

Annual Report



MINISTRY OF HEALTH MALAYSIA

2006

Annual Report



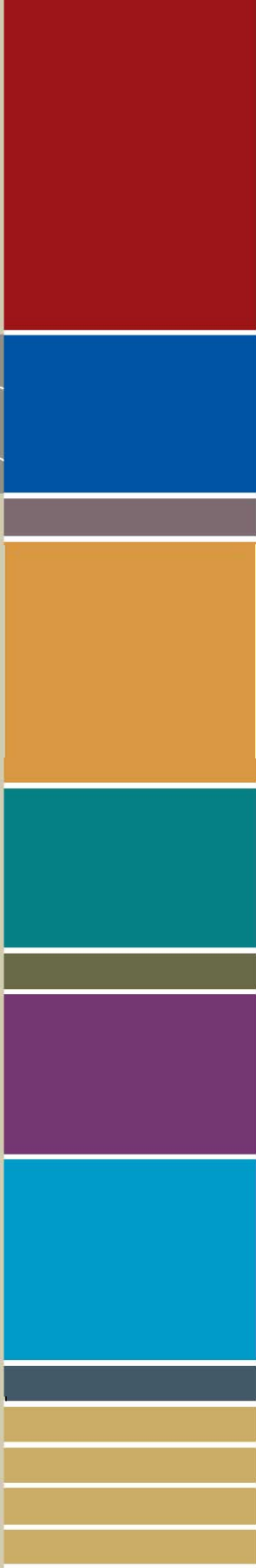
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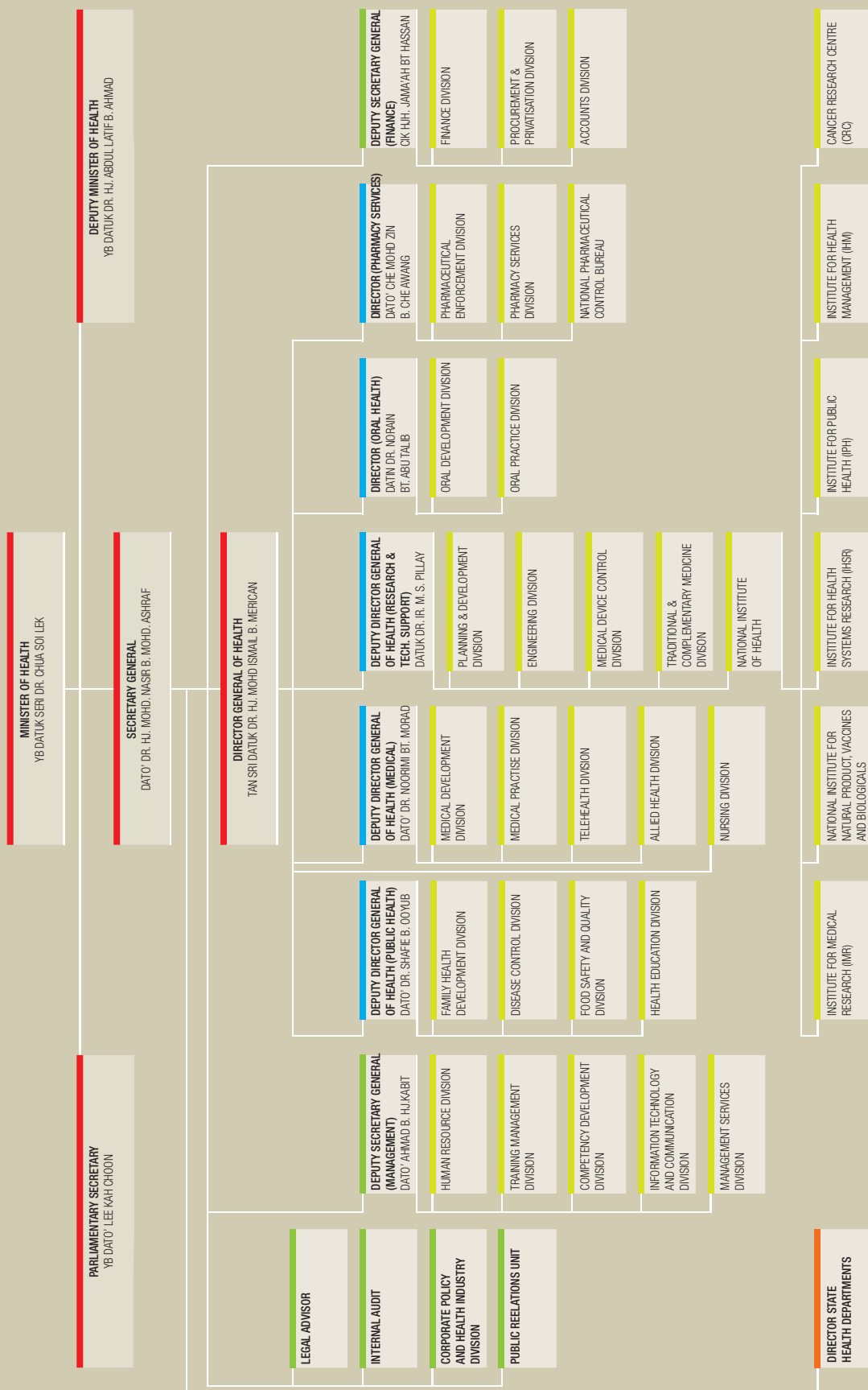
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Organisation Chart of Ministry of Health Malaysia 2006



Vision for Health

Malaysia is to be a nation of healthy individuals, families and communities, through a health system that is equitable, affordable, efficient, technologically appropriate, environmentally adaptable and consumer-friendly, with emphasis on quality, innovation, health, promotion, and respect for human dignity and which promotes individual responsibility and community participation towards an enhanced quality of life.

Mission of the Ministry of Health

The mission of the Ministry of Health is to built partnerships for health to facilitate and support the people to:

- Attain fully their potential in health.
- Motivate them to appreciate health as valuable asset.
- Take positive action to improve further and sustain their health status to enjoy a better quality of life

HEALTH STATUS

HEALTH STATUS

The health status of the population in Malaysia has improved and will continue to improve. The Ministry of Health continues to actively pursue public health promotion through health education campaigns alongside routine disease prevention and control programmes. The government also continues to take the lead in providing health services of good quality and support to all other healthcare providers in its effort to ensure that the Malaysian population gets the best affordable health care.

POPULATION STRUCTURE

The population of Malaysia in 2006 was 26.64 million with an average annual population growth rate of 1.9. The geographical distribution of population by state in 2006 remained largely unchanged from the pattern in 2005, whereby Selangor still has the highest resident population of 4.9 million, while Perlis recorded the lowest population of 0.2 million. Federal Territory of Kuala Lumpur and Pulau Pinang were still the most densely populated with 6,502 and 1,449 persons per square kilometer of land respectively. The population density by state in 2006 is shown in Table 1.

In 2006, analysis of the age structure of the population showed that the distribution pattern remained much the same as the previous year. Distribution of population for ages below 20 years or population of the youth was 42%, whereas the population distribution for ages above 60 years or the elderly was about 6.7% of the total population. The economically-productive or working age population, classified as persons age 15 to 64 years was a sizeable 16.9 million people or 63.3%, while the economically-dependent, that is people below 15 years and 65 years and above, was about 9.8 million or 36.7% of the total population in Malaysia.

Analysis of the population by gender in 2006 remained unchanged as compared to 2005, where the number of male population continue to outnumbered the females with a percentage of 50.9% and 49.1% respectively. It was noted that 63.2% of the population live in the urban areas and 36.8% in rural areas. Both the urban and rural population in 2006 increased by 2.3% and 1.4% respectively. Table 2 shows some of the basic demographic features of the Malaysian population in 2006.

NATALITY, MORTALITY AND NATURAL INCREASE

In 2006, a total of 482,700 live births were recorded. The crude birth rate and the crude death rate were 18.7 and 4.5 per 1,000 population respectively, while the rate of natural increase was 14.2 per 1,000 population.

VITAL STATISTICS

Statistical analysis for the period of 2002-2006, showed an increasing trend in perinatal mortality and neonatal mortality rate, while the crude death rate and maternal mortality rate remained unchanged. However, infant mortality showed a slight decrease in 2006 as compared to 2005. Table 3 shows the vital statistics in Malaysia for the year 2002 to 2006.

LIFE EXPECTANCY

For the year 2006, the life expectancy at birth for male was 71.8 and 76.3 for female. There was a lot of improvement compared to the life expectancy for Malaysians in 1957, which was 56 years for male and 58 years for female. This was related to decreasing trends in mortality rates, better environment, improvement in nutritional status and better sosio-economic status of the population.

TABLE 1
Population Density by State, Malaysia, 2006

State	Population (‘000)	Area (Sq.km)	Density (per Sq. Km)
Perlis	228.0	795	287
Kedah	1,882.0	9,425	200
Pulau Pinang	1,492.4	1,030	1,449
Perak	2,283.0	21,005	109
Selangor*	4,850.1	7,979	608
F.T. Kuala Lumpur	1,580.0	243	6,502
Negeri Sembilan	961.8	6,657	144
Melaka	725.3	1,652	439
Johor	3,170.5	18,987	167
Pahang	1,454.9	35,965	40
Terengganu	1,042.0	12,955	80
Kelantan	1,530.7	15,020	101
Sabah	2,997.0	73,997	41
F.T. Labuan	84.9	92	933
Sarawak	2,357.5	124,450	19
Malaysia	26,640.2	329,876	81

* Includes F.T. Putrajaya

Source : Department of Statistics, Malaysia

TABLE 2
Demographic Indicators, Malaysia 2005 – 2006

Indicators	2005		2006	
	Number (Thousands)	% of Total Population	Number (Thousands)	% of Total Population
Population				
Male	13,302.7	50.9	13,562.6	50.9
Female	12,825.0	49.1	13,077.6	49.1
Youths (below 20 years)	11,052.6	42.3	11,187.8	42.0
Elderly (above 60 years)	1,731.2	6.6	6.7	6.7
Economically-productive (age 15-64 years)	16,483.0	63.1	16,858.6	63.3
Economically-dependent (age 15 & above 64 years)	9,644.7	36.9	9,781.6	36.7
Urban	16,465.2	63.0	16,838.5	63.2
Rural	9,662.4	37.0	9,801.7	36.8

Source: Department of Statistics, Malaysia

TABLE 3
Vital Statistics, Malaysia, 2002 – 2006

Indicator	2002	2003	2004	2005(p)	2006(p)
Crude Birth Rate per 1,000 Population	19.9	19.4	19.1	18.3	19.0
Crude Death Rate per 1,000 Population	4.4	4.5	4.5	4.5	4.5
Perinatal Mortality Rate per 1,000 Total Births	6.8	6.8	6.8	7.3	7.3
Neonatal Mortality Rate per 1,000 Live Births	3.8	3.2	3.7	3.9	3.9
Infant Mortality Rate per 1,000 Live Births	6.5	6.6	6.5	6.7	6.6
Toddler Mortality Rate per 1,000 population aged 1- 4 years	0.5	0.5	0.4	0.4	0.5
Maternal Mortality Rate per 1,000 Live Births	0.3	0.3	0.3	0.3	0.3
Life Expectancy at Birth (Age in years)					
Male	70.8	70.9	71.1	71.5	71.8
Female	75.6	75.9	75.9	76.2	76.3

P – Provisional figures

Source : Department of Statistics, Malaysia

MORBIDITY AND MORTALITY BY CAUSE

Based on the Ministry of Health statistics, the leading cause of hospitalization in MOH hospitals for the year 2006 were normal delivery, followed by complication of pregnancy, childbirth and the puerperium and accidents. Normal deliveries, complication of pregnancy, childbirth and puerperium and certain conditions originating in the perinatal period constituted about 27.3% of all causes of hospitalization in MOH hospitals, while the percentage of hospitalization due to accidents constituted about 9.11% of all hospitalisation. However, the major cause of deaths was Septicaemia, followed by Heart Disease and Diseases of Pulmonary Circulation. Table 4 and 5 shows the 10 principle causes of hospitalization and deaths in MOH Hospitals in 2006 respectively.

TABLE 4
10 Principal Causes of Hospitalization in Ministry of Health Hospital, 2006

10 Principal Causes of Hospitalization	Percentage (%)
1. Normal Delivery	14.91
2. Complication of Pregnancy, Childbirth and the Puerperium	12.39
3. Accident	9.11
4. Diseases of The Respiratory System	7.30
5. Diseases of The Circulatory System	7.26
6. Certain Conditions Originating in the Perinatal Period	6.57
7. Diseases of the Digestive System	5.20
8. Diseases of the Urinary System	3.74
9. Ill-Defined Conditions	3.43
10. Malignant Neoplasms	3.13
Total Admission (1,905,089)	100.00

Source : Information and Documentation System Unit, MOH

TABLE 5
10 Principal Causes of Death in Ministry of Health Hospital, 2006

10 Principal Causes of Death	Percentage (%)
1. Septicaemia	16.87
2. Heart Diseases and Diseases of Pulmonary Circulation	15.70
3. Malignant Neoplasms	10.59
4. Cerebrovascular Diseases	8.49
5. Pneumonia	5.81
6. Accident	5.59
7. Diseases of the Digestive System	4.47
8. Certain Conditions Originating in the Perinatal Period	4.20
9. Nephritis, Nephrotic Syndrome and Nephrosis	3.83
10. Ill-Defined Conditions	3.03
Total Number of Death (40,586)	100.00

Source : Information and Documentation System Unit, MOH

MANAGEMENT PROGRAMME

HEALTH MANPOWER

INTRODUCTION

Human Resource Division (HRD) in the Ministry of Health (MOH), Malaysia is responsible for human resources planning and development in the health sector. The role of HRD is to ensure that planning, management and development of the human resources in MOH are implemented effectively and efficiently in order to enhance the image of MOH. All the activities are aiming to facilitate and enable the MOH employees to enhance their level of commitment and motivation in achieving the MOH goals. These activities include career development, training, allowance and scheme and others.

ACTIVITIES AND ACHIEVEMENTS

Establishment

Organizational structuring is carry out based on the need to produce effective work force that is well planned and efficient in order to achieve the optimum consumption of human resources. In sequence with this goal, Establishment Unit has implemented 13 surveys for major posts which include restructuring of MOH organization Phase 1 and restructuring of 4 Divisions in the MOH namely Human Resource, Planning and Development, Training Management and Account. There were 9,372 additional posts were established through Estimated Operational Budget 2006 (ABM 2006). The total posts in MOH by 31 December 2006 were 166,392.

Scheme and Allowance Review

The scheme and allowances is reviewed continuously, in order to ensure MOH employees enjoy an effective benefit and competitive and attractive allowances and the appropriate services scheme. In sequence with these objectives, Scheme and Allowance Unit has submitted four (4) proposals to Public Service Department (PSD) regarding services scheme in MOH. One of the proposals has been approved by PSD which is the establishment of Integrated Service Scheme for Medical Assistants Grade U29, U32, U36, U41/42, U44, U48, U52 and U54 involving 7,213 officers. Besides that, eight (8) proposals regarding allowances were submitted to PSD. Two (2) proposals have been approved on enforcement allowance at the rate of RM200 per month to the Pharmacists and Pharmacist Assistants engaged in enforcement activities. In order to establish a systematic referral system, 105 service schemes in MOH were documented. Dialogue sessions were organized between the Secretary General and health service unions/ associations as a forum for the health service unions/ associations to voice out their problems and to find solutions.

Post Filled

In 2006, 141,488 posts were filled with 17,030 posts in the Management and Professional, 80,693 posts in Paramedic and Auxiliary and 43,765 posts in Common User & Support.

Services Related Matters

In 2006, the HRD had processed a total of 9,916 services related matters for Management and Professional, 12,383 for Paramedic and Auxiliary and 18,863 for Common User & Support group concerning the confirmation of employment, confirmation in service, pension status, transfers and other related services.

Promotion

In 2006, 65 promotion exercises have been carried out involving 1,748 officers from Management and Professional group and Support (I and II) group, while 136 matters related to acting were carried out involving the filling up of 3,387 vacant posts for both groups. For matters pertaining to superintend, 4,172 applications from both groups were processed. Besides that, a total of 161 matters related to the posting/acting of medical specialist officers U54 and 253 matters for Grade U52 and Grade U48 were completed in 2006.

Contract Employment

Contractual recruitment was implemented to accommodate the shortage of medical officers and paramedic in MOH. The recruitment process for the contractual employment that is being practiced in MOH is through the Government to Government agreement (G to G) and personal application to the government. As of December 2006, a total of 704 Medical Officers were recruited on contractual basis which consists of 158 Malaysians and 546 foreigners.

Disciplinary Action

To ensure good practices of governance, Disciplinary Unit has implemented detection actions, punitive and awareness activities to enhance the integrity and the efficiency of the services delivery system of the employees in MOH. As of December 2006, a total of 85 cases 372 cases were reported by Management and Professional group and Support group respectively. In terms of status, 253 cases have been solved while 214 cases which are still unsolved include cases of absenteeism, complaints, bribery, drugs and criminals. There were 37 integrity related matters for Management and Professional group which include outside employment, land and property declaration, while 66 disciplinary cases for the support group were regarding land matters.

Data Management

The main function of Data Management Unit is to coordinate and updating the information regarding establishment in MOH. In 2006, this unit has produced establishment information book for every quarter. This book was circulated to all Divisions in MOH, including central agencies such as Public Service Department (PSD), Treasury and Public Service Commission for the purpose of recruitment and updating information. As of 31st December 2006, a total of 140,824 (84.6%) posts were filled with 25,568 vacancies (15.4%).

Training Program

In 2006, HRD has organized a few courses in order to produce capable, efficient and knowledgeable manpower in line with government policy. The courses include Orientation for Medical Officers, Supervising Course, Course for Pensioner, Service Related Course and Orientation for new Administrative and Diplomatic Officers and Assistant Administrative Officers in MOH.

HRD also sent a total of 153 HRD officers to attend courses organized by private companies and government agencies which include ICT, File Management, Procurement, Human Resource Management, Supervising Course, Finance, Official Documents Management, Effective Writing Skills, Team Building and Asset Management. There were also workshops, inspections and seven (7) talk sessions on discipline and integrity conducted in 2006.

Finance Management

In 2006, a sum of RM1,875,760 was allocated to HRD of which RM1,865,215.29 or 99.44% was spent on the implementation of activities conducted by HRD.

Improvisation and Innovation

This Division has made a few improvisations and established some innovation to uplift the management quality, service delivery and work process. The processes include:

- Publishing of Medical Officer Career Guide Book to attract Medical Officers particularly those who are serving abroad to work in Malaysia.
- 8 Orientation Courses for Medical Officers (U41) to ensure that all Medical Officer are capable in performing their duties, ability to work as a team, and producing customer oriented service.
- Introduction to usage of online MBJ sub module in MOH Headquarters.
- Introduction to usage of Leave Management sub module MOH Headquarters.

TRAINING MANAGEMENT

INTRODUCTION

The Training Division (TD) is responsible in developing the human capital of the Ministry of Health (MOH) through its Strategic Training Plans (Training Road-map). In 2006, the TD continued to strengthen its training activities, reviewed certain training policies, restructured and refined the curriculum of Basic and Post Basic courses, identified and developed the curriculum of new Post Basic courses and also strengthened the management of examinations. The training colleges of MOH were further consolidated to ensure that the training of Allied Health Science Personnel (AHSP) is carried out effectively. The following were the priority issues dealt by TD in 2006:

- Manpower Planning
- Training Programmes
- Management of Examinations
- Curriculum Development, and
- Quality Improvement Initiatives

WORK FORCE

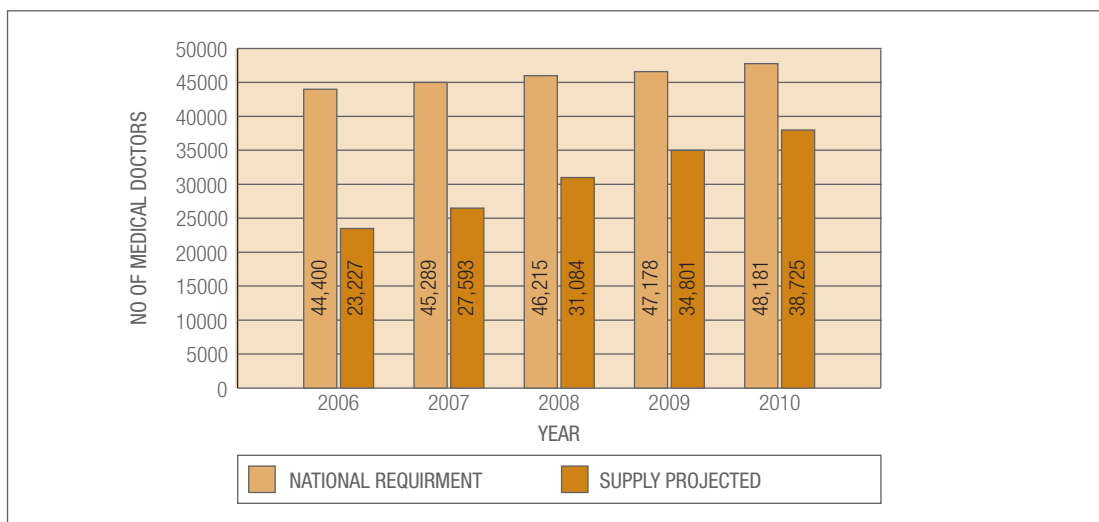
In 2006, there were 173 posts in the TD. There were 1,175 posts of training college tutors (including those posts in TD). In TD, 102 (62%) posts were filled. The number of training college tutors posts filled was 724 (62%).

ACTIVITIES AND ACHIEVEMENTS

Manpower Planning

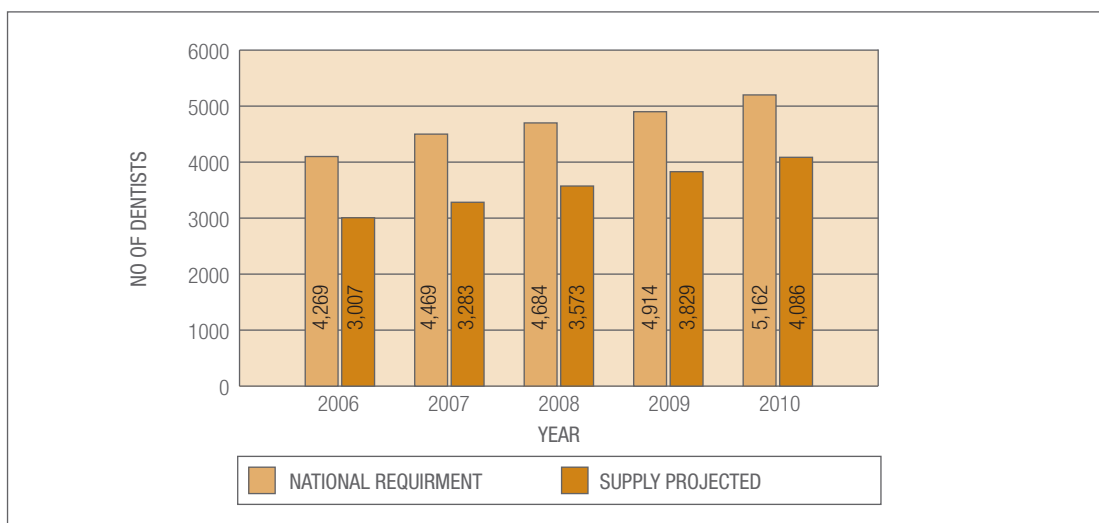
The projection for requirements and supply of Medical Doctors, Dentists, Pharmacists, Medical Specialists, and the AHSP for the period of 2006 to 2010 were reviewed. The indication from the projection is that the increase in the supply of Medical Doctors, Dentists, Pharmacists, Medical Specialists, and the AHSP for the next few years to come would still be inadequate to meet the increasing needs of the nation. However, the deficits between the supply and demand of those categories of health human resources are expected to steadily reduce over the years. Figure 1, 2, 3 and 4 shows the current and projected national requirement and stock of Medical Doctors, Dentists, Pharmacists, and the AHSP respectively.

FIGURE 1
Current and Projected Requirement and Supply of Medical Doctors



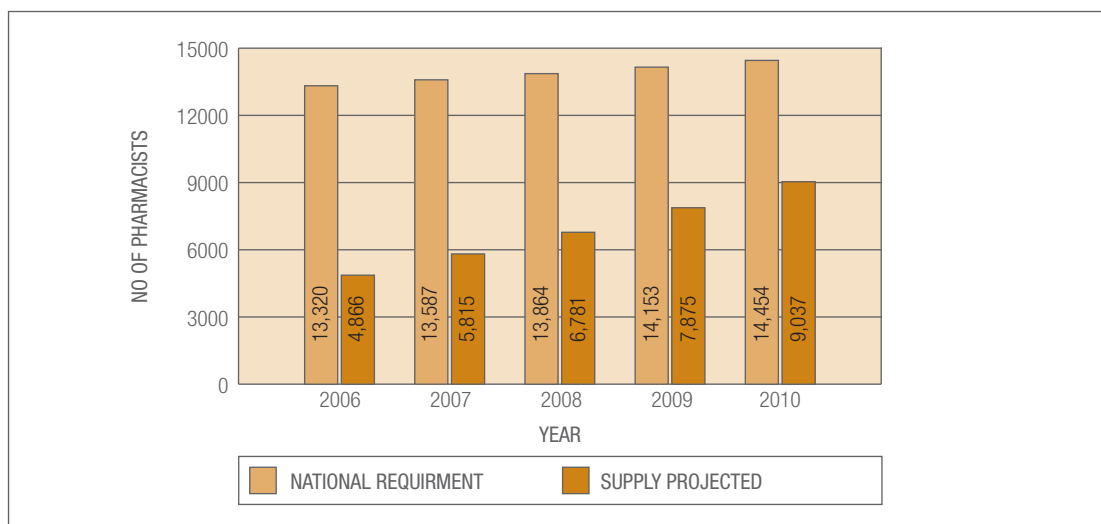
Source: Training Management Division, MOH
 Note : Based on the norm of 1 : 600 population

FIGURE 2
Current and Projected Requirement and Supply of Dentists



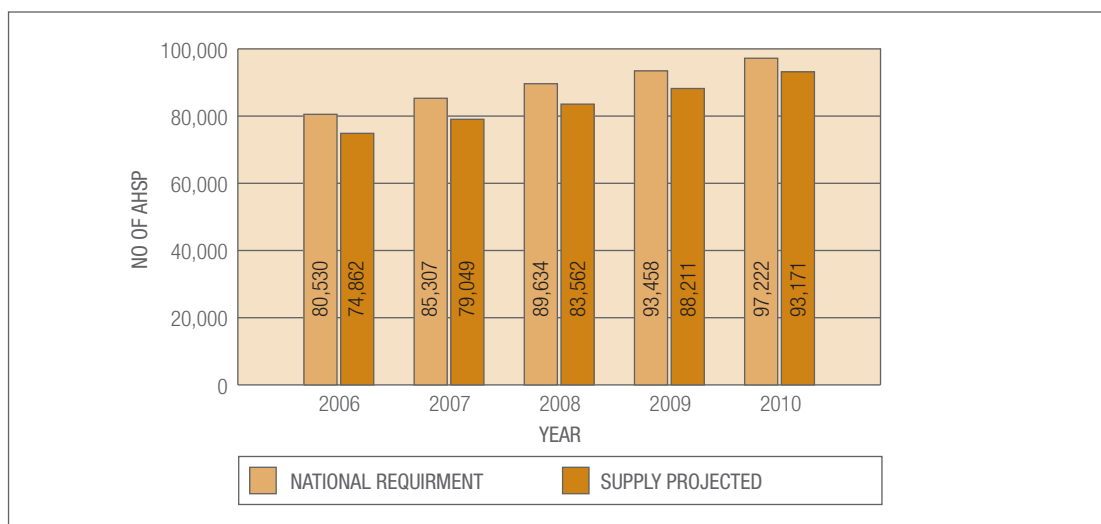
Source: Training Management Division, MOH
 Note : Based on the norm of 1 : 4,000 population

FIGURE 3
Current and Projected Requirement and Supply of Pharmacists



Source: Training Management Division, MOH
 Note : Based on the norm of 1 : 2,000 population

FIGURE 4
Current and Projected Requirement and Supply of AHSP for MOH



Source: Training Management Division, MOH

Training Programmes

In 2006, there was an increase in the intake of trainees for various categories of training as compared to the year 2005, with the exception of Basic Training and the Sub-Speciality Training (Medical Officers) as shown in Table 1.

TABLE 1
Intake of Trainees by Types of Training

No.	Types of Training	2005	2006
1.	Basic Training (AHSP)	6,061	5,588
2.	Post Basic Training	1,991	2,459
3.	Specialist Training (Medical Officers)	421	451
4.	Sub-Speciality Training (Medical Officers)	100	87
5.	Masters / Doctoral courses	50	53
6.	Short Term In-service courses(Overseas)	193	200
7.	In-Service Conversion courses	154	201
8.	Induction courses	10,465	9,632

Source: Training Management Division, MOH

a) Basic Training (AHSP)

The intake of trainees for the Basic courses in the year 2006 was 5,588. Table 2 shows the intake of trainees for the Basic training courses according to disciplines for 2005 and 2006.

TABLE 2
Intake of Trainees by Category of AHSP, 2005-2006

No.	Discipline	2005	2006
1	Nurse	2,655	2,199
2	Community Nurse	1,402	1,323
3	Medical Assistant	678	613
4	Pharmacy Assistant	126	101
5	Assistant Environmental Health Officer	233	237
6	Medical Laboratory Technologist	358	274
7	Radiographer	142	82
8	Dental Nurse	131	130
9	Dental Technician	40	40
10	Physiotherapist	57	59
11	Occupational Therapist	52	60
12	Dental Surgery Assistant	187	267
13	Public Health Assistant	-	203
TOTAL		6,061	5,588

Source: Training Management Division, MOH

b) Post Basic Training

In 2006, a total of 2,399 AHSP attended Post Basic training courses in 33 different disciplines in the training colleges of MOH (Table 3) shows the number of AHSP who have attended Post Basic training courses according to disciplines for the year 2005 and 2006.

TABLE 3
Intake of Trainees for Post Basic Training, 2005-2006

No.	Discipline	2005	2006
1	Midwifery	704	776
2	Emergency Care	60	120
3	Public Health Nursing	73	116
4	Environmental Health	18	6
5	Laboratory Management	-	-
6	Health Personnel Management	69	141
7	Primary Healthcare	24	52
8	Tranfusion Medicine	-	-
9	Gerontology	22	26
10	Coronary Care	84	97
11	Neonatal Nursing	56	78
12	Ophthalmic Nursing	38	39
13	Oncology Nursing	30	42
14	Orthopaedic Nursing	73	83
15	Paediatric Care	72	98
16	Perioperative Care	139	149
17	Psychiatric Nursing	33	70
18	Intensive Care	117	153
19	Renal Nursing	119	115
20	Legal and Prosecution	14	15
21	Cytology	23	-
22	Computerize Tomography	13	20
23	Anaesthesiology	8	16
24	Diabetic Management	50	53
25	Sports Medicine	49	41
26	Hemostasis	-	-
27	Occupational Health and Safety	-	-
28	Paediatric Dental Care	-	18
29	Forensic	19	43
30	Otorinolaringology Treatment	21	21
31	Microbiology	29	-
32	Food Safety and Cleanliness	4	5
33	Orthodontic Treatment	30	-
TOTAL		1,991	2,393

Source: Training Management Division, MOH

TABLE 4
Intake of Medical Officers for Specialist Programmes, 2005-2006

No.	Discipline	2005	2006
1	Obstetric & Gynaecology	33	28
2	Anesthesiology	43	54
3	Paediatric	18	23
4	Internal Medicine	36	46
5	Psychiatry	25	22
6	Radiology	22	30
7	General Surgery	42	35
8	Ophthalmology	30	22
9	Orthopaedic	34	36
10	Otorhinolaryngology	17	21
11	Pathology	30	22
12	Family Medicine	25	31
13	Public Health	40	35
14	Sports Medicine	0	3
15	Rehabilitation Medicine	3	6
16	Emergency Medicine	12	21
17	Neurosurgery	5	4
18	Plastic Surgery	1	3
19	Clinical Oncology	5	4
20	Pediatric Surgery	0	3
21	Tranfusion Medicine	0	2
TOTAL		421	451

Source: Training Management Division, MOH

c) Specialist and Sub-speciality Training

A total of 451 Medical Officers were offered for Master in Medicine programme in the various fields of specialization under the Federal Training Scholarship for the year 2006 as compared with 421 in 2005. 87 Medical Specialists were offered to undergo sub-speciality training. Table 4 and 5 show the intake of Medical Officers and Medical Specialists for specialist and sub-speciality training for the year 2005 and 2006 respectively.

TABLE 5
Intake of Medical Specialists for Sub-Specialty Training

No.	Discipline	2005	2006
1	Medicine	20	22
2	Surgery	10	12
3	Paediatric	7	7
4	Obstetric & Gynaecology	7	5
5	Anesthesiology	10	6
6	Orthopedic	15	6
7	Otorhinolaryngology	5	6
8	Ophthalmology	6	4
9	Psychiatry	2	4
10	Pathology	8	8
11	Radiology	2	3
12	Family Medicine	4	3
13	Radiotherapy	1	-
14	Forensic Medicine	2	-
15	Palliative Medicine	1	1
16	Health Management	-	0
TOTAL		100	87

Source: Training Management Division, MOH

d) Masters and Doctorate Courses

A total of 53 officers from different health service schemes were offered the Federal Training Scholarship to undertake Masters (47 officers) and Doctorate courses (6 officers) in different disciplines relating to health in the year 2006.

e) Short Term In-Service Courses

In the year 2006, a total of 200 personnel of MOH as compared to 193 in 2005 attended short-term in-service courses financed either from the operating budget of MOH or sponsored by other agencies and international bodies or foreign governments.

f) Conversion Courses (In-Service)

Table 6 shows the details of the in-service conversion courses conducted for the career advancement of Assistant Nurses, Community Nurses and Midwives In the year 2006.

TABLE 6
In-Service Conversion Courses

No.	Discipline	2005	2006
1.	Assistant Nurses to Nurses (11/2 years)	-	-
2.	Community Nurses to Nurses (1 year)	154	201
3.	Midwife to Community Nurses (9 months)	-	-
TOTAL		154	201

Source: Training Management Division, MOH

Management of Examinations

Various aspects in the management of examinations for all Diploma and certificate courses conducted by the training colleges of MOH were further strengthened in the year 2006.

All the examinations scheduled for the year 2006 were successfully implemented. Almost all the courses of the different disciplines achieved a passing rate of more than 90%. However, there are several issues in the administration of the examination that need to be overcome to further improve the students' achievement in the examinations and the overall quality of the graduates.

Development of Curriculum

Through the year 2006, continuous strengthening and refining of several curriculum of specialised allied health science disciplines which had adapted the credit system. A number of new curriculum in specialised disciplines incorporating the concept of credentialing and privileging were also introduced. In addition, the structures for conversion and preparatory programme for several AHSP service schemes were prepared.

The training curriculum was further enhanced for the following Diploma programmes:

- Diploma in Dental Nursing
- Diploma in Dental Technology
- Diploma in Nursing

Training need analysis for specialization courses were carried out in the following disciplines:

- Endoscopy Medicine
- Palliative Medicine
- HIV/AIDS Counselling

TD had also developed and structured training programs for certain categories of service schemes following the introduction of new requirements or changes to their respective schemes of services. The courses were:

- Conversion courses for Nurses, Radiographers and Assistant Environmental Health Officers as part of the requirement to be placed under the Professional Service Group.
- Conversion courses for Public Health Assistant course
- Preparatory courses structure for Hospital Directors (AHSP)
- Training programme for new tutors (U41)

Quality Improvement Initiatives

In 2006, TD had intensified its quality improvement initiatives for its training activities. A national convention for QCC was organized from 1-3 November 2006 whereby 21 teams from the technical and management categories competed among themselves.

Two (2) quality assurance performance (QAP) reports on the Basic training Programme of MOH training colleges were prepared, each for the period of January-June 2006 and July – December 2006 respectively. The overall level of compliance of MOH training colleges to the quality assurance indicators set was commendable.

The outsourced training programme for nurses, pharmacy assistants and medical laboratory technologists in several private training institutions were monitored from time to time. The teaching and training activities of MOH training colleges were also monitored to ensure that they meet the needs and standards set.

WAY FORWARD

The human resources development of MOH through training is crucial in supporting the development and expansion of an efficient, effective and reliable health service delivery system which can respond to the dynamic changes in health care needs and demands. The following are the strategies of TD to achieve its human resources development initiatives:

- Enhance manpower planning activities and reviewing them constantly to ensure they are strategic and responsive to changes;
- Comprehensive assessment of current and projected demand and supply of health human resources in accordance with set norms;
- Develop appropriate health manpower training plans to equip all levels and categories of personnel to the required level of competencies;
- Ensure continuous improvement in the planning and development of MOH training programmes;
- Expedite the development or improvement of the training colleges of MOH to ensure their teaching and learning quality meet national needs and aspirations; and
- Collaborate closely with relevant government agencies and the private sector to ensure the requirement for health human resources are met adequately.

CONCLUSION

It is projected that the supply of medical and health manpower, especially Medical Doctors, Dentists, Pharmacists, Medical Specialists, and the AHSP for several years to come will still be inadequate to meet the needs of the nation. However, the increase in intake of students in the medical and health fields by local Institutions of Higher Learning (public and private) and also the increase in the intake of AHSP trainees by MOH training colleges will help to reduce the deficit in the demand and supply of those categories of manpower.

The curriculum and the management of examination of Basic and Post Basic training programmes will continue to be enhanced to meet the targets set. These initiatives were taken to ensure that the training provided continue to be relevant.

FINANCIAL MANAGEMENT

INTRODUCTION

Ministry of Health's (MOH) financial matters are being managed by the Finance Division. The objective of the Finance Division is to ensure that the MOH has a well organized budgeting system, to enhance the budget management and revenue collection of the organization in accordance to the current financial policies and regulations. This Division was established as part of the Financial Activity in the Ministry of Health.

The Finance Division consists of the Financial Policies 2 sections, namely Financial Policies and Budget Management. The Financial Policies Section comprises of 3 units, i.e. Policies, Allowances and Administrative Unit, Financial Aid and Subsidy Unit and Revenue Management Unit, while the Budget Management Section consists of Budget System Unit, Health Programmes and Medical Treatment Unit and Management and Development Unit.

In 2006, a sum of RM9,502.7 million was allocated to MOH of which RM8,205.93 million was allocated for the Operational Budget and RM1,296.77 million for the Development Budget. The total allocation for MOH was the third largest budget allocation as compared to other Ministries. In comparison to the budget allocated in 2005, there was an increase of 12.38% for the Operational Budget and 8.36% for the Development Budget.

