicate alcohol and substance abuse, prevent sexually-transmitted diseases as well as instil the habit of regular exercise and the need for balanced diet. These programmes were implemented through the mass media, schools and through community groups.

17.04 A six-year thematic healthy lifestyle programme was launched, beginning with the programme on Cardiovascular Disease in 1991, followed by the programme on Acquired Immunodeficiency Syndrome (AIDS) in 1992, Food Hygiene in 1993, Promotion of Child Health in 1994 and Prevention of Cancer in 1995. Educational materials relating to these themes were distributed at health centres, clinics, hospitals and public places. In addition, free health clinic sessions involving simple medical examinations and screening were organized, some with the cooperation of non-governmental organizations (NGOs), in shopping malls and community halls.

17.05 Health cards with information and indicators of a child's growth and development were distributed to parents through maternal and child health clinics. These cards, maintained by parents, are to educate, monitor and record various aspects of a child's growth, thus alerting parents to symptoms of early childhood diseases or abnormal development.

17.06 Prevention of diseases such as diphtheria, pertussis, tetanus, poliomyelitis and tuberculosis was continued through the expanded programme of *immunization*. In 1994, about 91 per cent, or 502,000 infants, received complete immunization against these diseases as compared with 79 per cent in 1990. As shown in *Table 17-1,* immunization coverage for tuberculosis and measles improved, while coverage for triple antigen and polio remained stable at 89.9 per cent and 89.6 per cent, respectively. Rubella immunization, to prevent congenital rubella syndrome, was provided to about 212,000 schoolgirls and women of child-bearing age. In addition, a total of about 476,000 newborns or 86.5 per cent received compulsory Hepatitis B immunization. The immunization programme contributed significantly to the reduction of childhood diseases, as reflected in the improving infant and toddler mortality rates.

TABLE 17-1

PUBLIC HEALTH FACILITY AND COVERAGE, 1990 AND 1995

Category	Number		Facility Ratio to Population and Coverage (%)	
	1990	*1995*[1]	*1990*	*1995*[1]
Health Facilities				
Rural Health Facilities				
Rural Clinics[2]	1,998	1,991	1:5,320	1:4,580
Health Centres	497	592	1:21,386	1:15,405
Mobile Units				
Dispensary Services	216	157		
Village Health Teams	118	122		
Flying Doctor Services	14	14		
Mobile Dental Services	126	117		
Urban Health Facilities				
Maternal & Child Health Clinics	123	104		
Polyclinics	51	64		
Patient Care Services				
Hospitals	95	115		
Acute Beds[3]	23,223	23,956	1:682	1:814
Dental Units[4]	2,133	2,260	1:8,328	1:8,623
Beneficiaries ('000)				
Outpatient Visits[5]	23,807	24,209		
Inpatients[5]	1,307	1,397		
Rural Water Supply	6,177	7,258	*75.1*	*83.5*
Sanitary Latrines (Rural)	6,843	7,981	*83.2*	*92.0*
School Dental Clinics	2,397	2,952	*62.7*	*68.1*
Supplementary Feeding	475	520	*21.8*	*20.8*
Immunization (Under one year)				
BCG	492	542	*97.0*	*97.2*
Diphtheria, Pertussis & Tetanus (3rd dose)	456	502	*89.9*	*89.9*
Hepatitis B (3rd dose)	437	476	*86.2*	*86.5*
Measles	356	452	*70.1*	*81.1*
Polio (3rd dose)	455	500	*89.6*	*89.6*

Notes:

[1] Refers to 1994.

[2] Includes *klinik desa* and midwife clinics. The reduction in 1995 is due to the upgrading of *klinik desa* and midwife clinics into health centres.

[3] Refers to hospital beds under the Ministry of Health and does not include chronic beds. The number of new beds increased marginally because of the redeployment of beds from existing overcrowded hospitals.

[4] Refers to dental chairs in Government clinics.

[5] Refers to attendances in public health facilities.

17.07 Under the *school health service*, health screening and monitoring, dental services and general health education activities were carried out in order to ensure that children are healthy and, where necessary, undertake early preventive and curative care. Coverage of the school health service improved from 92.9 per cent in 1990 to 98 per cent in 1995. A revised format for registration and referral was introduced and new equipment purchased for the screening and rehabilitation of disabled children.

17.08 While the overall *nutrition* level in the country was satisfactory, moderate malnutrition among children below five years, iron deficiency anaemia among pregnant mothers and iodine deficiency among the specific groups of the population still persisted. To address these problems, nutrition programmes were incorporated as an integral component of the *Program Pembangunan Rakyat Termiskin* (PPRT). These efforts resulted in an improvement in the nutritional status of children below five, where 0.42 per cent of these children had a body weight less than 60 per cent standard in 1995 compared with 0.5 per cent in 1990, while the percentage of anaemic mothers was reduced from 5.4 per cent to 3.8 per cent for the same period. In addition, the supplementary food programme for primary school children from low-income families was continued in all schools, benefitting 520,000 pupils.

17.09 During the Sixth Plan period, the *food quality control programme* was continued to ensure that the public consumed safe and nutritious food. The healthy lifestyle campaign to promote food hygiene created increased awareness among food-handlers on the need to adopt good personal hygiene and food-handling practices, while the public was encouraged to be conscious of food hygiene. Analysis of 297,990 food samples and inspection of 279,540 food premises were made during the period. These efforts contributed to a reduction in the incidence of food-borne diseases from about 7,510 in 1990 to about 3,390 in 1995.

17.10 The *environmental health and sanitation programme* continued to be given priority to supply safe water to rural communities with the aim of reducing the incidence of water-borne diseases. In this regard, about 83.5 per cent of rural households were provided with safe water in 1994. Clean water was supplied through the tapping of underground water and wells in remote villages where the supply of potable water was not available.

17.11 As an additional step towards health improvement, sanitary latrines were also provided. This was undertaken through the community self-help programme, through which 267,300 sanitary latrines for the rural population were constructed during the period. The implementation of the environmental

health and sanitation programme and improved hygienic practices contributed to the reduction in the incidence of food and water-borne diseases. In this regard the incidence of typhoid and dysentery was reduced from 12.46 and 3.04 per 100,000 population, respectively, in 1990 to 7.57 and 1.37 per 100,000 population in 1995.

17.12 With regard to *occupational safety and health*, efforts were undertaken to create greater awareness and instil commitment among employers and workers of the need to prevent and reduce industrial accidents. Towards this end, the National Institute of Occupational Safety and Health was established in 1992 to provide training in occupational safety and health, disseminate information on preventive measures, promote healthy and safe practices at work and conduct research as well as provide consultancy services. Since its establishment, the Institute conducted 63 courses on employers' responsibilities and workers' safety measures for about 1,600 participants. Participants for these courses, who were members of the Institute, were provided a rebate of 25 per cent, while the balance of the fees was drawn from the Human Resources Development Fund.

17.13 In order to ensure that the employers provided a safe working environment, the Occupational Safety and Health Act, 1994 was enforced. Overall Government efforts to promote occupational safety contributed to the reduction in the incidence of industrial accidents among workers from 26.4 per 1,000 in 1990 to 24.6 per 1,000 in 1995. The Social Security Organization (SOCSO), which plays an important role in ensuring the welfare and security of employees, disbursed about RM470 million for medical treatment and employment injury compensation to workers involved in industrial accidents between 1991 and 1994. In addition, survival pensions amounting to about RM217 million were paid to the next of kin during the same period.

Curative Health Services

17.14 The provision and expansion of curative health care facilities such as *hospitals* and *polyclinics* rendered better health care to the population. During the Plan period, 31 hospitals were built, of which 11 were replacement hospitals. This helped to reduce overcrowding in existing hospitals and extended facilities to new areas. Although 20 new hospitals were completed, the number of beds increased marginally as a result of the redeployment of beds from existing overcrowded hospitals. Health care and services improved significantly through the provision of upgraded services and modern diagnostic equipment which included Magnetic Resonance Imaging (MRI), Computerized Tomography (CT) Scan, mammography equipment as well as echo cardiography and stress test equipment at selected hospitals. A cardiothoracic unit was established at the Pulau Pinang Hospital in 1994 to cater for patients in the northern region.

17.15 Basic *specialist facilities* and services were improved in hospitals in the districts to provide better quality services as well as increase utilization of these facilities. In addition, the Government expanded and increased the efficiency of acute medical care services at selected hospitals. These included the upgrading of facilities for emergency cases and also treatment of burns cases.

17.16 *General outpatient services* were expanded with the establishment of 13 new polyclinics equipped with adequate diagnostic and treatment facilities benefitting about 270,000 people during the Plan period. These polyclinics helped to reduce overcrowding in hospitals which were then able to concentrate on providing better services for inpatients.