ACTIVITIES AND ACHIEVEMENTS

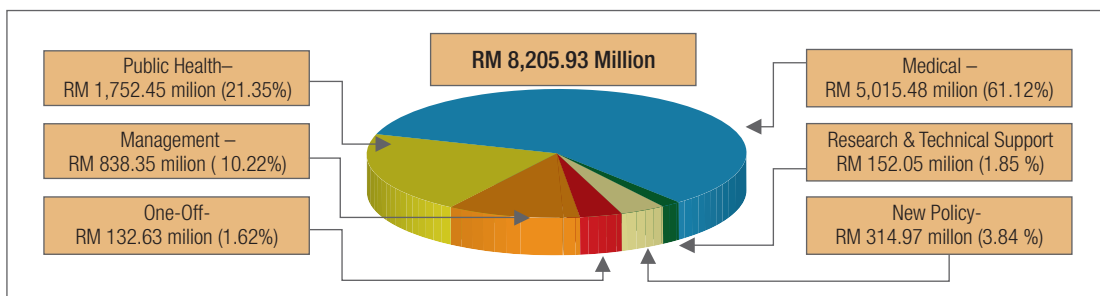
BUDGET MANAGEMENT

Operational Budget

Operational Budget Allocation

Figure 1 shows the allocation of Operational Budget by programmes for 2006:

FIGURE 1
Allocation of Operational Budget By Programme, 2006



Source : Finance Division, MOH

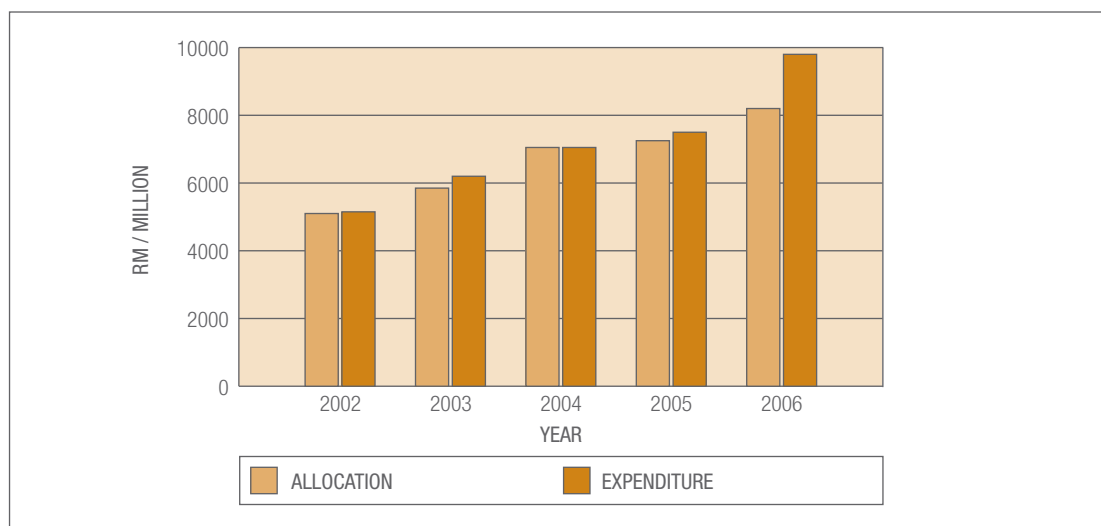
Expenditure Performance

Total expenditure of the Operational Budget in 2006 was RM8,693.05 million or 105.94% from the total allocation of RM8,205.93 million. The over expenditure was due to the payment of bonus for the year 2006, the expansion of Cost of Living Allowance (COLA), the increment of the allowance rate, the adjustment of salary and allowance due to the changes made in certain service schemes and promotions, and filling up of vacant posts. A sum of RM487.122 million was approved by the government in 2007 as an additional allocation for the year 2006.

Overall Performance of Operational Budget 2002 – 2006

The Operational Budget allocation of MOH has increased by 59.7% in the past 5 years (2002-2006) from RM5,139.27 million in 2002 to RM8,205.93 million in 2006 with annual average increment of 11.93%. Meanwhile, the operational expenditure for the same period increased by 68.7% from RM5,151.65 million to RM8,693.05 million with an average rate of 13.74% per annum. The total expenditure was higher than the total allocation due to the payment of emolument not allocated sufficiently in the budget allocation (Figure 2).

FIGURE 2
Overall Performance of Operational Budget, 2002 – 2006



Source : Finance Division, MOH

Development Budget

Development Budget Allocation and Expenditure for the Year 2006

The total expenditure of Development Budget was RM1,209.16 million or 93.24% from the total allocation of RM1,296.77 million. Table 1 shows the development expenditure according to project details.

In 2006, the highest percentage of expenditure was recorded by New Hospital projects with 98.17% from total expenditure. The total expenditure for all the projects was more than 92% except for Rural Health Service and Urban Health Service which recorded 65.25% and 73.62% respectively.

TABLE 1
Development Allocation and Expenditure By Project Details , 2006

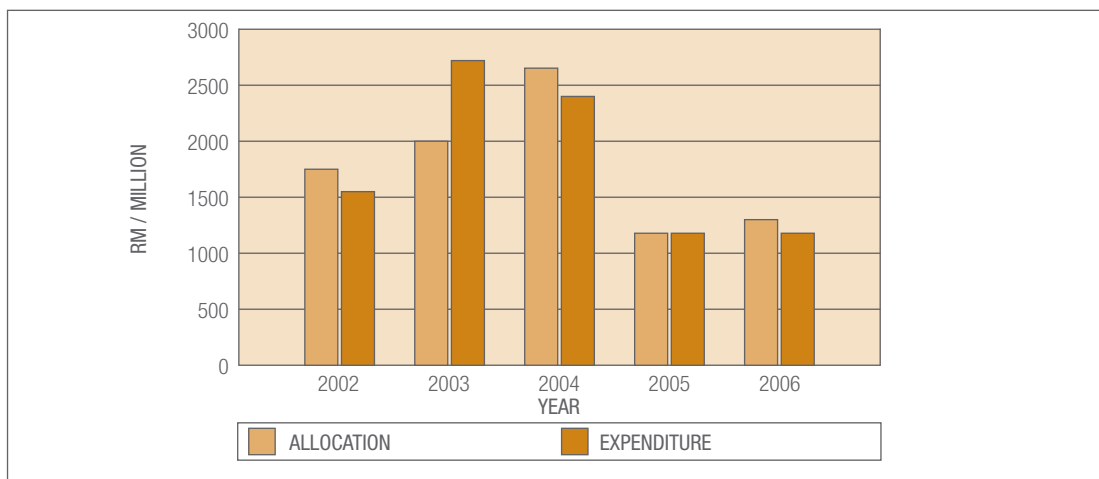
Detail (Project)	Title	Allocation (RM Million)	Expenditure (RM Million)	Percentage (%)
00100	Training	173.09	166.20	96.02
00201	Rural Health Service	59.20	38.63	65.25
00202	BAKAS	15.00	14.71	98.05
00203	Urban Health Service	59.00	43.43	73.62
00301	Hospital Restructure and Upgrade	236.20	218.53	92.52
00302	Master Plan and Redevelop of Hospitals	110.00	102.18	92.89
00400	New Hospitals	397.50	390.22	98.17
00500	Possibility Studies and Consultancy Services	40.00	36.95	92.39
00600	Restructure, Upgrade and Repair	146.76	142.15	96.85
00700	Procurement and Land Maintainance	60.00	56.14	93.57
TOTAL		1,296.77	1,209.16	93.24

Source: Finance Division, MOH

Overall Performance of Development Expenditure 2002 - 2006

Figure 3 shows the trend of the Development allocation and expenditure from 2002 to 2006.

FIGURE 3
Overall Performance of Development Budget, 2002 – 2006



Source : Finance Division, MOH

REVENUE MANAGEMENT

The total revenue collection for MOH in 2006 was RM 246.7 million, of which RM167.3 million or 67.8% was collected from the charges of health services in hospitals and clinics while RM79.4 million or 32.2% was collected from other revenues such as fines, rentals, sales and etc. The breakdown of the revenue classifications are shown in Table 2.

TABLE 2
Total Revenue Collected by MOH, 2006

Code	Revenue Classification	Amount (RM)
60000	Tax Revenue	1,475.00
71000	Licenses, Registration Fees and Permits	8,936,395.17
72000	Services and Services Fees	177,175,258.07
73000	Receipts from Sales of Goods	1,336,482.88
74000	Rentals	10,394,033.51
75000	Interest and Returns on Investment	229,088.22
76000	Fines and Penalties	7,523,120.00
80000	Non-Revenue Receipts	40,299,290.73
90000	Revenues from Federal Territory	847,273.67
TOTAL		246,742,417.25

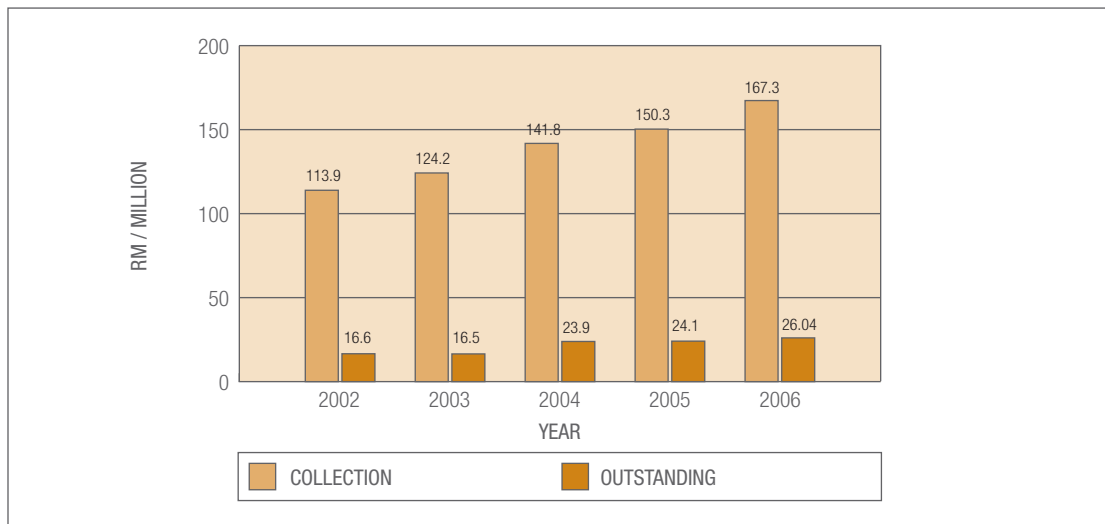
Source : Finance Division, MOH

Collection and Outstanding of Revenue for Health Services under the Fees (Medical) Order 1982 for the Year of 2006

Figure 4 shows the total collection and outstanding of revenue under the Fees (Medical) Order 1982 for the year 2002 till 2006:

The revenue collected under Fees (Medical) Order 1982 for the past 5 year period (2002-2006) showed an average increment of RM139.5 million annually. The total revenue collected in 2006 was RM167.3 million, which was 11.3% higher than RM150.3 million collected in 2005. From the total revenue collected in 2006, RM126.0 million was collected from Malaysian citizens while RM41.3 million was collected from Non- Malaysian citizens.

FIGURE 4
Collection and Outstanding of Revenue under the Fees (Medical) Order 1982 for 2002 - 2006



Source : Finance Division, MOH

Total outstanding of revenue also gradually increase with an average of RM21.43 million per year. The outstanding of revenue was due to the unpaid hospital bills by the citizen and non-citizen patients. The total outstanding revenue for 2006 was RM26.04 million which increased by 8.05% as compared to RM24.1 million in 2005. A total of RM12.5 million and RM13.6 million of the outstanding revenue in 2006 were contributed by Malaysian and non-Malaysian citizens respectively.

FINANCIAL AID AND SUBSIDY TO NON-GOVERNMENTAL ORGANIZATION (NGO)

Financial Aid to Non-Governmental Organization (NGO)

There are 3 types of financial assistance offered by the Ministry of Health Malaysia (MOH) to the Non- Governmental Organizations (NGO) such as:

- **Health Related Programmes Fund**

In 2006, a sum of RM2.1 million was allocated by MOH to NGOs in the form of financial aid to support health related programmes and activities such as counselling sessions, awareness campaigns, treatment and other related activities to the patients. This allocation was given to "Yayasan Jantung Malaysia", "Institut Diabetes Negara (NADI)", and other NGOs. The total allocation in 2006 decreased by 10% as compared to RM2.4 million allocated in 2005. The Ministry of Health had also provided funds amounting to RM4 million to the Malaysian Aids Council (MAC) in 2006 to carry out AIDS education and awareness activities.

- **Capital Grant Fund**

This grant was given to new dialysis centres which has a maximum of 10 dialysis machines. In 2006, a sum of RM3.1 million was allocated to the NGO in the form of capital grant. This amount had increased by 7% as compared to RM2.8 million allocated in 2005.

- **Hemodialysis Subsidy Fund**

This fund was created in order to help people who are in need and requires medical treatment including treatment on a prolonged basis in NGO hemodialysis centres with a subsidy of RM50.00 for each treatment. Assistance provided was in the form of financing medical cost, cost of medicine, medical equipment and equipment for rehabilitation that are not provided by government hospitals. In 2006, MOH had allocated a sum of RM17 million to NGOs as subsidies for hemodialysis treatment.

CONCLUSION

The Finance Division will continue to ensure that the allocations and revenue collection for the Ministry of Health (MOH) are well managed and will improve over the years. The Finance Division also supports other programs conducted by MOH in order to upgrade the health status of the people in the urban and rural areas to enhance productivity. The Division will continue to play an important role in ensuring all the financial policies and regulations are being followed accordingly.

ACCOUNTS MANAGEMENT

INTRODUCTION

The Accounts Division was set up during the 1960's. It is one of the 11 accounting offices for certain ministries or Self-Accounting Departments located in Kuala Lumpur and Putrajaya. The Accounts Division provides accounting and payroll processing services to agencies under the Ministry of Health in Kuala Lumpur and Putrajaya. The functions of the Accounts Division are to:

- i. Process payment vouchers on supplies and services, overtime allowances, traveling claims and other expenses;
- ii. Process payment of salaries;
- iii. Process collection statements;
- iv. Examine the accuracy of entries in the cash books of all Responsibility Centres involved in the collection of revenues;
- v. Prepare monthly and annual reports for top management, Accountant General's Department and Auditor General;
- vi. Provide training and consultancy services on accounting and the implementation of eSPKB; and
- vii. Conduct inspection on Responsibility Centres to ensure compliance to eSPKB user manual and financial procedures.

There are 5 sections in the Accounts Division namely the Administrative and Finance, Planning and Advisory, Payments and Payroll, Accounts, and Information Technology.

ACTIVITIES AND ACHIEVEMENT

Processing of payments

The Accounts Division processes payment vouchers from 33 Responsibility Centres (RC) of the Ministry in Kuala Lumpur and Putrajaya and make payments through cheques or Electronic Fund Transfer (EFT). For the year 2006, a total of 110,385 payment vouchers were processed as compared to 93,539 in the year 2005. The total payments amounted to RM2,154,078,429 of which 72% is by EFT.

Processing of Payroll

The Accounts Division is responsible for providing the payroll processing service to 16,959 personnel under the Ministry of Health in Kuala Lumpur and Putrajaya by using the Human Resource modules in the GFMAS. Employees under this payroll system receive their salaries every month on the pay day that is determined by the Accountant General's Office.

Processing of collectors' statements

The Accounts Division processes collectors' statements to account for revenue collected and issues Treasury receipts. The number of collectors' statements that were processed in 2006 was 7,615 as compared to 6,900 in 2005. The number of Treasury receipts issued were 9,353 for a sum of RM30,226,548 collected in 2006.

Preparation of financial statements

The Accounts Division is responsible for the preparation of the financial statements of the Ministry of Health every year. The financial statements for the year 2005 were prepared on 23 March 2006. Among the statements prepared were for Operating Expenditure, Development Expenditure, Revenues, and Trust Accounts. The Trust Accounts are Government Trust Funds, Public Trust Funds, General Deposits Accounts, other Trusts Accounts and Accounts Payable.

Expand the use of Electronic Budgetary Planning and Control System (eSPKB)

The eSPKB expedites the payment process and also provides greater control over allocations and expenditures of which the recording of the Vot Book is done electronically. From 2003 to 2006, the Accounts Division has implemented the system in all RCs in Kuala Lumpur and Putrajaya. Besides using cheques to make payments, the Accounts Division has expedited its payments by using EFT. The implementation of eMaklum enables recipients of payment by EFT to be notified of their payment status.

eSPKB inspectorate team

The inspection program was set up in all accounting offices in compliance with the requirements by the Accountant General of Malaysia under Treasury Instruction 138 and Accountant General of Malaysia Circular No. 2/2003 on proper monitoring to prevent losses due to fraud and carelessness in the RC. An eSPKB inspectorate team has been set up to ensure payments compliance with the eSPKB user manual and financial procedures. A total of 33 RCs were inspected in 2006. Based on team reports, corrective measures were taken to overcome the various weaknesses.

Improve monitoring and compliance of financial procedures

Cash and revenue audits have been carried out on selected collection offices to ensure that they comply with procedures on revenue collection to avoid malpractices. In addition, the inspectorate team will give advisory services on the revenue collection system so that the financial documents are properly administered and kept safely. The inspectorate's observations on any irregularities will be reported to the collection offices and the Ministry of Health. In 2006, a total of 70 audit inspections were conducted on collection offices under the Ministry of Health.

Government Financial and Management Accounting System (GFMAS)

The GFMAS was implemented in the Ministry of Health on 1st September 2006 to replace the old legacy accounting system which comprises of Branch Accounting System and the Payroll System. GFMAS is developed based on web enabled system technology. GFMAS is an integrated system and is able to integrate with both internal and external systems. GFMAS provides financial information that is correct and consistent for financial planning, budget control and accounting, and streamlines work processes to achieve a standard financial process across all Federal Government agencies. This will enhance financial transparency and accountability.

WAY FORWARD

eSPKB inspection

Inspection audit will be carried out on a frequent basis on all the 33 Responsibility Centres in order to ensure all financial documents are properly kept and in adherence to eSPKB user manual and financial procedures.

Advisory services

The implementation of GFMAS will enable the Accounts Division to provide financial information and analysis effectively for a timely managerial decision support. The Accounts Division will transform from its role from a primary transaction processing to one that provide advisory and consulting services on matters related to accounting and electronic government accounting application systems. The functions of the Accounts Division will therefore be further enhanced to include knowledge management, implementation of electronic system, technical support, training and helpdesk support.

Management Accounting

The costing module known as Activity Based Costing (ABC) under the GFMAS will be implemented to give information on the cost of outputs of program/activities.

CONCLUSION

The Accounts Division will continue to improve its operational efficiency and effectiveness in order to enable it to provide value added services to the Ministry of Health. The future direction of the Accounts Division involves the transformation from a primarily transaction processing Division to a role of a financial solution information provider. This will enable the Division to provide management decision support to the Ministry of Health.

PROCUREMENT AND PRIVATISATION

INTRODUCTION

Procurement and Privatisation Division (P&PD) is responsible in managing of procurement, privatization, assets and stores in Ministry of Health (MOH), Malaysia. As of Disember 2006, a total of 64 out of 76 posts in P&PD were filled (Table 1).

TABLE 1
Total Posts by Category in P&PD, 2006

Management Group	No. of Post	Filled	Vacant
Higher Management	1	1	0
Management & Professional Group	25	22	3
Supporting Group	50	41	9
Total	76	64	12

Source: Procurement and Privatisation Division, MOH

ACTIVITIES AND ACHIEVEMENTS

STORE MANAGEMENT AND STOCK VERIFICATION

Store Inspection

A total of 111 stores in 52 Responsibility Centres (RC) were inspected in 2006 as compared to 27 stores in 15 RC inspected in 2005.

Stock Verification

For the first half of 2006, a total of 745 out of 838 RC in the MOH had received stock verification certificates, whereas in the second half of 2006, a total of 717 stock verification certificates were received.

Approval for "Receival of Gift"

In 2006, a total of 1,308 applications from the RC for "Receival of Gift" worth RM5.7 million were approved. Approval of "Receival of Gift" in 2006 had doubled as compared to 545 approvals in 2005.

Seminars

P&PD had organized 4 series of workshop on Procurement Management, Asset & Store according to zone (North, South, East and Sabah/Sarawak), involving 250 staff from Management & Professional group and Supporting group. The talks were given by officers from Procurement and Privatisation Division and Internal Auditing Branch of MOH.

ASSET MANAGEMENT AND DISPOSAL

Asset Disposal Management for MOH

A total of 228 applications for the disposal of Government Asset worth RM530,967.00 were received from its original value of RM12,188,042.00.

“Naziran” Report and Store & Asset Inspection

Store and Asset inspection on 50 RC was carried out to ensure that regulations and guidelines under *“Panduan Perbendaharaan/Arahan Perbendaharaan/Surat Pekeliling Bahagian Perolehan dan Penswastaaan KKM Bil. 2/2001”* – Guidelines on Stock Verification for all RCs under Ministry of Health” were followed accordingly.

Asset and Inventory Management System (AIMS)

AIMS will be used by all RCs in MOH by the year 2010. The proposal paper on the expansion of the system is being prepared with assistance of the Information and Communication Technology Division, MOH.

Reports on MOH’s Lost of Asset

A total of 101 cases were reported in 2006 with only 44 cases were resolved.

POLICY MANAGEMENT AND PRIVATISATION PLANNING

Several consulting firms were appointed to carry out several research in Ministry of Health (MOH). Among the research conducted in 2006 were:

- **Possibility Research at MOH Level**

The KPMG consultants had carried out the Possibility Research in incorporating Institute of Medical Research (IMR). A proposal to privatize the supply of extemporaneous medicine was not implemented due to the decisions made by Economic Planning Unit (EPU).

- **Efficiency and Effectiveness at the MOH Level.**

Usains Holding Sdn Bhd was appointed to carry out the Efficiency and Effectiveness of Cost for the Privatisation of Hospital Supporting Services research at a cost of RM1,278,400 within 8 months period beginning 16 January to 15 September 2006.

Usains had also conducted a research on Evaluation of Privatising Pharmaceutical supply by Pharmaniaga Logistics Sdn. Bhd. worth RM713,890.03 for 6 months period (11 May to 10 November 2006).

- **New Research**

Among new research conducted include:

- i. Proposal on privatizing, building and upgrading of medical lab / pathology lab for MOH hospital project
- ii. Proposal on privatizing and upgrading health clinics in rural area
- iii. Privatisation projects in Institut Kebangsaan Produk-Produk Asli, Vaksin dan Biologikal (IKPAVB)
- iv. Research on Due Diligence On The Capability And Effectiveness Of The Ministry Of Health And Institut Jantung Negara Sdn Bhd In Managing Regional Cardiac Centres
- v. Proposal on designing, implementing, training, commissioning and handling over medical equipment program in Malaysia
- vi. Research on The Authentication Of Pharmaceuticals and Health Care Products in Malaysia
- vii. Proposal on privatizing medical checkup for foreign workers

A proposal on "*Perakuan Semakan Harga (APPL)*" for the period of 2007-2009 was submitted to Ministry of Finance on 6 December 2006 for approval. Since the validity period for the APPL 2004-2006 expired on 30 November 2006, the Ministry agreed to continue the use of APPL 2004-2006 until 31 March 2007 or until new decisions is implemented, whichever the earlier.

There were two (2) committee meetings conducted between the Ministry and Pharmaniaga Logistics Sdn. Bhd. This committee had carried out 10 visits to Syarikat Skim Anak Angkat and supplying company of e-Tender products. The purpose of the visits was to monitor the manufacturing process of the products.

MONITORING AND EVALUATION OF PRIVATISATION

Agreement Management

Among the agreements sealed in 2006 were:

- Concession's Agreement for Hospital Support Service, SIHAT Supervision and Consultancy Agreement and MOH's Adoption Scheme for privatization of pharmaceutical product supplies.
- Interim Agreement for temporary appointed Concession Company in 3 out of 4 new hospitals/ institutional namely Serdang Hospital, Ampang Hospital and Allied Health Science College Sungai Buloh. Interim Agreement for Sungai Buloh Hospital will be sealed officially in January 2007.
- Permanent appointed agreement for Hospital Sultan Ismail.

Service Surveillance

SIHAT's Supervision and Consultancy Service Observation Committee was formed. Roadshows regarding the new SIHAT's Supervision and Consultancy Agreement will be held to give explanation to the hospitals.

A total of 45 complaints were recorded and follow-up actions were carried out towards these complaints. A database, known as ADU was constructed to retain complaints from hospitals regarding non-compliance of Hospital Support Service's Clause towards Concession Company.

For pharmaceutical products, the monitoring and observations activities were carried out through managing, conducting and handling complaints from the hospitals.

Review and Extension of the Contract

Appointed matter of Hospital Support Service's company for 4 out of 8 hospitals, namely Jeli Hospital, Setiu Hospital, Kepala Batas Hospital and Likas Hospital were successfully accomplished.

The appointment of new company for the Hospital Support Service of Ampang Hospital, Serdang Hospital, Sungai Buloh Hospital and Sungai Buloh Allied Health Science College is being carried out.

For all replacement hospitals, the Hospital Support Service is supplied through the appointment of the existing concession company. The hospitals involved were, Alor Star Hospital, Sungai Petani Hospital, Cameron Highlands Hospital and Pekan Hospital.

Project Performance Assessment

Project Performance Assessment is conducted through continuous visits and observation to the Concession Companies, namely Faber Medi-serve Sdn. Bhd., Radicare (M) Sdn. Bhd. and Pantai Medivest Sdn. Bhd.

Visits to hospitals and pharmacy stores were conducted to observe the service of Hospital Support Service by Faber Medi-Serve Sdn. Bhd., Radicare (M) Sdn. Bhd., Pantai Medivest Sdn. Bhd. and pharmaceutical products supplied by Pharmaniaga Logistics Sdn. Bhd.

Visits and observation were also done on the performance of SIHAT Supervision and Consultancy Service.

PROCUREMENT MANAGEMENT

Pre-Procurement

A total of 217 specifications consisting of drugs (135), instrument/application (60), work (2), ICT (11) and Services (9) were received from Responsibility Centres (RC) under Ministry of Health (MOH) for tendering.

Procurement Board of Ministry of Health

A total of 301 offers with contract value of RM854,882,979.36 were approved by the Board.

Appointment of Multimodal Transport Operator (MTO)

In 2006, a total of 88 quotations were offered to MTO for the shipment of imported products from different port of loading all over the world. A total of 132 Shipping Instructions were issued to the successful MTO.

Implementation of e-Procurement (eP) in Ministry of Health

All RC under the Ministry of Health (MOH) which have completed eP-enabled infrastructure and have been issued the certificate from Ministry of Finance must utilize the eP system for any purchasing under the Treasury Central Contract Modules, Direct Purchase Module and Ministry of Health Central Contract Modules in line with Treasury Instructions Letter (SPP Bil.5/2003, 8/2004 and 8/2005.)

A total of 100 additional/new RC implemented the eP-enabled in 2006, with 85 of them undergone Mandatory Handholding due to transferring of staff. A total of 12 Sessions of Mandatory Handholding were completed in 2006 with joined cooperation from Commerce Dot Com Sdn. Bhd. and Ministry of Finance.

A total of 35,161 Local Order (LO) worth of RM 331,931,454.10 were generated in 2006 through the implementation of eP system used by RC as compared to 18,352 LO with the value of RM153,708,375.00 in 2005.

Procurement of Services

Procurement of Services covers the supplies of raw food materials to the hospitals, outsourcing of food supplies services for hospitals, security services in hospitals and MOH headquarters, Health Education Campaigns, outsourcing of private healthcare services and business lots renting services in hospitals.

A total of 75 services with the value of RM153,097,705.21 were approved in 2006 as shown in Table 2.

TABLE 2
Approved Procurement Services by Category, 2006

Category	Number Offered	Value (RM)
Food	39	75,369,915.30
Security	24	30,133,506.70
Others (Media)	12	47,594,283.21
Total	75	153,097,705.21

Source: Procurement and Privatisation Division, MOH

Procurement of Pharmaceutical Products

A total of 142 procurements including drugs and non-drugs products with the value of RM564,008,313.62 were approved.

Procurement of Work

A total of 8 procurements with the value of RM30,375,466.19 were approved.

Procurement of ICT and Medical Instruments

A total of 76 procurements of ICT and medical instruments with the value of RM107,401,494.34 were approved.

TABLE 3
Approved Procurement of ICT and Medical Instruments, 2006

Category	Number Offered	Value (RM)
ICT	11	16,848,510.94
Instruments	65	90,552,983.40
Total	76	107,401,494.34

Source: Procurement and Privatisation Division, MOH

INFORMATION AND COMMUNICATION TECHNOLOGY

INTRODUCTION

The success of management programmes mainly relies on the support system that plays an important role in expediting the service delivery system. Hence, the Ministry of Health Malaysia (MOH) has made Information and Communications Technology as a main agenda in its management program. The responsibility in planning, developing, monitoring and coordinating the implementation of projects to strengthen the service delivery system based on information communication technology (ICT) is entrusted to the Information Technology and Communications Division (BTMK).

The main focus for BTMK in the year 2006 is the development and improvement of the existing computer network infrastructure as well as to monitor the implementation of projects in the Information and Communications Technology Strategic Plan (ISP) which was approved in the year 2005.

ACTIVITIES AND ACHIEVEMENTS

Reinforcement of the MOH ICT Network Infrastructure.

To improve the performance of the MOH network system which is known as MOH*Net, in July 2006 the communications line was upgraded from the COINS Frame Relay Technology to IPVPN Multi Protocol Label Switching (MPLS) Network technology. The upgrading of this network involves 26 locations in MOH including 14 State Health Departments, 3 hospitals and the National Blood Centre. Besides the communications line, the relocation of the Data Centre from Perkim building in Kuala Lumpur to MyLoca in Cyberjaya has successfully reduced the server downtime as the infrastructure of MyLoca is more suitable as a Data Centre. The MOH*Net network to MyLoca was upgraded to 34 Mbps compared to 4 Mbps previously.

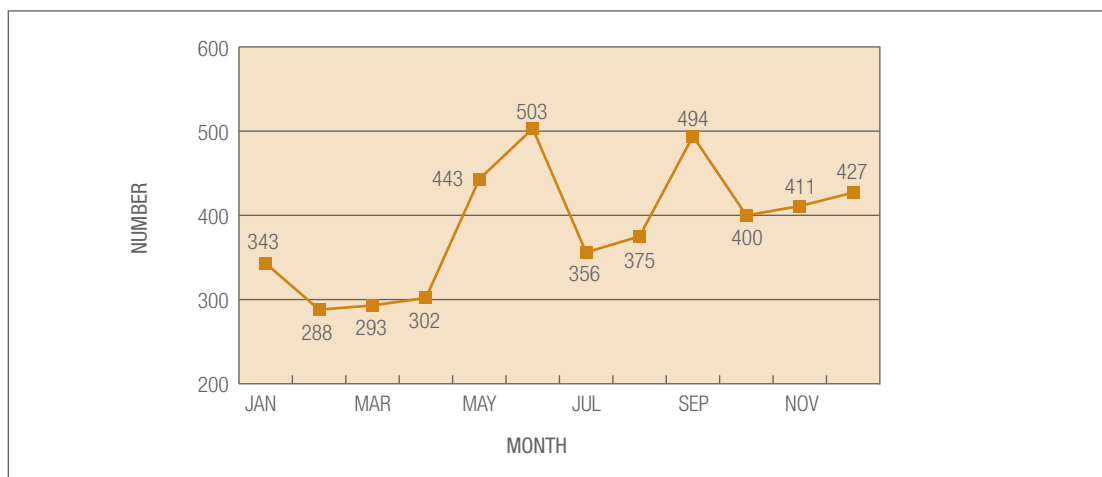
Improvement of the Service Delivery System to MOH staff

MOH portal was officially launched in 25 April 2006 at PWTC by the Honorable wife of the Deputy Prime Minister, Y.A.Bhg. Datin Seri Rosmah Mansor in conjunction with the World Health Day 2006. Through this portal, information and services pertaining MOH can be disseminated to all clients including the general public.

A competition for the Best Web Site in MOH was organized in 2006 to encourage various Divisions and Agencies under MOH to update their respective web sites.

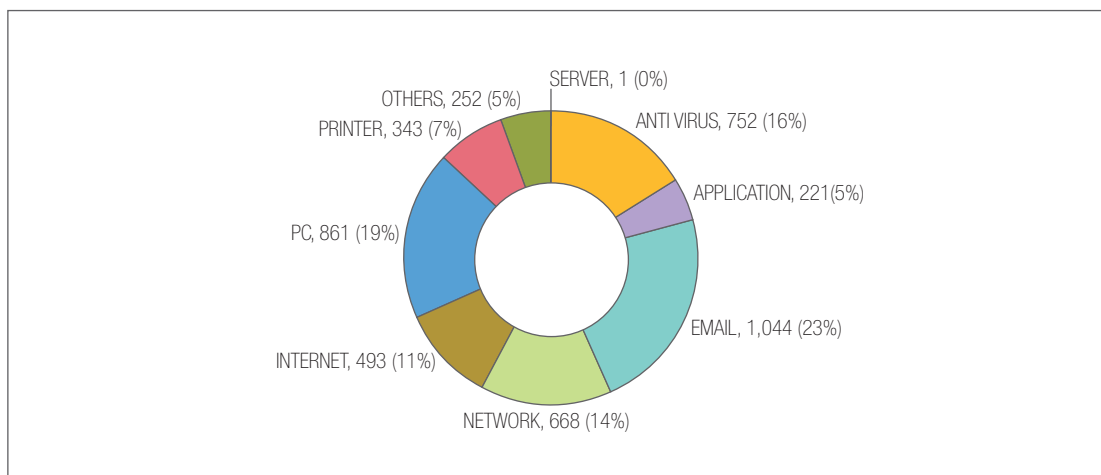
To further improve the service delivery, BTMK formed a one-stop centre or helpdesk under the Technical Assistance Unit. This Unit is to facilitate internal users to channel all their problems pertaining to ICT via on-line or phone. In 2006, this Unit received 4,635 complaints/applications/enquiries (Figure1).

FIGURE 1
Complaints Received in 2006



Source: Information and Communication Technology Division, MOH

FIGURE 2
Complaints by Category, 2006



Source: Information and Communication Technology Division, MOH

From the complaints received, e-mail had the highest percentage of 23% consisting of a combination of new e-mail applications and complaints. Figure 2 shows the percentage of complaints by category.

To Close the Digital Divide in ICT Knowledge Among MOH Staff

To enhance ICT knowledge amongst MOH staff, BTMK conducted an assessment to ascertain the level of ICT usage through the ICT Skill Assessment and Certification (ISAC) which is accepted and utilized in the public sector. A total of 18 sessions of the ISAC tests were conducted for MOH staff involving 900 participants. Out of this total, 600 participants or 67% had passed the assessment. As an objective to spread ICT knowledge among MOH staff, BTMK had distributed 2 issues of BTMK Bulletin in the year 2006.

Monitoring, Coordinating and Providing Technical Advisory Services for Future, Current and Implemented ICT Projects.

In order to facilitate the monitoring, coordinating and technical advisory assistance, BTMK has divided the projects into 3 categories namely. Medical, Clinical and Management.

a. Medical

- Hospital Information System (HIS), previously known as Total Hospital Information System (THIS), Intermediate Hospital Information System (IHIS) and Basic Hospital Information System (BHIS)
- Medical Treatment Information System
- Medical Practitioners Control System (MedPCs)
- In Patient Management System

b. Clinical

- Tele Primary Care System (TPC)
- Public Health Laboratory Information System (SIMKA)
- Blood Bank Information System (BBIS)
- Typhoid Registration System (TyREG)
- Measles Investigations System
- Communicable Disease Control Information System (CDCIS).

c. Management

- Overseas Travel Application System
- Official Letters Management System
- Projects Diary System
- PTK Results Checking System
- Online Delivery of Medical Information to Head Office (E-Reporting)

BTMK also carried out the evaluation of HIS project in Kepala Batas Hospital and the findings was presented to the management of MOH.

Monitoring and Coordinating the Policy and Development of ICT in MOH

BTMK is also the Secretariat of ICT Steering Committee (JPICT). This committee is responsible for monitoring and coordinating the policy and the development of ICT in MOH. In 2006, a total of 38 ICT projects with a total cost of RM73,535,086.74 was approved by the JPICT (Table 1).

TABLE 1
Number of Projects and Cost Approved by JPICT, 2006

No.	Matter	No. of Projects	Cost (RM)
1.	ICT Projects approved by the JPICT Secretariat in 2006	28	3,376,305.00*
2.	ICT Projects approved by JPICT in 2006	10	70,158,781.74**
Total		38	73,535,086.74
<p>Note :</p> <p>* Does not include the cost for the TPC roll-out implementation under RMK9 i.e. RM500 million.</p> <p>**Does not include the HMIS Phase II Computer Replacement and Addition project whereby the allocation was given according to the warrant of each state.</p>			

Source: Information and Communication Technology Division, MOH

One of the aggressive monitoring efforts by BTMK is through conducting inspections. In 2006, BTMK conducted inspections on 2 MOH ICT projects i.e. the Applications System on Food Safety Information System of Malaysia (FoSIM) and the Computerized Operating Theatre Documentation System (COTDS). The benefit derived from this activity is the ability to directly monitor the respective ICT projects from the aspect of system utilization, network infrastructure and equipment utilization. The report of this inspection which also includes recommendations for improvement will be presented to the Divisions/Agencies who own the systems for their further action.

Upgrading BTMK Quality Management System (SPK)

BTMK has taken efforts to strengthen the Quality Management System (SPK) through ISO 9001:2000 certification. SPK was implemented in August 2006 and the internal audit of ISO procedure was carried out in December 2006. Besides the implementation of ISO, BTMK had also applied the Six Sigma methodology to further improve the quality of services provided.

WAY FORWARD

BTMK will continue with the expansion of IPVPN usage to all its locations including Hospitals and District Health Offices throughout Malaysia. BTMK will also continue to strengthen the implementation of ICT projects through enforcement of policies and inspection. BTMK will further enhance its Helpdesk application system through the IT Infrastructure Library (ITIL) method, create an exclusive One Stop Centre (voice recording, SMS notification and integration with the application systems) and the usage of toll-free call number (1-800).

To encourage the usage of ICT, BTMK will continue its effort to ensure that MOH staff in the Headquarters are equipped with PC facilities according to ratio agreed in the ISP. BTMK will cooperate with INTAN to facilitate more members of MOH sitting for ISAC Test. BTMK will continue to carry out ISO awareness program and increase its efforts to procure the ISO certification.

CONCLUSION

The Information Technology and Communications Division (BTMK) will improvise the usage of ICT especially in the area of network infrastructure and system ability to support the effectiveness of the services delivery system.

PUBLIC HEALTH PROGRAMME

FAMILY HEALTH DEVELOPMENT

INTRODUCTION

Family Health Development Division (FHDD) is one of the Divisions under Public Health Department, Ministry of Health Malaysia. This Division is responsible to ensure that services provided are of quality to all levels of community. There are three sections in this Division, namely, Family Health, Primary Healthcare and Nutrition. The main function of the FHDD is to manage the activities related to family health, primary healthcare and nutrition conducted at all levels through continuous and effective planning, implementation, monitoring and evaluation.

ACTIVITIES AND ACHIEVEMENTS

FAMILY HEALTH SECTION

Family Health activities are carried out in all health facilities. The target groups consist of all levels of the community ranging from perinatal and maternal health care to children, school, adolescent, women and elderly healthcare. In addition, there are activities for the mentally ill in the community and for persons with disabilities.

MATERNAL AND PERINATAL HEALTH CARE SERVICES

Antenatal Care

The national coverage for antenatal services had increased to 97.2% in 2006 as compared to 68.8% in 2005 (Table 1). The average antenatal visits by a pregnant mother to public health facilities increased from 9.5 in 2005 to 9.6 in 2006 (Table 2). The coverage for tetanus toxoid immunisation for pregnant mothers (completed dose) increased slightly from 85.2% in 2005 to 86.9% in 2006.

Deliveries and Postnatal Care

The number of registered births in Malaysia was 458,743 in 2006 as compared to 402,168 in 2005 (Table 3). Postnatal attendances at all health facilities decreased from 91.0% in 2005 to 79.3% in 2006. Deliveries conducted by trained health care providers increased from 98.0% in 2005 to 98.3% in 2006 (Figure 1).

TABLE 1
Antenatal Service Coverage by Public Health Facilities in Malaysia, 1990, 2000, 2004 – 2006

Region	Estimated No. of Pregnant Mothers					Antenatal Coverage				
	1990	2000	2004	2005	2006	1990	2000	2004	2005	2006
Peninsular Malaysia	527,095	543,199	469,906	486,106	411,092	412,363 (78.2%)	398,773 (73.4%)	333,255 (70.9%)	327,332 (67.3%)	406,519 (98.9%)
Sabah	81,571	86,333	64,130	72,003	59,529	69,291 (84.9%)	64,073 (74.2%)	51,489 (80.3%)	52,444 (72.8%)	53,935 (90.6%)
Sarawak	67,716	62,132	53,416	56,242	47,549	46,375 (68.5%)	54,292 (87.4%)	43,460 (81.4%)	42,894 (76.3%)	43,123 (90.7%)
Malaysia	676,382	691,664	587,452	614,351	518,170	528,029 (78.1%)	517,138 (74.8%)	428,204 (72.9%)	422,670 (68.8%)	503,577 (97.2%)

Source: Information and Documentation System Unit, MOH
Family Health Development Division, MOH

TABLE 2
Average Antenatal Visits Per Mother and Tetanus Toxoid Immunisation Coverage 1990, 2000, 2004 – 2006

Region	Average Antenatal Visits per Mother					Tetanus Toxoid Immunisation Coverage				
						Completed Immunisation (2nd & Booster Dose)				
	1990	2000	2004	2005	2006	1990	2000	2004	2005	2006
Peninsular Malaysia	6.7	8.7	9.4	9.8	10.0	316,375 (80.0%)	337,043 (82.9%)	278,050 (75.3%)	301,157 (82.4%)	302,388 (84.6%)
Sabah	5.2	7.3	7.7	8.2	8.5	54,205 (88.6%)	59,887 (97.5%)	47,257 (92.1%)	53,587 (99.2%)	50,487 (97.5%)
Sarawak	7.3	8.3	8.3	8.5	8.4	43,865 (86.4%)	52,678 (113.0%)	39,250 (91.8%)	38,561 (91.4%)	38,561 (93.3%)
Malaysia	6.6	8.5	9.0	9.5	9.6	414,445 (81.7%)	449,608 (86.8%)	364,557 (78.7%)	393,305 (85.2%)	391,436 (86.9%)

Source: Information and Documentation System Unit, MOH
Family Health Development Division, MOH

Note: Estimated livebirth is used as denominator for Tetanus Toxoid Coverage

TABLE 3

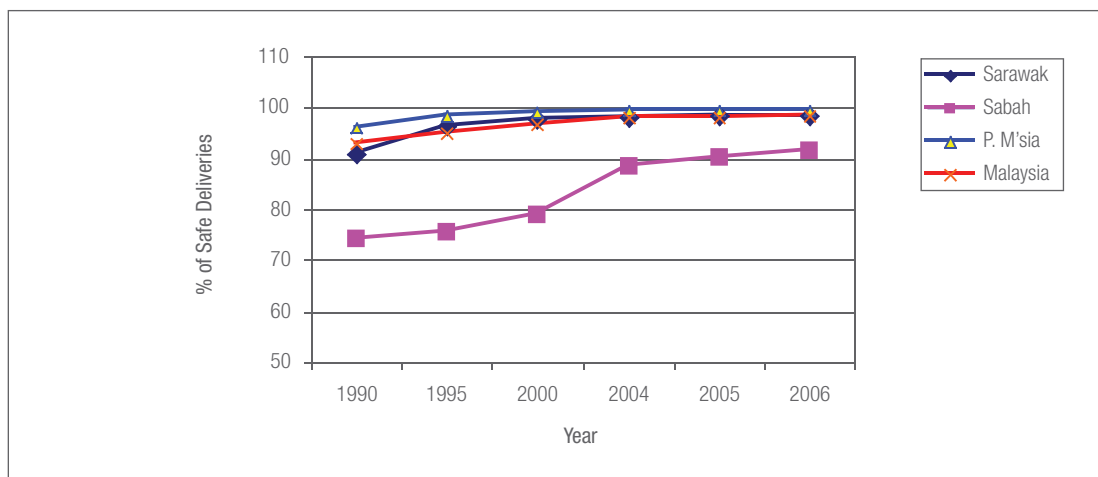
Postnatal Coverage in Public Health Facilities and Government Hospitals, Malaysia, 1990, 2000, 2004 – 2006

Region	Total Delivery					Postnatal Coverage				
	1990	2000	2004	2005	2006	1990	2000	2004	2005	2006
Peninsular Malaysia	371,519	400,690	352,683	307,255	360,535	241,284 (64.9%)	312,467 (77.9%)	300,098 (85.1%)	277,518 (90.3%)	276,871 (77.1%)
Sabah	59,927	61,722	51,721	52,781	50,667	39,507 (65.9%)	55,641 (90.1%)	50,052 (96.8%)	49,381 (93.6%)	48,723 (93.4%)
Sarawak	44,750	45,488	43,188	42,132	47,541	38,162 (85.3%)	49,124 (107.9%)	40,483 (93.7%)	39,016 (92.6%)	38,194 (80.3%)
Malaysia	476,196	507,900	447,592	402,168	458,743	318,953 (67.0%)	417,232 (82.1%)	390,633 (87.3%)	365,915 (91.0%)	363,788 (79.3%)

Source : Information and Documentation System Unit, MOH

FIGURE 1

Percentage of Safe Deliveries in Malaysia, 1990 – 2006



Source: Information and Documentation System Unit, MOH

Neonatal jaundice and G6PD Deficiency

A total of 301,025 newborns were screened for G6PD in 2006 as compared to 312,993 in 2005. Among them, 2.0% were found to have G6PD deficiency in 2006. The percentage of babies with neonatal jaundice increased from 42.0% in 2005 to 46.6% in 2006. There was one death from kernicterus in 2006.

Prevention and Control of Thalassaemia

The allocation received for the Prevention and Control of Thalassaemia programme was spent for purchasing of drugs and consumables for blood dependent thalassaemia patients, preparation of media campaign and buying of 'air time'. A pilot study on the screening for thalassaemia was conducted on Form Four students in several schools in Pulau Pinang, Melaka and Sabah. The National Thalassaemia Registry was in the initial process of development.

In conjunction with World Thalassaemia Day, a course on Clinical Management of Thalassaemia for healthcare providers, followed by the Second National Thalassaemia Seminar for patients and parents were held from 4 - 7 May 2006. These events were organised in collaboration with the National Thalassaemia Society. The second training for Thalassaemia counselling for healthcare providers was conducted in November 2006.

Confidential Enquiries for Maternal deaths (CEMD)

In 2006, the National Technical Committee on Confidential Enquiries for Maternal Deaths (CEMD) had carried out a meeting to review the maternal death cases. The third CEMD newsletter as well as interesting illustrations on maternal deaths were published and distributed to update the health care providers on the recent development in the auditing of maternal deaths.

During the World FIGO XVIII Congress held in Kuala Lumpur in November 2006, Malaysia had the opportunity to share experience with other developing countries in maternal and newborn health care. A total of 42 participants from 35 countries were given the opportunity to learn from Malaysia's success in reducing maternal mortality. This International Fellowship programme was sponsored by Economic Planning Unit (EPU) in the Prime Minister's Department.

CHILD HEALTH SERVICES

Attendances of Infant, Toddlers and Pre-School Children in Health Facilities

Coverage of attendance to the health clinics in 2006 was 91.5% for infants, 33.8% for toddlers and 9.9% for pre-school children. The average clinic visits made per infant, toddler and pre-school children was 4.1, 2.8 and 2.2 visits respectively. Breakdown of coverage for clinic visits made per children is shown in Table 4.

TABLE 4
Coverage of New/First Clinic Attendance's of Children and Average Visits to
Government Health Facilities per Children, Malaysia, 2006

Coverage of Children (%)			Average Visits per Child		
Infant	Toddler	Pre-school	Infant	Toddler	Pre-school
91.5	33.8	9.9	4.1	2.8	2.2

Source: Information and Documentation System Unit, MOH

Immunisation

The immunisation coverage for 2006 is shown in Table 5. There was a reduction in the coverage of Hepatitis B (3rd dose) in 2006 as compared to 2005 (91.5%) due to the change in schedule from 4 to 3 doses and the use of combination vaccines (DPT-Hep B + Hib) in one dose.

TABLE 5
Imunisation Coverage, Malaysia, 2006

BCG	Hepatitis B (3rd Dose)	Polio (3rd Dose)	DPT (3rd Dose)	MMR	Hib (3rd Dose)
98.9%	87.4%	96.2%	96.4%	65.4%	89.2%

Source: Information and Documentation System Unit, MOH

National Congenital Hypothyroidism Screening

The main objective of this programme is for early detection and management of Congenital Hypothyroidism so as to prevent mental disability. By 2006, about 70 hospitals conducted this screening programme and about 307 cases of Congenital Hypothyroidism were detected and on follow up by Paediatrician in respective hospitals.

Integrated Management of Childhood Illness (IMCI)

In 2006, trainings on IMCI for facilitators and healthcare workers were conducted in Sarawak and Pahang. The module has been finalised and will be implemented in Peninsular Malaysia and Sarawak.

SCHOOL HEALTH SERVICES

School Health Coverage and Morbidities Among School Children.

The coverage of School Health Services in 2006 is as shown in Table 6. Eventhough, there was a slight improvement in coverage by doctors in 2006 as compared to 2005, the overall coverage was still low (less than 40%). This was due to critical shortage of doctors in the School Health Team.

TABLE 6
Coverage of School Health Services, Malaysia, 2006

Coverage by Health Nurse (%)			Coverage by Medical Officer (%)		
Standard 1	Standard 6	Form 3	Standard 1	Standard 6	Form 3
97.2	97.4	99.0	39.5	34.5	26.4

Source: Information and Documentation System Unit, MOH

The common health morbidities among school children are as shown in Table 7. These have remained the same in recent years. The less common illness found among them were worm infestations, scabies and malnutrition.

TABLE 7
Common Morbidities Among School Children, Malaysia, 2006

Condition	Incidence Rate per 1,000 Children Examined		
	Standard 1	Standard 6	Form 3
Visual Defects	48.0	57.4	47.1
Skin Conditions	25.0	41.9	27.7
Head Lice	31.6	28.2	2.8

Source: Information and Documentation System Unit, MOH

Immunisation Among School Children

Table 8 shows the immunisation coverage for school children in Malaysia. The overall coverage in 2006 was more than 90%.

TABLE 8
Immunisation Coverage Among the School Children Malaysia, 2003-2006

Standard 1								Form 3			
Polio, Booster Dose (%)				Double Antigen, Booster (%)				Tetanus Toxoid (%)			
2003	2004	2005	2006	2003	2004	2005	2006	2003	2004	2005	2006
94.1	94.3	93.3	102.4	94.0	94.4	93.7	102.6	97.5	91.6	96.0	94.2

Source: Information and Documentation System Unit, MOH

Quality Assurance of School Health Programme

Visual defect detection rate is a proxy indicator for the School Health Programme. Districts with lower rate of visual defect detection (less than 2%) among the Standard 1 children, need to undergo a quality audit. In 2006, detection rate in Peninsular Malaysia was 4.9%, while in Sabah and Sarawak were 3.9% and 4.7% respectively.

Pilot Project

Between June – November 2006, a pilot project to study two models of school health services, namely 'Integrated School Health Team' and 'Nurse in School' was conducted in 6 districts (Federal Territory Putrajaya, Seberang Perai Tengah in Pulau Pinang, Kota Bharu in Kelantan, Kota Tinggi in Johor, Sandakan in Sabah and Kuching in Sarawak). Both models proved to be ideal for providing the best health services for the school children. However, due to the lack of resources especially in health workforce, the school health services are not ready to implement either model in the country.

ADOLESCENT HEALTH PROGRAMME

The Adolescent Health Programme was established in 1996. In 2001, the National Adolescent Health Policy was launched which outlined seven strategies, i.e. Health Promotion, Accessible and Appropriate Health Care Services, Human Resource Development, Adolescent Health Information System, Research and Development, Strategic Alliances with Related Agencies and Legislation that support the health of adolescents. As of December 2006, a total of 518 (59.9%) health clinics in Malaysia provide adolescent healthcare services. The services provided were health promotion, screening, counseling, and curative care for the adolescents. In 2006, the number of adolescents receiving treatment at the adolescent health clinics throughout the country were 502,419. From the total, 20,287 were given counseling, while 1,397 were referred to hospitals or other agencies for further management.

At national level, two training programmes were jointly conducted by Public Health Institute and Family Health Development Division involving 92 health care providers. Several training sessions

were also conducted at state and district levels, involving 866 health care providers. The National Adolescent Health Plan of Action draft was developed and further reviewed prior to publication. This document is a collection of input from various government and non-government agencies that involved with adolescent programmes. It contains detailed activities for action by various stakeholders in order to operationalize the National Adolescent Health Policy.

WOMEN'S HEALTH PROGRAMME

The main activities of this Unit are coordination of Pap Smear Screening Programme, Family Planning Programme and Breast Cancer Awareness Programme.

Pap Smear Screening Programme

The number of pap smear slides taken has increased from 406,367 in 2005 to 414,487 in 2006. The overall percentage of slides taken as compared to target was more than 40%. The percentage of unsatisfactory slides was 3.7%, which was higher than the performance in 2005 (2.6%). The positive smear rate which includes LGSIL, HGSIL, ASCUS, HPV and cancer has increased from 0.86% in 2005 to 0.93% in 2006. Beginning 2006, workshops and trainings on the correct technique of taking pap smears were conducted for clinic staffs to help in reducing the number of unsatisfactory slides. A Call-Recall System will be introduced in 2007 as an effort to embark on a population-based screening programme and to improve the coverage of the National Pap Smear Screening Programme.

Family Planning Services

The Family Planning Services were integrated into Ministry of Health (MOH) since 1970s and the coverage of facilities has reached up to 99%. The new Family Planning acceptors has increased from 74,968 (2005) to 79,142 (2006). The most popular contraceptive methods were pills, condoms and injectables.

Breast Cancer Screening Programme

MOH has been promoting Breast Self Examination and annual breast examination by trained health workers as part of breast cancer awareness campaign since 1995. The Health Technology Assessment on various breast cancer screening modalities revealed mammography as the main tool for early detection of breast cancer. The cost effectiveness and success of a screening programme depends on among others the incidence of the disease in the community and participation of the target population. Therefore, a pilot study need to be conducted in the community to assess the feasibility of the screening programme.

HEALTH CARE SERVICES FOR THE ELDERLY

Till December 2006, a total of 596 (69.7%) health clinics, all over the country have implemented the health care services for the elderly. The services include health promotion and education, health screening and assessment, medical examination and treatment, counseling, exercise for the elderly and recreational, social and welfare activities.

Other services, such as rehabilitation, occupational therapy, home visit and home care nursing were done in several health clinics. As of December 2006, only 228 health clinics (38.8% of total health clinic which run health care programme for the elderly) had dedicated space for rehabilitation. From January to December 2006, there were 388,747 elderly (21.72% out of expected total number of elderly throughout the country) attended health clinics as new cases. The percentage increased by 1.28% as compared to the previous year. Five most common morbidities among the elderly (according to the highest number of repeated visits) were hypertension, osteoarthritis, diabetes mellitus, asthma/COAD and vision problem.

HEALTH CARE FOR PERSONS WITH DISABILITIES

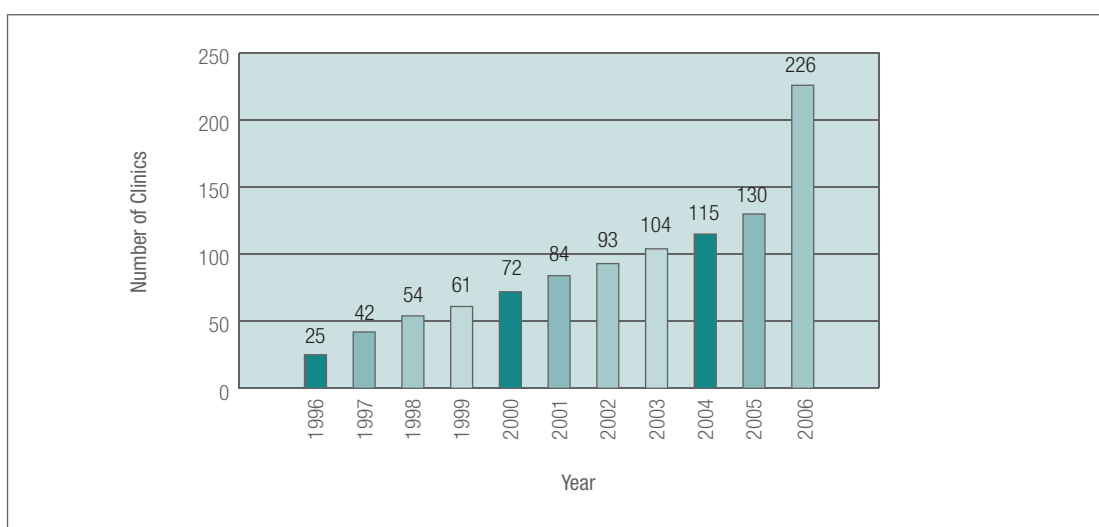
Health care programmes for Persons with Disabilities (PWD) include care of Children with Special Needs (CWSN) as well as prevention and control of blindness and deafness. From 1996 to 2005, the activities focused on CWSN. However, beginning 2006 till 2016, the activities will focus on the strengthening of the rehabilitation services for adults with disabilities.

The main emphasis in 2006 was on the quality improvement for the care of CWSN. Findings from a pilot study on screening for Autism among children 18 months to 3 years showed a prevalence rate of 1.6 per thousand children. Based on the findings, a decision was made to include screening for autism during the child visits at health facilities at the age of 18 months.

A training manual aimed at helping care providers (health, welfare and education) to teach on issues of sexual health to CWSN and their families was presented and endorsed by the Advisory Council for Persons with Disabilities on 14th December 2006. Six manuals on the management of CWSN were developed and national trainings were carried out from 2001 to 2004. From 2006 to 2007, the focus is to develop the manuals in Bahasa Malaysia version. The strengthening of adult rehabilitation services has begun with development of manuals for common problems seen at health clinics, such as stroke, arthritis and chronic backache. A manual on training of caregivers in managing PWDs in institutions and at home was developed together with Cheshire Home Malaysia and was launched on 27th December 2006 in Pulau Pinang.

In 2006, a total of 2,538 new cases were detected among children 0-12 years. The number of clinics providing rehabilitation has increased over the past 10 years. The sudden increase in the number of clinics from 130 in 2005 to 226 in 2006 was due to the trained staff providing services even with minimal equipment. Total attendances for rehabilitation in 2006 had increased to 60,121 of which 45,490 attendances were at the clinics while 14,631 encounters at community based rehabilitation centers operated by Department of Social Welfare (Figure 2).

FIGURE 2
Number of Health Clinics Providing Rehabilitation Services for Children with Special Needs



Source: Family Health Development Division, MOH

COMMUNITY MENTAL HEALTH PROGRAMME

Among activities conducted under this programme were mental health promotion, healthy mind service, child and adolescent mental health, follow-up treatment and psychosocial rehabilitation.

In 2006, a total of 1,265 new cases were registered for follow-up treatment where Kelantan has registered the highest new cases of 344, followed by Perak with 286 cases. There were 16,073 default cases reported in 2006, with Pulau Pinang as the highest defaulter (11,139 cases).

Total attendances for mentally ill patients in 25 Psychosocial Rehabilitation Centres (PSR) were 8,237. The number of new referral cases were 1,469, while defaulter cases were 438. There were only 2 cases arrested by police and none attempted suicide.

PRIMARY HEALTHCARE SECTION

This Section is striving to achieve the objectives and goals of the Ministry's 9th Malaysia Plan focusing on integration and consolidation through its various units. In 2006, the concept of Integrated Approach in health delivery services at health clinic through Reviewed Approach had been drafted. Meanwhile, training of trauma and emergency care among primary care providers had been carried out extensively in ensuring their competency in such situations. The application of Teleprimary care solution had been extended, while the quality assurance programme had identified two additional indicators namely 'The appropriate management of hypertension' and 'Management of pre-hospital care of trauma and emergency cases'. Clinic advisory panels had actively participated in publishing manuals on chronic diseases.

Integrated Approach in Health Delivery Services in Health Clinic (Reviewed Approach)

Rapid development and expansion of services in health clinics had led to an introduction of integrated services through "Reviewed Approach" concept. The main objective was to optimize the utilization of resources in spite of expansion in various activities introduced by multiple programmes in the Ministry of Health.

Medical Examination for Government Servant Age 40 Years and Above

There were 347 Departments participated in this programme. A total of 22,759 public servants were examined of which 5,979 (26.3%) noted to have at least one medical problem. The common medical problems detected were high blood pressure, obesity, high blood sugar and cholesterol level. Table 9 shows the distribution of routine medical examinations on public servants aged 40 and above in Malaysia for 2004 to 2006.

TABLE 9
Routine Medical Examination on Public Servants Aged 40 and Above, Malaysia, 2004- 2006

State	No. of Department Involved			No. of Staff Examined			No. of Staff With Medical Problem(s)					
	2004	2005	2006	2004	2005	2006	2004		2005		2006	
							No.	(%)	No.	(%)	No.	(%)
Perlis	14	7	3	458	223	114	189	41.3	46	20.6	38	33.3
Kedah	22	11	22	1,627	2,038	1,583	401	24.7	291	14.3	361	22.8
P. Pinang	18	11	N/A	2,526	458	N/A	552	21.9	71	15.5	N/A	N/A
Perak	24	30	31	2,066	3,857	3,257	924	44.7	1,520	39.4	952	29.2
Selangor	26	88	40	3,192	3,281	2,136	757	23.7	957	29.2	450	21.1
F.T.K. Lumpur & Putrajaya	115	95	94	4,149	1,963	1,443	2,058	49.6	1,129	57.5	739	51.2
N.Sembilan	31	21	16	783	1,279	846	146	18.6	305	23.8	68	8.0
Johor	57	128	59	3,276	7,042	7,782	1,142	34.9	2,072	29.4	2,055	26.4
Malaka	15	49	17	635	611	248	144	22.7	129	21.1	83	33.5
Pahang	23	30	22	953	1,293	3,139	345	36.2	265	20.5	496	15.8
Terengganu	7	9	7	1,479	1,774	827	355	24.0	278	15.7	165	20.0
Kelantan	15	10	1	926	573	26	268	28.9	110	19.2	7	26.9
Sabah	26	4	14	856	13	498	105	12.3	3	23.1	181	36.3
Sarawak	23	30	17	838	1,846	737	203	24.2	607	32.9	384	52.1
F.T. Labuan	1	3	4	15	58	123	0	0	0	0	0	0
Total	417	526	347	23,779	26,309	22,759	7,589	31.9	7,783	29.6	5,979	26.3

Source: Family Health Development Division, MOH
N/A: Not Available

Health Clinic Advisory Panels

The Health Clinic Advisory Panels Programme and the Village Health Promoters in Sarawak were one of the successful community empowering initiatives where the number of advisory panels amounting to 9,697 involving 653 (79.3%) clinics. Among the activities carried out were community health screenings and camps, control of communicable diseases (e.g dengue), health care initiatives for geriatrics and people with special needs. Several selected Health Clinic Advisory Panels with assistance from a group of specialists, paramedics and nutritionists, were given the task to develop manuals for chronic diseases namely Diabetes, Hypertension, Stroke and Arthritis. Each emphasized on risk factors and healthy life styles practices.

Pre Hospital Emergency Care and Ambulance Services

In 2006, a total of RM 8 million was spent in upgrading the treatment rooms in clinics and ambulances' infrastructures for all states. Four training sessions involving 160 medical assistants were conducted to ensure they have proper skills and knowledge on emergency and pre-hospital care.

Quality Assurance Program (QAP)

The QAP measures optimal standards of practice in handling certain conditions or services. The Primary Healthcare QAP involves 3 indicators, namely the Appropriate Management of Asthma, Appropriate Management of Diabetes and Client Friendly Clinic. The percentage of clinic implementing the QAP indicators is shown in Figure 3. There were two new QAP indicators have been identified, namely the Appropriate Management of Hypertension and Appropriate Management of Pre Hospital Emergency Care. These indicators have been drafted and ready to be implemented.

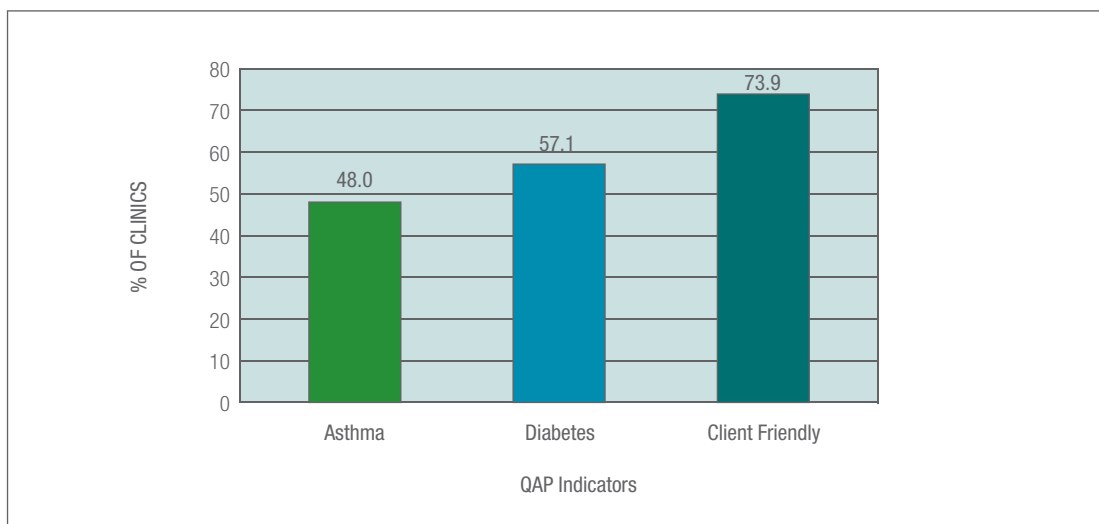
Human Resource Development

The number of different categories of posts and staffs working in primary healthcare facilities had increased in 2006. The number of health clinics with resident Family Medicine Specialist (FMS) in 2006 had increased to 136 as compared to 124 in 2005. Following the integrated services scheme for nurses, the posts of U38 and U40 were upgraded and replaced by U41 and U42 (Table 10).

Family Medicine Specialist (FMS)

The number of Family Medicine Specialist (FMS) serving within the Ministry of Health in 2006 was 146, an increase of 9.0% as compared to 2005. A total of 127 or 87% of the FMS gazetted as specialists. Six FMS had completed training in special fields namely Geriatrics (2), Psychiatry (1), Adolescent Medicine (1) and Chronic Disease Management (2), while two had undergone overseas fellowship programme in Pediatrics and Infectious Disease Management.

FIGURE 3
Percentage of Health Clinics Implementing QAP Indicators, 2006



Source: Family Health Development Division, MOH

TABLE 10
Number of Health Clinics with Certain Category of Staff, Malaysia, 2006

	No.	%
Health clinics with average daily attendances > 100/day	378	46.7
Health clinics with resident Family Medicine Specialist (FMS)	136	16.8
Health clinics with resident Medical and Health Officer	511	63.2
Health clinics with resident Pharmacy Officer	128	15.8
Health clinics# with at least one resident Public Health Nurse	467	52.0
Health clinics with resident Pharmacy Assistant	641	79.2
Health clinics with resident Medical Laboratory Technologist	524	64.8
Health clinics with Administration Assistant	243	30.0

Source: Family Health Development Division, MOH
 # Including Maternal and Child Health Clinics

Public Health Nursing

A pilot project on Home Care Nursing was conducted in 5 states and had successfully provide treatments to 202 patients, of which 56% were stroke cases, 32% post-surgery/fracture and 12% cancer. Documents on Nursing Policy (reviewed version) and guidelines on Technical Audit for Public Health Nurses and Community Nurses were ready for publications, while the draft of training module on Home Care Nursing and Lists of Duty for Nurses, Community Nurses, Medical Assistants and Health Attendants were prepared. Discussion and decision on training for Public Health nursing on full time basis had been finalised and will be implemented in the coming year.

Public Health Medical Assistant

Medical assistants were crucial in contributing their health care services particularly in rural areas or even in facilities with no doctors. Three technical meetings were held to review the professional development plan, participation in various quality initiatives and to facilitate the implementation of the Reviewed Approach in Primary Health Care. Full-time equivalent study was conducted to determine the number of medical assistants required to carry out their duties effectively in health clinics. Standard formats for supervisory visits and reports for the use of all medical assistants were produced and were ready for distributions.

Pharmacy Services

The number of prescriptions and items dispensed in 2006 were 18,050,072 and 56,232,560 respectively, increased by 18.7% as compared to 2005. The average number of items per-prescription was 3.1 (2.96 in 2005). The total expenditure for drug and non-drug items in 2006 was RM206,892,955, i.e. an increase of 63.1% as compared to 2005. Out of the total expenditure, 90.7% was spent on purchasing of drugs. The average cost of drugs per prescription was RM10.35. The number of prescriptions screened in 2006 was 164,930, an increase of 13.7% as compared to 145,110 in 2005. A total of 11,927 cases received drug counseling by primary healthcare pharmacy officers in 2006.

Overall, there was an improvement in the number of health clinics implementing the QAP as well as the number of health clinics achieving the required standards (Table 11). There were 766 (87%) health clinics adapting the monitoring of indicators with an increase of 25% as compared with 2005.

TABLE 11
Performance of QAP Indicators for Pharmacy Service in Primary Health Clinics, Malaysia 2004-2006

Indicators	Standard (%)	No (%) Health Clinics Implemented			No (%) Health Clinics Achieved the Standard		
		2004	2005	2006	2004	2005	2006
Percentage of Prescriptions being intervened	2.5	189 (22%)	331 (38%)	465 (54%)	166 (88%)	298 (90%)	465 (100%)
Percentage of prescriptions wrongly filled	0.0	163 (19%)	211 (24%)	301 (39%)	145 (89%)	168 (80%)	292 (97%)

Source: Pharmaceutical Services Division, MOH

Pathology Services

The number of tests done in the medical laboratories in the health clinics increased by 5.7% (20,591,752) in 2006 as compared to 2005. The most frequent test done were biochemistry (70.5%), followed by hematology (18.5%) and microbiology (10.7%). As of end 2006, the number of hematology, chemistry, and HbA1c analyzer in the health clinics were 332, 129 and 162 respectively.

In 2006, a total of 291 health clinics involved in QAP indicator activity, increased by 59% as compared to 2005. External Quality Control or Proficiency Testing for routine biochemistry tests was participated by 73 laboratories for 2006/07 cycles, as compared to 35 in the first cycle. The overall achievement by primary healthcare medical laboratories in the 2005-06 cycle was fair, in which 1 laboratory (out 943 participating laboratories) achieved the top 50 position globally and 7 (out of 129) achieved the top 40 nationally. Basic trouble shooting and advance training for Medical Laboratory Technologists involved in the activity was done in 2006.

Radiology Services

Total health clinics with diagnostic imaging unit in 2006 was 157. Five x-ray units in several health clinics (KK) were upgraded with new machines (KK Greentown in Perak, KK Kulim in Kedah, KK Bintulu in Sarawak, KK Beserah in Pahang and KK Miri in Sarawak) respectively. Meanwhile, the number of ultrasound scanners had increased to 375 units as compared to 300 units in 2005.

Primary Healthcare Facilities

By the end of 2006, there were 807 health clinics, 89 maternal and child health clinics, 1,919 community clinics and 151 mobile clinics in the country. The decrease in the number of health clinics was due to the policy of re-transferring the out-patient service to hospital administration. A total of 684 (76.4%) health clinics and maternal and child health clinics were involved as practical centres for medical and allied health trainings.

Counter Service Quality Award

The sixth series of the Award was conducted in 2006. For the health clinics category, the competition involved the evaluation of family health, out-patient care, dental clinics and pharmacy counter, while the hospital category involved the emergency, general and specialist out-patient clinics as well as out-patient pharmacy counters. The evaluation was done through auditing visit by the panel judges at zone and national levels. The emphasis was on client's satisfaction and quality of services. The recipients for the 2006 for first position (for both clinic and hospital categories) were Klinik Kesihatan (KK) Pasir Akar in Terengganu and Hospital Tuanku Fauziah in Perlis. Second position were KK Bangi in Selangor and Hospital Jelebu in Negeri Sembilan, while the third place were KK Pokok Asam in Perak and Hospital Tengku Ampuan Afzan in Pahang.

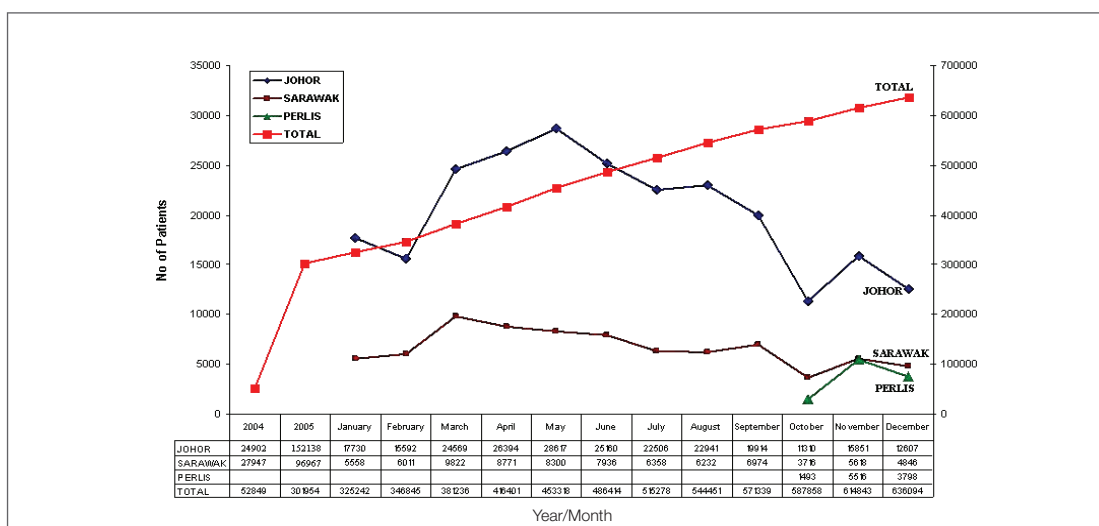
Teleprimary Care (TPC)

Teleprimary Care was fully utilised in respective health facilities since 2005. As of December 2006, the cumulative figure of patients registered into the system was 636,094 (Figure 4). The usage of visit record module in TPC has been increasing with a sharp rise in 2006.

Among activities and achievements for TPC in 2006 are as follows:

- An additional of three health clinics equipped with TPC system, which brought up the total facilities to 54. The clinics were KK Jln. Mahmoodiah in Johor, KK Lanang in Sarawak and KK Kangar in Perlis.
- Intellectual Property Rights on TPC was filed.
- Post-implementation review of the TPC application was conducted, whereby several improvements were identified to make the application more friendly user.
- Copyright Declaration was signed and Trademark for TPC logo was applied
- Training for programme managers on Proclarity (an analytical tool within TPC system) was conducted.
- Integration with the Laboratory Information System was implemented in Sultanah Aminah Hospital in Johor and Sibu Hospital in Sarawak.

FIGURE 4
Number of Patients Registered into TPC System, 2004-2006



Source: Family Health Development Division, MOH

NUTRITION SECTION

NUTRITION PLANNING AND DEVELOPMENT

The Nutritional Plan of Action for Nutrition Malaysia (NPANM)

The National Nutrition Policy was launched by the Honourable Minister of Health Malaysia, Datuk Seri Dr. Chua Soi Lek on 21st February 2006. The policy endeavours to achieve and maintain the nutritional well being of the population and to strengthen efforts in the prevention and control of nutritional deficiencies and excesses as well as diet-related non-communicable chronic diseases. The Technical Working Groups (TWG) were set up to assist the implementation of the activities in the NPANM. Under the NPANM II (2006-2015), five TWGs were formed.

TWG for Policy had reprinted the national Nutrition Policy. The book was developed into a multimedia presentation in a form of compact disc (CD). The TWG for training had revised and printed the training module for '*Gaya Hidup Sihat*'. The revision of '*Diet Seimbang*' module was completed and will be reprinted in 2007. The TWG for Nutrition Guidelines had distributed the 'Recommended Nutrient Intake (RNI)' book to various agencies. The TWG is also planning to review the Malaysian Dietary Guideline. The TWG for Research had conducted two workshops to complete the report writing of the Malaysian Adult Nutrition Survey 2002/2003 and the KAP Study Healthy Life Style Campaign 1997.

NUTRITION PROMOTION

Healthy Eating

Media Campaign on Healthy Eating 2006

The media campaign was a component of the Healthy Eating Programme 2006. The theme of the campaign was “Love Yourself. Make It A Priority”. The campaign started in June 2006 and will end in June 2007.

Healthy Eating through Healthy Shopping

The “Healthy Eating through Healthy Shopping” project was a nutrition promotion initiative that utilised the supermarket as a channel to disseminate “healthy eating” messages. The project was undertaken with participation from three states, namely Selangor, Negeri Sembilan and Johor.

Healthy Community Kitchen Project (HCK)

The main purpose of HCK was to improve implementation and effectiveness of nutrition promotional activities by health personnel in health clinics. Until 2006, a total of 44 HCK were developed and fully-operational all over the country. There are 4 HCK still in the process of construction and renovation.

Breastfeeding Promotion

Malaysian Breastfeeding Policy

In 2006, the Ministry of Health (MOH) declared an amended policy statement which stated that the period of exclusive breastfeeding for babies is from birth up to 6 months of age. Hence, the Malaysian Breastfeeding Policy, is accordingly reworded as:

“All mothers are encouraged to exclusively breastfeed their babies from birth until six months of age, and thereafter to continue breastfeeding up to 2 years of age. Complementary feeding should be introduced at the age of 6 months.”

Baby-Friendly Hospital Initiative (BFHI)

The Baby-Friendly Hospital Initiative was one of the most ingenious measures to support breastfeeding practices through participation and commitment from both government and private hospitals. In 2006, 116 out of 128 government hospitals under the Ministry of Health were designated as Baby Friendly Hospitals. Re-assessment and continuous monitoring are conducted to ensure the sustenance of Baby Friendly Hospital status. Up to December 2006, 38 Baby Friendly Hospitals had been re-assessed.

Code of Ethics for Infant Formula Products

Activities under the Code of Ethics for Infant Formula Products in 2006 were:

- **Vetting of Informational and Educational Materials on Infant Formula Products**

A total of 121 printed materials including product labels, educational and promotional brochures for Health Professionals, medical journal advertisements and other materials such as can stickers were submitted to Vetting Committee in 2006.

- **Monitoring of Code Violations**

A total of 9 cases of Code Violation backdating to 2005, involving 5 companies marketing infant formula products were discussed at Disciplinary Committee Meeting on the Code of Ethics for Infant Formula Products in 2006. All the implicated companies were slapped with a penalty of 1 year suspension on the vetting of new promotional materials, including product labels. The penalty term was from 26 July 2006 to 26 July 2007.

Nutrition Promotion in Schools and Institutions

Among the activities carried out were revision and review of menus for the Fully Residential Secondary Schools under the Ministry of Education and Healthy School Canteen Pilot Project.

The Institutional Nutrition Promotion plans and coordinates the nutrition guidelines and menus at various government or non-government institutions such as child care centres, training centres, institutions for the disabled and old folks' homes. Among the activities were pilot test on module for Handling of the Disabled For Carers in Institution, development of Nutrition Management Guidelines for Children with Special Needs, development of menu for children in child care centres, revision of the Nutrition Guidelines for the Elderly in Institutions, Nutrition Check-List for Prisons and revision of the Diet Scale and Menu Recommendations for Prisoners/Lock-up Prisoners/Officers in Prisons in Malaysia.

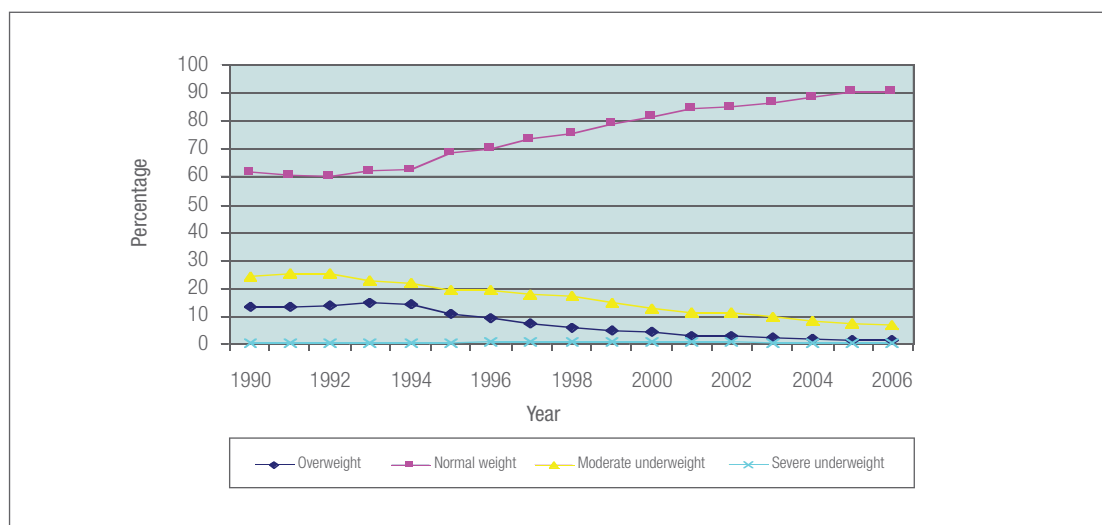
Nutrition Information Centre

The main objective of this centre is to disseminate knowledge and impart skills in nutritional science to community as an effort to change behaviors leading to a healthier lifestyle. In 2006, three road shows were held to promote the Nutrition Information Centre.

NUTRITION SURVEILLANCE

Generally, the nutritional status of children had improved over the years (Figure 5). The proportion of children with normal body weight had increased, while the proportion of overweight children had declined from 1995-2006. The proportion of moderately underweight had decreased gradually in 2006 as compared to 2005. However, the percentage of children who were severely underweight remained at below 1% since 1990.