17.17 In order to expand health services in the rural areas, various facilities and services were provided. These included 29 new *health centres* and seven *rural clinics*. A total of eight health centres were provided with diagnostic facilities such as x-ray and laboratory equipment. In addition, maternal services provided in the home were also expanded for maternal cases in outlying areas, while facilities for low-risk cases were established at health centres. Maternal cases needing inpatient care were managed at the hospitals.

17.18 With regard to the provision of *pharmaceutical services* in both the public and private sectors, measures were undertaken by the Government to ensure that the public had access to good quality, safe and efficacious pharmaceutical and health care products. Towards this end, existing facilities at the National Pharmaceutical Control Bureau were upgraded to cope with the increased volume of laboratory tests and analyses of samples for registration as well as medicines obtained from the market place. During the period, 1,828 scheduled poisons and 1,445 over-the-counter medicines were registered under the Control of Drugs and Cosmetic Regulations, 1984 with a view to monitoring the quality and safety of drugs. The Ministry of Health also monitored the price of drugs to ensure that prices remained affordable and stable.

17.19 The implementation of various health programmes and projects resulted in the overall improvement of the health status of the population as reflected in improvements in health indicators such as life expectancy and mortality rates, as shown in *Table 17-2*. These achievements approached the levels attained by developed countries.

TABLE 17-2

SELECTED INDICATORS OF HEALTH STATUS, 1980, 1990 AND 1995

Indicator	*Malaysia*			*Upper Middle Income Economies*[1]	*High Income Economies*
	1980	*1990*	*1995*[2]	*1993*	*1993*
Life Expectancy At Birth[3] (in years)					
Male	66.7	68.9	69.3	66.0	74.0
Female	71.6	73.5	74.0	72.0	80.0
Crude Birth Rate (Per 1,000)	30.9	28.4	28.0	24.0	13.0
Crude Death Rate (Per 1,000)	5.3	4.7	4.5	7.0	9.0
Doctors Per 10,000 Population	2.8	3.9	4.5	9.0	23.8
Dentists Per 10,000 Population	0.5	0.8	0.9	n.a	n.a
Infant Mortality Rate[3] (Per 1,000)	24.0	13.0	10.5	36.0	7.0
Toddler Mortality Rate[3] (Per 1,000)	2.0	0.9	0.8	n.a	n.a
Maternal Mortality Rate[3] (Per 1,000)	0.6	0.2	0.2	n.a	n.a
Perinatal Mortality Rate[3] (Per 1,000)	26.7	13.8	11.0	n.a	n.a
Neonatal Mortality Rate[3] (Per 1,000)	14.8	8.4	6.7	n.a	n.a

Sources: Ministry of Health and World Development Report, 1995.

Notes:

[1] Includes Malaysia.

[2] Refers to 1994.

[3] For Peninsular Malaysia only.

n.a. Not available.

17.20 The Government continued to implement the Quality Assurance Programme aimed at ensuring that patients obtained better benefits from health services. This programme covered patient care, laboratory, dental and pharmaceutical services as well as public health and engineering activities. The implementation of the Quality Assurance Programme contributed to better patient care in clinics and hospitals. In addition, a Client's Charter was launched during the Plan period to detail out the targetted level of patient care provided by the Ministry of Health and its facilities. These quality management activities contributed, among others, to a reduction in the waiting time for medical examination in clinics and collection of medicine at pharmacies, as well as courteous behaviour and promptness of response to patient needs.

17.21 During the Plan period, the Ministry of Health *computerized* some non-medical programmes such as the health management information system, quality assurance and budget performance monitoring to generate accurate, relevant and

timely information to improve the efficiency of services. Computerization of the health management information system provided information on health indicators, thereby allowing for better monitoring of health care activities at various levels of care and more effective management of these programmes and activities.

17.22 The increasing number of migrant workers and their dependants had implications on the utilization of public health services. The influx of migrants partly contributed to the increasing incidences of communicable diseases such as tuberculosis, malaria, dengue and leprosy. In 1994, of the total number of cases treated for tuberculosis, malaria and leprosy, 10.5 per cent, 35.5 per cent and 12.6 per cent, respectively, were migrants. In this regard, the Ministry of Health stepped up its surveillance activities and further strengthened the communicable disease control programme to focus more on areas where the migrant population was located.