FIGURE 5
Nutritional Status Of Children Under 5 Years, 1990 - 2006



Source: Information and Documentation System Unit, MOH

NUTRITION REHABILITATION

Nutrition Rehabilitation Programme for Malnourished Children

In 2006, a total of 8,623 children from all states in Malaysia, including those in Federal Territory of Kuala Lumpur, received food supply from the Food Basket Programme. Out of these children, 6,048 were repeated cases, while 2,196 were new recipients for 2006 (Table 12). As of December 2006, there were 5,805 children still receiving the food basket. Overall, Pahang, Sabah, Sarawak and Kelantan were among the states that registered the most number of cases, while Johor, Federal Territory of Kuala Lumpur and Pulau Pinang were the states with the lowest number of recipients.

TABLE 12
Distribution of Food Basket Programme Recipients by State, 2006

State	Number of New Recipients	Total Numbers of Recipients	Number of Recipients Stopped in 2006	Number of Recipients Still Receiving Food Basket in December 2006
Perlis	13	45	5	40
Kedah	49	205	60	145
P. Pinang	7	42	13	29
Perak	284	1,237	490	747
Selangor	18	89	50	39
F.T. K Lumpur	9	21	3	18
N. Sembilan	18	73	19	54
Melaka	17	434	11	423
Johor	0	11	7	4
Pahang	772	1,589	386	1,203
Terengganu	99	299	123	176
Kelantan	460	1,060	306	754
Sabah	484	1,936	862	1,074
Sarawak	459	1,582	483	1,099
MALAYSIA	2,689	8,623	2,818	5,805

Source: Information and Documentation System Unit, MOH

Throughout the year 2006, a total of 2,818 children had stopped receiving the food basket. Out of the number of children terminated from the programme, 1,561 (53.39%) cases rehabilitated, 424 (15.05%) cases had gone to school and 833 (29.56%) cases were due to other reasons, such as relocation, death, refusal and the family was not considered as poor. F.T Kuala Lumpur showed the highest rate of rehabilitation (100.0%), followed by Perak (76.53%) and Kelantan (66.67%) (Table 13).

TABLE 13
Number And Percentage Of Recipients Rehabilitated At Termination Of Food Basket Programme

State	No. of Recipients Stopped	No. of Recipients Rehabilitated at Termination	Percentage of Recipients Rehabilitated at Termination (%)
Perlis	5	3	60.00
Kedah	60	30	50.00
P. Pinang	13	6	46.15
Perak	490	375	76.53
Selangor	50	18	36.00
F.T. K Lumpur	3	3	100.0
N. Sembilan	19	9	47.37
Melaka	11	4	36.36
Johor	7	2	28.57
Pahang	386	171	44.30
Terengganu	123	75	60.98
Kelantan	306	204	66.67
Sabah	862	428	49.65
Sarawak	483	233	48.24
MALAYSIA	2,818	1,561	55.39

Source: Information and Documentation System Unit, MOH

Prevention and Control of Iodine Deficiency Disorder (IDD)

In Malaysia, Iodine Deficiency Disorders is a significant problem in several states including Perlis, Kedah, Perak, Pahang, Kelantan, Terengganu, Sabah and Sarawak. Iodized salt was distributed to malnourished children under the Nutrition Rehabilitation Programme for Malnourished Children and pregnant mothers attending to health clinics. In 2006, a total of 125,618.74 kilogram of iodized salt were distributed to 190,158 recipients. The main indicator used to monitor IDD was median urinary iodine concentration (mUIC). The mUIC of school children aged 8 to 10 years in 2005 and 2006 showed that several districts in Kedah and Perak remained as a mild IDD problem. However, IDD was not a significant problem in Sabah and Federal Territory of Labuan (median urinary iodine concentration 161.0 µg/L and 154.0 µg/L respectively).

Prevention and Control of Aneamia

Women have a substantially higher prevalence of aneamia in their reproductive age, especially among pregnant mothers. The level of haemoglobin (Hb) is used as an indicator of anemia. Data is collected based on Hb level at 36 weeks gestation. In 2006, the percentage of pregnant women who were anaemic (heamoglobin level below than 11 gm) was 28.7% (Table 14).

Percentage of pregnant mothers with Hb level below than 9 gm% and Hb level between 9 – 11 gm% were 2.0% and 26.8% respectively. A total of 69.9% had Hb level 11gm% and above. Three states had percentage of anaemic mothers more than 40%. They were Perlis (43.9%), Negeri Sembilan (43.9%) and Federal Territory of Kuala Lumpur (43.5%).

Obesity Prevention and Control

In 2006, the activities of the programme concentrated on the preparation of the Pilot Project of the Body Weight Management Nutrition Counseling Service and Adult Obese. The main purpose of the pilot project was to standardize activities that been carried out and to identify the basic equipments and budget needed to run this service. A training course on the Principles of Weight Management was successfully conducted by the Public Health Institute with collaboration from the Nutrition Section of the Family Health Development Division involving 33 Nutritionists from all over the country. The draft of the Nutrition Guidelines in Managing Overweight and Adult Obese was also refined to be used for the pilot project.

TABLE 14
Haemoglobin Levels Among Pregnant Mothers Attending Government Health Clinics, 2006

State	Hb < 9 gm %		Hb 9-11 gm %		Hb ≤ 11 gm % (anaemia)		Hb > 11 gm % (normal)	
	%	No.	%	No.	%	No.	%	No.
Perlis	1.1	15	42.8	578	43.9	593	56.1	758
Kedah	0.9	168	23.6	4,447	24.5	4,615	75.5	14,216
Pulau Pinang	1.8	187	37.9	3,879	39.8	4,066	60.2	6,156
Perak	1.1	237	21.4	4,551	22.5	4,788	73.1	15,534
F.T. Kuala Lumpur	7.1	410	36.3	2,091	43.5	2,501	56.5	3,253
F.T. Putrajaya	0.5	3	27.3	164	27.8	167	72.2	433
W.P. Labuan	4.2	38	31.2	280	35.4	318	54.3	488
Selangor	2.1	736	29.6	10,326	31.7	11,062	64.3	22,438
N.Sembilan	4.8	313	39.2	2,579	43.9	2,892	56.1	3,689
Melaka	2.5	138	35.4	1,974	37.9	2,112	62.1	3,466
Johor	0.4	99	22.7	5,607	23.1	5,706	76.9	19,010
Pahang	2.1	282	30.3	4,113	32.4	4,395	67.6	9,174
Terengganu	0.2	29	23.3	3,077	23.5	3,106	76.5	10,085
Kelantan	1.2	153	31.9	4,011	33.1	4,164	66.9	8,405
Sabah	2.3	720	19.8	6,324	22.0	7,044	78.0	24,934
Sarawak	3.9	909	27.2	6,310	31.1	7,219	66.0	15,344
Malaysia	2.0	4,437	26.8	60,311	28.7	64,748	69.9	157,383

Source: Information and Documentation System Unit, MOH

CONCLUSION

In conclusion, the Family Health Development Division has successfully carried out most of the programmes planned for the year 2006, involving participation from various government agencies, private sectors, non-government organizations, local community leaders and individuals. The Division hopes that more efforts will be carried out in future in planning, implementing, monitoring and evaluating the family health services in Malaysia.

DISEASE CONTROL DIVISION

INTRODUCTION

Disease Control Division plays an important role in the prevention and control of diseases with its objective:

- To reduce the occurrence of diseases and death due to communicable and non-communicable diseases as well as environment-related diseases so that they will no longer poses a threat to public health.
- To encourage a healthy life style, a healthy, safe and hygienic work environment and workplace, suitable preventive measures, immediate detection and treatment, continuous monitoring and suitable rehabilitation services.
- To encourage an active participation from the public and cooperation among agencies/sector so as to build a healthy and caring society.

The activities are being carried out by its seven sections namely Communicable Disease Section, Disease Surveillance Section, Vector Borne Disease Section, AIDS/STI Section, Public Health Laboratory, Non-Communicable Disease Section and Occupational and Environmental Health Section. The activities are implemented at all level – Ministry, state and district.

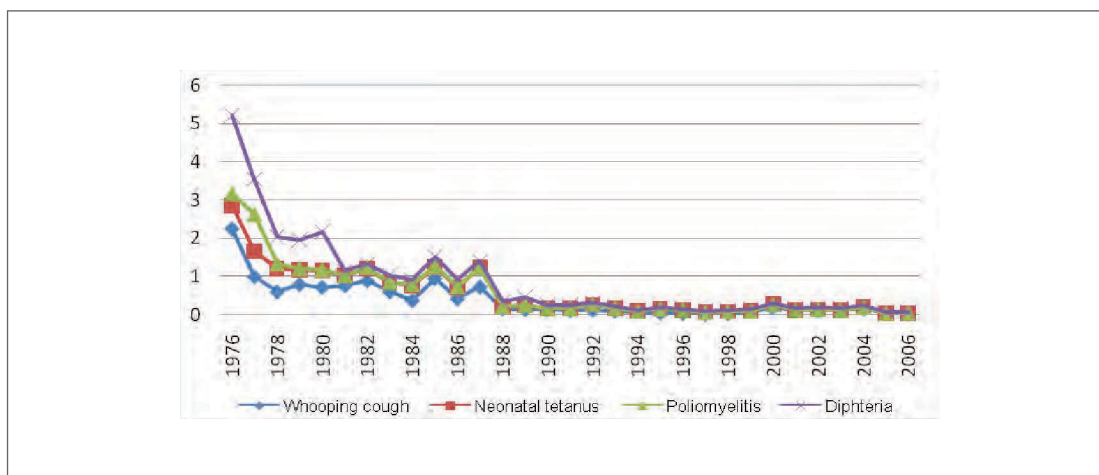
ACTIVITIES AND ACHIEVEMENTS

COMMUNICABLE DISEASE SECTION

Vaccine Preventable Disease Control and Prevention Program

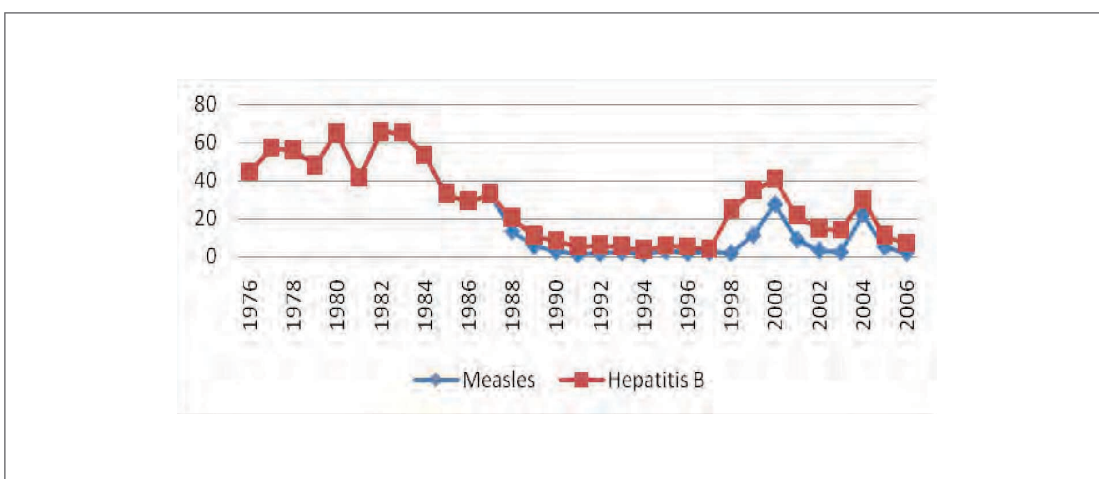
In 2006, there were no poliomyelitis cases reported. Thus, Malaysia remains polio free since 2000. The incidence rate of whooping cough, neonatal tetanus and diphtheria were maintained less than 1 per 100,000 population. The incidence rate of measles had decreased from 5.39 per 100,000 population in 2005 to 2.27 in 2006. A similar trend was observed in Hepatitis B, where the incidence rate had decreased from 5.69 per 100,000 population in 2005 to 4.68 in 2006. Figure 1 and Figure 2 show the trend of the incidence of vaccine preventable diseases between 1976 to 2006.

FIGURE 1
Incidence Rate for Vaccine Preventable Diseases (Childhood Immunisation Program), Malaysia 1976- 2006



Source : Disease Control Division, MOH

FIGURE 2
Incidence Rate for Measles and Hepatitis B, Malaysia 1976- 2006

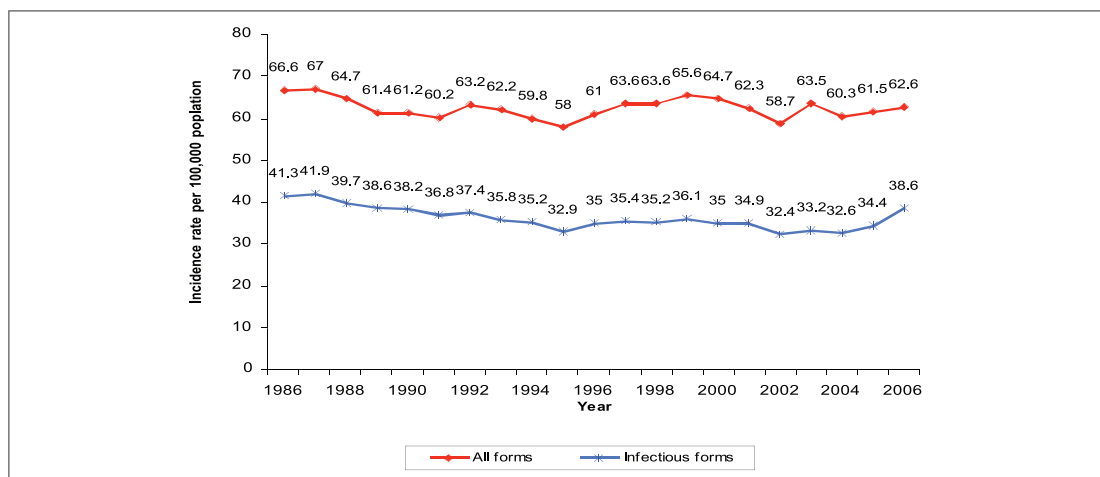


Source : Disease Control Division, MOH

TB Prevention and Control Program

Malaysia has been classified by the World Health Organization (WHO) as an intermediate TB burden country. In the last 20 years, TB situation in Malaysia is stagnating with a slight upward curve in 1999. In 2006, a total of 16,665 new cases were registered in Malaysia, out of which 10,274 cases were infectious forms. The incidence rate of TB (all forms) in 2006 was 62.6 per 100,000 population and the incidence rate of the infectious form was 38.6 per 100,000 population.

FIGURE 3
Incidence Rate of TB, All Forms and Infectious Forms, Malaysia, 1986-2006



Source : Disease Control Division, MOH

Food and Water Borne Disease Prevention dan Control Programme

In Malaysia, food and waterborne diseases were monitored through the notification system under the Prevention and Control of Infectious Diseases Act 1988 (Act 342). It includes cholera, typhoid, food poisoning, hepatitis A and dysentery. The incidence of these diseases has shown a declining trend. Over the past five years (2002-2006), the average incidence of cholera, typhoid, paratyphoid, hepatitis A and dysentery was less than 5 cases per 100,000 population. The incidence rate of food and waterborne diseases is shown in Table 1.

TABLE 1
Number and Incidence Rate of Food and Waterborne Diseases in Malaysia, 2002- 2006

	2002		2003		2004		2005		2006	
	C	IR	C	IR	C	IR	C	IR	C	IR
Food poisoning	7,023	28.63	6,624	26.45	5,898	23.06	4,641	17.76	6,938	26.04
Cholera	365	1.49	135	0.54	89	0.35	386	1.48	237	0.89
Typhoid/ paratyphoid	853	3.48	785	0.89	478	1.87	1,072	4.10	204	0.77
Hepatitis A	295	1.20	222	0.89	108	0.42	44	0.17	64	0.24
Dysentery	292	1.19	310	1.24	111	0.43	141	0.54	105	0.39

C = Case

IR = Incidence Rate (per 100,000 population)

Source : Disease Control Division, MOH

Overall, there was significant decrease in the incidences of Food and Waterborne Diseases in 2006 compared to the previous year. Number of typhoid cases was significantly decreased to 81%, followed by cholera 39% and dysentery 26%. Most of typhoid cases were reported in several areas in Kelantan whereas cholera was reported in several areas in Sabah. The incidence rate for food poisoning in 2006 was 26 per 100,000 population.

Despite of the overall reduction in the number of cases, activities related to prevention and control of food and waterborne diseases have never been slowed down by the Food and Waterborne Disease Unit. This unit had strengthened its network with other interested parties within the Ministry of Health Malaysia, namely Food Safety and Quality Division, Engineering Services Division, and Enforcement Unit, Department of Public Health. Through this network, all public health activities related to food and waterborne diseases were overseen together from the head quarters level. In addition to that, the 2nd Edition of Guideline of The Management of Food and Waterborne Diseases in Malaysia, had been completed and published. Concerned about cholera in Sabah, a proposal paper on "Reduction of Cholera in Sabah" was presented in the 3rd Meeting of National Cabinet Committee of Hygiene and Health in November 2006. The Food and Waterborne Disease Unit was also concerned about the significant increase of food poisoning cases in 2006. Most of the food poisoning cases occurred in school canteens or hostels. All activities would be focused towards the reduction of food poisoning in this country especially in school canteen or hostel.

International Health / Quarantinable Diseases

Table 2 shows the achievements activities concerning plague and yellow fever at the international entry points from 1998-2006 as stipulated under the International Health Regulations 1969 (IHR 1969). Both international ports and airports in Malaysia were still not free from vector breeding places, as there was an increase in the number of vectors for plague and yellow fever in the year 2006. Thus, vigilant aedes and rodent control should be carried out at all entry points in Malaysia.

Medical Examinations for Foreign Workers

The medical examination for foreign workers which was carried out by FOMEMA showed a declining trend of 'Unfit' workers from 1998 to 2002 and subsequently an increasing trend from 2003 to 2006 (Table 3). This showed that a well coordinated medical examination for foreign workers is capable of detecting cases of 'Unfit' workers. Those found to be unfit were not allowed to renew their work permit in Malaysia, thus reducing the risk of spreading infectious diseases among both the workers and the locals. In 2006, the major causes of foreign workers considered to be unfit during the screening was Hepatitis B (surface antigen) (33.5%), abnormal chest X-ray for TB infection (23.3%) and syphilis (8.7%).

TABLE 2
Vector Control Activities of International Health at the Entry Points in Malaysia, 1998-2006

No	Type of Activities	Achievements (Year)								
		1998	1999	2000	2001	2002	2003	2004	2005	2006
A. International Ports										
1.	Number of ports	10	10	10	10	10	15	24	24	29
2.	Flea Index	0.18	0.19	0.08	0.53	0.16	0.59	0.49	0.19	0.87
3.	Ovitrap Index (A. aegypti)	0.1	0.02	0.4	0.4	0.8	0.1	0.46	0.17	0.07
4.	Number of DC issued	3	3	47	5	9	23	1	1	4
5.	Number of DEC issued	1,754	1,896	1,749	2,455	2,202	1,783	2,874	2,296	2,308
6.	Number of extension of DC issued	2	10	0	5	2	0	0	0	1
7.	Number of extension of DEC issued	63	47	43	45	80	39	38	38	247
B. International Airports										
1.	Number of airports	8	8	8	8	8	8	10	10	11
2.	Flea Index	0.08	0.07	0.01	0.34	0.01	0.1	0.09	0.2	0.26
3.	Ovitrap Index (A. aAegypti)	0.2	0.12	0.1	0.1	0.1	0.02	0.03	0.04	0.12
4.	Number of passengers quarantined for Yellow Fever	152	176	183	144	301	209	332	308	281

Source: International Health Unit, Disease Control Division, MOH.

TABLE 3
Percentage and Number of Unfit Foreign Workers in Sabah and Peninsular Malaysia, 1998 – 2006

Year	Total examined	Results of examination		
		Fit	Unfit	% Unfit
1998	565,737	541,322	24,415	4.3
1999	545,222	531,292	13,930	2.6
2000	525,681	515,143	10,538	2.0
2001	500,133	490,869	9,264	1.9
2002	402,831	394,005	8,826	2.2
2003	716,157	697,595	18,562	2.6
2004	909,273	884,204	25,069	2.8
2005	1,158,443	1,120,273	38,170	3.3
2006	1,345,756	1,300,329	45,427	3.4

Source: FOMEMA Sdn. Bhd.

Medical Examination For Pilgrims

Disease surveillance among Muslims who were performing their hajj in 2006 showed that the respiratory tract and lung diseases were the main diseases occurring among them, followed by muscular skeletal diseases, skin diseases and gastrointestinal diseases. Congestion during congregation of the pilgrims increased the risk of contracting and spreading of respiratory tract diseases through the air.

The percentage of deaths for those performing the hajj in 2006 was 0.15% (54 deaths). The main causes of death recorded among the pilgrims were heart attack i.e. Acute Myocardial Infarction or AMI (18 deaths), followed by septicemia (5 deaths), lung infections or Bronchopneumonia (3 deaths) and others (28 deaths). There was no death reported due to meningococcal meningitis infection in 2006. The main cause of death was similar to that as recorded in Malaysia i.e. heart attack.

Zoonotic Disease Control Program

Avian Influenza prevention and control activities among humans was the main focus of the Unit in 2006. In 2006, two episodes of Avian Influenza outbreaks occurred among backyard chicken farms. First episode occurred in Jalan Genting Klang, Kuala Lumpur in February 2006, while the second episode occurred in March 2006 involving three districts i.e in Perak (2 districts) and Pulau Pinang (1 district). All prevention and control strategies and activities as mentioned in "Alert, Enhanced Surveillance and Management of Avian Influenza in Human" guidelines were carried out. Although avian influenza was detected amongst poultry in Malaysia in 2004 and 2006, there have not been any cases of avian influenza H5N1 amongst humans.

COMMUNICABLE DISEASE SURVEILLANCE SECTION

Infectious disease surveillance activities in Ministry of Health have been strengthened since the establishment of Communicable Disease Surveillance Section in 2001 which focuses primarily on the emerging (new cases) and re-emerging communicable diseases.

Syndromic Notification

Syndromic notification is used to notify infectious diseases based on their syndromes, namely acute jaundice syndrome, acute neurological syndrome, acute respiratory syndrome, acute dermatological syndrome, acute haemorrhagic fever syndrome and diarrhoeal syndrome; and not as a specific disease. This notification was implemented throughout the country in 2004, involving all government hospitals.

In 2006, a total of 25 notifications were received from three hospitals namely Kota Bahru Hospital (3), Sarawak General Hospital (20) and Alor Setar Hospital (2).

TABLE 4
Number of Syndromic Notification Reported, Malaysia, 2004 – 2006

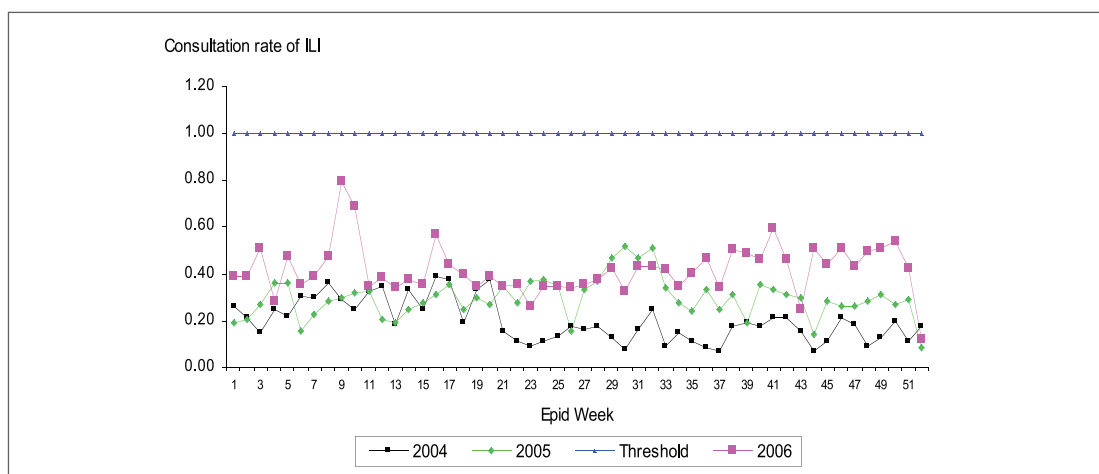
Type of Syndromic Notification	Year		
	2004	2005	2006
Acute jaundice syndrome	1	1	0
Acute neurological syndrome	11	1	5
Acute respiratory syndrome	1	33	20
Acute dermatological syndrome	0	1	0
Acute haemorrhagic fever syndrome	0	0	0
Diarrhoeal syndrome	1	0	0
Total	14	36	25

Source : Communicable Disease Surveillance Section, MOH

Influenza Surveillance

Influenza surveillance was strengthened in 2004 due to Influenza A /Fujian and Avian Influenza outbreak. It was monitored via Influenza-Like Illness (ILI) sentinel surveillance using consultation rate of ILI cases as its indicator. The surveillance was carried out by 246 government and private sentinel clinics and hospitals throughout the country. In 2006, the consultation rate of ILI was below the stated threshold level (Figure 4), though it was higher compared to 2004 and 2005.

FIGURE 4
Consultation Rate of ILI (per 100,000 consultation) in Selected Health Clinics, Malaysia, 2004 – 2006



Source : Communicable Disease Surveillance Section, MOH

Preparedness and Rapid Response

The action plan of National Influenza Pandemic Preparedness Plan (NIPPP) was launched by Minister of Health Malaysia, Y.B. Datuk Seri Dr Chua Soi Lek, on 9 January 2006. A few series of simulation exercise have been conducted to ensure that the Ministry of Health was well prepared to deal with an influenza pandemic, should it happen. Among the exercises conducted were:

i. Table-top pan-flu exercise

This exercise was conducted on 4 April 2006 with an aim to evaluate the level of preparedness and to update the coordination mechanism between government and non-government agencies in dealing with an influenza pandemic, as well as to evaluate the role and responsibility of the agencies involved.

ii. APEC pandemic response exercise

This stimulation exercise was organised by APEC on 7 June 2007 involving 21 countries. Malaysia was chosen as one of the primary participants, other than Indonesia, Japan, Korea, China and Vietnam. The scope of this exercise was to test the communication link at the regional level with regards to information sharing and consultation as well as assistance to the neighbouring countries, should a pandemic influenza occur. The effectiveness of the communication link was tested in this exercise so that details of information with regards to outbreak control could be shared. The exercise was a scenario exercise on pandemic influenza at the Malacca Straits.

iii. KLIA pan-flu exercise

This exercise was conducted to evaluate the level of preparedness of Kuala Lumpur International Airport (KLIA) in dealing with pandemic influenza, should it happen. It was carried out on 14 September 2006, involving Kuala Lumpur Airport Berhad, Malaysia Airline System, Public Aviation Department, Public Defense Department 3, Immigration Department, Malaysia Royal Custom Department and KLIA Health Office.

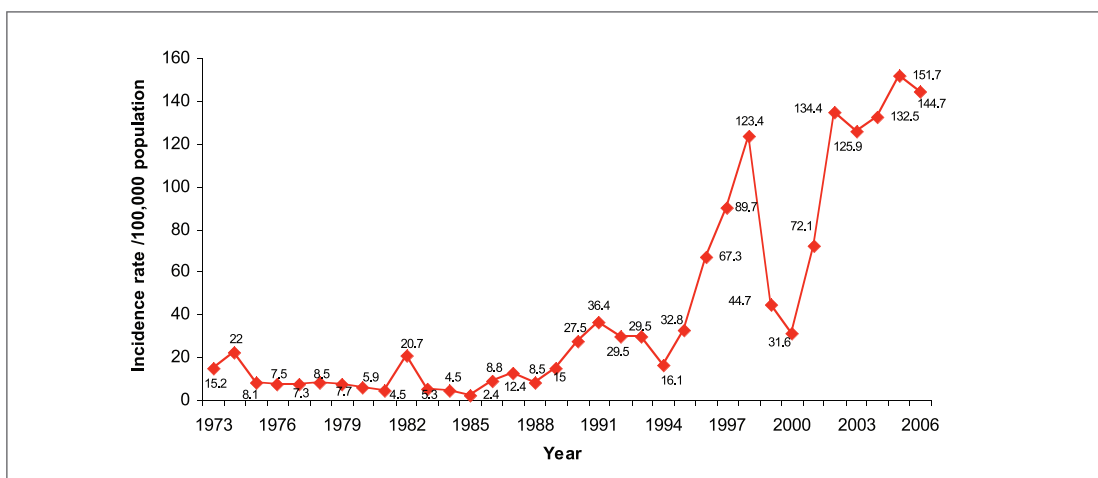
VECTOR BORNE DISEASE DIVISION

Dengue Control Program

Dengue cases are increasing every year. However, the number of dengue cases reported in 2006 decreased to 38,556 cases with an incidence rate of 144.7 per 100,000 population (Figure 5). From the total number reported, 94.6% (36,462 cases) were cases of dengue fever, while the rest were dengue haemorrhagic fever. However, only 47.3% (18,240 cases) were confirmed dengue. A total of 89 dengue deaths with fatality rate of 0.23% was reported in 2006.

Selangor had the highest number of dengue cases and deaths with 12,264 cases and 36 deaths reported, followed by Federal Territory of Kuala Lumpur (7,341 cases with 19 deaths), Johor (2,726 cases with 6 deaths), Pulau Pinang (2,653 cases, no death), Kelantan 2,014 cases with 3 deaths), Perak (2,007 cases with 2 deaths) and Kedah (1,907 cases, no death).

FIGURE 5
Dengue Incidence Rate, Malaysia, 1973-2006



Source : Vector Borne Disease Division, MOH

Aedes surveillance activities were strengthened from time to time. Construction sites remained as sites with the highest Aedes breeding rate for the past five years. In 2006, Aedes breeding rate at construction sites was 13.5%, followed by vacant lots/land (9.3%), factories (7.1%), abandoned housing projects (3.5%), schools (3.5%) and government offices (2.3%).

All Aedes breeding sites were destroyed. Larvicide was used to prevent Aedes breeding in 249,153 premises. Fogging activities were carried out at 14,753,596 premises to control the spread of the disease and outbreak. Vector prevention and control activities were continuously carried out at potential Aedes breeding areas to prevent the spread of dengue.

COMBI Program (Communication for Behavioural Impact)

Community participation in dengue prevention and control programme has been strengthened through Communication for Behavioural Impact (COMBI) Programme which was introduced in 2001. The objective of the programme is to empower the community in dengue prevention and control programme. COMBI Program is one of the effective activities in reducing the incidence of dengue fever with active involvement from the community members. Johor was chosen by Ministry of Health Malaysia in collaboration with World Health Organisation (WHO) to carry out COMBI pilot project in 2002.

In 2006, the program was expanded throughout the country. A total of 317 localities and 5,105 volunteers were involved in COMBI Programme. The volunteers would make sure that the local communities were reminded on taking care of their personal hygiene, family health and environment. The First COMBI Convention was successfully held on 8 - 9 December 2006 in Johor. The purpose of this convention was to provide opportunity to the volunteers all over the country to meet and share their experiences in carrying out COMBI activities.

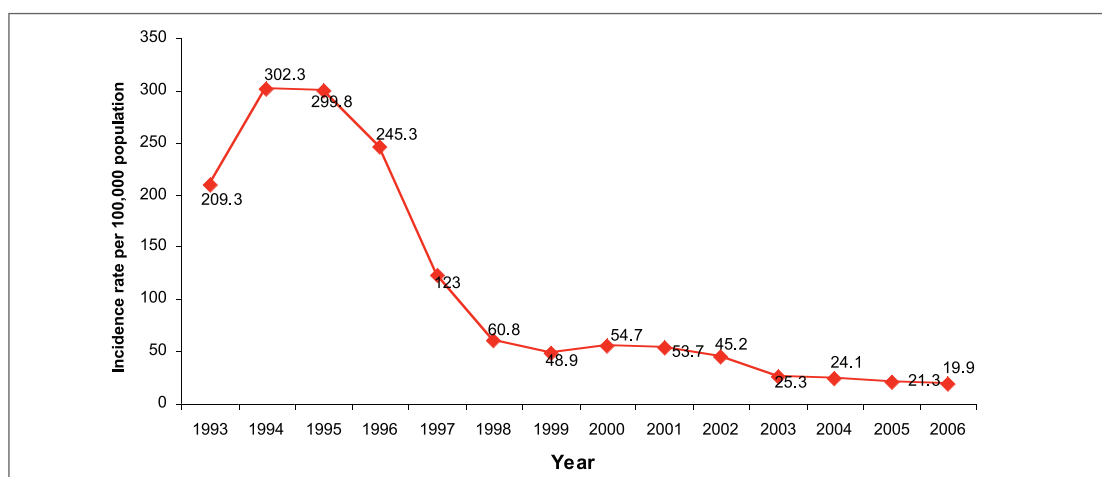
Enforcement of Destruction of Disease Bearing Insect Act (DDBIA) 1975

DDBIA 1975 was further enforced in 2006. In 2006, a total of 11,568 notices and 17,112 compounds and fines were issued under this Act. A sum of RM1,292,891 compounds were collected while RM62,310 were collected based on the court verdict.

Malaria

The incidence of malaria in Malaysia has decreased to 5,294 cases in 2006 as compared to 5,569 cases in 2005. The incidence rate decreased to 19.9 per 100,000 population in 2006 from 21.3 in 2005 (Figure 6). The case distribution in the country for the year 2006 was : Sabah 3,029 cases (57.2%), Sarawak 1,413 cases (26.7%) dan Peninsular Malaysia 852 cases (16.1%). The number of cases among aborigine decreased to 86 in 2006 from 172 in 2005, while the number of cases among foreigners increased to 2,121 (40.1%) in 2006 as compared to 2,106 (37.8%) in 2005.

FIGURE 6
Malaria Incidence Rate, Malaysia, 1993-2006



Source : Vector Borne Disease Division, MOH

Plasmodium vivax was the most common parasite with 2,774 cases (52.4%), followed by *Plasmodium falciparum* (1,790 cases or 33.8%), *Plasmodium malariae* (540 cases or 10.2%) and mixed species (190 cases or 3.6%). A total of 4,094 cases (77.4%) were detected through passive detection, 267 cases (5.0%) through active detection and 933 (17.6%) through other methods. The death distribution by region showed 9 cases (40.9%) in Sabah, 6 cases (27.3%) in Sarawak and 7 cases (31.8%) in Peninsular Malaysia

Filariasis

The number of filariasis cases in Malaysia had decreased to 172 in 2006 from 189 in 2005. The incidence rate improved to 0.65 per 100,000 population in 2006 from 0.72 in 2005. The case distribution by region in 2006 recorded 4 cases (2.3%) in Sabah, 3 cases (1.7%) in Sarawak and 165 cases (96.0%) in Peninsular Malaysia. The number of cases among foreigners were 134 (77.9%) in 2006 as compared to 137 (72.5%) in 2005. *Wuchereria bancrofti* was the most common parasite with 127 cases (73.8%) and *Brugia malayi* with 45 cases (26.2%). The coverage of the 3rd cycle of Mass Drug Administration (MDA) in The National Programme for Elimination of Lymphatic Filariasis for the year 2006 was 87.4% as compared to 88.0% during the 2nd cycle in 2005 (targeted coverage is 80.0% or more). MDA will be continued for another two cycles. Malaysia is expected to achieve elimination status of Lymphatic Filariasis by 2013.

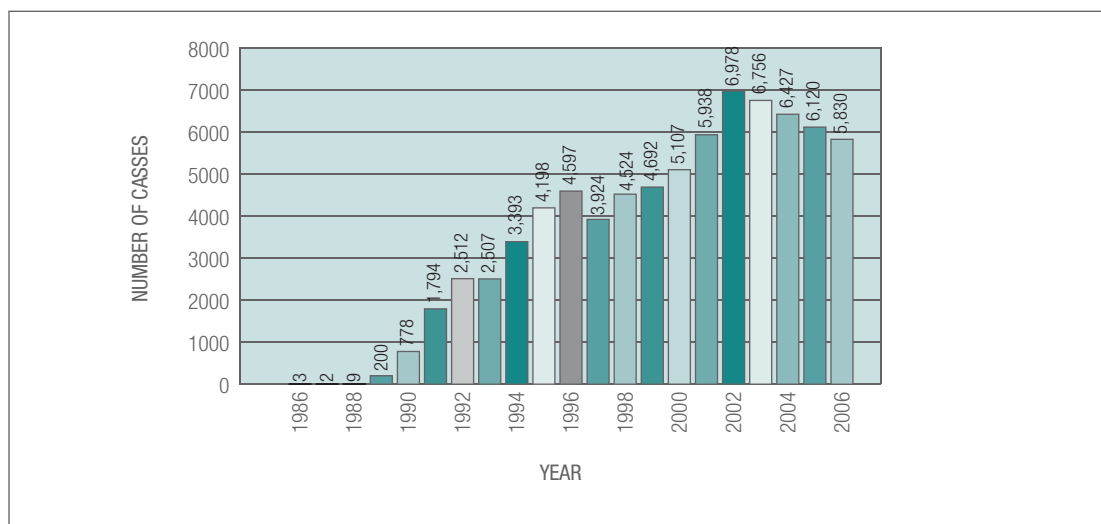
AIDS/STI SECTION

HIV/AIDS Prevention and Control Program

Since 1986 to 2006, a cumulative total of 76,389 HIV cases have been reported in Malaysia of which 12,505 cases or 16.4% were notified as AIDS. A total of 9,155 deaths were reported within the same period.

A total of 5,830 new HIV infections were reported in the year 2006, which reflected 16 new HIV cases reported daily with 1 AIDS death in Malaysia. Analysis showed that 78% of the total cases were in the age group of 20 to 40 years old. Meanwhile, 75% of the reported cases contracted HIV/AIDS through sharing of needles. However, the percentages of HIV transmission through sexual means increased from 16% in 2000 to 32% in 2006, especially among women. The majority of the cases were among men (92%). However, the cases among women had increased from 9.4% in 2000 to 15% in 2006. Meanwhile, majority of the HIV/AIDS patients were those who were unemployed, i.e 21% from total cases reported in 2006. This percentage had increased as compared to 14% reported in 1995. Other status of employment among the HIV/AIDS cases were factory workers (5,337 or 7.6%), fishermen (3,013 or 3.9%), housewives (2,107 or 2.8%) and long distance drivers (1,835 or 2.4%)

FIGURE 7
Number of HIV Cases (Inclusive AIDS) Reported in Malaysia, 1986 – 2006



Source : AIDS / STI, MOH

HIV/AIDS National Strategy Plan (NSP) 2006-2010

In response to the United Nation General Assembly Special Session on HIV/AIDS (UNGASS), Ministry of Health has formulated the HIV/AIDS National Strategy Plan 2006 -2010 which consist of 6 main strategies. The plan will focus on balancing HIV/AIDS activities namely prevention, treatment and care activities.

The objectives of the NSP are to achieve the following principles of the UNGASS and the MDGs targets and also complement approaches outlined in the National Drug Strategy as follows:

- To reduce the number of young people aged 15 to 24 who are HIV-infected
- To reduce the number of adults aged 25 to 49 who are HIV-infected
- To reduce the number of HIV infections in injecting drug users
- To reduce the number of HIV-infected infants born to HIV-infected mothers every year
- To reduce the number of marginalised population (sex workers, transsexuals and men who have sex with men) who are HIV-infected
- To increase the survival and quality of life among people living with HIV/AIDS

Three committees have been set up to enhance the capacity in term of planning, implementing and evaluation the NSP. The first Cabinet Committee on AIDS meeting was held on 29 June 2006 and was chaired by YAB Deputy Prime Minister. To support the implementation of NSP, a total of RM100 million allocation has been approved by the cabinet to fund the 5 year (2006-2010) programme. This allocation was an addition to the RM40 million that is allocated annually to run the prevention, control, treatment and surveillance activities in this country.

Prevention of Maternal To Child Transmission Program (PMTCT)

In 2006, the coverage of HIV screening among antenatal mother attending government clinics was 99.5% (384,027) with 0.04% of the mothers screened being detected positive. Among the babies delivered, 3.7% or 7 babies were HIV positive.

Prevention and Control of Activities in Prison and Drug Rehabilitation Centers

This program was initiated by Ministry of Health Malaysia in collaboration with Home Affairs Ministry. All new inmates admitted to the Drug Rehabilitation Centers and prisoners who were identified as high risk behaviour were required to undergo HIV screening. In 2006, a total of 4,926 new inmates in Drug Rehabilitation Centers were screened for HIV, and 766 cases (15.6%) were HIV positive. At the same time, a total of 62,907 prisoners were screened for HIV in which 3,309 (5.3%) prisoners were HIV positive.

Harm Reduction Program

The Ministry of Health has introduced Harm Reduction Program as an initiative to curb the spreading of HIV among drug users. This programme consists of two components;

a) Needle and Syringe Exchange Programme (NSEP)

This voluntary programme was jointly implemented with the Malaysian AIDS Council and was carried out in Penang, Kuala Lumpur and Johor Bahru in February 2006. As at December 2006, a total of 1,380 drug users had participated in the programme and 37 of them were people living with HIV/AIDS (PLWHA). There were 834 counselling sessions and 18,155 discussions on the harm of sharing injecting needles and casual sex carried out under this programme. A total of 42,000 clean needles and 21,000 syringes had been distributed with an average of 61.6% returned used needles. This program had successfully referred 202 participants for medical treatment in Health Clinics, 37 participants for voluntary HIV screening, 108 participants for Methadone Replacement Treatment and 46 participants to other social services.

b) Drug Substitution Therapy (DST)

This programme basically aims at preventing or reducing the negative health consequences associated with their risky behaviours of injecting drugs. Substitution Therapy replaces dangerous drugs such as heroin and morphine with prescribed medication of similar action but of much lower addictive or sedative effects.

Methadone is taken orally on a regular basis thus significantly reduces the rate of HIV/AIDS risk behaviour, such as needle or syringe sharing and is aimed for IVDU hard core. The selected drug addicts are registered and monitored.

The main objective of DST is to reduce relapse among opiate dependents. Besides that, it helps to improve the physical and mental condition of opioid dependents, reduce the spread of infection among IVDU and those sharing needles such as HIV, Hepatitis B and C, improve psychosocial function, including ability to work, improve their social adaptation and integration into the society and also reduce criminal activities among opiate dependents.

Methadone Maintenance Therapy Programme Phase I was implemented in October 2005 as a pilot project. A total of 10 government health facilities and 7 private clinics were involved in this project (Table 5).

As of December 2006, a total of 1,241 clients participated in this program, of which 1,203 clients (96.94%) were male. In terms of ethnicity, 1,010 clients (81.39%) were Malays, 162 (13.05%) were Chinese, 56 (4.51%) were Indians, while the rest were others. The retention rate for the period of three months was 90.27%, i.e 90.27% of clients managed to free themselves from drug addiction for three months since participating in this program. The retention rate for the period of 6 and 12 months were 93.84% and 75.11% respectively.

In order to implement MMT programme, all officers and staffs in treatment centres attended Standard Operating Procedures (SOP) and counselling courses and trainings. Throughout 2006, 18 sessions of SOP and Counselling courses were held which involved 530 officers from various agencies such as Ministry of Health (381), National Anti-Drug Agencies (84), Royal Malaysia Police or PDRM (5), non-Government Organization (NGO) (34), Universities (14) and General Practitioners (12).

TABLE 5
Ministry of Health and Private Facilities Implementing Methadone Replacement
Therapy Program Phase I by Zones

North Zone	East Zone
Kedah	Kelantan
<ul style="list-style-type: none"> • Hospital Alor Star • Klinik Kesihatan Pendang • Klinik Shakinah, Alor Star 	<ul style="list-style-type: none"> • Hospital Raja Perempuan Zainab II, Kota Bharu • Klinik Rusli, Kota Bharu
Pulau Pinang	Pahang
<ul style="list-style-type: none"> • Hospital Bukit Mertajam • Klinik Xavier, Butterworth 	<ul style="list-style-type: none"> • Hospital Sultan Hj. Ahmad Shah, Temerloh • Klinik Sulaiman, Jengka
Middle Zone	South Zone
WP Kuala Lumpur	Melaka
<ul style="list-style-type: none"> • Hospital Kuala Lumpur • Pusat Perubatan Universiti Malaya 	<ul style="list-style-type: none"> • Hospital Melaka • Poliklinik Mawar, Ayer Molek
Selangor	Johor
<ul style="list-style-type: none"> • Klinik Kesihatan AU2 Keramat • Klinik Dr. Khafidz, Kajang 	<ul style="list-style-type: none"> • Hospital Permai, Johor Bahru • Poliklinik Fernandez, Johor Bahru

Source : Disease Control Division, MOH

PUBLIC HEALTH LABORATORY

National Public Health Laboratory (NPHL) in Sg Buloh, Selangor received 47,921 clinical and non-clinical samples in 2006 which consisted of 44,026 (91.9%) clinical samples and 3,895 (8.1%) food and environmental samples. There were 18,445 (38.5%) samples for diagnostic/special projects or survey, 14,225 (29.7%) samples from surveillance activities and 4,827 (10.1%) from outbreaks or epidemics (Table 6).

TABLE 6
Number of Samples Received by NPHL, 2006

Sample Category	Diagnostic /Monitoring	Surveillance	Outbreak	Others	Total
Laboratories in Disease Section					
Bacteriology	2,031	10	2,619	0	4,660
Biochemistry	950	8,559	0	637	10,146
Heavy Metal	176	0	0	0	176
Mycobacterium (TB)	7,436	0	0	0	7,436
Molecular	276	527	5	416	1,224
Serology	3,711	1,966	0	0	5,677
Cytology	0	0	0	8,917	8,917
Virology	3,537	977	1,169	107	5,790
SUB-TOTAL	18,117	12,039	3,793	10,077	44,026
Laboratories in Food Section					
Additives	6	422	23	17	468
Biotechnology	74	107	1	9	191
Mycotoxin	44	33	0	30	107
Microbiology	42	588	1,006	57	1,693
Nutrients	78	349	0	3	430
Heavy Metal and Environmental Pollution	188	205	0	1	394
Veterinary Drug Residue	44	292	0	6	342
Pesticide Residue	11	152	4	48	215
Tar and Nicotine	17	38	0	0	55
SUB-TOTAL	504	2,186	1,034	171	3,895
TOTAL	18,621	14,225	4,827	10,248	47,921

Note:

Diagnostic / Monitoring: samples for diagnostic purposes (case-based) or from special project or survey.

Surveillance: samples for surveillance or on-going scheduled (including Ops Ramadhan) activity.

Outbreak: samples from outbreaks investigations and control or complaints.

Others: samples from other than the above reasons (eg. Proficiency Testing', cross-checking' etc).

Source : Public Health Laboratory, MOH

On 24 April 2006, NPHL had obtained certification for quality management system MS: ISO9001:2000 from SIRIM QAS International Sdn. Bhd. The scope of the certification was on management of analytical services for food and clinical samples (AR 3985). Another achievement was an accreditation from SAMM ISO/IEC 17025 on analysis for microbiology and chemicals (No SAMM 267) carried out by the Food Section in NPHL.

In order to strengthen the laboratory services to accommodate future challenges, NPHL had built an expansion from its main building, which includes 2 biosafety level 3 laboratories. The new complex provides a more spacious and comfortable laboratory working area with an electron microscopy suite. It was handed over to MOH (NPHL) on 22 September 2006. NPHL also acquired a consultant in microbiology on contract basis for 2 years in order to strengthen the microbiology services especially in the mycobacterium area.

In 2006, NPHL undertook some effort to provide information on services and activities to the clients. The first edition of 'Test Handbook : Public Health Laboratories' which listed all the analysis available in all the 3 public health laboratories was published and distributed. Besides that, 6 issues on '*Buletin Survelan Makmal*' which provides laboratory based surveillance information were also published and distributed.

NPHL had widened its services by visiting epidemics areas to obtain samples as one of its efforts in assisting the district and state during an investigation and control of outbreaks. There were at least 3 visits carried out in 2006, which were during the acute respiratory infection outbreak in Melaka, Chikungunya outbreak in Perak and meningococcal disease in Selangor.

NPHL had also organised the "ASEAN +3 / WHO 4th Workshop on the Strengthening of Laboratory Surveillance and Networking for Infectious Disease Surveillance, Emerging Infectious Disease Programme, Phase II" in collaboration with WHO in Kuala Lumpur from 21-24 November 2006. All delegates from ASEAN+3 countries, WHO and Mongolia (as an observer) were present and discussed on the Standard Operating Procedures (SOP) for the laboratory analysis of 13 infectious agents as well as on issues of information sharing between the countries.

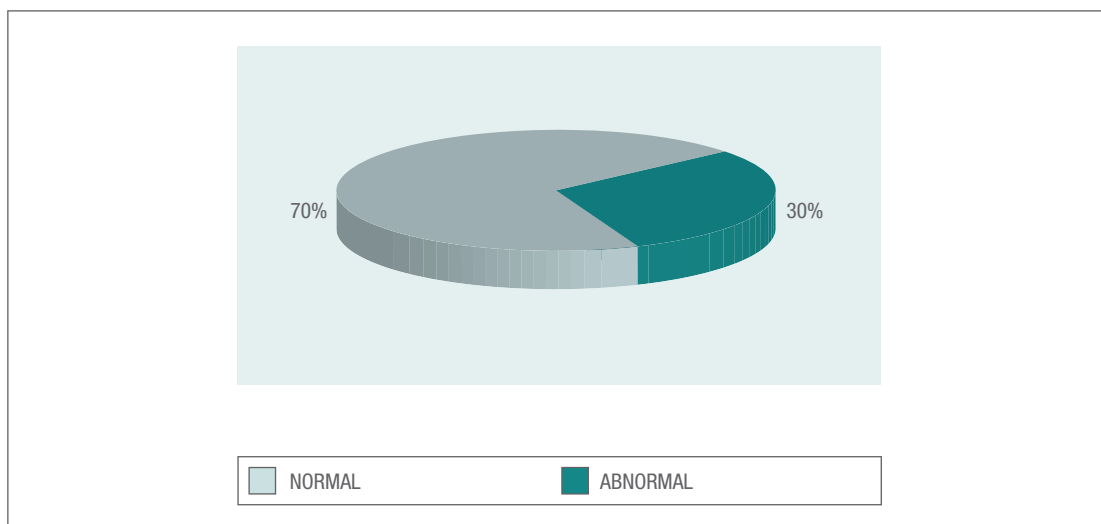
NON COMMUNICABLE DISEASE SECTION

Diabetes Prevention and Control Program

Diabetes Screening Activity

Diabetes screening was carried out in hospitals and health clinics for early detection of diabetes especially among those with high risk such as family history of diabetes, age over 35 years, obese and those with other diseases such as hypertension and heart condition. Throughout 2006, a total of 580,705 patients were screened for diabetes, of whom 30% or 173,018 cases were abnormal.

FIGURE 8
Diabetes Screening in Malaysia, 2006



Source : Disease Control Division, MOH

Screening for Diabetes Complications

Every diabetic patient will undergo the screening for early detection and prevention of early complication as it is mandatory. Several tests were done to detect complications which include Microalbuminuria test, monofilament test and fundus camera. In 2006, a total of 47,836 new diabetic cases were reported where 81% (38,733 cases) were without complication whereas 19% (9,103 cases) were with complications (Table 7).

HbA1c Tests

Monitoring for control of diabetic patients is done using HbA1c test which will reflect the patient's diabetes status for the past three months. In 2006, from 164,705 tests done, 33.2% or 54,687 diabetic patients were well controlled and 66.8% (110,018 cases) were poorly controlled.

Diabetes Resource Centre

Diabetes Resource Center was established as a centre that provides information and health education to the patient and their family members, staffs and also public. As of December 2006, a total of 92 Diabetes Resource Centers were established in health clinics, while 18 units of fundus cameras were placed in respective health clinics to carry out retinopathy examination.

TABLE 7
Diabetes Complications, 2006

Complications	Number of cases	Percentage (%)
Urine Microalbuminuria	3,784	41.6
Nephropathy	1,695	18.6
Neuropathy	1,160	12.7
Foot Ulcer	635	6.9
Retinopathy	609	6.7
Proteinuria	567	6.2
Ischemia Heart Disease	270	3.0
Erectional Dsyfunction	153	1.7
Amputation	60	0.7
Data not available	170	1.9

Source : Disease Control Division, MOH

Screening Program for Cardiovascular Diseases (CVD) Risk Factor

As at the end of 2006, a total of 650 health clinics had carried out screening programs for CVD risk factors. There were 186,025 attendances reported of which 49.54% or 92,148 cases were found to have risk factor/s.

Violence and Injury Prevention Programme

The programme was established in 1996 as Injury Prevention Program. In 2003, the scope of the programme was expanded to include violence prevention activities. In 2006, the Violence and Injury Prevention Unit was selected as the secretariat for Coordinating Panel for Children Issue for Ministry of Health under the National Social Council. The activities and achievements for 2006 were :

- a) Conducted 71 CPR and First Aid training at state and district level involving 1,400 health personnels dan 1,575 public.
- b) Conducted 24 training on prevention and management of domestic violence and child abuse at state level involving 1,480 health personnels as well as other relevant agencies.
- c) Produced and distributed Video CD on First Aid, CPR and One Stop Crisis Center (OSCC) and small book on First Aid, Safety at Home, Type of Common Injury Among Childen and Risk of Injury According to Level of Child Development.

- d) Conducted a workshop to formulate National Action Plan on Prevention of Child Abuse involving participants from Ministry of Health, Ministry of Women, Family and Community Development, Department of Social Welfare, Royal Malaysian Police, Ministry of Education and NGOs.
- e) Conducted a survey on Profiling of Victim and Perpetrator of OSCC cases 2005.

OCCUPATIONAL AND ENVIRONMENTAL HEALTH SECTION

Environmental Health Program

Environmental Health Unit (EHU) is committed to achieving the objective to protect the people from exposure to unnecessary environmental hazards and its risk through various strategies which include awareness and sharing of experience program through conference and seminar, providing technical expertise and consultancy in the area of environmental health, empowering public through risk communication activities especially during disaster and haze, developing the tool for investigation or inspection, capacity building of the workforce and collaboration with other agencies.

Activities and achievement in 2006 were:

- a) Reviewed the Detailed Environmental Impact Assessment Document (DEIA) submitted by the Department of Environment for technical comment. A total of 7 DEIA reports for the proposed development projects were reviewed and 14 Ad-Hoc Reviewer panel meeting was held.
- b) Conducted 1 in-service training among Assistant Environmental Health Officers on Environmental Health Impact Assessment for Eastcoast Zone (Kelantan, Terengganu and Pahang).
- c) Conducted 3 health risk assessments on the proposed development projects in collaboration with other EIA assistant.
- d) Organized 2 workshops on disaster management to strengthen the disaster management plan and developed the guideline for public health preparedness and response.
- e) Produced and distributed the Health Facts in form of posters and pamphlets about haze related illnesses. A total of 125,000 posted had been distributed to all states.
- f) Coordinated the operation room and activities on public awareness and monitoring of diseases during haze.
- g) Coordinated the operation room and activities on public health prevention and monitoring of diseases during flood (in Johor, Melaka, Negeri Sembilan, Pahang, Terengganu, Kelantan and Sabah).
- h) Produced technical information in dealing with ammonia gas exposure entitled "Summary of the Public Health Statement About Health Effects of Ammonia Exposure".
- i) Conducted the investigation of 5 hotels claimed to be the sources for Legionnaires Disease infection among veteran war from Scotland.
- j) Participated in 2 workshops organized by Ministry of Tourism which emphasized on the concepts of safe and healthy accommodation.
- k) Organized the ASEAN Healthy Cities Conference in Putrajaya.

- l) Hosted the Alliance for Healthy Cities Meeting, attended by representatives from Japan, Australia, Korea, Hong Kong, China, Thailand, Indonesia, Mongolia and Philippines.
- m) Hosted the ASEAN Healthy Cities Meeting, attended by participants from Thailand, Indonesia, Philippines and Malaysia.
- n) Participated in Second Alliance Healthy Cities Conference held in Souzhou, China.
- o) Organized a seminar on "Physical Activities and Public Health" in collaboration with Center for Communicable Disease USA, University of Sydney Australia, International Union for Health Promotion & Education Geneva, WHO involving 78 participants from various states in Malaysia.
- p) Developed the Integrated Scoring Inspection format for health assessment of the National Service Camp. A total of 49 (60%) camps were inspected.

Occupational Health Program

The Occupational Health Unit has planned various strategies based on the Three Level of Prevention In Public Health to provide a comprehensive occupational health services for the nation. The activities and achievements for 2006 were:

Health promotion and education regarding occupational health

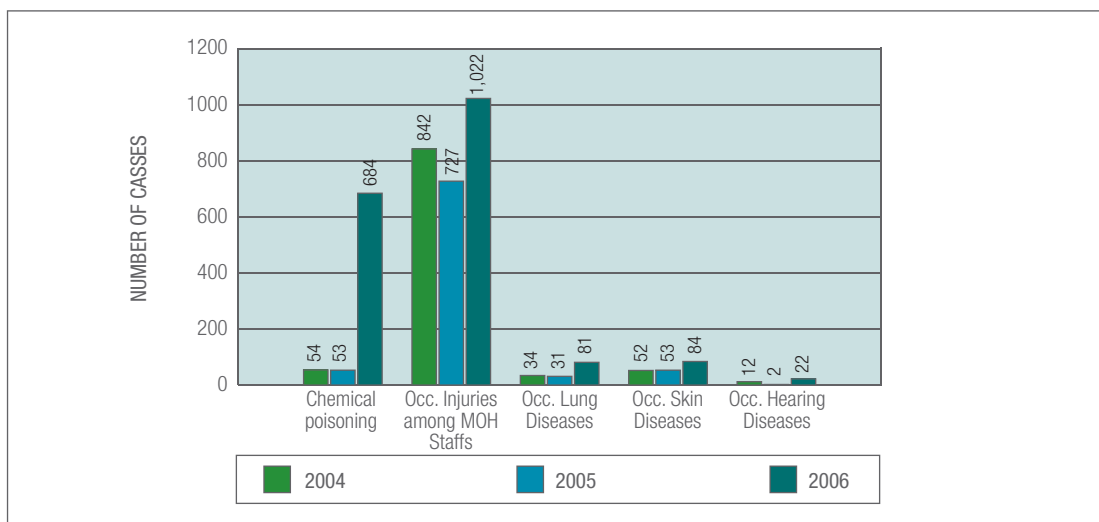
Occupational Health Unit (head quarters, states and districts level) have conducted various activities to promote and educate workers regarding occupational health.

- a. Workshop to formulate Module on Induction Programmes for Health Care Workers in Ministry of Health, Malaysia.
- b. Workshop for preparation of Occupational Health Module for Trainers in Ministry of Health Malaysia.
- c. Various occupational health promotion and education activities among health care and industrial workers at state and district level.
- d. Produced "Pocket Guideline of Dermatology for Occupational Health Services Providers" in collaboration with Dermatology Department in Selayang Hospital.
- e. Production of posters on - Safe use of computers, health effect of pesticides, accident prevention at workplace and commuting accident prevention.
- f. Collaborated with Universiti Malaya and Universiti Kebangsaan Malaysia in the Post Graduate Training In Public Health (Occupational Health).
- g. Collaborated with Society of Occupational and Environmental Medicine- Malaysian Medical Association in conducting Continuous Medical Education in Occupational Medicine.

Surveillance of Occupational Diseases, Poisoning and Injuries

Surveillance system was first established for pesticide and chemical poisoning in 1989. This was followed by surveillance for occupational lung disease, skin disease and injuries in 1997. Occupational noise induced hearing loss was established only in the year 2002. Generally, the reported cases of occupational diseases in Malaysia are still low compared to other countries. This is most likely due to under-reporting of cases and difficulties to diagnose occupational diseases.

FIGURE 9
Surveillance of Occupational Diseases, Poisoning and Injuries, Malaysia, 2004-2006



Source : Disease Control Division, MOH

a) Chemical poisoning

Chemical poisoning is still a serious problem in Malaysia. In 2006, a total of 684 cases were notified (Figure 9). Between 2000 to 2006, majority of the poisoning cases involved pesticides, followed by therapeutical drugs, gases, organic solvents, industrial chemicals and agrochemicals. Paraquat, organophosphate, glyphosate, carbamate and organochlorine were the main pesticides involved in chemical poisoning. Most chemical poisoning were parasuicidal. The second main cause was accidental, followed by homicide and occupational related poisoning. Main route of exposure for poisoning was oral, followed by inhalation and dermal.

b) Occupational injuries among Ministry of Health staffs

A total of 1,022 cases were reported in 2006. Majority of injuries happened in hospitals (786 cases), followed by health facilities (60 cases) and dental facilities (39 cases), while 128 cases of injuries happened in other places. There were 9 cases reported with insufficient data. Needle stick injuries remain as the most common injuries among the health care workers, followed by injuries while handling/lifting and exposure to/contact with harmful substances or radiance. The hospital wards showed the highest incidence of needle stick injuries, followed by operating theatre and emergency department. In the Health Division, most of the accidents occurred in Health Clinics.

c) Occupational lung diseases

There were only 81 cases notified in 2006. Infectious disease, asthma and pneumoconiosis were the 3 most common type of occupational lung diseases. Despite being diagnosed as having occupational lung disease, most of the workers continued with their present work.

d) Occupational skin diseases

In the year 2006, 84 cases of occupational skin diseases were notified compared to 52 in the previous year. Occupational dermatitis remained as the main type of occupational skin disease notified.

e) Occupational noise induced hearing loss

The notification of occupational noise induced hearing loss is still low with only 22 cases notified in 2006. In most cases, personal hearing protection devices were not provided by the employers.

Consultancy and Advisory Services

Ministry of Health also works together with other government and non-government agencies in providing consultancy, advisory services and technical assistance pertaining to occupational health.

a) Establishment of new policy and action plan

- Produce new surveillance program for sharps injuries among health care workers.
- Committee member in the the drafting of Code of Practice on Prevention/Eradication of Drug/Alcohol & Substance Problem In Workplace
- Control of Tuberculosis Infection Among Health Care Workers within Ministry of Health Facilities.

b) Provide technical assistance

- Committee member in the formulation of Occupational Safety and Health Management System Standard organized by SIRIM
- Involved in research called 'Mercury Exposure Among Dental Health Personnel', conducted by Institute of Medical Research & Oral Health Division, Ministry of Health
- Part of Technical Working Group on the Development of National Environmental Health Indicator (Occupational Safety & Health)
- Committee member in the Prevention of Illegal Pesticide Smuggling chaired by Agricultural Department

WAY FORWARD

Inline with the 9th Malaysian Plan, the prevention and control of diseases will be further strengthened. The wellness concept which focuses on risk factor screening and early detection will be stressed to the public so that they will be able to take necessary actions. Disease surveillance will also be strengthened. Collaboration and smart partnership with various agencies at all levels – local, national and international will be further strengthened for comprehensive disease prevention and control implementation. The Division will also focus on human capital development. Health personnel will be further upgraded and trained in their knowledge and skills. This is to ensure that they are well prepared in dealing with whatever epidemic or pandemic.

CONCLUSION

Throughout the year 2006, the planning, implementation, monitoring and evaluation of the diseases prevention and control programmes and activities were conducted as planned. Even though the achievements for these activities were remarkable, there are still areas which can be further improved and strengthened for better and greater success in the future.

FOOD SAFETY AND QUALITY

INTRODUCTION

Implementation and enforcement of the provisions as provided for in the Food Act 1983 and Food Regulations 1985 is under the purview of the Food Safety and Quality Division (FSQD), Ministry of Health (MOH). The FSQD in MOH, as the agency with the mandate to ensure a safe food supply for whole country, carries out a series of activities through the Food Safety and Quality Programme. The scope of activities encompasses mandatory food inspection, sampling, analysis and enforcement on food, promoting food safety assurance system, provision of advice to the food industry, consumer education and the protection of the national economic interest in the highly competitive world food market. The Food safety and Quality Unit established at the state level implement the policies formulated at the FSQD.

ENFORCEMENT SECTION (DOMESTIC)

ACTIVITIES

i. Food Sampling

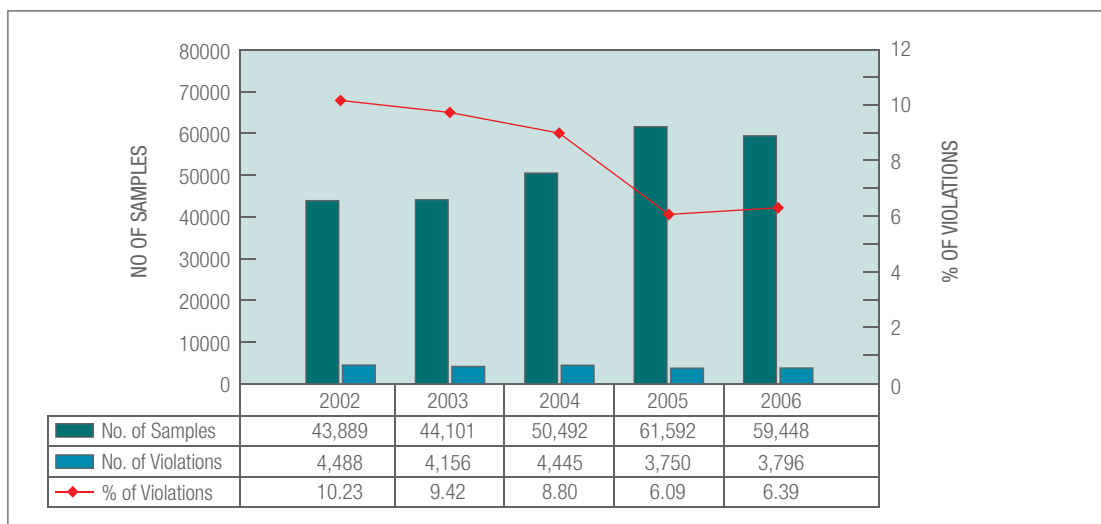
Sampling was carried out to ensure food prepared and sold in Malaysia are safe and comply with the provisions in the Food Act 1983 and Food Regulations 1985. The sampling target for the year 2006 was 48,000. The parameters of analysis of these samples was divided into Microbiology (40%), Chemical (55%) and Physical (5%).

A total of 59,448 food samples were taken for analysis in 2006, out of which 3,796 (6.39%) contravened the Food Act 1983 and Food Regulations 1985 (Figure 1). The number of offenders fined were 733 cases while fines amounting to RM996,772.00 were collected. There was no case of imprisonment for the offenders, 139 cases were acquitted not amounting to discharge and 10 cases were discharged and acquitted.

ii. Inspection and Closure of Food Premises

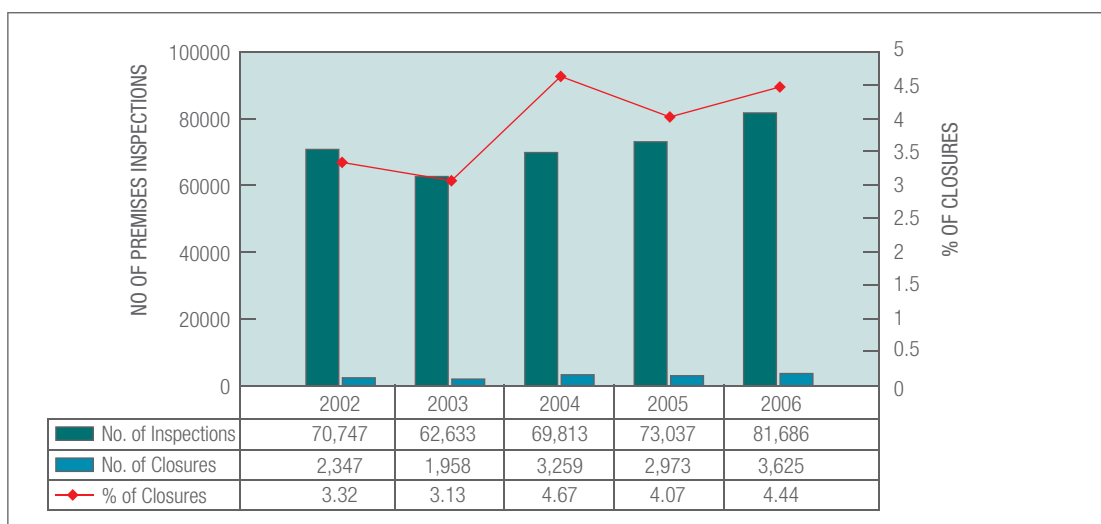
The inspection of premises is a routine activity to ensure the sanitation and hygiene of premises and to ensure food safety. In 2006, a total of 81,686 premises were inspected and 3,625 insanitary premises were closed under provisions provided in Section 11 of the Food Act 1983 (Figure 2).

FIGURE 1
Food Sampling and Violations, 2002 - 2006



Source: Information and Documentation System Unit, MOH

FIGURE 2
Food Premises Inspection and Closure, 2002 – 2006

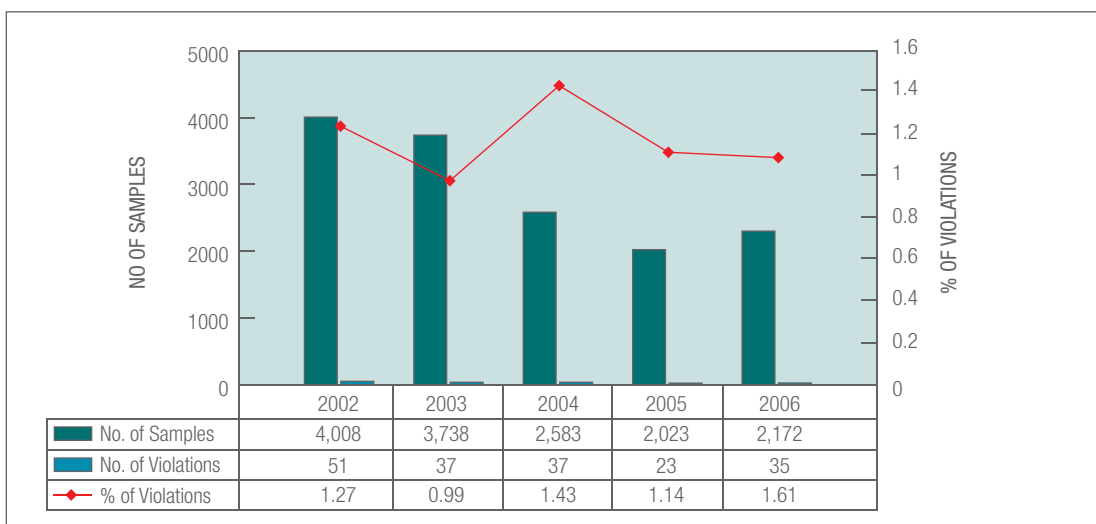


Source: Information and Documentation System Unit, MOH

iii. Pesticide Residue

In the year 2006, a total of 2,172 samples of vegetables and fruits were taken for pesticide residue analysis (Figure 3). Out of these 2,172 samples, 1,779 samples were vegetables and 393 samples were fruits. Results of the analysis indicated only 26 samples (1.39%) of vegetables were found to be above the Maximum Residue Limits (MRLs) of Schedule 16 (Pesticide Residue), Regulation 41, of the Food Regulations 1985. However, no fruits were found to contravene the regulations.

FIGURE 3
Sampling of Vegetables and Fruits for Pesticide Residue, 2002 – 2006



Source: Information and Documentation System Unit, MOH

iv. Veterinary Drug Residue

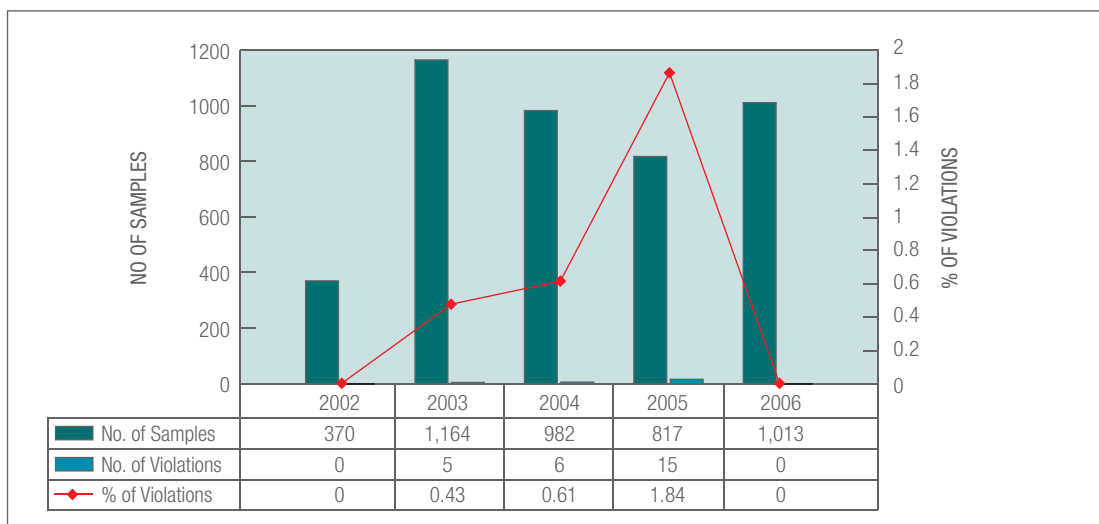
Nitrofurant

A total of 1,013 samples of chicken and 93 samples of eggs were taken for analysis and none were found to contravene the Food Regulations 1985 (Figure 4).

Chloramphenicol

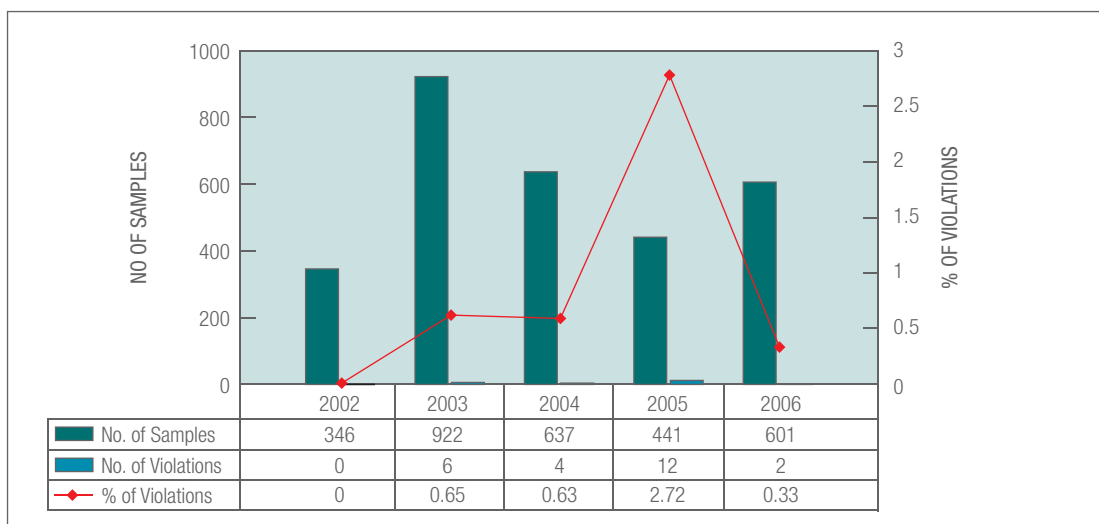
A total of 601 samples of chicken were taken with 2 (0.33%) violations (Figure 5) and 173 samples of fish taken with no violations (Figure 6).

FIGURE 4
Sample for Nitrofurantoin in Chicken 2002 -2006



Source: Information and Documentation System Unit, MOH

FIGURE 5
Sample for Chloramphenicol In Chickens, 2002 -2006



Source: Information and Documentation System Unit, MOH

FIGURE 6
Sample for Chloramphenicol In Fish, 2003 - 2005



Source: Information and Documentation System Unit, MOH

Beta-Agonist

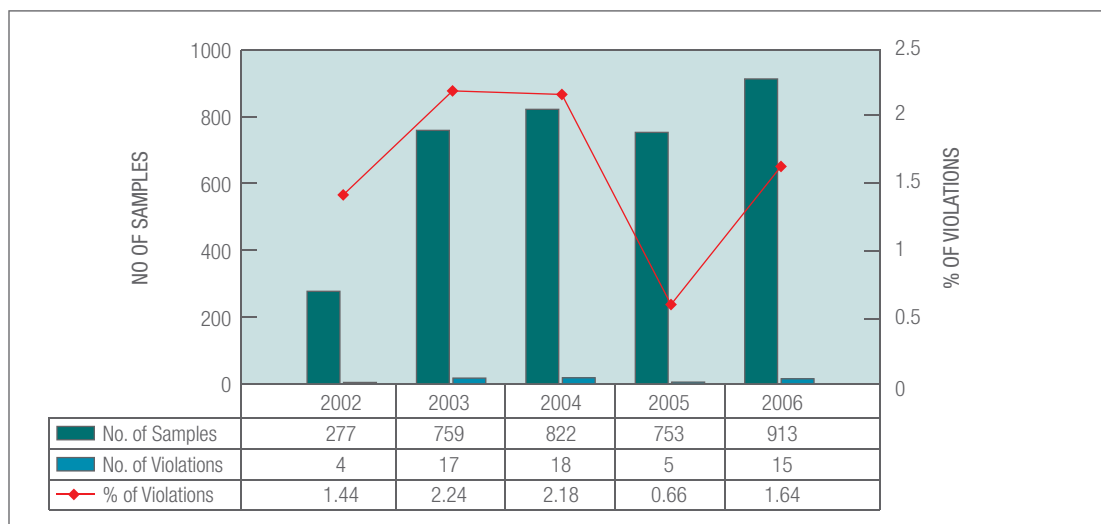
In 2006, a total of 913 samples were taken for analysis of beta-agonist (Figure 7). This includes pork (457 samples), beef (362 samples), mutton (72 samples) and duck meat (22 samples). There was an increase of violations in pork. 14 samples (3.06%) of pork and 1 sample (0.28%) of beef were found to be contaminated with beta-agonist.

v. Licensing

Natural Mineral Water

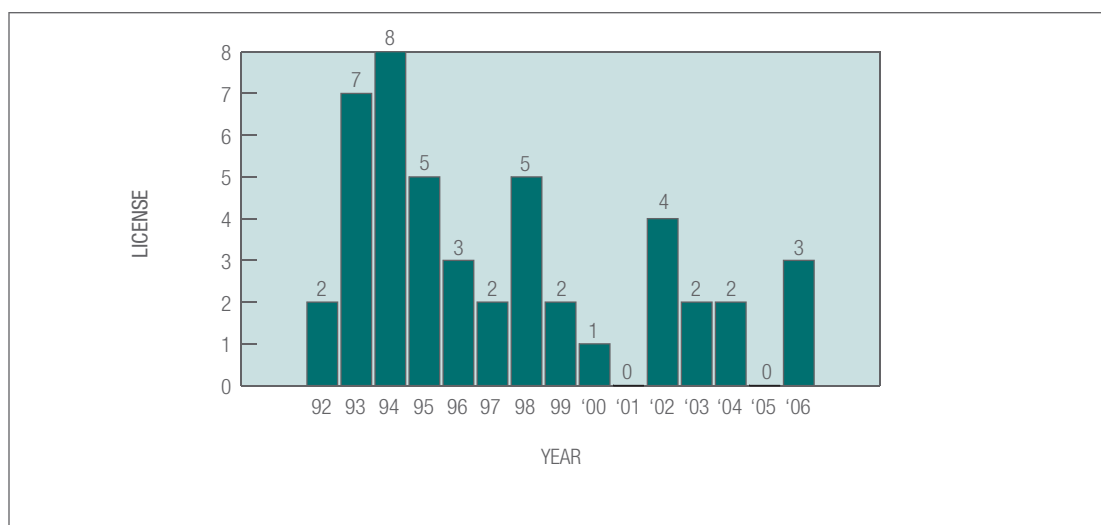
The production and importation of natural mineral water in this country is licensed under Regulation 360A of the Food Regulations 1985. From the time this Regulations is enforced until December 2006, 46 sources of natural mineral water is being licensed with a collection of RM276,000. From the 46 sources of natural mineral water licensed (Figure 8), 33 were from local sources and 13 were from foreign sources. In 2006, 30 licences were issued for local sources (Table 1) and 9 licences for foreign sources (Table 2).

FIGURE 7
Monitoring of Beta-agonist 2002 – 2006



Source: Information and Documentation System Unit, MOH

FIGURE 8
No. of Licences Issued for Natural Mineral Water, 1992 - 2006



Source: Food Safety and Quality Division, MOH

TABLE 1
Total Licences of Natural Mineral Water Issued For Year 2006

State	Natural Mineral Water		Total	Total Collection (RM)
	Local	Imported		
Perlis	1	0	1	6,000
Kedah	3	0	3	18,000
P.Pinang	1	0	1	6,000
Perak	5	0	5	30,000
Selangor	4	8	12	72,000
F.T. Kuala Lumpur	0	1	1	6,000
N.Sembilan	3	0	3	18,000
Melaka	0	0	0	0
Johor	8	0	8	48,000
Pahang	3	0	3	18,000
Terengganu	0	0	0	0
Kelantan	0	0	0	0
Sarawak	1	0	1	6,000
Sabah	1	0	1	6,000
F.T. Labuan	0	0	0	0
TOTAL	30	9	39	234,000

Source: Food Safety and Quality Division, MOH

TABLE 2
List of Countries of foreign sources for Imported Natural Mineral Water, 2006

No.	Country of Origin	Total
1.	Indonesia	1
2.	Nepal	1
4.	France	3
5.	Italy	3
6.	United Kingdom	1
TOTAL		9

Source: Food Safety and Quality Division, MOH

Packaged Drinking Water

Regulation 360B, Food Regulations 1985 was gazetted in the year 2000 whereby the sources of packaged drinking water need to be licensed. Since 2002, a total of 148 sources of packaged drinking water were approved (Table 3).