17.23 During the Plan period, utilization of maternal and child health, and patient care services in health clinics and public hospitals by the migrant population increased. In 1995, about 34,470 migrants utilized inpatient services compared with about 24,280 in 1994, paying fees that were similar to those imposed on Malaysians. However, with effect from January 1994, the Government, in an effort to encourage migrants to utilize private medical facilities instead of public health services, imposed on migrants higher fees for ward accommodation, investigation and treatment. At the same time, the outpatient fee was raised from RM1 to RM2 for migrants. In spite of this move, the utilization of health services by migrants continued to increase and affected the provision of health care for Malaysians.

17.24 The private sector played an active role in complementing public health services. During the Plan period, the number of *private hospitals* increased from 174 in 1990 to 193 in 1994, resulting in an increase of 38.8 per cent of beds from 4,675 to 6,492. In 1994, beds in private hospitals comprised 15.2 per cent of the total number of hospital beds in the country. The majority of the private sector facilities, however, were located in urban areas and mainly provided curative services.

17.25 During the Plan period, a number of medical and non-medical services was corporatized or privatized. In 1992, the National Heart Institute was corporatized in order to expand and provide better services in cardiothoracic medicine as well as to attract and retain experienced medical personnel. For

the period 1992-95, the Institute treated 120,188 outpatients and 18,904 inpatients, of whom 10 per cent and 25 per cent, respectively, were from the low-income group. In this regard, the Government contributed RM140.4 million as a subsidy for the low-income group and public sector employees. Of the total number of inpatients, 3,665 underwent open heart surgery while 1,519 underwent close heart surgery. The Institute was also equipped with advanced equipment such as gamma cameras and cardiac ultrasound machines to assist in the diagnosis and treatment of patients.

17.26 To ensure greater private sector participation and efficiency in the provision of medical services, the general medical store was privatized in 1993. The hospital support services such as laundry, and biomedical equipment and facility engineering maintenance services in all hospitals were privatized on a regional basis in 1995.

Medical Research and Development

17.27 During the Plan period, medical research and development activities continued to be undertaken with the aim of improving the diagnosis, management and prevention of infectious diseases. In this regard, emphasis was given to biomedical, clinical, epidemiological and behavioural research. Under the Intensification of Research in Priority Areas (IRPA), innovative approaches were discovered for the diagnosis of diseases such as typhoid and dengue fever. In this regard, a kit for the rapid diagnosis of typhoid was successfully commercialized. In addition, other innovative approaches included the use of iodinator for solving goitre problems, new intervention for the management of leprosy patients and the use of insecticide impregnated bed nets as an alternative for malaria control. The Institute for Medical Research (IMR) also continued to function as the collaborating centre for research for the World Health Organization (WHO) in new areas such as screening and use of medicines for malaria as well as functioning as the Centre for Western Pacific Region for Research and Training in Tropical Diseases and Nutrition.

17.28 Various studies under the Health Systems Research Programme were also undertaken during the Plan period aimed at improving the effectiveness and efficiency of the health care delivery system. Studies undertaken included strengthening of family and child health services, utilization of hospital beds and upgrading of the medical record system in hospitals.

Health Manpower

17.29 The standard of health care depends to a large extent on the availability and quality of human resources. In this regard, measures were taken to ensure the adequate supply of trained health manpower. The number of doctors increased from 7,012 in 1990 to 9,504 in 1995, as shown in *Table 17-3*, resulting in an improvement in the doctor-population ratio from 1: 2,569 in 1990 to 1: 2,177 in 1995. This was slightly below the targetted ratio of 1: 2,000. In terms of other health professionals, there were 1,791 dentists and 1,622 pharmacists in 1995, compared with 1,471 dentists and 1,239 pharmacists in 1990.

17.30 Efforts to increase the supply of medical professionals and allied health professionals, formerly known as para-medical staff, were undertaken by increasing the intake into local medical institutions. Enrolment in the medical degree courses increased from 2,090 in 1990 to 2,294 in 1995, while the output of doctors totalled 1,573 during the period. In addition, the supply of doctors was supplemented by 919 medical graduates trained abroad. As a temporary measure to ease the shortage of health manpower, the Government recruited 274 foreign doctors and 87 specialists and re-employed 14 retired doctors and specialists on a contract basis.

17.31 Despite the increase in health professionals, the public sector continued to face shortages of health manpower. There was also an unequal distribution of doctors in the public and private sectors. In 1995, there were 4,277 doctors or 45 per cent of the total in the public sector, compared with 5,227 doctors in the private sector. The doctor-population ratio between states also reflected inequities, with Wilayah Persekutuan Kuala Lumpur having a ratio of 1:500 as compared with 1:5,760 in Sabah in 1994. The situation was further worsened in terms of the distribution of doctors and delivery of health services between urban and rural areas within the states. Doctors in the private sector mainly provided curative care, catering for a minority catchment of affluent population who could afford such services.