TABLE 3
Total Licences Approved for Packaged Drinking Water by State, 2002 - 2006

No.	State	2002	2003	2004	2005	2006	Total
1.	Perlis	0	2	1	0	0	3
2.	Kedah	0	4	0	0	0	4
3.	Pulau Pinang	3	4	0	1	1	9
4.	Perak	5	0	0	0	4	9
5.	Selangor	10	6	3	3	4	26
6.	F.T. Kuala Lumpur	1	1	3	0	1	6
7.	N. Sembilan	1	2	1	0	0	4
8.	Melaka	0	2	1	0	1	4
9.	Johor	4	4	4	0	7	19
10.	Pahang	2	7	1	1	1	12
11.	Terengganu	0	0	0	1	0	1
12.	Kelantan	2	3	6	3	2	16
13.	Sarawak	2	2	3	6	4	17
14.	Sabah	2	6	3	2	1	14
15.	F.T. Labuan	1	0	0	2	1	4
TOTAL		33	43	26	19	27	148

Source: Food Safety and Quality Division, MOH

Non-Nutritive Sweetener

The Ministry of Health issued 5 types of licences for non-nutritive sweetening substances as provided under Regulation 133 (5) of the Food Regulations 1985 as follows:

- Licence to import and use Non-nutritive Sweetening Substance in food preparation for sale (Form B).
- Licence to import and sell Non-nutritive Sweetening Substance (Form B1)
- Licence to manufacture for sale and use in food preparation for sale of Non-nutritive Sweetening Substance (Form B2).
- Licence to purchase and use Non-nutritive Sweetening Substance in food preparation for sale (Form B3).
- Licence to purchase and sell Non-nutritive Sweetening Substance in retail premises (Form B4).

In the year 2006, 18 licences for non-nutritive sweetening substances were issued. Fees collected from the the issuance of licences were RM3,150 (Table 4).

TABLE 4
Total Number of Licences Issued for Non-Nutritive Sweetening Substances by State, 2006

No.	State	Type of Licence					Total	Fees Collected (RM)
		B	B1	B2	B3	B4		
1.	Kedah	-	-	-	1	-	1	200
2.	P. Pinang	-	1	-	2	-	3	600
3.	Perak	-	-	-	4	-	4	800
4.	Selangor	1	3	-	-	1	5	850
5.	F.T Kuala Lumpur	-	1	-	1	-	2	400
6.	Melaka	-	-	-	-	1	1	50
7.	Kelantan	1	-	-	-	1	2	250
Total		2	5	-	8	3	18	3,150

Source: Food Safety and Quality Division, MOH

vi. Operations Carried Out

In the year 2006, a few operations were carried out as shown in Table 5.

TABLE 5
Operations carried out in 2006

Operations	Month
Colour Operation (Tea with Colour)	January
Chinese New Year Operation/Ops Gou (Beta-agonist in pork, nuts and nuts product - aflatoxin, mandarin oranges - pesticides and kuaci - cyclamate dan sulphur dioxide)	February
Hijrah Operation (Hari Raya Qurban)	
Malachite Green and Lenco Malachite Green in Fried Dace and Salted Black Beans Operation	March
Benzene in Soft Drink Operation	
Boric Acid in Pasta Operation	March – April
Patuh II and III Operations - Natural Mineral Water and Packaged Drinking Water	May
Propionic Acid in bread and biscuits Operation	September
Ramadhan Operation	
Deeparaya Operation (Sealing and seizures of food)	September - October
Beta-agonist in pork dan pig feed operation	November – December

Source: Food Safety and Quality Division, MOH

ENFORCEMENT SECTION (IMPORT)

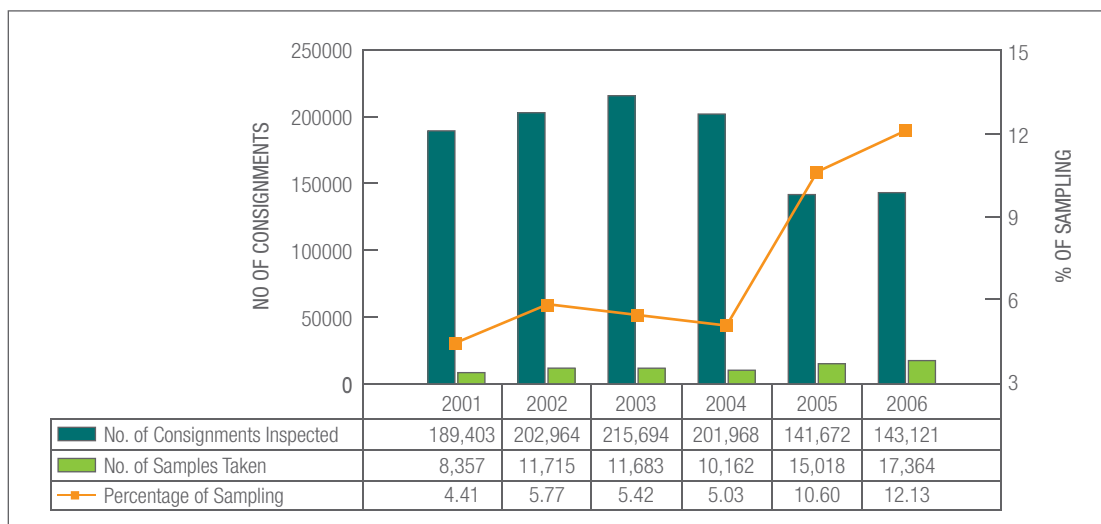
The objective of this section is to ensure that all food imported into this country comply with Food Act 1983 and its Regulations 1985. The monitoring of the safety of food is carried out at entry points. The monitoring activities include inspection, sampling, monitoring and surveillance, detention, recall, rejection, prosecution, destruction of contravened consignment and etc.

Food import control management is assisted by web based application system, known as Food Safety Information System of Malaysia (FoSIM). The system uses risk-based approach in determining food safety hazard of imported food. The risk attributed to the food is determined by six levels of inspection.

ACTIVITIES AND ACHIEVEMENTS

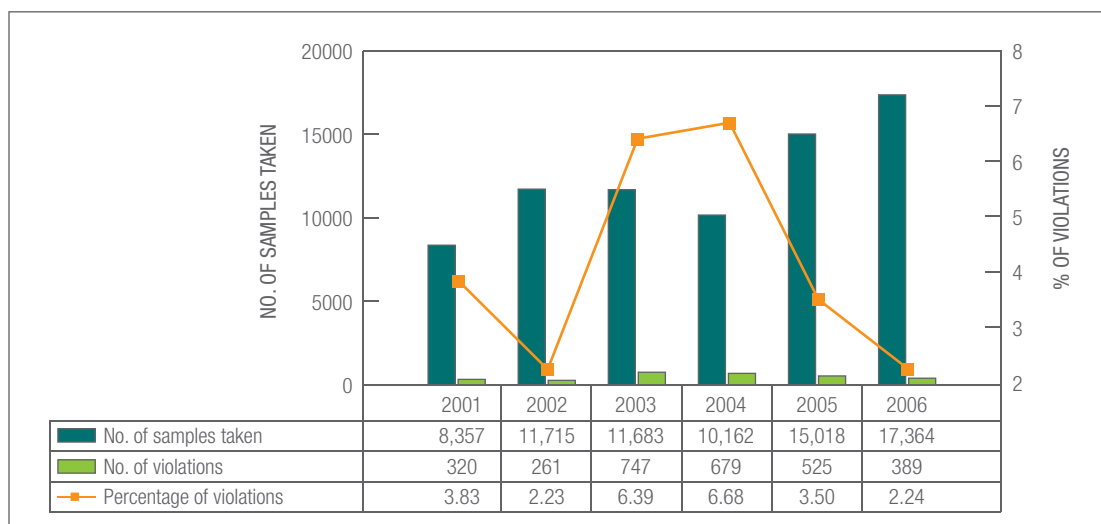
The Section monitors the achievement of 38 entry points through out Malaysia. In 2006, a total of 143,121 consignments were inspected and 17,364 samples (12.1%) were taken for analysis (Figure 9). From the total samples taken for analysis, 389 samples (2.2%) contravened the Food Act 1983 and its Regulations 1985 (Figure 10).

FIGURE 9
Inspection of Food Import Consignment and Sampling, 2001-2006



Source: Information and Documentation System Unit, MOH

FIGURE 10
Food Import Violations, 2001-2006



Source: Information and Documentation System Unit, MOH

Among the main activities carried out by this Section in 2006 were:

- Established the National Monitoring Programme of Imported Groundnut Kernels for Aflatoxin Contamination.
- Developed new warehouses/inspection bay at selected entry points i.e Rantau Panjang in Kelantan and Pasir Gudang in Johor, and upgrade existing warehouses/inspection at Bukit Kayu Hitam in Kedah and Padang Besar in Perlis.
- Redrafting and reviewing of the proposed Food Import Regulation.
- Developed guidelines for the released of imported food products not intended for sale (eg: personal consumption/ exhibition/ research/ gifts).
- Established new import requirement of Health Certificate and Certificate of Analysis for importation of groundnut, crab & crab products and honey.
- Established guidelines for "criteria for action" level for the following parameters:
 - i. Level of Hydroxymethylfurfuraldehyde (HMF) in honey.
 - ii. Level of formaldehyde in fish & fish products
 - iii. Level of formaldehyde in rice vermicelli
- Consultation and reviews on existing policy on Bovine Spongiform Encephalopathy (BSE). Inter-agency Committee on BSE was formed to discuss request from European Union (EU) to review Malaysia's current ban on importation of meat & meat products from EU.
- Monitoring of labeling for buffalo meat from India ("Ops Daging Tipu").
- Training on FoSIM System to forwarding agents, importers and Ministry of Health staff at Perlis, Sarawak and Kelantan.

INDUSTRY SECTION

ACTIVITIES

i. EU Registration

Since 1996, the European Union had appointed the Ministry of Health (MOH) as the competent authority to ensure food safety through HACCP certification scheme in order to obtain registration approval such as European Union (EU) Registration Number when exporting fish and fish based products to the EU. There were 70 companies registered with the EU through Food Safety and Quality Division (FSQD).

As the competent authority (CA), the MOH has been preparing the annual report on the monitoring program for drug residues in fish and fish-based , as requirement by the EU.

ii. Export Control

The section provides guidance and advice on aspects of safety and hygiene to relevant agencies and industries as well as to develop, monitor and evaluate issues or problems that occur during the export of food products, with the cooperation of the state health officers and other agencies. The Section maintains good cooperation and bilateral or unilateral relationships through discussions, provide information and assist during inspection visits carried out by CA of importing countries.

Based on the inspection carried out by Food and Veterinary Office (FVO) in European Commission's Health and Consumer Protection Directorate General in 2005, several comments and ameliorate recommendation had been given. The FSQD took the initiative to seek assistance under Asia Trust Fund (ATF) to carry out a project entitled 'Upgrading The Capability of The Competent Authorities and Fish Facilities in Malaysia of Meeting EU Fishery Requirements'. The objective of the project is to improve the understanding of all relevant agencies on the 'EU requirements for fish and fish product export to EU'. This project will be carried out in phases over a one year duration and will be conducted by international consultants from International Trade Centre (ITC).

iii. Export Certificate

Corresponding with the rapid expansion of the food industries in Malaysia, there is a tremendous increase in the food export activities in order to fulfil the various requirements of the importing countries. The Section has issued various certificates for export purposes namely Health Certificate, Free Sales Certificate, Non Genetically Modified Food (Non Starlink Corn), HACCP certificate and also other certificates based on the needs of the importing countries. The increase in the number of certificates issued as in the Table 6 shows the rapid expansion of the export trade.

TABLE 6
Total Export Certificate Issued, 2002-2006

Type of Certificate	2002	2003	2004	2005	2006
Health Certificate	7,525	12,255	14,938	16,907	17, 805
Free Sale Certificate	252	481	1,326	1,078	1,261
Non-Genetically Moodified Certificate (non-starlink Corn)	21	33	142	50	64

Source: Food Safety and Quality Division, MOH

The government had decided to impose fees for the issuance of Health Certificates since 3rd January of 2005. The fee for each health certificate was RM80.00 whereas the fee for the Free Sale Certificate was RM 30.00 per cert with a limit of 25 products per certificate. However, the fees were reviewed by FSQD and the new fees are as shown in Table 7.

From 15th July 2006, application and issuance of the free sale certificates were carried out at state-level due to increasing demand by the industries.

TABLE 7
Fees for Health Certificate Per Consignment

Number of Application	Charge Rate Per Cert (RM)
1 - 3	80.00
4 -6	60.00
7 - 9	40.00
≥10	30.00

Source: Food Safety and Quality Division, MOH

TABLE 8
Fees for Health Certificate for Promotion Purpose

Type of Exhibition	Charge Rate Per Cert (RM)
Government Request	30.00
Individual Basic	50.00

Source: Food Safety and Quality Division, MOH

iv. HACCP Certification Scheme

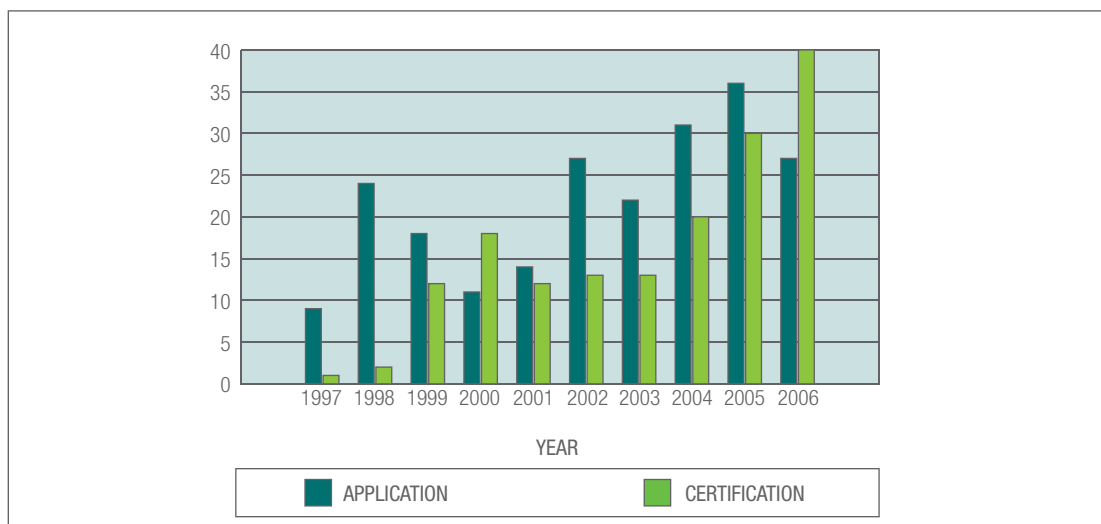
To strengthen the HACCP Certification scheme, FSQD is cooperated with other certification bodies such as SIRIM QAS International Sdn. Bhd. in giving accreditation on quality assurance system to food industries. This can be seen through the integration HACCP-ISO system under the Integration Certification Scheme ISO 9000/HACCP which was launched in 2002. This merger is to expedite the audit and accreditation process due to increasing demand. This will be advantageous to industries especially those involved in export. Table 9 and Figure 11 indicate the total of HACCP certified company.

TABLE 9
Total Export Certificate Issued, 2002-2006

Perlis	Kedah	P.Pinang	Perak	Selangor	Kuala Lumpur	N.Sembilan	Melaka	Johor	Pahang	Terengganu	Kelantan	Sarawak	Sabah	Labuan	Total
0	3	25	20	42	6	3	3	14	2	0	0	14	17	1	150

Source: Food Safety and Quality Division, MOH

FIGURE 11
Number of Certification, 1997-2006



Source: Food Safety and Quality Division, MOH

TABLE 10
HACCP Courses in 2006

Course	Organiser	Date	No. of Participants
Pre-Requisites To HACCP Implementation	MARDI	21 – 24 March	5
HACCP & Its Implementation	MARDI	5 – 9 June	6
HACCP Auditing And Verification	MARDI	11 – 15 September	8

Source: Food Safety and Quality Division, MOH

In 2006, 13 HACCP Certification meetings were held wherein 105 audit reports were discussed. One (1) HACCP's surveillance auditor meeting was held in August 2006 to discuss improvements to the surveillance audit activities under Malaysia HACCP System.

v. Good Manufacturing Practice (GMP) Certification Scheme

The GMP Certification Scheme was launched by the Health Minister on 19 December 2006. The scheme was developed based on request for GMP certificates from importing countries as well as from small and medium enterprise (SME) in the country. The certificate scheme will enable the SME to achieve a relatively simple food safety assurance system. 'Guidelines on GMP' and 'Guidelines on GMP Certification Scheme' were developed under this scheme.

vi. Food Handlers Training Programme

In order to improve the training of food handlers, a memorandum of understanding was signed between Ministry of Health (MOH) and University Kebangsaan Malaysia (UKM) on 2nd March 2006. Through this memorandum, Akademi Latihan Kebersihan dan Keselamatan Makanan (ALKEM) will take over the role of FSQD in providing trainings and coordinating the activities of Sekolah Latihan Pengendali Makanan (SLPM) which include the registration of SLPM and review of the curriculum.

vii. Food Hygiene And Safety Policy In Schools

FSQD plays an active role in ensuring the hygiene and safety of food prepared in school canteens and hostel kitchens. Several policies and activities for schools were developed through joint venture efforts between Ministry of Health and Ministry of Education such as under the Program Bersepadu Sekolah Sihat (PBSS). Food safety guidelines for school canteens was developed and list of questions for the National School Health Quiz which was held every year was prepared.

LABORATORY SECTION

The MOH has 14 food laboratories, which consist of 10 Food Safety and Quality Laboratory (FSQL) and 4 Public Health Laboratory (PHL). It has modern laboratories infrastructure with up-to-date equipments to enable efficient food analysis in line with analytical demands and rapid development of science and technology. All laboratories implemented a quality system, based on ISO/IEC 17025 requirements to ensure the performance of laboratories and the reliability of the test results. All analytical methods and laboratory procedures are evaluated and documented as Standard Operating Procedures (SOP).

Monitoring of Laboratories

Audits

Audits were conducted on each laboratory to ensure smooth implementation of quality system and to evaluate laboratories' preparedness to undergo compliance audit to obtain accreditation by the Department of Standard Malaysia. In 2006, all food laboratories under MOH have successfully obtained accreditation for ISO/IEC 17025 from the Department of Standard Malaysia.

Proficiency Testing

Laboratories participated in national and international proficiency test to evaluate the competency of technical staff in conducting food analysis. The type of proficiency test participated in 2006 is shown in Table 11.

TABLE 11
Participation in Laboratory Testing, 2006

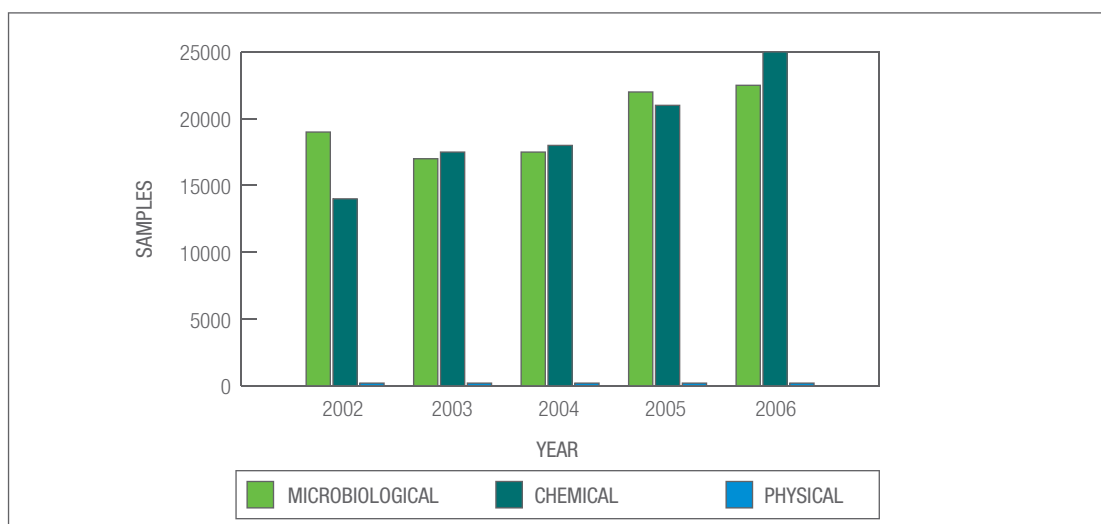
Level	Organizer	Proficiency Test	Date
INTERNATIONAL LEVEL	IFM, Australia Food Microbiology Proficiency Test	(P6-Starch) PATHOGEN ONLY	August
	FAPAS Programme, UK	i. Sulphur Dioxide (2046F)	August
		ii. Chloramphenicol (0281)	October
NATIONAL LEVEL	FODAS (Department of Chemistry Proficiency Testing Scheme)	FODAS 1 :2005 (Benzoic & Sorbic Acid)	April & July
		FODAS 8 :2005 (Caffein)	March
		FODAS 9 :2005 (Cadmium,Lead, & Arsenic)	August
		FODAS 11:2005 (Nutrition)	September

Source: Food Safety and Quality Division, MOH

Laboratory Reports/Output

Monthly reports from 11 Food Laboratories were monitored and analysed to evaluate the achievements and performances. In 2006, a total of 47,417 food samples were analysed, which increased by 10% as compared to 43,111 samples analysed in 2005. Out of this, 22,596 samples were analysed for microbiological (47.6%), 24,645 samples were analysed for chemical (52.0%) and 176 samples were analysed for physical (0.4%).

FIGURE 12
Samples Analyzed by Categories, 2002-2006



Source: Food Safety and Quality Division, MOH

LEGISLATION SECTION (STANDARD DEVELOPMENT)

ACTIVITIES

i. Technical Advisory Committee on the Food Regulations 1985 (JPTPM)

This committee endorses amendments to the Food Regulations 1985. The committee consists of representatives from government bodies, universities, industries as well as professional bodies. There were 6 working groups under the committee that study applications or petitions from the industries and other stakeholders to amend the Food Regulations 1985. The working groups are as follows:

- Working Group on Nutrition/Health Claims/Advertisement
- Working Group on Food Additives and Contaminants
- Working Group on Microbiology
- Working Group on Food Commodity Standards
- Working Group on Drinking Water
- Working Group on Genetically Modified food (GMF)

Working Group on Nutrition/Health Claims/Advertisement

10 meetings were held in 2006. Five (5) applications were received of which only four applications were approved, namely :

- i. Oat soluble fibre (Glucan) helps to lower the rise of blood glucose provided it is not consumed together with other food
- ii. "High Amylose Maize Resistant Starch" helps improve/promote colonic/intestinal function/environment
- iii. Oligofructose/fructooligosaccharide/FOs is a prebiotic
- iv. Inulin is a prebiotic

Working Group on Food Additives and Contaminant

There were two (2) meetings held in 2006. Two applications received from the industry regarding the approval of usage of lacticol as a sweetening substance and isomaltulose as a food conditioner. Other issues discussed were benzoic acid exposure assessment project and the amendment of the Sixteenth Schedule for Pesticide Residue. Harmonization of the food additive with Codex under the Food Regulations 1985 meeting was held four times discussing issues regarding the numbering system for food additives and proposal for the amendment of food additive.

Working Group on Microbiology

This working group had two (2) meetings in 2006. One application was received from the industry to amend Regulation 26A regarding the addition of the microorganism culture in food and to review the Twelfth A Schedule. Other issue discussed was the list of allowed probiotic bacteria. A proposal of the guideline for microbiology standard was presented by the working group.

Working Group on Food Commodity Standard

This working group had two (2) meetings in 2006. Issues discussed include 11 applications from the industries with 6 applications for amendment of standard for oyster sauce and oyster flavoured sauce, premix coffee, ice cream, flavoured milk, fat spread, corn oil, mustardseed oil, soya bean oil and sunflower seed oil. 3 applications had proposed a new standard for the mixture of aspartame and acesulfame potassium, Nata De Coco and dairy creamer. 2 other applications were proposals to allow the addition of acesulfame potassium in soft drink and colouring in tea. Other matters discussed were the 'Proposal Of Sambal Anchovies Research' that will be conducted by MARDI.

Working Group on Drinking Water

This working group was formed in 2005 and had 6 meetings in 2006. The working group discussed the proposed amendment to the standard on water, natural mineral water and the proposed draft standard for vended water.

Working Group on Genetically Modified Food (GMF)

This working group was formed in 2005 and had 4 meetings in 2006. Issue discussed was the draft proposed regulation for GMF including threshold level for GMF labeling.

ii. Draft gazette to the amendment of the Food Regulations 1985

Several draft amendments were made to the Food Regulations 1985 which include:

Regulation / Schedule	Amendments
Regulation 11A	New statement standard for dietary guidelines
Regulation 18C	Amendment to the nutrient content claim with the prohibition of the usage of 'low fat' or 'low salt' claim and nutrient comparative claim with relevant provision
Regulation 18D	Nutrient function claim amendment with prohibition of the 'low fat' or 'low salt' claim and nutrient comparative claim with relevant provision
Regulation 18E	Addition to permitted function claim
Regulation 25 (5)	Amendment of labeling for poly dextrose if contains as much as 25g/100g or more in products.
Regulation 25A	New regulation for Pullulan
Regulation 91B	New regulation for Formulated Milk Powder for Children
Regulation 185	Amendment to allow addition of food conditioner in margarine
Regulation 186	Amendment to allow addition of preservative, colouring substance, flavouring substance and food conditioner in fat spread
Regulation 269A	Amendment to allow addition of 'dextrose, glucose or honey and flavouring substance'
Regulation 390	Amendment to the standard for canned food for infants and children
Regulation 391	Amendment to the standard of cereal based food for infants and children
Regulation 393	Amendment to allow addition of acesulfame potassium with relevant provision
Regulation 395 (4)	Amendment to the standard for food not elsewhere standardized
Eleventh Schedule (Table III) (New)	Amendment to allow the addition of Pullulan as food conditioner in specified food
Twelfth Schedule (Table 1)	Amendment of permitted nutrient supplement by adding 'Magnesium Lactate' under magnesium, 'Polydextrose' and 'High Amylose Maize Resistant Starch' under dietary fibre.
Twelfth Schedule	Amendment to enlist Polydextrose and Galacto-oligosaccharide (GOS) under dietary fibre
Sixteenth AA Schedule	Amendment with inserting Sixteenth AA Schedule Table I and Table II between Schedule Sixteenth A and Schedule Sixteenth B
Seventeenth Schedule Table II	Amendment with addition 'formula dietary food' with relevant provisions
Twenty First Schedule (Table IA)	Amendment with addition of Galacto-oligosaccharide (GOS) with relevant provisions
Twenty First Schedule A (Table III)	Amendment with addition of Glacto-oligosaccharide with relevant provisions.

Source: Food Safety and Quality Division, MOH

iii. Food Drug Interface (FDI) Product Classification

In 2006, a total of 658 applications were received where part of the applications had been discussed in the FDI Product Classification Committee meetings. The FDI product was classified either as food or pharmaceutical products, and controlled under the Food Safety and Quality Division or the National Pharmaceutical Control Bureau. These applications were processed by reviewing and revising the ingredients and labels to ensure that they comply with the Food Regulations 1985 and also based on the decision tree agreed by the committee.

iv. Labeling and Food Labeling Advisory Services

This Section provides Food Labeling Advisory Services for industries through the Food Labeling Advisory Committee. The industries or an importer which seek advisory services on labeling will be charged in amount of RM1,000. Food labels should be amended based on the comments given to ensure it complies with the provisions in Food Act 1983 and Food Regulations 1985. 65 labels had been assessed by the Labeling Working Committee in 2006.

v. Food Import Regulation

Several discussions were held regarding the Food Import Regulation draft.

vi. Food Irradiation Regulation

This draft regulation is being revised by the legal advisor.

vii. Food Hygiene Regulation

Final draft resulted from the discussion and comments from the Legal Advisor was sent to the Legal Advisor office.

viii. Food Analyst Act and Food Analyst Regulation

Detailed discussion with MIFT was held in 2006. The drafts and comments were sent to the Legal Advisor Office and was reviewed in November 2006.

RESEARCH AND MONITORING AND RISK ANALYSIS SECTION

A total of 18 monitoring and research project were planned in early 2006. Table 12 shows the monitoring and research project by categories for 2006.

TABLE 12
Monitoring and Research Project by Category, 2006

Categories	Projects
National Project	Total Dietary Study (TDS) on heavy metals
	Dioxin in spinach, kailan and soil
	Natural formaldehyde in marine fish
Specific Project	Microbiological contaminant status in sugar cane
	Microbiology status in raw materials, utensils and boiling water of keropok lekori
	Microbiological status in cockles
	Determination of Polycyclic Aromatic Hydrocarbons (PAHs) in shellfish
	Microbiology status including Salmonella spp and E.Coli 0157 in grilled fish and "air asam"
	Ractopamine in meat and internal organ of poultry
	Risk Assessment of B. cereus in rice
Method Development	Allergens in foods
	Pesticide residue in meat
	Microbiological standard for live cultured product (method development for lactic acid bacteria)
	Aflatoxin in tree nuts
	Ochratoxin A in coffee beans and cocoa beans
	Antibiotic residue in milk
	Antibiotic residue (sulphonamide) in egg
	Antibiotic residue (chloramphenicol) in honey

Source: Food Safety and Quality Division, MOH

Research and Monitoring Section also collaborated with local universities to conduct food safety research. Among research carried out in 2006 were:

- i. Safety and quality of recycle oils for street vendors
- ii. Safety and quality of recycle oil for household practices.
- iii. Physical quality of plastic and other containers for microwave heating.
- iv. Safety of reused microwaveable plastic and other microwaveable container including polystyrene food container.
- v. Safety of food packaging material and disposable food container for ready to eat (RTE) food.
- vi. Monitoring of *Campylobacter jejuni* and *Campylobacter* spp. in raw vegetables commonly consumed as ULAM.
- vii. Study on the occurrence of *Bacillus cereus* and other *Bacillus* spp. in cereals in the Malaysia market.
- viii. Public awareness and practice on plastic bottle water usage.

The Section also organized and conducted the risk assessment activities. In 2006, FSQD in collaboration with WHO and FAO conducted 3 consultations in the area of risk assessment as follows:

- i. Practical methods on chemical risk assessment.
- ii. Training on risk assessment of chemicals with no reference health standard
- iii. Probabilistic microbiological risk assessment workshop

Two (2) courses on chemical risk assessment and microbiological risk assessment were conducted by Research and Monitoring Section to officers from State Health Department and food laboratories officers.

Other activity was the development of database for food contamination through National Food Contamination Monitoring Assessment System (NFAS). The research and monitoring data related to food safety will be collected in this database. As of December 2006, the system was at the final stage of development.

CODEX AND INTERNATIONAL SECTION

ACTIVITIES

i. International and National Level

Malaysia continues to play an active role in Codex and relevant international food safety related activities. In 2006, a total of 42 Malaysian delegates, consisting of representatives from the Ministry of Health (MOH) and other agencies, participated in 17 Codex meetings, 17 Working Group meetings and 2 Workshop sessions at the international level according to their relevant fields of expertise to ensure that the interest of our country is sufficiently addressed.

At the national level, the National Codex Committee (NCC), which consists of 20 National Codex Sub-Committees (NCSC), 3 Ad Hoc Task Force and 12 Codex Working Group (WG) is responsible for the formulation of the Malaysia position. One NCC meeting, 68 NCSC meetings, 4 Ad-hoc Task Force meetings and 2 WG meetings were held at the national level in preparation and follow-up for the international level Codex meetings. The Food Safety and Quality Division (FSQD) was responsible as the Malaysia Codex Contact Point and the Secretariat for the NCC. FSQD also responsible as a National Enquiry Point SPS (Sanitary and Phytosanitary) under WTO (World Trade Organization) for the food safety.

ii. ASEAN

Malaysia hosted the 1st Project Coordination Group (PCG) Meeting in Kuala Lumpur from 24-25 November 2005 under the ASEAN-Australia Development Cooperation Programme (AADCP). The 2nd PCG Meeting was held in Hanoi, Vietnam on 8 May 2006 while the 3rd PCG on 23 November 2006, in Yangon, Myanmar.

Two training activities were planned under the AADCP namely, the Chemical Risk Assessment Training Workshop and the Microbiological Risk Assessment Training Workshop. The Microbiological Risk Assessment Training Workshop was held from 27 February to 3 March 2006 in Sydney, Australia. Malaysia was appointed to lead the 'Microbiological Case Study on *B. cereus* in cooked rice'. The findings of the case study will be made available as reference for ASEAN Member Countries. The Chemical Risk Assessment Training Workshop was held from 1 - 3 August 2006 in Phnom Penh, Cambodia. Malaysia led the 'Chemical Case Study on Chloropropanol in soya sauce and HVP sauce'. The findings of this case study will also be made available as reference for ASEAN Member Countries.

The Health and Consumer Protection Directorate-General (DG SANCO) of the European Commission sponsored two (2) workshops. A workshop on 'EU Food Standards for Fishery and Aquaculture Products' was held from 25 - 27 April 2006, in Jakarta, Indonesia as a follow-through of the EC-ASEAN Standards, Quality and Conformity Assessment programme which ended in 2005. Malaysia was represented by 3 officers from FSQD and the Department of Fisheries, Ministry of Agriculture and Agro- Based Industry.

The second workshop was on 'EU Food Standards for Fruits and Vegetables', hosted by Malaysia and was held in Kuala Lumpur from 19 - 21 September 2006. The Food Safety and Quality Division was the National Project Coordinator for both workshops. The objective of these workshops was to provide complete and comprehensive information and training on EU standards as requirements for export purposes to EU countries.

The 5th Meeting of the ASEAN Expert Group on Food Safety (AEGFS) was held from 21 - 23 November 2006 in Yangon, Myanmar. Malaysia as the Regional Focal Point for the project cooperation between Malaysia and the Australian Marine Science and Technology (AMSAT) funded by Australia under the framework of the ASEAN-Australia Development Cooperation Programme – Regional Partnerships Scheme (AADCP-RPS) presented the Project Proposal on 'Strengthening for Food Inspection and Certification Activities from farm to Table of ASEAN Member Countries'. The meeting agreed to implement the programme led by Malaysia and to be responsible as the Regional Project Focal Point.

Malaysia was also responsible as the coordinator for 2 programmes, namely Food Inspection and Certification and Food Monitoring and Surveillance under the ASEAN Food Safety Improvement Plan (AFSIP) as agreed by the previous AEGFS meetings.

The 6th Meeting of the ASEAN Consultative Committee on Standards and Quality for Prepared Foodstuff Products Working Group (ACCSQ PFPWG) was held from 4 - 5 December 2006 in Bandar Seri Begawan, Brunei Darussalam. Malaysia presented the current developments of the ASEAN Harmonized Technical Requirement on Food Labeling, which was an important element to determine suitable products for the purpose of the Mutual Recognition Arrangement (MRA). Malaysia also presented current activities under the AEGFS in particular under the AFSIP as a basis for handling training and capacity building in food safety under the ACCSQ PFPWG.

HEALTH EDUCATION

INTRODUCTION

The Health Education Division is one of the Divisions under the Department of Public Health. In 1993, the Health Education Unit was upgraded to Health Education Division under *Sistem Saraan Baru* (The New Remuneration System). Its initial role was centered around training, printing of printed media on health and organizing health education activities within the community focusing on communicable disease prevention and personal hygiene. Presently, the Division has diversified and expanded its services to managing health promotion activities as well as training, research and ICT at various levels including states, state hospitals, district hospitals, district health offices and clinics. New non-traditional programmes had been established in line with the current health needs and demands.

ACTIVITIES AND ACHIEVEMENTS

Healthy Life Style Campaign

Beginning 2003, Healthy Lifestyle Campaign carried the theme "Be Healthy for Life". The theme emphasized on community roles regardless of age and sex to lead a healthy and wholesome life. Starting from 2006, five components were emphasized which included Healthy Eating, Manage Stress Smartly, Do Not Smoke, Do Physical Activities and Avoid Alcohol. These five basic healthy lifestyle components were able to reduce risk factors.

A number of activities were carried out during the 2006 Healthy Lifestyle Campaign, namely:

- **The *Jom Makan Secara Sihat* (Lets Eat Healthily Programme) and Be Healthy for Life Carnival**

The Lets "Eat Healthily 2006" pre launching ceremony at the MOH Headquartes was officiated by Y.B. Datuk Seri Dr. Chua Soi Lek, Minister of Health on 1st July 2006. It was a conjoint event with Ministry of Health's Family Day Celebration at Forest Research Institutes Malaysia (FRIM) in Kepong, Selangor. During the ceremony, the campaign's mascots were introduced, i.e. brinjal, corn, mustard, carrot and banana as an effort to encourage people to eat more fruits and vegetables in their daily eating.

The National Lets Eat Healthily Carnival was held on 25 and 26 August 2006 and was launched by Y.B. Datuk Seri Chua Soi Lek, Minister of Health, who represented Y.A.B. Dato' Sri Mohd Najib Tun Hj. Abdul Razak, the Deputy Prime Minister, at Dataran Merdeka, Kuala Lumpur. Amongst the activities carried out during the carnival were exhibitions and promotion stalls, kids colouring contest, kids best dress, cooking demonstration, health quiz, futsal and cultural performance.



Lets Eat Healthily Mascot



The launching of Lets Eat Healthily Campaign

- **The Jump Rope & Fitballrobic Competition**

This annual competition was held on 12 to 14 September 2006 at Stadium Negeri, Kuala Terengganu and was launched by Y.B. Datuk Dr. Hj. Abdul Latiff bin Ahmad, the Deputy Minister of Health. His speech text was read by Encik Abdul Jabar bin Ahmad, Director of Health Education Division, Ministry of Health. The main target of this competition was to produce healthy and fit Malaysians that practice fitness activities in their daily routine (Table 1).



National Jump Rope & Fitballrobic Competition in Terengganu



Doktor Muda Choir



National Doktor Muda Convention in Alor Setar, Kedah

TABLE 1
Number of Participants by Category and State, 2006

No.	State	Open Fitballrobic	Close Fitballrobic	Jump Rope (J)	Jump Rope (T)	Jump Rope (Y)	Jump Rope (S)
1	Selangor	-	1	1	1	1	1
2	Negeri Sembilan	-	1	-	-	1	-
3	F.T. Labuan	-	1	-	-	1	-
4	Melaka	-	1	-	-	-	-
4	Kedah	1	1	1	1	1	-
6	Kelantan	-	1	1	1	-	1
7	Sabah	-	1	-	-	-	-
8	Pulau Pinang	-	1	1	1	1	-
9	Terengganu	1	1	1	1	1	1
10	Perak	1	1	-	1	1	1
11	Perlis	1	1	1	1	1	1
12	Pahang	1	1	1	1	1	1
13	Johor	-	1	-	-	1	-
14	F.T. K.Lumpur	1	1	1	1	1	1
15	MOH HQ	-	1	-	-	1	-
16	Sarawak	-	-	-	-	-	-
Total		6	15	8	9	12	7

Source : Health Education Division, MOH

Total Participants : 57 teams

- ***Doktor Muda Programme***

The *Doktor Muda* Programme is a programme to promote good health habits among primary school students through the concept of empowerment and peer group support. The objective of this programme was to produce a group of students that made health as a priority and at the same time as the agents or role models to promote healthy lifestyle to their peers, school community and family members.

The Second National *Doktor Muda* Convention was held on 6 to 9 August 2006 at Stadium Sultan Abdul Halim, Alor Star, Kedah. This convention was organized by Health Education Division, Ministry of Health with the collaboration of School Division, Ministry of Education, Health Department and Education Department of Kedah.