17.32 The public sector also faced shortages of medical specialists in areas such as paediatrics, orthopaedics and anaesthesiology. Of the total number of specialists, about 60 per cent was in the private sector. Similarly, 51 per cent of dentists and 74 per cent of pharmacists were in the private sector in 1995. In addition, during the Plan period, 1,137 medical officers, 108 specialists and 755 allied health professionals resigned. In order to increase the number of specialists in the public sector, the Government sponsored 900 medical officers

TABLE 17-3

SUPPLY OF SELECTED MEDICAL AND ALLIED HEALTH PROFESSIONALS, 1990, 1995 AND 2000

Category	*Number*			*Requirement (based on norms)*
	1990	*1995*	*2000*	*2000*
Medical Professionals				
Doctors	7,012	9,504	14,029	15,510
Dentists	1,471	1,791	2,243	2,909
Pharmacists	1,239	1,622	2,586	2,909
Ratio To Population				
Doctors	1:2,569	1:2,177	1:1,658	1:1,500
Dentists	1:12,245	1:11,552	1:10,370	1:8,000
Pharmacists	1:14,538	1:12,756	1:8,995	1:8,000
Allied Health Professionals				
Dental Paramedics & Auxiliary	2,137	2,720	4,097	6,361
Medical Assistants & Laboratory Technologists	4,903	5,392	8,287	9,842
Nurses[1]	28,932	32,401	47,812	50,551
Occupational Therapists & Physiotherapists	234	410	811	911
Public Health Inspectors	1,007	1,418	2,019	2,695
Radiographers	508	537	1,049	1,297

Note: [1]Includes staff nurses, community nurses, assistant nurses and midwives.

to pursue specialist courses locally and 169 for courses abroad. As a short-term measure, 274 doctors and 87 specialists from foreign countries were recruited on a contract basis.

17.33 In order to enhance the quality of health services, an appropriate mix of professionals and allied health professionals was maintained at various levels of health care. During the Plan period, in-service courses were provided to 170 professionals and 187 allied health professionals to upgrade knowledge and skills. A total of 11 nursing schools and two training schools for medical assistants were completed, increasing the annual intake of nurses from 1,005 to 2,100, and medical assistants from 160 to 347. The intake of nurses for post-basic training in fields such as midwifery, orthopaedics and paediatrics increased from 385 in 1990 to 1,179 in 1995. These efforts assisted in upgrading the skills of nursing personnel and improving the quality of health care.

III. PROSPECTS, 1996 - 2000

17.34 Health sector development during the Seventh Plan period will further pursue the objective of improving the health status of the population. Greater emphasis will be given to promotive and preventive health in order to reduce future expenditure on curative and rehabilitative health care. Maintenance of healthy lifestyles will be further promoted through health education and the mass media as well as through community-based programmes. Health services will be expanded especially in rural areas to increase accessibility for the low-income group. Quality of inpatient care will also be upgraded, while more outpatient services will be decentralized and located closer to the community. In view of the expanding health services, the provision of adequate supply of trained health manpower will be emphasized. To increase the efficiency of services and to retain qualified and experienced manpower, the corporatization and privatization of hospitals as well as medical services will be undertaken during the Plan period. The Government will gradually reduce its role in the provision of health services and increase its regulatory and enforcement functions. A health financing scheme to meet health care costs will also be implemented. However, for the low-income group, access to health services will be assured through assistance from the Government.

Promotive and Preventive Health Services

17.35 The promotion of health and prevention of diseases will continue to be the priority of the health sector. In this regard, programmes and projects which will assist individuals and communities to achieve and maintain better health status will be implemented. With regard to health promotion, information on healthy lifestyles and the maintenance of healthy behaviour will be disseminated through the mass media and health education in schools. The thematic healthy lifestyle programme will focus on the prevention of diabetes in 1996, followed by promotion campaigns on healthy diet and nutrition in 1997, exercise and fitness in 1998, safety at home and the work place, and road safety in 1999, and promotion of healthy family life in the year 2000. The overall health education and awareness programmes will continue to focus on diseases such as cardiovascular, AIDS, cancer and stress-related illnesses and will be targetted to those in the vulnerable groups. In this regard, the cooperation of private hospitals and clinics, NGOs and members of the public will be encouraged to ensure the effectiveness of these programmes.

17.36 The *immunization* programme will be further expanded to cover all children in order to prevent and reduce incidences of diseases such as tuberculosis, poliomyelitis, diphtheria, pertussis, tetanus and measles. In addition, vaccination for the prevention of Hepatitis B will be continued. In this regard, the private sector will also complement the efforts of the public sector.

17.37 The programme on the control of *communicable diseases* will give priority to reduce incidences of tuberculosis, malaria and dengue as well as contain the spread of AIDS. The construction of a National Blood Services Centre will be completed and blood transfusion facilities in the various hospitals in state capitals and teaching hospitals will also be upgraded. In addition, three public health laboratories will be completed to provide efficient support for the control of communicable diseases.

17.38 The National Plan of Action on Nutrition (NPAN), initiated in 1995 to address all forms of malnutrition problems, will be implemented during the Seventh Plan. Under the NPAN, assessment and monitoring of the *nutrition* situation among children below five years of age under the National Nutrition Surveillance System will be stepped up to cover 80 per cent by the year 2000 compared with 50 per cent in 1995. In addition, severe malnutrition among children less than five years of age will be reduced from 0.42 per cent in 1995 to 0.25 per cent by the year 2000. Programmes to reduce severe anaemia among pregnant mothers from 3.8 per cent in 1995 to 1.9 per cent by the year 2000 and the virtual elimination of iodine and Vitamin A deficiency will also be implemented.

17.39 Steps will be taken to formulate food quality and safety standards, nutritional and dietary guidelines as well as food and nutrition labelling. In addition, nutrition intervention programmes incorporated into village economic development programmes and food supplementary programmes aimed at improving the nutritional status of the rural population and children in schools will be continued.

17.40 *Safe water supply* and *sanitation* facility coverage, particularly for the rural and remote areas, will be extended. The provision of safe water supply as one of the means to eradicate pockets of communicable diseases will be given priority. During the Plan period, RM30.9 million will be provided for water supply and RM39.6 million for sanitation. Where safe water supply is a problem, communities will be encouraged to provide self-help for tapping underground water sources, while efforts will be made to extend safe water supply from the

main sources. These measures will improve the coverage of safe water supply in rural areas from 83.5 per cent in 1995 to 87 per cent by the year 2000 and sanitary latrines from 92 per cent to 100 per cent over the same period.

17.41 The *occupational safety and health* programme will be expanded in view of the increasing number of workers, particularly in the transport, manufacturing and construction sectors. More courses such as safety rules for building construction, chemical utilization, fire hazard, first aid at the work place, cardiopulmonary resuscitation and hearing conservation will be conducted by the National Institute of Occupational Safety and Health. With regard to information dissemination, the Institute will publish a book on occupational safety and health in the Malaysian context as well as brochures, pamphlets and newsletters. In addition, regulation of standards and safety rules, treatment and compensation will be further enforced.

17.42 A comprehensive *family health development* programme intended to address health aspects from infancy to adulthood will be given greater attention. In this regard, healthy lifestyle campaigns will focus more on the adolescent and elderly population. A programme for the elderly, which includes further development of geriatric care, rehabilitative and community services, will also be implemented during the Seventh Plan.

Curative Health Services

17.43 Curative health services will be further expanded to meet the growing demand for comprehensive inpatient and outpatient services. This will be supported by the construction of 16 new *hospitals* in new townships and urban areas such as Bintulu, Putrajaya and Slim River, while the construction of hospitals in Cameron Highlands and Selayang will be completed during the Plan period. In addition, the Government will upgrade and rehabilitate 11 hospitals in state capitals and districts as well as provide basic specialist services in selected hospitals in the districts.

17.44 In order to support the services to be provided at the hospitals, *high technology medical equipment* such as MRI and CT Scan as well as trained health personnel will be made available. This will include the provision of mammography equipment for hospitals in Kota Bharu, Melaka, Muar and Taiping. During the Plan period, seven existing hospitals in the state capitals

will be upgraded to accommodate secondary and tertiary care services. Three of these hospitals in Johor Bahru, Kuantan and Kuching will provide cardiothoracic services. In addition, more dialysis centres will be established in selected hospitals in order to meet the increasing demand for haemodialysis services.