A total of 2,000 participants from 13 states were involved in this convention while representatives from Federal Territory of Kuala Lumpur, Labuan and Putrajaya acted as observers. The activities carried out during the convention were :

- Essay Writing Contest
- Story Telling Contest
- Drawing Contest
- Health Book Information Contest
- Doktor Muda Exhibition Contest
- Sketch Contest
- 2006 National *Doktor Muda* Icon Award
- 2006 National *Doktor Muda* Programme School Excellence Award

- **Community Health Promotion Centre (CHPC)**

Based on the achievement of the pioneer project at the Seberang Jaya Community Health Promotion Centre in Pulau Pinang which operated on regular basis from August 2004, the first phase of the CHPC was implemented in 6 states, namely Pahang, Sabah, Selangor, Melaka, Kedah and Terengganu under the 9th Malaysian Plan (9MP) budget. Four CHPC, namely Purun in Pahang, Bangi Health Clinic in Selangor, Masjid Tanah in Melaka, and Kerteh Health Clinic in Terengganu had started their operations except for CHPC in Putatan Penampang, Sabah and in Alor Star, Kedah.

- **Organ Donation Awareness Promotion Programme**

Two Organ Donation Awareness Promotion programmes were carried out in 2006. The Promotion Programme was held at Lenggong, Perak with participation of 200 residents while the Road Show Programme was held in Kluang, Johor. The mission of the Organ Donation Road Show was to promote awareness among the community on the importance of organ donation to those who are in need. A total of 63 people had registered as donors of which 51 were Malays, 2 Chinese and 10 Indians. Amongst the activities carried out during the road show were:

- Exhibitions
- Consultation Sessions
- Organ Donor Pledge Registration Counter
- Organ Donation Quiz
- IEC material distribution
- Information Reviewing

- **Healthy Without AIDS for Teens Programme (PROSTAR)**

In 2006, a first PROSTAR symposium was organized by PROSTAR Club Malaysia in collaboration with Health Education Division, Ministry of Health in accordance with Ministry of Health's hope and effort in PROSTAR in giving HIV/AIDS education to the target groups. The Adolescent Prime PROSTAR Symposium was generally a platform for the PROSTAR members to create a range of cooperation and unity in order to strengthen and establish the HIV/AIDS education activities among the adolescent in districts and states.



Launching Ceremony Prime PROSTAR Symposium in Kuantan, Pahang



Participants for the PROSTAR Symposium

Patient Education Programme

In order to achieve Patient Education Programme, the 3 strategies used were:

- i. Patient Education Service as part of the hospital patient management.
- ii. Provide training to the hospital personnel; and
- iii. Encourage patients and family members to join the patient education classes.

Based on the existing protocol, the patient education classes focused on diabetes, hypertension, asthma, renal failure and cardiac rehabilitation. There were 8,277 patients attended diabetes education classes, 921 patients in asthma education classes, 2,678 patients in hypertension classes, 180 patients in renal classes, 292 in cardiac rehabilitation classes and 101 patients participated in quit smoking clinics.

- **TAK NAK Media Campaign (Anti-smoking Campaign)**

In 2006/2007, the TAK NAK Media Campaign was in the third phase and the strategies focused on advertising in three main mass media, i.e. television, newspapers and school bus panels. The main messages focused on 3 target groups which were the adolescents, women and smokers. The Quit Smoking Info Line had been introduced in order to support the media campaign. The campaign was also supported with ground activities that conjoined with other campaigns such as the Lets Eat Healthily

Launching Ceremony and also through advertising in Sepang Circuit Race by sponsoring 2 racing cars, banners and distribution of *TAK NAK* pamphlets for the three race series in November 2006.



- **Mass Media and ICT Programme**

The mass media programme was one of the main strategies to deliver health messages to the public. Throughout 2006, a total of 88 media programme slots were aired involving 57 television and 31 radio slots. Among the slots were *Selamat Pagi Malaysia* (RTM1), *Hello On Two* (RTM2), *Malaysia Hari Ini* (TV3) and "The Breakfast Show" (NTV7). These channels also collaborated with radio channels such as National FM, Traxx FM, Minnal FM, Ai FM and Info FM.

Meanwhile, a total of 5 television slots through *Selamat Pagi Malaysia* were aired during Ramadhan. Among the issues were Healthy and Fit in Ramadhan, Healthy Eating in Ramadhan, New Breath Starts in Ramadhan, Stress in Ramadhan and Syawal, and Eat Healthily in Syawal. The Health Education Division in collaboration with Radio Traxx FM, RTM had also produced "Live Healthily Capsule throughout Ramadhan" which content the Healthy Lifestyle components.

MyHEALTH and MOH portals were launched on 25 April 2006 by Y.A.B. Datin Paduka Seri Rosmah Mansor at PWTC, Kuala Lumpur.

- **Commemoration of Specific Health Days**

These specific health days were celebrated at national, states, districts, hospitals and even at clinics level as one of the efforts to promote healthy living and to inform the community about the importance of good health care (Table 2).

In 2006, 30 booklets, 22 pamphlets, 15 posters, 4 Gandt chart, 2 exhibition posters, 4 flyers, 7 bunting and 1 banner were produced. The Division also produced and printed practice modules, protocol books and health bulletins. An Interactive CD on HIV/AIDS was also produced in 2006.

TABLE 2
Specific Health Days in 2006

Health Day	Date	Theme
World Tuberculosis Day	24 March	Actions for Life: Towards a World Free of Tuberculosis
World Health Day	7 April	Working Together for Health
International Thalasemia Day	6 May	Together We Prevent
World Heart Day	26 September	How Young is Your Heart?
World Mental Health Day	10 October	Substance Mental Health: Building Awareness, Reducing Risks
World Diabetes Day	14 November	Diabetes Care for Everyone
World AIDS Day	1 December	Stop AIDS : Keep The Promise
World Asthma Day		The Unmet Needs of Asthma
World Sight Day	25 November	The Unmet Needs Asthma

Source : Health Education Division, MOH

Health Education Activities by the Health Personnel

Health Education activities were carried out covering 8 major health programmes, namely family health, communicable disease control, vector-borne disease control, food quality control, healthy environment, non-communicable disease control, AIDS/STD disease control as well as health campaigns. The activities conducted by health personnel in 2006 are shown in Table 3.

Research

Several research projects carried out in 2006 were:

- i. Hygiene among Food Handlers in Tawau, Sabah
- ii. Pre Media Campaign on HIV/AIDS
- iii. Pre Media Campaign on Anti Dengue
- iv. Pre Media Campaign on Healthy Lifestyle
- v. Effectiveness of Seberang Jaya Community Health Promotion Centre
- vi. *Doktor Muda* in Johor
- vii. Market Survey on Effectiveness of Community Health Promotion Centre

TABLE 3
Health Education Activities Conducted by Health Personnel in 2006

Health Programme	Talk	Dialogue	Individual Advice	Demo	Exhibition	PKK (Health Education Information System)	Video	Spontaneous Announcement
Health Campaign	841	296	13,175	1,441	160	1,199	133	29
Family Health	102,666	16,695	1,349,348	98,280	3,461	94,386	2,936	5,765
Non Communicable Diseases	8,738	1,867	228,994	4,055	653	12,296	1,016	124
Food Quality Control	6,058	2,640	75,972	5,894	375	5,641	479	79
Vector- Borne Diseases	759	98	19,769	1,301	245	7,866	8	118
Communicable Diseases	7,623	1,749	135,146	3,482	515	21,103	668	640
AIDS/STD	14,191	1,302	75,516	1,953	1,403	5,318	767	10
Health Environment/ Work	1,307	2,517	45,362	12,820	339	27,703	681	28

Source : Health Education Division, MOH

CONCLUSION

Throughout 2006, the Health Education Division had carried out various health education programs and projects to promote awareness to the community on the importance of a healthy life. The Division will continue to improve and expand the programmes and activities by strengthening its collaboration with other government agencies, NGOs and private sectors in planning and implementing the health education activities and promotions in the future.

ORAL HEALTH PROGRAMME

ORAL HEALTH

INTRODUCTION

In Malaysia, oral health care is provided by both public and private sectors. Public sector service delivery is mainly provided by Ministry of Health (MOH) and the service is made available for the population at dental facilities in clinics and hospitals throughout the country. The Oral Health Division of the MOH is responsible for the nation's oral health and as the lead agency for oral health matters in the country.

The roles of the Oral Health Division are as follows:

- formulation and development of policies related to the oral health of the population;
- management of oral health services which include planning, organising, monitoring and evaluation of oral health care;
- promotion of oral health to ensure continual improvement of the oral health of the population; and
- enactment and enforcement of laws and regulations pertaining to the practice of dentistry.

The strategies for oral health are:

- i. Increasing oral health awareness of the community through oral health promotion and education
- ii. Fluoridating public water supplies at an optimum level of 0.4 – 0.6 ppm
- iii. Providing clinical preventive oral health care services to all school children in need
- iv. Improving inter-agency and inter-sectoral collaboration and co-operation
- v. Providing quality oral health services, which are easily accessed, suitably utilised and technologically appropriate
- vi. Providing maximum coverage to identified priority (target) groups
- vii. Rendering the maximum number of school children orally-fit
- viii. Providing specialist oral health care to those in need of these services, and
- ix. Collecting and analysing data, as well as undertaking research aimed at improving the quality of the oral health care services provided.

The Oral Health Division collaborates with dental and non-dental agencies from both public and private sectors in order to provide the best oral health care for the population. In addition, the secretariat of the Malaysian Dental Council is responsible for regulating the practice of dentistry in the country.

ACTIVITIES AND ACHIEVEMENTS

PROFESSIONAL DEVELOPMENT

Recognition of Dental Specialist Qualifications

Dental specialist qualifications recognised by the Ministry of Health (MOH) are updated continuously. Proposal papers for the recognition of Membership of Faculty of Dental Surgery of the Royal College of Surgeons together with the Master of Science in Restorative Dentistry, University of Newcastle-upon Tyne, and Membership of the Faculty of Dental Surgery of the Royal College of Surgeons together with the Master of Dental Science in Paediatric Dentistry, University of Leeds, were submitted to Training Division, Ministry of Health. Recognition for these qualifications were granted in November 2006.

Since Dental Public Health Specialists were not gazetted as specialists, efforts are put in place to enable their gazettement. A log book for the pre-gazettement period of this specialty has been prepared for approval.

Continuing Professional Development (CPD)

The Oral Health Division was given the responsibility to prepare the Log Book of "Continuous Professional Development Programme for Professionals in the Ministry of Health Malaysia". The final draft was presented and discussed with the Competency Division, MOH at the end of 2006.

In 2006, a total of 19 training modules were facilitated involving 441 dental officers and auxiliaries. Four (4) courses/seminars involving 133 dental officers were also coordinated. These trainings and seminars were conducted locally. Meanwhile, fifteen (15) dental officers and auxiliaries underwent overseas training. Twelve (12) dental officers were selected to pursue post-graduate studies locally and abroad. Since 1992, a total of 268 dental officers had undergone post-graduate training in all specialist disciplines. Post-basic courses were conducted for dental nurses in Periodontology and Pediatric Dentistry, with 13 participants for the former and 17 participants for the latter.

A management training was conducted for 70 newly promoted dental matrons and sisters on 12-15 September 2006 at Plaza Hotel, Kuala Lumpur. Meanwhile, a seminar on infection control held by the Infection Control Association of Malaysia was attended by dental nurses and dental technicians from all states.

Sixty (60) dental nurses attended a Seminar on Safety and Health of Oral Health Personnel at Grand Pacific Hotel, Kuala Lumpur on 22-24 November 2006 to improve their knowledge on occupational hazards and safety in relation to dental mercury. The seminar dealt with the policy on the use of amalgam and procedures for safe handling. The objective of the seminar was for enhancement of knowledge and skills in handling amalgam and to come up with a format for monitoring. The

practice of safe handling of amalgam was monitored by Chief Dental Matron during her visits to dental clinics in states.

Selangor and Pahang had organised training for their dental technologists. The implementation of the practice of safety in the dental laboratory was monitored by Senior Dental Technologist during his clinic visits to the states. In addition, a course on denture labelling was conducted for dental technologists from all states on 6 - 9 September, 2006 at Universiti Sains Malaysia, Kubang Kerian, Kelantan.

Dental auxiliaries participated at the 6th Scientific Meeting of Allied Health Professionals on 18 - 20 September 2006 at City Bayview Resort, Melaka.

ORAL HEALTH PROMOTION

Inter-agency Collaboration

Inter-agency collaboration is one of the necessary factors for the success of the oral health promotion. The collaboration involved other Divisions in the Ministry of Health (MOH), other governmental and non-governmental agencies, private sector providers and professional organisations in dental industry.

In August 2006, the Division was involved in the launching of *"Jom Makan Untuk Sihat"* Carnival organised by the Health Education Division, MOH. Among the activities conducted were oral health screening, exhibitions, counseling sessions and a quiz.

The Division, in collaboration with the Telehealth Unit and Health On-Line Unit of the MOH, had translated 100% of topics (69 topics) for online health education into Bahasa Malaysia version for My Health Portal.

The Division provided technical input to the Schools Division of Ministry of Education for Health Quiz for Primary School. Officers from the Division were invited as panel judges at the National School Health Quiz which was held on 26 - 29 June 2006 in Kelantan. The number of questions for the question bank for the yearly quiz were constantly topped-up and updated.

A National Oral Health Plan Seminar 2006 was held on 5 - 6 June 2006 in Institute for Health Management, MOH to review the status and goals of the 10-year plan. The seminar was organised by the Oral Health Division involving key players in oral health from various sectors.

Dissemination of Oral Health Information

In 2006, a total of 26 pamphlets were uploaded to the Oral Health Division website. An audio-visual presentation to increase awareness on mouth self-examination for early detection of oral cancer was produced and copies of compact disc (CD) were distributed to all states. A draft storyboard for a video/audio-visual presentation on early childhood caries was also prepared.

A total of 3,000 copies/books of '*Kesihatan Gigi Sepanjang Hayat*' were printed. The catalogue of *Bahan Kesihatan Pergigian* to monitor all dental health education (DHE) materials produced by the Oral Health Promotion Unit was compiled and updated.

Several pamphlets and booklets on dental health education were printed. The pamphlets were on '*Gigi Sensitif*' and '*Kecederaan Gigi*', while the booklets produced were, *Si Comel dan Kesihatan Pergigian*, *Ibu Mengandung dan Kesihatan Pergigian*, *Warga Emas dan Kesihatan Pergigian* and *Pantun Kesihatan Pergigian*.

Training in Oral Health Promotion

A seminar to update all dental officers on oral health promotion was held at Cititel Hotel, Mid Valley, Kuala Lumpur on 6 - 8 September 2006, with the theme "Never Too Early to Start" involving 40 participants. The output of the seminar was a draft on guidelines for the oral health care programme for toddlers.

Among the courses conducted were:

- *Keselamatan dan Kesihatan Pekerjaan dalam Klinik Pergigian*
- Youth Counselling
- Dentists Role in Tobacco Cessation
- Orientation for Contract Dental Officers (Non-citizen)
- *Penilaian Tahap Kecekapan (PTK) 4 Bil. 6/2006, MOH.*

Monitoring and Evaluation

In monitoring and evaluating oral health promotion activities, the following reports were prepared:

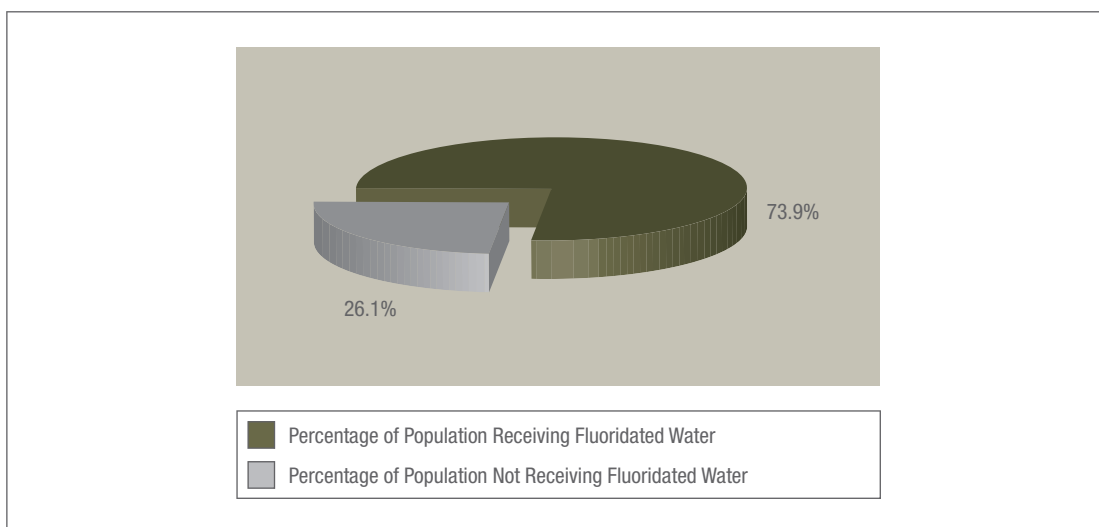
- Seminar Guru Tadika 2005.*
- Oral Health Programme for Trainee Teachers – 2005.
- Feedback on "Dentists' Role in Tobacco Cessation – 2005"
- Achievements in Annual Report 2005 of the Oral Health Division, MOH.
- Report on achievement of strategies and goals of NOHP 2010. This has been updated and was distributed during the NOHP Conference in June 2006.

FLUORIDATION OF PUBLIC WATER SUPPLIES

Fluoridation of public water supplies in Malaysia at 0.4 – 0.6 ppm is a population-based approach for prevention and control of dental caries. The programme has been carried out since 1972. A Fluoridation Seminar was held on 28-30 December 2006, involving participants from states and the Malaysian Dental Training College Pulau Pinang. A document on “Implementation of the Fluoridation Programme in Malaysia” was prepared. The fluoride content of bottled drinking water, ice and mineral water were reviewed to a maximum level of 0.6 ppm.

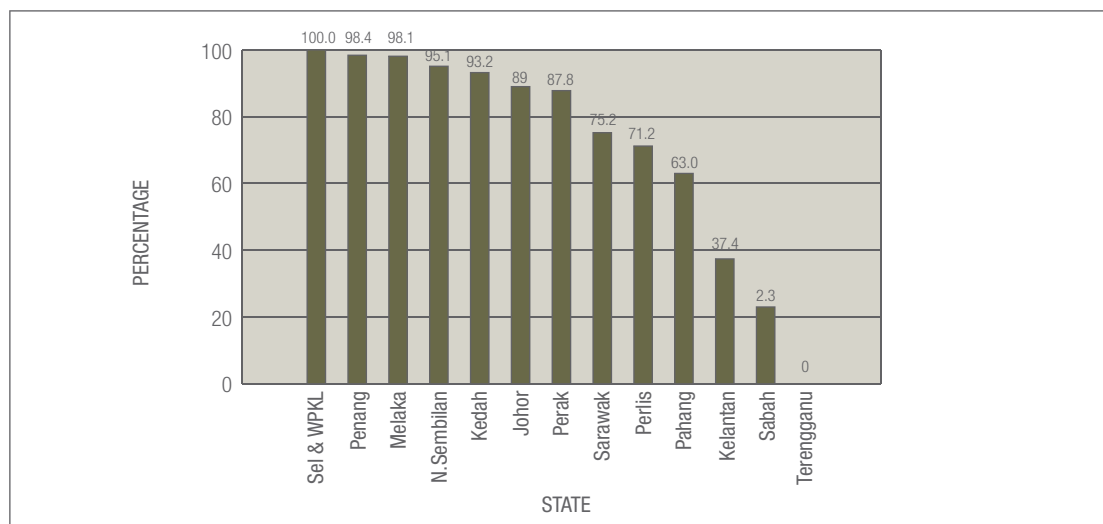
In 2006, generally about 73.9% of the Malaysian population received fluoridated water (Figure 1). In most states, more than 70% of the population received fluoridated water except for Pahang, Sabah (including F.T. Labuan), Kelantan and Terengganu. In Pahang, the population receiving fluoridated water showed a lower proportion of 63%, while in Sabah only 2.3% were covered. In Kelantan, the fluoridation was reinstituted in 2006, covering 37.4% of its population. However, in Terengganu, the programme remains discontinued since 1999 (Figure 2).

FIGURE 1
Population Receiving Fluoridated Water Supplies, Malaysia, 2006



Source: Oral Health Division, MOH

FIGURE 2
Population Receiving Fluoridated Water by State, 2006



Source: Oral Health Division, MOH

CLINICAL PREVENTION / FISSURE SEALANT PROGRAMME

The school-based fissure sealant programme is a method of clinical prevention against dental caries for children. This programme focussed on Standard 1 and Standard 2 school children, as well as those at risk to developing caries. Carious lesions in Malaysian school children are mainly found on the occlusal surfaces of teeth, with the teeth most affected being the first and second molars.

PRIMARY PREVENTION AND EARLY DETECTION OF ORAL PRE-CANCER AND CANCER PROGRAMME

The prevalence of oral pre-cancer and cancer in the country is found to be predominantly among the Indians and the indigenous groups. Apart from ethnic origin being a factor, these communities also practice risk habits found to be associated with development of oral lesions, namely quid chewing, tobacco use and alcohol consumption. In order to prevent this disease, a high-risk strategy involving early screening for oral mucosal lesions in captive communities i.e. in the estates, as well as for patients who attended dental clinics, is utilised.

A compact disc (CD) on Mouth-Self Examination was prepared and distributed to increase awareness among community about the disease. In addition, a booklet entitled 'Oral Cancer - The Visible Upper Aero-Digestive Tract Cancer (A Referral Guide for Primary Healthcare Practitioner)' was printed and launched by the Director of Oral Health in 2006.

A seminar on Oral Cancer in the Asia Pacific Region was held on 17-19 February 2006, while a seminar on "The Human Side of Oral Cancer" was held on 23 May 2006. A discussion on issues related to oral cancer was held on 21 August 2006 with representatives from the Oral Cancer Research Collaborating Centre (OCRCC).

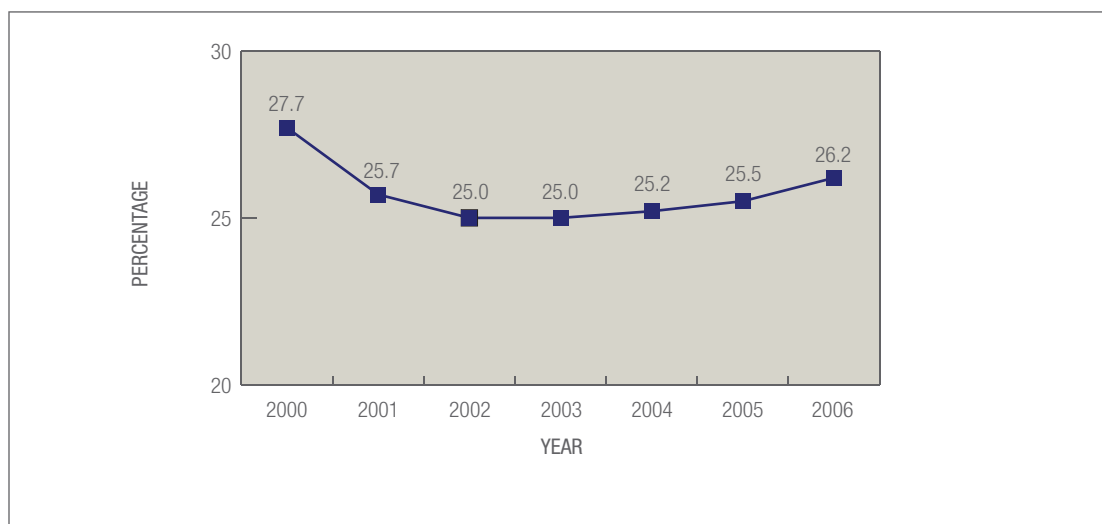
PRIMARY ORAL HEALTH CARE

Several activities were organised in order to improve efficiency, effectiveness and health outcomes of oral health care delivery, especially among pre-school children and the elderly. A seminar on healthcare programme for the elderly was conducted on 2 - 4 July 2006 at The Legend Resort Cherating, Pahang with involvement from various sectors.

Implementation of the pre-school children programme was monitored closely in 2006, in line with the 'Guidelines on Oral Healthcare for Pre-school Children'. For the special children programme, a seminar was held for co-ordinators of the programme. A workshop on 'Preparedness for Medical Emergency and Medically Compromised Patients' was conducted on 17 - 18 Disember 2006. Meanwhile, the 'Guidelines on Oral Healthcare for School Children' was reviewed and to be printed and circulated. A study on compliance to proper recording of dental treatment cards was completed and a booklet on "*Panduan Mengisi Kad Rawatan Pergigian Primer*" was distributed to all states.

The proportion of the Malaysian population who attended primary oral healthcare facilities at Ministry of Health (MOH) in 2006 was 26.2%. There was an increase of 2.7% as compared to 25.5% in 2005. (Figure 3).

FIGURE 3
Population Given Primary Oral Health Care, 2000 - 2006

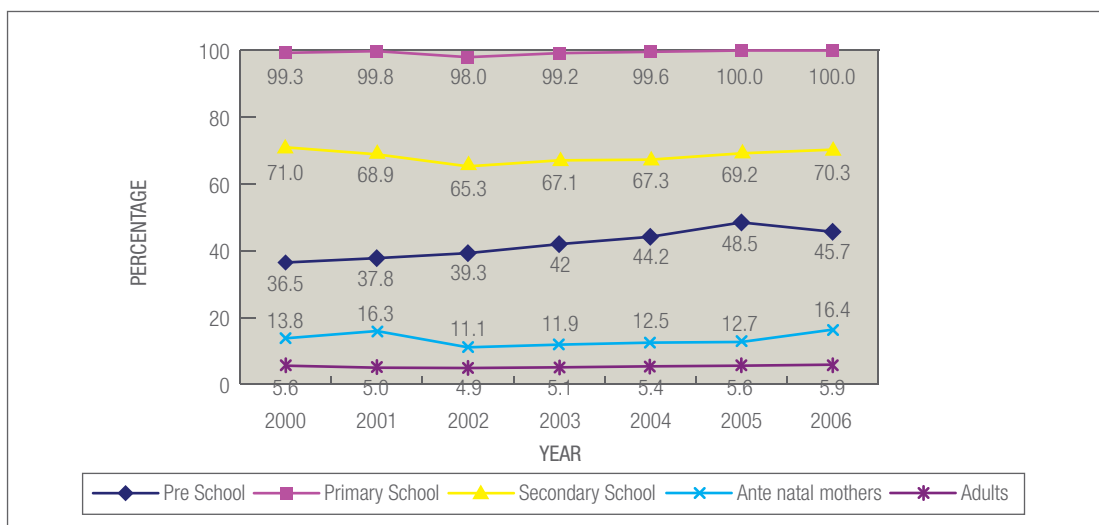


Source : Information and Documentation System Unit, MOH

Of the total estimated population for each target group, the proportion of primary school children who attended MOH oral health facilities was 100%, while the secondary school children and adults were 70.3% and 5.9% respectively. For the period of 2000-2006, the proportion of pre-school group had increased from 36.5% in 2000 to 45.7% in 2006, while for the ante-natal group, the coverage ranges around 13.8% in 2000 to 16.4% in 2006 (Figure 4).

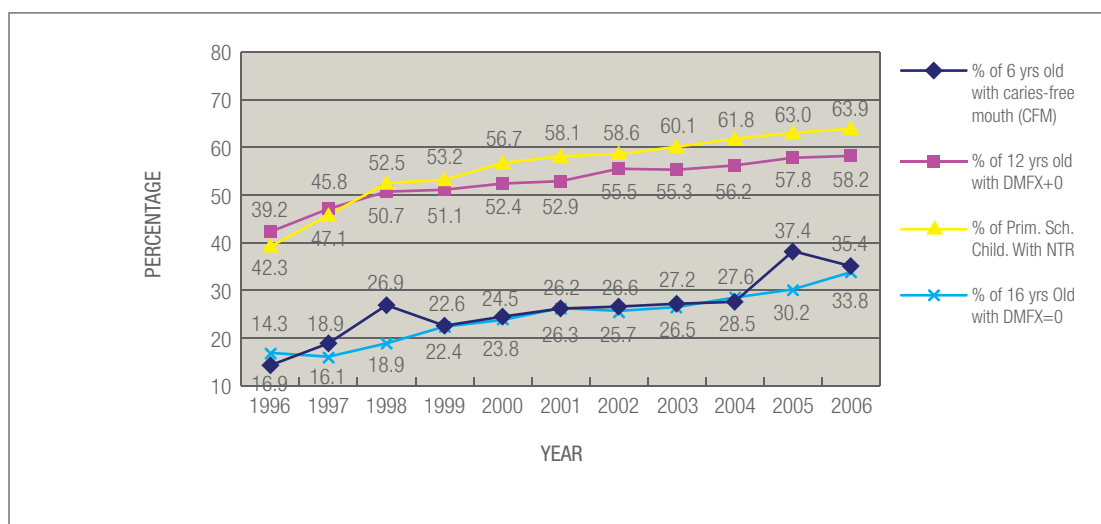
Impact indicators have been used to monitor the oral health status of 6, 12, and 16 year-old school children. There was an increase in the proportion of 6-year-olds with caries-free mouths to 33.8% in 2006. Likewise, the proportion of caries-free for 12 and 16-year-olds showed a gradual increase in the last 10 years (1996-2006) with more than half of the population of 12-year-olds were caries-free. The proportion of 6-year-olds with caries-free mouth at 33.8% is still quite low, but the increase as compared to the previous year was probably due to the emphasis on the pre-school programme (Figure 5).

FIGURE 4
Patients Receiving Primary Oral Health Care by Category, 2000-2006



Source : Information and Documentation System Unit, MOH

FIGURE 5
Impact Indicators for School Dental Service , 1996-2006



Source : Information and Documentation System Unit, MOH

SPECIALIST ORAL HEALTH CARE

Complex cases from primary care are referred to dental specialists for further management. Specialist oral health care is provided by clinical dental specialists based in dental clinics at primary care facilities in major cities and towns, or at hospitals. Clinical dental specialists in Ministry of Health (MOH) are the oral surgeons, orthodontists, paediatric dental specialists, periodontists, oral pathology/ oral medicine specialists, and restorative dental specialists.

In 2006, dental charges for specialist oral health care under the Full Paying Patient Fee Schedule was completed. The proposed pilot for these charges was at Selayang and Putrajaya Hospitals.

Meanwhile, the preparation of brief requirements for the National Oral Health Centre continued, while human capital necessary for the set-up is being prepared through higher specialist training. Discussions on the establishment of Centres of Excellence for oral health care are also on-going.

The Clinical Practice Guidelines (CPG) on 'Management of Severe Early Childhood Caries' and 'Management of Unilateral Condylar Fracture' were printed in 2006. Meanwhile, the CPG on 'Management of the Unerupted Maxillary Incisor' and 'Management of Unerupted and Impacted Third Molar Teeth' had completed and will be printed in 2007. Review of the CPG 'Antibiotic Prophylaxis for Oral Surgical Wound Infections' produced in 2003 has started.

In 2006, the number of clinical dental specialists in the Ministry of Health had increased to 114 (Table 1).

TABLE 1
Clinical Dental Specialists in Ministry Of Health Malaysia By Discipline, 2000-2006

Discipline \ Year	Number of Specialists						
	2000	2001	2002	2003	2004	2005	2006
Oral Surgery	32	30	31	34	34	34	36
Orthodontics	28	26	27	28	31	28	26
Paediatric Dentist	8	10	10	10	13	12	20
Periodontist	8	7	7	8	10	16	17
OP/OM	2	3	3	4	5	4	6
Restorative Specialist	0	0	0	0	2	3	9
Total Clinical Specialists	78	76	78	84	95	97	114

Source : Oral Health Division, MOH

ORAL HEALTH RESEARCH

Oral Health Epidemiological Surveys

Report of the pilot study for the Young Adults Survey conducted in Federal Territory Kuala Lumpur (with Perak) was finalised. Data management for the National Pre-school Dental Epidemiological Survey (NOHPS) 2005 was completed in April 2006. The report will be published in early 2007. Draft protocols for 6, 12 and 16-year-olds as part of the National Oral Health Survey of School children for 2007 (NOHSS 2007) have been completed together with the proposal request for a medium research grant. The survey is scheduled for 2007.

Research Projects

The status of all state Health System Research (HSR) Projects were reported on regular basis to the Oral Health Division. Abstracts for all dental HSR and other research projects were listed in the Annual Compendium of Abstracts for reference. The Compendium for 2005 was published in 2006.

The closure of the 'Mercury Exposure in Dental Personnel' project was done in 2006 and was presented by the Chief Investigator. Other presentations based on this research include:

- 'Urinary mercury levels in oral healthcare personnel' presented at the 84th General Session IADR, Brisbane
- 'Mercury exposures in Malaysian healthcare personnel' presented at the 2nd Regional Conference on Occupational Health
- 'Mercury at work : are our healthcare workers at risk?' presented at the First East Asian Conference of International Society of Environmental Epidemiology in Taipei

Training in Research

A workshop on Scientific Writing was organised with the Dental Faculty, University of Malaya on 20 - 22 Nov 2006 at Awana Hotel, Genting Highlands. The Oral Health Research Conference was held on 19-21 July 2006 at Allson Klana Resort in Seremban, Negeri Sembilan.

A team shall be undertaking a health outcomes research project on the "management of mandibular fractures" and assessing the impact using the GOHAI, which has been translated into Bahasa Malaysia version. The research project will provide experiential training for the team.

National Health and Morbidity Survey 2006 (NHMS 3)

The questionnaire and manual for the Oral Health Module of the NHMS3 Survey was pre-tested and completed in January 2006. It was followed by a Pilot Study Workshop. Training for facilitators was carried out in March 2006. Two training sessions were conducted for research assistants in 2006, one for those in Peninsular Malaysia and the other for Sabah/Sarawak. Dummy tables and definition of variables and terms were completed at a workshop in October 2006, and subsequently, another workshop was held in November for data analysis group.

Modified Budgeting System 2000-2004

The evaluation of the Modified Budgeting System for the years 2000 until 2004 for Oral Health Activities was completed. This evaluation encompassed the following areas:

- Primary Care
- Specialist Care
- Community Oral Healthcare
- A research project on 'Product Costing of Extractions and Restorations'

QUALITY IMPROVEMENT INITIATIVES

National Indicator Approach (NIA)

A review of NIA indicators based on state performances and achievements was carried out in 2006. The indicator "Percentage of Gingivitis-free 12 Year-Olds" was recommended to be excluded in NIA for 2007 for various reasons, namely because gingivitis was not a problem in the young age group as shown by the NOHSS 1997, where the proportion of 12 year-olds gingivitis-free was 94.4% and also the predetermined standard of 95% for the NIA indicator has been achieved since 2000.

For the indicator "Percentage of 16 year-olds free from gingivitis", since all states have achieved the standard of 80%, it was recommended that the standard for 2007 should be increased to 85%. The indicator and standard for "Percentage of Non-Conformance of Fluoride level at reticulation points" will be maintained since most of the states still experience shortfalls in quality. The level of fluoride in the water supply need to be monitored continuously to ensure that the population received the optimal level for maximum effectiveness.

Several new NIA indicators were considered to be included. However, the Key Performance Indicators (KPI) were not relevant to be included since KPI was performance-oriented, whereas QAP was process-oriented. Furthermore, the goals for the National Oral Health Plan measure the impact of indicators and should be monitored separately.

MS ISO 9001: 2000

The oral health services of six states namely Perlis, Selangor, Federal Territory of Kuala Lumpur, Negeri Sembilan, Melaka and Johor were certified in 2005 using the multi-site certification approach. This approach was adopted in Negeri Sembilan, Pahang, Kelantan, Terengganu and Sabah. As of 2006, a total of 11 states (out of 15) including 61 districts have received the certification (multi-sites). Meanwhile, the Oral Health Division underwent a Re-assessment Audit in 2006. At the same time, 6 states and 10 districts had undergone surveillance audits.

Several courses were conducted at state, regional or central levels in order to continuously update the knowledge and skills of the personnel. These courses covered topics such as awareness, internal auditing, advanced auditing, lead assessor training, managing customer feedback/measuring satisfaction, effective management review and in-depth interpretation and effective understanding of ISO 9000 requirements.

PROFESSIONAL DENTAL PRACTICE

Laws and Regulation

The draft on the proposed amendments to the Dental Act 1971 is being prepared, while dental inputs were also provided to the Allied Health Professional Bill. Meanwhile, guidance notes on Radiation Safety in Dentistry have been prepared and will be discussed with the Radiation Protection and Safety (Medical, Dental and Veterinary Usage of Radiation) Working Group, which coordinated by Engineering Department, MOH. Oral health personnel were also involved in Main Committee meetings in preparing the regulations for the Private Healthcare Facilities and Services Act 1998 (Act 586). A working group was established to prepare the Advertisement and Provision of Practice Information as part of amendments to the Code of Professional Conduct (Advertising). For the Fees Act 1951, Fees (Medical) Order 1982, the proposed dental fees for the 'full paying patient' was submitted to Finance Division of the Ministry.

Globalisation and Liberalisation of Oral Health Care

A preliminary draft for the ASEAN Framework Mutual Recognition Arrangement (MRA) for dental services has been prepared and will be deliberated in the Health Sectoral Working Group meeting for consensus by all ASEAN member countries.

Accreditation of Dental Degree Programmes

The Oral Health Division involved in the accreditation of Dental Degree Programmes. The guidelines for Accreditation of Dental Degree Programmes' has been reviewed and will be discussed with a working group comprising of members from LAN, JPA and the public universities for consensus. The final product will be presented to the Technical Committee on Accreditation of Dental Degree Programmes. Visits to institutions of higher learning were conducted to monitor the implementation of conditions stipulated for course approval. Applications from institutions of higher learning through LAN for approval of dental programmes were assessed and site visits were conducted for this purpose.

Credentialing of Dental Specialists

The National Specialist Register of the MOH-Academy of Medicine Malaysia (AMM) was launched on 24 August 2006. Approval for establishment of a College of Dental Surgeons under the AMM has been received from the Master of the Academy.

Contract Dental Officers

Foreign Contract Dental Officers were employed to overcome the shortage of the dental officer workforce. An orientation course for 18 new foreign contract dental officers was held at Quality Hotel, Kuala Lumpur from 11– 14 December 2006.

CHALLENGES AND FUTURE DIRECTION

Development of human capital is the main focus of the 9th Malaysia Plan (9MP) and with this, training of oral health personnel is emphasised so as to provide effective and high quality oral health services to the community. The needs of the organisation as well as needs for development of the individual shall be taken into consideration in determining training requirements. It is hoped that the integration of points acquired through continuing professional development with competency-based assessments (*Penilaian Tahap Kecekapan*) will become a reality.

Globalisation and liberalisation of healthcare necessitate that oral health services of the country must be at the same level with the rest of the world. Continuous quality improvement is required and more initiatives are needed in order to achieve the standard. The MS ISO 9001:2000 certification for oral health departments and clinics will be expanded to more facilities.

Several projects have granted approval under the 9MP, and it is hoped that with more facilities, oral health services can be easily delivered and accessed especially by those in rural areas. To achieve good oral health status for the population, oral health promotion shall continue to be the thrust. Towards this, collaborative efforts and smart partnerships have to be forged constantly.

MEDICAL CARE PROGRAMME

MEDICAL PRACTICE

INTRODUCTION

Medical Practice Division is responsible for the promulgation or the amendment of any existing legislations under the Medical Programme and enforces the Private Healthcare Services Facilities Act 1998 and its Regulations. The Division also regulates the Malaysian Medical Council, Malaysian Optical Council, Medical Assistant Board, Estate Hospital Assistant Board, Private Medical Practice Control Section, Complaints Enforcement and Medico-Legal Section and Medical Legislation and Globalisation Section.

PRIVATE MEDICAL PRACTICE CONTROL SECTION

The role and function of the Private Medical Practice Control Section or CKAPS is to regulate and control the licensing of private hospitals, private maternity homes, private nursing homes and other private healthcare facilities and services. The monitoring of private medical clinics and private dental clinics were carried out through registration of these clinics based on the requirements provided under the Private Healthcare Facilities and Services Act 1998 (Act 586) and its Regulations.

ACTIVITIES AND ACHIEVEMENTS

The Private Healthcare Facilities and Services Regulations 2006 was gazetted on 1st April 2006 and was enforced on 1st May 2006. There were 68 dialogue sessions and briefings to the private healthcare providers throughout the country regarding the implementation of the Act 586 and its Regulations. The activities were carried out in collaboration with the Private Medical Control Practice Unit and State Health Departments of the country.

PRIVATE HOSPITALS

Private hospitals, private nursing homes and private maternity homes which were licensed under the Private Hospitals Act 1971 are deemed to be licensed under the Act 586. These healthcare facilities need to renew their licences under the new Act and abide by the requirements made under this Act 586 and its Regulations. Table 1 shows the number of licensed private hospitals, private maternity homes and private nursing homes by state for 2006.