17.45 The Kuala Lumpur Hospital, being the *national referral centre* with a large number of beds and facilities, will be decentralized in order to improve efficiency in the provision of good quality services and to increase comfort of patients. In this regard, redevelopment of the Kuala Lumpur Hospital will be undertaken to retain the secondary and some of the tertiary services such as cardiology, urology and neurosurgery. Other tertiary services which will be relocated in new hospitals to be built at Ampang, Selayang and Sungai Buloh will also provide secondary services for these areas.

17.46 In view of the increasing number of industrial and road accidents, the *emergency departments* in hospitals will be upgraded. These facilities will be located in strategic areas within the hospital site and will be equipped with advanced treatment equipment and diagnostic facilities to provide a wider range of services. In this regard, ambulatory care will also be expanded to improve the quality of pre-hospital care. Burns treatment facilities will be established in hospitals in state capitals to support emergency services.

17.47 *General outpatient services* will be dispersed and the scope widened to provide improved services. This will be undertaken through the decentralization of outpatient services in hospitals and be located closer to the community. In this regard, 13 health clinics and 45 polyclinics will be built. More outpatient services will be provided by these health clinics which will be equipped with radiology and laboratory services, thus providing comprehensive primary health care.

17.48 The increasing urban population and changing pattern of diseases have implications on the quality of health care provided in the local authority areas. Health manpower and financing constraints have affected the ability of local authorities to cover and expand the scope of their health services to meet the needs of the increasing urban population. In line with the policy of decentralization of general outpatient services from the hospitals to the urban community, the Ministry of Health will take over in phases the health and medical-related functions of the local authorities and establish more health clinics which will provide comprehensive health care services.

17.49 During the Plan period, about 37 *health centres* and 86 *rural clinics* will be constructed, while 49 health centres in rural areas will be upgraded with diagnostic facilities and trained manpower. The health centres will also continue to provide a comprehensive range of services including maternal services for rural women. More mobile dispensaries will be provided to extend services to underserved parts of the country in order to improve equity and accessibility.

17.50 The scope of curative health care will also be expanded to provide a comprehensive range of *rehabilitative care* such as for cardiac, spinal injury and orthopaedic patients as well as for the needs of the elderly population. During the Seventh Plan period, the construction of a rehabilitation centre in a hospital setting will be undertaken. To complement the efforts of the public sector in the expansion of rehabilitative care services, community participation will be sought along with the promotion of home-based care. In addition, the development of private nursing homes in urban areas with the support of NGOs will be encouraged.

17.51 Efforts will be made to increasingly use *information technology* (IT) as a tool for medical care and health services administration. In the area of medical care, IT application will assist efficient patient care management, while health services administration will be further improved. A study on IT application in the health sector will be conducted with the view to exploring the possibilities of widening the usage and application of IT in areas such as telemedicine, health engineering and continuing medical education.

17.52 *Pharmaceutical services* will be expanded and improved to support curative care. Enforcement activities will be strengthened to ensure that pharmaceutical products in the market are safe, efficacious and of good quality. The Quality Assurance Programme will emphasize good manufacturing practices as well as the efficient delivery of quality drugs for patient care. Post-marketing surveillance will also be undertaken to ensure continued safety and efficacy of pharmaceutical products.

17.53 Inspection and surveillance activities as well as immunization and environmental sanitation programmes in areas where there are large number of migrant workers will be undertaken to control and eradicate communicable diseases among them. In addition, the fees for inpatient and outpatient services for the migrants will be reviewed to recover actual cost of medical care. Employers will also be required to issue guarantee letters for the payment of bills of migrant workers being treated in government facilities.

17.54 The private sector, including NGOs, will be encouraged to expand and complement the Government's effort in providing a comprehensive range of health care services for all income groups. The regulatory functions of the Ministry of Health and related agencies will be reviewed and strengthened to ensure that the public and private sectors are provided with standards and guidelines to allow expansion based on need and the provision of quality and appropriateness of care which are not compromised for the sake of profits. In this regard, consideration will be given to review the Private Hospitals Act, 1971 to enable private hospitals to provide comprehensive and affordable quality care, and facilities for all. At the same time, credentialling of health personnel and accreditation of health facilities will be undertaken to improve service quality.

17.55 Utilization of private sector facilities, where appropriate, will be continued to optimize the use of available health resources, while the existing arrangement of allowing private specialists to admit and treat patients in Government hospitals on a contractual basis will be continued. Private specialists will also continue to be contracted to work in public hospitals. In addition, a number of facilities and services such as the school health and dental services will be considered for privatization during the period.

17.56 Corporatized institutions such as the National Heart Institute will be encouraged to develop into a centre of excellence with a view to enhancing expertise in all aspects of cardiothoracic medicine. It will also be earmarked as a service for export to meet the rise in demand from neighbouring countries.

Medical Research and Development

17.57 Medical research aimed at improving the quality and effectiveness of health services and eradicating diseases will be continued. Emphasis will be given to new research programmes on health problems associated with demographic changes, lifestyles, new technologies, occupational and environmental health as well as vector-borne and non-communicable diseases. Clinical research will be expanded to involve hospitals in major towns and the findings from such research will contribute to the improvement of diagnosis and quality of care provided to the patients. The IMR will also continue as the regional centre for the WHO on training and research pertaining to tropical diseases and nutrition as well as the national reference laboratory for the control of AIDS, poliomyelitis and drug abuse. A Centre for Environmental Health will be established and its scope

of research will include the environmental impact on health of workers involved in agricultural and industrial activities. The private sector will also be encouraged to cooperate and increase its expenditure for medical research and development.

17.58 Under the health systems research programme, improvements in terms of quality of health care, especially at outpatient and inpatient level, efficacy of medicines, the delivery system, management and financing of health services will be further explored. During the Plan period, a study on household health expenditure will be implemented and a health morbidity survey will also be carried out as a follow-up to a similar survey undertaken in 1987. To allow for more coordinated research in various fields of health and medicine, including health economics, bio-medical and behavioral research, the feasibility of establishing the National Institute of Health which incorporates activities under the IMR, the Public Health Institute and the Institutes of Health Management and Health Promotion will be undertaken. This will facilitate the implementation of the continuum from determination of research priorities to utilization of research findings.

Health Manpower

17.59 Based on the target of one doctor per 1,500 population by the year 2000, about 1,200 additional doctors per annum will be required. The supply of doctors for the expanding health sector will be further increased with the completion of the new teaching hospital for *Universiti Kebangsaan Malaysia* and the establishment of new medical faculties in *Universiti Malaysia Sarawak* and the *Universiti Islam Antarabangsa.* With the output from local public institutions and the output of Malaysian students from private medical colleges and institutions overseas, the total number of doctors is expected to increase from 9,504 in 1995 to about 14,030 by year 2000. However, the shortage of doctors in the public sector is expected to continue. Measures to overcome such shortages include providing more scholarships for degree and post-graduate programmes as well as encouraging the private sector to establish more medical colleges including twinning programmes. In addition, the Government will review the terms and conditions of service for doctors and related personnel as well as reemploy retired medical personnel on a selective basis.

17.60 With regard to nurses, the total requirement is about 50,550 by the year 2000, as shown in *Table 17-3.* As the additional requirement of nurses is about 2,740 by the year 2000, existing nurses training schools under the Ministry of Health will be expanded to meet the demand from the public as well as the private sectors. In addition, private hospitals will be encouraged to train more

nurses. As a short-term measure, more foreign nurses will be recruited to fill vacancies in public and private sector institutions. Home-based health services will be expanded by training more community health workers. Flexible working arrangements will also be explored to enable the recruitment of retired allied health professionals to support the expanding medical services.

IV. ALLOCATION

17.61 The development allocation and expenditure for health services during the Sixth Plan period and the allocation for the Seventh Plan are shown in *Table 17-4*. A total of RM2.6 billion is allocated to further expand the facilities and improve the efficiency of health services.

TABLE 17-4

DEVELOPMENT ALLOCATION FOR HEALTH SERVICES, 1991-2000
(RM million)

	6MP		*7MP*
Programme	*Allocation*	*Expenditure*	*Allocation*
Patient Care Services	**2,070.3**	**1,943.2**	**1,831.6**
Hospitals	1,537.0	1,477.8	1,159.7
Upgrading & Renovation	533.3	465.4	671.9
Public Health Services	**293.6**	**280.2**	**655.7**
Urban Health	66.5	62.2	183.3
Rural Health	131.8	123.2	400.0
Environmental Health	95.3	94.8	72.4
Other Health Services	**134.5**	**128.3**	**162.7**
Total	**2,498.4**	**2,351.7**	**2,650.0**

V. CONCLUSION

17.62 During the Sixth Plan period, emphasis was given to the expansion of health care infrastructure as well as health manpower with a view to strengthening the delivery and quality of health care services. Health programmes will continue to be given priority during the Seventh Plan period as they have direct impact on, and contribute to, the overall health status of the population.