PRIVATE MEDICALS AND DENTAL CLINICS

The existing private medical clinics and private dental clinics were given six months from the date of enforcement of the Act to apply for registration. As of the end of 2006, there were 3,346 and 800 applications for registration from private medical clinics and private dental clinics respectively received through the State Health Department. A total of 150 applications from the private haemodialysis centres were received towards the quarter end of the year for approval to establish or maintain these facilities.

TABLE 1
Number of Private Healthcare Facilities by State, 2006

State	Private Hospitals, Private Maternity Homes and Private Nursing Homes	Number of Beds
Johor	36	998
Melaka	5	797
Negeri Sembilan	5	216
Selangor	51	2,583
F.T. Kuala Lumpur	44	2,731
Perak	15	768
Kedah	12	463
Pulau Pinang	26	1,968
Perlis	1	2
Kelantan	3	117
Terengganu	3	30
Pahang	10	213
Sarawak	11	439
Sabah	10	312
F.T. Labuan	-	-
Total	232	11,637

Source: Private Medical Practise Control Section, MOH

Part time outpatient healthcare services provided by the factory in house clinics or health facilities, estate clinics, off shore clinics and those provided on a voluntary basis by the Non-Governmental Organisations (NGO), religious organisations and hospice home care services were given exceptions from registration or licensing requirement. As of the end of 2006, there were 360 organisations and facilities applied for the exceptions.

The implementation of the Act 586 and its Regulations was considered a new activity which was carried out since 1st May 2006. Many areas were being implemented concurrently, beginning with interaction with the private healthcare providers, roadshows, preparation of guidelines, policy formulation up to processing of the applications for registration, approval and licensing of various private healthcare facilities. At the same time, on-line application system for registration of private clinics and other healthcare facilities was also developed and the implementation was carried out in stages.

MEDICAL LEGISLATION AND GLOBALISATION SECTION

Medical Legislation and Globalisation Section is responsible for the promulgation of new medical Acts and the amendment of existing medical Acts under the Medical Programme. The Section is also responsible to study the amendment of laws related to Health Services Sector and to coordinate the activities of globalisation and liberalisation of Health Sector. The Section represents the Health Services Sector as a negotiator in meetings related to globalisation and liberalisation conducted in Malaysia or in other countries.

ACTIVITIES AND ACHIEVEMENTS

Amendment to Medical Act 1971

The first draft of the proposed amendment to the Medical Act 1971 was sent for review to the Legal Advisor's Office in September 2005 and the feedback was obtained in July 2006. However, since September 2006, the Malaysian Medical Council had re-opened the discussion on the amendment of the Act and decided that it need to be revised to suit the current medical practice.

Pathology Laboratory Bill

The final draft of the Bill is being revised and is expected to be tabled in Parliament in 2007.

Amendment to the Human Tissue Act 1974

The amendment draft of the Human Tissue Act 1974 was sent to the Legal Advisor's Office in August 2005. However, the draft is still pending until the Medical Act 1971 is finalized and produced as there was cross-reference on enforcement between these two Acts.

Human Reproductive Cloning Bill

The first draft of the Bill was approved by the Director General of Health and the National Committee on Human Reproductive Cloning in 2006, as well as the Minister of Health in January 2007.

Cosmetology Bill

A memorandum was prepared in December 2005. In January 2006, the Cabinet of Malaysia has agreed on the concept of cosmetic practices, the promulgation of related Bill and the setting up of Cosmetic Practice Section in the Ministry of Health (MOH). The whole concept of the Bill was approved by the Director General of Health and the Minister of Health. The final draft was sent to the Legal Advisor's Office in December 2006 for review.

Assisted Reproductive Techniques Bill

In 2006, the Bill was still at the initial stage of discussion with the Working Committee. The Section is currently concentrating on several issues pertaining to prohibitive procedures of the assisted reproductive techniques.

Allied Health Bill

Throughout 2006, the Bill was still in the discussion stage with the committee members to find solution regarding the categories of professions to be listed in the Bill and the regulatory system to govern the practice of Allied Health Practitioners.

Free Trade Agreement (FTA)

Representative from the Medical Legislation Section and Globalisation has become the negotiator for Malaysian Health Services Sector in FTAs in 2006.

i. Malaysia – Pakistan bilateral FTA

Representative from this Section has been involved since the fifth Trade National Committee (TNC) meeting in February 2006 and until end of 2006, the negotiation was still on-going.

ii. Malaysia – Australia bilateral FTA

Representative from this Section has been involved since the third TNC meeting in March 2006 and until end of 2006, the negotiation was still on-going.

iii. Malaysia – New Zealand bilateral FTA

Discussions have started in May 2005 and representative from this Section has been involved since the third TNC meeting in September 2005 and until end of 2006, the negotiation was still on-going.

iv. Malaysia – United States bilateral FTA

Discussions have started in June 2006 and until end of 2006, the negotiation was still on-going.

v. Malaysia – Chile bilateral FTA

This negotiation is still being studied since early 2006.

World Trade Organisation (WTO)

The Medical Legislation and Globalisation Section on behalf of the Ministry of Health (MOH) is responsible for conducting revision of the Health Services Sector's offered to WTO countries in 2004. The offers need to be revised from time to time and the next revision is scheduled in 2007.

ASEAN Coordinating Committee on Services (CCS)

A Mutual Recognition Agreement (MRA) on Nursing Services with the ASEAN countries was concluded in early 2006. MRA for Medical Practitioners which started in 2005 was continued in 2006. Review of commitments under the ASEAN Framework Agreement on Services was also held in 2006.

MALAYSIAN OPTICAL COUNCIL

Malaysian Optical Council (MOC) is responsible in the registration of optometrists and opticians as well as in regulating the practice of optometry in the country, as indicated under the Optical Act 1991 and Optical Regulations 1994. MOC had organised several meetings on the amendment of the Act and had developed two (2) Committees, namely Standard Operating Procedure of Optometry, and Recognition of Optometry Programmes. These committees are responsible to expand the activities for consolidation of sovereignty of the law, improved optometry services and practitioners in order to ensure that the standard of the optometry practice is always updated to the international standard.

In 2006, a total of 2,269 opticians and 578 optometrists were registered with MOC (Table 2). Total optometry practitioners in 2006 had increased by 11.26% (181) as compared to 2005.

As of 2006, MOC issued 2,220 Annual practicing certificates (APC) for registered optometrists and opticians.

MOC also issued 2,040 Photo Name Certificate (PNC) to the private optometry practitioners in 2006.

TABLE 2
Number of Registered Opticians and Optometrists as of December 2006

OPTICIANS		TOTAL
Section 18 (1)	577	
Section 18 (2) (a)	1,684	
Section 18 (2) (b)	-	2,269
Section 18 (3)	8	
OPTOMETRIST		
Section 19 (1)	578	578
Section 19 (2)	-	
GRAND TOTAL		2,847

Source: Malaysian Optical Council

Future Plan

The future plans of MOC are as follows:

- i. Amendment of the Optical Act 1991 to upgrade the standard of the Malaysian optometry practice and to regulate the practitioners. The amendment is at par with the development of the profession and the necessity of the public and the country.
- ii. The development of Criteria and Guideline of the Optometry Programme will continuously be monitored to enhance recognition and accreditation of the Programme and to ensure that it is always at par with the need of the optometry profession which is more advanced and challenging.
- iii. The formation of Standard Operating Procedure (SOP) for Optometry Practice will be started in 2007. The procedures will first be implemented at MOH level. It will be audited by the Optometry Audit Team to ensure the effectiveness before expanding it to the private sector.

MALAYSIAN MEDICAL COUNCIL

The Malaysian Medical Council (MMC) is entrusted with the responsibility of registering and regulating both public and private medical practitioners.

ACTIVITIES AND ACHIEVEMENTS

Registration

The number of medical practitioners approved for registration from 2000 to 2006 are as shown in Table 3, while the number of medical practitioners granted full registration according to sections of the Medical Act 1971 are shown in Table 4.

TABLE 3
Number of Medical Practitioners Registered by Types of Registration, 2000-2006

Types of Registration	2000	2001	2002	2003	2004	2005	2006
a. Provisional Registration	995	1,029	1,104	1,083	1,126	1,112	1,122
b. Full Registration (Without Condition)	893	1,060	1,088	653	968	1,060	1,801
c. Full Registration (With Condition) (Section 14(3))	133	163	76	128	267	296	240

Source: Malaysian Medical Council

TABLE 4
Number of Full Registration by Category, 2000-2006

Full Registration	2000	2001	2002	2003	2004	2005	2006
A. Registered According to Section 14:							
a. Malaysian–Completing Housemanship Locally	819	996	1,002	568	858	1,060	1,695
b. Malaysian–Completing Housemanship Overseas	74	64	86	85	110	77	106
Total	893	1,060	1,088	653	968	1,137	1,801
B. Registration according to Section 14 (3):							
a. Foreigner–Completing Housemanship Locally	10	13	9	15	16	-	8
b. Foreigner–Completing Housemanship Overseas	123	150	67	113	251	296	232
TOTAL	133	163	76	128	267	296	240
GRAND TOTAL	1,026	1,223	1,164	781	1,235	1,433	2,041

Source: Malaysian Medical Council

According to record, the number of APC issued for the year 2006 had decline as compared to 2005 (Table 5). This was probably due to the termination of foreign medical practitioners and the change in the type of registration for foreign medical practitioners. Prior to 2006, foreigners who came to pursue their postgraduate medical courses in Malaysia were given full registration under section 14(3). However, due to various inevitable reasons, the registration practice was changed to Temporary Practicing Certificate (TPC) as provided under section 16. The number of medical practitioners issued with TPC has increased ten fold within six years from 52 in 2000 to 535 in 2006.

TABLE 5
Total APC Issued for Public and Private Sectors by State, 2000-2006

State	2000		2001		2002		2003		2004		2005		2006	
	Pb	Pr	Pb	Pr	Pb	Pr	Pb	Pr	Pb	Pr	Pb	Pr	Pb	Pr
F. Territory	1,546	1,374	1,560	1,434	1,691	1,558	1,867	1,639	1,794	1,801	1,813	1,843	1,890	1,563
Johor	352	777	367	807	407	846	456	862	461	874	477	891	456	924
Kedah	255	382	282	398	326	411	316	410	338	447	349	457	355	444
Kelantan	531	170	582	172	623	176	574	186	584	186	595	194	595	192
Melaka	173	252	186	268	185	283	173	293	239	333	247	344	231	326
N.Sembilan	194	265	219	271	227	280	259	290	290	320	306	334	212	319
Pahang	201	235	243	252	272	274	286	289	305	311	316	319	223	311
P.Pinang	282	728	294	773	311	796	320	781	346	841	357	853	370	822
Perak	411	711	427	741	418	777	507	764	514	892	527	919	483	773
Perlis	49	33	44	31	56	32	50	37	78	36	83	44	60	33
Selangor	677	1,606	651	1,685	615	1,830	685	1,891	721	2,044	735	2,097	757	2,103
Terengganu	141	123	156	127	174	135	210	140	201	144	219	153	227	141
Sabah	202	277	239	292	284	309	200	288	268	329	279	337	225	312
Sarawak	205	276	220	286	262	311	308	343	327	362	332	377	300	339
Total	5,219	7,209	5,470	7,537	5,851	8,018	6,211	8,213	6,466	8,920	6,635	9,162	6,384	8,602
Grand total	12,428		13,007		13,869		14,424		15,386		15,797		14,986	

Source: Malaysian Medical Council

Key: Pb = Public , Pr = Private

Letter of Good Standing (LOGS)

Letter of Good Standing is a document required for registration with Foreign Medical Councils or other registering bodies. The number of LOGS issued in 2006 was 385.

Medical Qualifying Exam

Graduates from unrecognized colleges have to pass Medical Qualifying Examination (MQE) conducted by three local universities (Universiti Kebangsaan Malaysia, Universiti Malaya and Universiti Sains Malaysia) or examining bodies in order to qualify for registration. Hence, graduates from unrecognized colleges will be assessed at par with final year medical undergraduates of the relevant local examining bodies. Table 6 shows the performance of candidates in the Medical Qualifying Examination.

TABLE 6
Total Candidates Attended/Passed the Medical Qualifying Examination, 2006

Details		March/October			Total
		UM	UKM	USM	
a. Candidates registered for exam	New	5	12	8	25
	Repeat	3	3	6	12
	Total	8	15	14	37
b. Candidates sitting for the exam		5	9	12	26
c. Candidates pass		0	2	3	5
d. Candidates fails		5	7	9	31
e. Percentage pass		0%	22.2%	25.0%	19.2%
f. Percentage Fails		100%	77.8%	75.0%	80.8%

Source: Malaysian Medical Council

In 2006, MQE were conducted twice i.e in March and October. A total of 37 candidates registered for the examination, of which 25 candidates were new while 12 repeat. Out of total candidates registered, only 26 attended the examination and 5 candidates (19.2%) passed. The main reason cited for postponement in MQE was lack of preparation.

Accreditation/Approval

In 2006, three local institutions were given recognition. The list of local medical training institutions recognized/approved by the Council as of December 2006 is shown in Table 7.

TABLE 7
Approved and Accredited Local Medical Training Institutions as of December 2006

Accredited Institutions	Approved Institutions
Public	Public (Year Established)
1. Universiti Malaya	1. Universiti Malaysia Sabah (2001)
2. Universiti Kebangsaan Malaysia	2. Universiti Teknologi Mara (2003)
3. Universiti Sains Malaysia	3. Kolej Universiti Islam Malaysia (2004)
4. Universiti Putra Malaysia	4. UKM - Universiti Padjajaran (2006)
5. Universiti Malaysia Sarawak	
6. Universiti Islam Antarabangsa	
Private	Private (Year Established)
7. Universiti Perubatan Antarabangsa	5. Asian Institute of Medicine, Science & Technology (2003)
8. Kolej Perubatan Penang	6. Allianze College of Medical Sciences (2003)
9. Melaka-Manipal Medical College	7. University College Sedaya International (2003)
10. Royal Perak Medical College	8. Monash University Sunway Campus (2004)
	9. Cyberjaya University College of Medicine Science (2005)
	10. KUTPM - International Medical School (2006)
	11. KUTPM - Universiti Andalas (2006)

Source: Malaysian Medical Council

For the year 2006, another 5 foreign medical institutions were accredited by the Council and subsequently approved by the Health Minister to be included in the Second Schedule of the Medical Act 1971. The institutions are shown in Table 8.

TABLE 8
Foreign Medical Training Institutions Approved by the Council, 2006

Country	Name of the institution	With effect from
Republik Czech	First faculty of Medicine, Charles University in Prague	25 October 2004
	Faculty of Medicine in Hradec Kralove, Charles University in Prague	25 October 2004
	Faculty of Medicine, Palacky University, Olomouc	25 October 2004
Austria	Medical University of Vienna	23 August 2005
Australia	University James Cook, Australia	7 May 2006

Source: Malaysian Medical Council

Disciplinary Enquiry

Table 9 shows the number of complaints by category received by the Council for the period of 2003-2006.

TABLE 9
Number of Complaints by Category, 2003-2006

Categories of complaints	2003	2004	2005	2006
a. Neglect or disregard of professional responsibilities	38	33	30	40
b. Abuse of professional privileges and skills	3	6	16	12
c. Conduct derogatory to the reputation of the medical profession	21	12	5	13
d. Advertising, canvassing and related professional offences	5	5	5	3
TOTAL	67	56	56	68

Source: Malaysian Medical Council

A total of 68 complaints were received in 2006. An investigation will be carried out by a Preliminary Investigation Committee (PIC) on complaints and information against a practitioner forwarded by the President of the Council. In 2006, a total of 97 complaints were settled by the five Preliminary Investigation Committees.

The next step is an inquiry by the Council on matters forwarded by the PIC. The outcomes of the Council hearings from 2003 to 2006 are as shown in Table 10.

TABLE 10
Outcome of the Council Inquiry, 2003-2006

Types of Punishment	2003	2004	2005	2006
a. Charge dismissed and practitioner found not guilty	1	5	6	12
b. Name of practitioner Struck off from the Medical Register	0	0	0	2
c. Name suspended from the Medical Register	1	2	9	8
d. Reprimanded	3	3	5	5
TOTAL	5	10	20	27

Source: Malaysian Medical Council

COMPLAINTS, ENFORCEMENT AND MEDICO LEGAL SECTION

COMPLAINTS

The function of this unit is to attend and manage complaints on services provided so that action can be taken to improve the quality of services.

ACHIEVEMENTS

In 2006, 251 complaints were received from various resources i.e. telephone, letter, media, e-mail and others. A total of 183 (72.91%) complaints were completed while 68 (27.09%) were still under investigation. Table 12 shows the categories of complaints received while Table 13 shows number of complaints received by category of healthcare personnel.

TABLE 11
Number of Complaints by Category, 2006

Matters	Number of Complaints	Percentage (%)
Lateness	4	1.59
Unfairness	1	0.40
Lack of public facilities	1	0.40
Misuse of power	9	3.58
Misconduct of staff	29	11.55
Failure to follow existing procedures	4	1.60
Failure of enforcement	1	0.40
Unsatisfactory quality of services	137	54.58
Others	65	25.90
TOTAL	251	100.00

Source: Malaysian Medical Council

TABLE 12
Number of Complaints by Category of Healthcare Personnel, 2006

Matters	Number of Complaints	Percentage (%)
Doctor	130	49.06
Nurse	22	8.30
Medical Assistant	8	3.02
Pharmacist	1	0.38
Lab Technician	1	0.38
X-ray	2	0.75
Rehabilitation officer	1	0.38
Driver	3	1.13
Health Attendant	2	0.75
Others	95	35.85
TOTAL	265	100.00

Source: Malaysian Medical Council

MEDICO-LEGAL

This section serves as an advisor and coordinator to technical complaints, potential medico-legal cases and medico-legal cases. It also liaised with ILKAP and other agencies in organizing medico-legal courses to the staff of Ministry of Health.

ACHIEVEMENTS

Technical Complaints & Potential Medico-Legal Cases

The number of complaints received in 2006 had decreased to 79 complaints as compared to 83 in 2005. The decrease may be due to better services provided in government hospitals that had given satisfaction to the public.

Medico-Legal Cases (Summons Cases)

The number of summons received in 2006 decreased by 24% as compared to 2005. Table 13 shows the number of summons cases settled from 2000 to 2006 which include cases settled by court, cases settled out of court, cases which has been withdrawn or annulled by the court.

The amount paid for the period of 7 years (2000-2006) was RM3,475,735. The largest amount paid was recorded in 2006 which amounting to RM1,224,990. This was consistent with the number of 16 cases settled in 2006.

TABLE 13
Number of Summons Cases Settled, 2000-2006

DISCIPLINE	2000	2001	2002	2003	2004	2005	2006	TOTAL
O & G	4	1	2	5	3	4	8	27
Surgery	1	1	1	2	1	1	3	10
Orthopaedics	4	0	1	0	1	1	0	7
Pediatrics	0	0	0	0	0	3	3	6
Anesthesia	0	0	1	0	0	0	0	1
Medicine	0	0	2	0	2	0	1	5
Psychiatry	0	0	0	0	0	0	1	1
Ophtalmology	0	0	1	0	0	0	0	1
Radiology	0	0	0	0	0	0	0	0
Record	0	0	0	0	0	0	0	0
Ent	0	1	0	0	2	0	0	3
Urology	0	0	0	0	0	0	0	0
GRAND TOTAL								61

Source: Malaysian Medical Council

Medico-Legal Courses and Awareness Lectures

In 2006, 3 medico-legal courses were held to paramedics, medical specialist and medical administrator respectively. Meanwhile, a total of 24 awareness lectures were given to doctors and paramedics in ILKAP and other government and private agencies.

Publication of "Management of Complaints and Medico-Legal Cases and Development Guidelines" of Medico-Legal Database

To provide further advised and guidance to practitioners and members of public, the Unit is in the process of publishing a guideline on the Management of Complaints and Medico-legal Cases. The publication is expected to be completed in 2007. A database system for medico-legal cases is also being developed for better access to the information so that immediate action could be taken and forwarded to the related parties.

ENFORCEMENT

The Enforcement Unit is responsible to plan, coordinate and implement activities required by Private Healthcare Facilities And Services Act 1998 (Act 586), monitoring the implementation of Act 568 and conduct training for inspectors to strengthen enforcement activities.

ACHIEVEMENT

The enforcement activities were implemented since October 2006 and the following activities were carried out:

- Preparation of Standard Operating Procedure (SOP) for the Enforcement Unit. A meeting was conducted to prepare the guideline and checklist in order to carry out enforcement duties.
- Obtained information on clinics operating without licenses and unqualified medical practitioners.
- Conducted a "MOCK Practices" in several clinics in Langkawi and provided opinion on how to improve the services.
- Conducted inspection and closure of premises that overruled the Private Healthcare Facilities And Services Act 1998 (Act 586).

In 2006, state UKAPS were exposed to related courses as a 'pilot experiences'. Inspectors from the state UKAPS were involved during the premises inspection or raiding to gain knowledge and experience in enforcement.

MEDICAL ASSISTANT BOARD

The Medical Assistant Board is responsible in registration, training, specify the responsibilities and job specifications of Medical Assistants, enhance professionalism standard and setting the Code of Ethics for Medical Assistants. The Board is also responsible in the enforcement of the law and accreditation and training of the Medical Assistants.

ACTIVITIES

The 44th and 45th Medical Assistant Board Meetings were held in June 2006 and December 2006 respectively. The Medical Assistant Board is implementing the 'running registration system' to sort out registrations and as of December 2006, a total of 9,414 Medical Assistants were registered with the Board (Table 14). Meanwhile, a total of 609 trained Medical Assistants that have just passed their final Medical Assistant Board examination and graduated have been registered with the Medical Assistant Board in 2006.

A total of 7,318 Annual Practicing Certificates were issued by Medical Assistant Board in 2006.

TABLE 14
Number of Medical Assistants Registered by State, 2006

STATE	PUBLIC SECTOR		TOTAL	PRIVATE SECTOR	GRAND TOTAL
	MOH	NON MOH			
Perlis	88	2	90	4	94
Kedah	473	4	477	6	483
Pulau Pinang	275	4	279	9	288
Perak	845	10	855	15	870
Selangor	256	7	263	23	286
Federal Territory	194	17	211	21	232
Negeri Sembilan	274	4	278	11	289
Melaka	196	10	206	6	212
Johor	660	8	668	12	680
Pahang	372	6	378	6	384
Terengganu	334	1	335	7	342
Kelantan	752	16	768	3	771
Peninsular Malaysia	4,719	89	4,808	123	4,931
Sabah	646	3	649	33	682
Sarawak	855	10	865	52	917
Malaysia	6,220	102	6,322	208	6,530

Source: Medical Assistant Board

ESTATE HOSPITAL ASSISTANT BOARD (REGISTRATION)

The Estate Hospital Assistant Board (Registration) is responsible to register and manage the examinations, preparing the training modules, selecting the training centres, managing the Intensive Course, and integrating as well as coordinating with other agencies in conducting workshop updates for the Estate Hospital Assistants.

ACTIVITIES

The number of Estate Hospital Assistant registered with the Board as of December 2006 is shown in Table 15.

TABLE 15
Number of Registered Estate Hospital Assistant by Grade and State as of December 2006

STATE	GRADE I	GRADE II	GRADE III	TRIAL	TOTAL
Perlis	1	-	-	2	3
Kedah	21	9	17	39	86
Pulau Pinang	1	-	-	6	7
Perak	35	36	34	98	203
Selangor	35	20	14	14	83
N. Sembilan	15	6	-	31	52
Melaka	17	1	1	115	134
Johor	37	25	9	66	137
Pahang	9	6	4	31	50
Terengganu	6	3	7	12	28
Kelantan	2	-	1	32	35
Kuala Lumpur	6	-	1	50	57
Sarawak	-	-	-	1	1
Sabah	1	-	-	33	34
TOTAL	186	106	88	530	910

Source: Estate Hospital Assistant Board

Intensive training program for the Estate Hospital Assistant candidates sitting for the examination was conducted on 4-7 September 2006 at Medical Assistant College in Seremban. The training was also conducted at Hotel Indah, Sandakan, Sabah in collaboration with Malaysian Palm Oil Association (MPOA) Sabah.

The Estate Hospital Assistant examination which consists of 2 parts, i.e. written and verbal test was held at Medical Assistant College in Seremban and Nursing College in Sandakan, Sabah on 11-15 September 2006. Practical test for Laboratory Technique was held at Medical Research Institute Kuala Lumpur for candidates from Peninsular Malaysia, while candidates from East Malaysia carried out the test in Nursing College Sandakan, Sabah on 14 September 2006. For the first time, Multi Choice Question (MCQ) was introduced to replace the viva test.

In 2006, the Estate Hospital Assistant Board in collaboration with Society of Environmental Medicine (SOEM) and Malaysian Medical Association (MMA) had organized a workshop on 'The usage of Pesticide' in Bintulu, Sarawak.

MEDICAL DEVELOPMENT

INTRODUCTION

Medical Development Division is one of the Divisions under the Medical Programme headed by the Deputy Director General of Health (Medical). The objective of the Division is to provide comprehensive medical services that support primary health care, in accordance with MOH policies and standards, by harnessing appropriate technology towards achieving improved health and quality of life to the population.

The main functions of the Division are to formulate policies and guidelines in relation to the above objective as well as to monitor and evaluate policies and guidelines implemented in all Ministry of Health (MOH) medical care facilities and services in the country.

The functions of the Division are carried out by 4 Sections, namely:

- i. Medical Services Development
- ii. Medical Quality Care
- iii. Medical Profession Development
- iv. Health Technology Assessment

ACTIVITIES AND ACHIEVEMENTS

MEDICAL SERVICES MANAGEMENT

Medical Services Management focuses on overall hospital management which encompasses on management and monitoring of hospital facilities, organization and services systems, as well as treatment facilities and medical information.

There were 134 MOH hospitals (128 hospitals and 6 special medical institutions) operational throughout the country in 2006 of which 55 provided resident specialist services in various disciplines (Table 1). The total number of beds in these hospitals increased from 34,761 in 2005 to 35,739 in 2006.

Resident specialist services are available in all State, Federal Territory and major specialist hospitals. Sub-specialist services are available in selected hospitals within a geographical care-network zone. Access to specialist services in the non-specialist hospitals is made possible through a referral system, specialist visits and hospital-networking.

TABLE 1
MOH Hospitals and Medical Institutions by State, 2006

State	Medical Institution	Hospitals With Specialists	Hospitals Without Specialist	Total
Perlis	-	1	-	1
Kedah	-	4	5	9
Pulau Pinang	-	4	2	6
Perak	1	5	9	15
Selangor	1	7	3	11
Fed. Territory K. Lumpur	1	1	-	2
Fed. Territory Putarjaya	-	1	-	1
Fed. Territory Labuan	-	1	-	1
Negeri Sembilan	-	3	3	6
Melaka	-	1	2	3
Johor	1	6	5	12
Pahang	-	3	7	10
Terengganu	-	2	4	6
Kelantan	-	3	6	9
Sabah	1	6	15	22
Sarawak	1	7	12	20
Total	6	55	73	134

Source: Information and Documentation System Unit, MOH

Organisation and Service Systems

The MOH continued its hospital networking policy in order to provide greater accessibility to specialist care services. Participation from teaching hospitals assisted the MOH to implement policies more efficiently.

Utilization Review

For the year 2006, there were 1,905,089 admissions to MOH hospitals with an average bed-occupancy rate of 65.07%. A total of 352,254 deliveries were conducted and 782,776 operations were performed. Outpatient attendances amounted to 9,824,725 of which 4,911,674 were emergency department attendances and 4,913,051 were specialist clinics attendances.

The 5 major causes of admissions to MOH hospitals were normal delivery, complications of pregnancy, childbirth and puerperium, accidents, diseases of respiratory system and diseases of circulatory system, whereas the 5 major causes of deaths were septicaemia, heart disease and diseases of pulmonary circulation, malignant neoplasms, cerebrovascular diseases and pneumonia.

TABLE 2
MOH Hospital Inpatient Beds, Total Admissions and Bed Occupancy Rate, 2006

Locations of Hospitals and Institutions	Beds Complement	Bed Occupancy Rate (%)	Total Admissions
Peninsular Malaysia	24,119	65.15	1,550,432
Sabah	3,590	53.99	177,215
Fed. Territory Labuan	109	52.73	5,713
Sarawak	3,151	53.34	162,427
Special Medical Institution	4,770	75.88	9,302
MALAYSIA	35,739	65.07	1,905,089

Source: Information and Documentation System Unit, MOH

Medical Treatment service

Most of the services provided by the MOH are free of charge. However, some class of patients are charged fees, such as patients who have elected to be treated as private patients and patients who are compensated financially (i.e. patients for whom a third party covers the costs, such as workers' compensation or third party motor vehicle insurance). The fees charged are based on the fees scheduled determined by the Ministry of Finance. The cost of medical care in MOH hospitals is one of the cheapest in the South East Asian region.

Outsourcing of Medical Services

Outsourcing of services was continued in 2006 in order to increase access to specialized clinical care while cutting down the waiting time. Services that were outsourced are shown in Table 3.

TABLE 3
Type of Services and Hospitals Involved in the Outsourcing of Services, 2006

Services	Hospitals
Radiotherapy Services	Alor Setar Hospital
	Penang Hospital
	Kajang Hospital
	Tengku Ampuan Rahimah Hospital
	Putrajaya Hospital
	Seremban Hospital
	Malacca Hospital
	Sultanah Aminah Hospital
	Queen Elizabeth Hospital
Cardiothoracic Services	Kuala Lumpur Hospital
	Sarawak General Hospital
Diagnostic Imaging Services	Penang Hospital
	Kulim Hospital
	Sungai Petani Hospital
	Seberang Jaya Hospital
	Taiping Hospital
	Miri Hospital

Source: Medical Development Division, MOH

MEDICAL SPECIALTY SERVICES

Medical specialty services refer to medical based specialist services available at hospitals, namely General Medicine, Dermatology, Respiratory Medicine, Psychiatry, Nephrology, Neurology, Radiotherapy and Oncology, Cardiology, Gastroenterology, Haematology, Hepatology, Endocrinology, Rheumatology, Infectious Diseases, Palliative Medicine, and Geriatrics.

Amongst the activities carried out in 2006 were provision of new services which include:

- Bone densitometer services at Rheumatology Departments in Seremban Hospital and Taiping Hospital and ultrasound services at Rheumatology Departments in Seremban Hospital, Selayang Hospital and Putrajaya Hospital.
- Intensity Modulated Radiotherapy (IMRT) services for cancer management at Kuching Hospital.
- Clinical haematology services in Ampang Hospital as the main referral centre for haematology.
- Palliative care facilities at 6 hospitals namely Kota Bahru Hospital, Ipoh Hospital, Queen Elizabeth Hospital in Kota Kinabalu, Kuching Hospital, Kuantan Hospital and Selayang Hospital.
- Establishment of viral load facilities at Kuching Hospital for the management of patients with HIV/AIDS.

Medical Out Patient Care

The total number of patients treated at specialist clinics of the various medical disciplines increased by 3.8% in 2006 as compared to 2005. Attendances at all clinics had increased except for Nephrology and Neurology as indicated in Table 4.

TABLE 4
Number of Patients Who Received Treatment at Medical Specialist Clinics by Discipline, 2005-2006

Discipline	No. Of Patients Seen At Specialist Clinic		Difference (%)
	2005	2006	
Cardiology	57,187	62,429	9.2
Radiotherapy & Oncology	44,860	51,714	15.3
Tuberculosis & Respiratory medicine	237,027	245,106	3.4
Dermatology	235,351	235,887	0.2
General medicine	691,164	730,726	5.7
Neurology	28,333	27,523	-2.9
Psychiatry	299,127	312,527	4.5
Nephrology	124,329	116,156	-6.6
TOTAL	1,717,378	1,782,068	3.8

Source: Information and Documentation System Unit, MOH

Medical Inpatient care

Table 5 shows the total number of patients from various medical disciplines who were treated as inpatients. A total of 25.8% of the total government hospital admissions were from the medical based specialities. In general, the medical specialist admissions increased by 3.1% from 476,433 in 2005 to 491,437 in 2006. The increase in inpatients was most pronounced in neurology.

TABLE 5
Number of Admissions for the Specialist Medical Disciplines, 2005-2006

Discipline	No. of patients admitted		Difference (%)
	2005	2006	
Cardiology	6,222	5,965	-4.1
Neurology	3,098	3,591	15.9
Nephrology	8,711	9,891	13.5
General Medicine	417,957	432,323	3.4
Psychiatry	21,965	22,667	3.2
Dermatology	880	889	1.0
Radiotherapy & Oncology	9,110	8,795	-3.5
Tuberculosis & Respiratory Medicine	5,918	5,117	-13.5
Infectious Disease	2,572	2,199	-14.5
TOTAL	476,433	491,437	3.1

Source: Information and Documentation System Unit, MOH

PAEDIATRIC SPECIALTY SERVICES

In 2006, the paediatric services had achieved a number of major developments such as upgrading of the neonatal services in Raja Perempuan Zainab II Hospital, Kota Bharu Kelantan, Alor Star Hospital in Kedah and Sarawak General Hospital. A paediatric intensivist was placed in Alor Setar Hospital to ensure the smooth running of PICU/NICU and the retrieval system; which is also currently available in Ipoh Hospital, Raja Perempuan Zainab II Hospital, Kota Bharu dan Likas Hospital, Sabah.

Other subspecialty services that have also been given priority in the 9th Malaysian Plan were genetic services and neuro-rehabilitation services in the Paediatric Institute.

Outpatient Care

A total of 363,989 patients attended paediatric specialist outpatient clinics in the year 2006 (Table 6).

TABLE 6
Number of Patients Seen at Paediatric Clinics by State, 2006

State	No. of Patients Seen at Clinic
Perlis	6,510
Kedah	39,775
Pulau Pinang	25,316
Perak	37,667
Selangor	38,210
Federal Territory	62,406
Negeri Sembilan	15,578
Melaka	9,124
Johor	32,724
Pahang	20,143
Terengganu	10,737
Kelantan	11,774
Sabah	29,792
Sarawak	24,233
TOTAL	363,989

Source: Information and Documentation System Unit, MOH

Inpatient care

Table 7 shows the statistics for the paediatric service by state for the year 2006. The BOR for Paediatric patients ranged from 47.25% to 107.49%, while the ALOS ranged from 2.56 to 4.14 days. Putrajaya Hospital had the highest BOR compared to other states. Hence, the hospital needs to increase the number of beds to accommodate the increasing patients load.

Although Perak had the fourth highest admissions of Paediatric patients, it had the lowest BOR of 47.25% and the second shortest ALOS of 2.59 days. This finding indicates that high turnover rate of inpatients may reduce hospital's BOR directly.

TABLE 7
Number of Beds, Bed Occupancy Rate, Total Admissions and Average Length
of Stay by States (Paediatric), 2006

States	Bed Strength	Bed Occupancy Rate (%)	Total Admissions	Average Length of Stay (days)
Perlis	48	96.46	4,820	3.48
Kedah	312	84.77	26,643	3.60
Pulau Pinang	238	71.07	18,254	3.36
Perak	380	47.25	24,941	2.59
Selangor	371	74.20	29,039	3.55
F.T. Kuala Lumpur	331	85.30	24,716	4.10
F.T. Putrajaya	28	107.49	2,775	3.83
F.T. Labuan	15	54.50	853	3.49
Negeri Sembilan	180	66.06	14,419	3.00
Melaka	105	83.71	8,720	3.65
Johor	346	49.93	24,607	2.56
Pahang	194	71.62	16,083	3.10
Terengganu	153	58.34	12,205	2.66
Kelantan	263	63.92	14,780	4.14
Sabah	429	53.28	21,469	3.90
Sarawak	485	55.83	28,426	3.39
TOTAL	3,878	-	272,750	-

Source: Information and Documentation System Unit, MOH

OBSTETRIC AND GYNAECOLOGY SERVICE

A number of significant developments in O&G services were achieved in the year 2006. The Kuala Lumpur Hospital started its 'Assisted Reproductive Technique' (ART) services in July 2006. The charges imposed on the patients was agreed by Treasury with the cost of each ART cycle being approximately RM4,000 to RM5,000 per patient. Other subspecialty services were also been given emphasis such as the upgrading of gyne-oncology services in Alor Setar Hospital and the establishment of uro-gynaecology services in Ipoh Hospital.

Inpatient Gynaecology Services

As shown in Table 8, Melaka had the highest BOR (73.53%), while Perlis and Federal Territory Labuan were among the states with lowest BOR of 32.94% and 20.47% respectively. Johor had the highest admissions of 17,214 with BOR of 63.70%.

A total of 233,042 patients attended the specialist outpatient clinics in 2006 with Johor recorded the highest number of patients of 27,655, while Perlis had the lowest with 3,487 patients.

TABLE 8
Number of Beds, Bed Occupancy Rate, Total Admissions and Average Length of Stay by State for Gynaecology Service, 2006

States	Bed Strength	Bed Occupancy Rate (%)	Total Admissions Stay (days)	Average Length of Stay Seen at Clinic	No. of Patients
Perlis	28	32.94	1,097	3.04	3,487
Kedah	115	65.67	9,559	2.79	23,847
Pulau Pinang	98	59.49	7,111	2.86	23,112
Perak	179	40.11	10,430	2.53	25,942
Selangor	146	53.87	11,011	2.58	17,225
F.T. Kuala Lumpur	56	56.60	4,176	2.72	18,820
F.T. Putrajaya	10	53.92	842	2.24	
F.T. Labuan	14	20.47	519	2.01	
Negeri Sembilan	103	42.76	8,325	1.92	11,176
Melaka	51	73.53	4,481	2.82	9,308
Johor	172	63.70	17,214	2.32	27,655
Pahang	72	58.24	5,868	2.46	11,237
Terengganu	59	56.43	4,617	2.62	7,215
Kelantan	42	56.30	2,872	2.95	7,798
Sabah	218	42.83	11,861	2.83	23,125
Sarawak	152	46.85	10,026	2.57	23,095
Total	1,515		110,009		233,042

Source: Information and Documentation System Unit, MOH

Obstetric Services

There were more admissions recorded in the obstetric ward as compared with gynaecology ward in 2006. The average length of stay ranged from 1.72 to 2.70 (Table 9). Melaka had the highest BOR of 76.66% while Johor had the highest admissions of 59,485. Selangor had the highest attendance in the Obstetric clinic with 45,204 attendances for the year 2006.

TABLE 9
Number of Beds, Bed Occupancy Rate, Total Admissions and Average Length of Stay by State for Obstetric Service, 2006

States	Bed Strength	Bed Occupancy Rate (%)	Total Admissions	Average Length of Stay (days)	No. of Patients Seen at Clinic
Pertlis	61	64.32	5,483	2.58	6,302
Kedah	289	67.84	35,881	2.02	37,632
Pulau Pinang	251	52.44	21,334	2.28	29,337
Perak	537	50.57	41,937	2.32	30,574
Selangor	457	66.25	52,150	2.10	45,204
F.T. Kuala Lumpur	234	68.44	22,028	2.70	30,091
F.T. Putrajaya	46	74.97	5,893	2.05	
F.T. Labuan	17	49.83	1,796	1.72	
Negeri Sembilan	198	56.96	19,510	2.10	14,927
Melaka	143	76.66	16,251	2.60	12,441
Johor	506	69.23	59,485	2.14	37,666
Pahang	316	56.10	30,316	2.15	14,928
Terengganu	210	64.04	24,221	2.04	7,244
Kelantan	284	58.28	32,260	1.86	7,297
Sabah	494	53.24	53,411	1.81	18,603
Sarawak	469	52.51	46,263	1.95	8,495
TOTAL	4,512	-	468,219	-	300,741

Source: Information and Documentation System Unit, MOH

Maternity Units of MOH Hospitals

A total of 462,995 patients were admitted to the maternity wards with 60.76% (281,304) normal deliveries. Sabah registered the highest number of normal deliveries (37,116) while Perlis had the lowest (3,079). Other modes of delivery indicates that Caesarean section accounted the highest number of deliveries. There were 142 maternal deaths registered in MOH hospitals in 2006.

A total of 300,741 patients attended the obstetric specialist outpatient clinic in 2006 with Selangor registering the highest number of patients.

TABLE 10
Type of Deliveries, Total Admissions and Total Maternity Deaths by States, 2006

State	Types of Delivery							No. of maternity admissions	No. of maternity death
	Normal	c-Section	Forceps	Vacuum	Others	Total	Average/ day		
Perlis	3,079	820	28	111	48	4,086	11	5,187	0
Kedah	21,415	4,903	55	512	379	27,264	75	35,762	10
Pulau Pinang	11,586	2,510	47	185	108	14,436	40	21,460	3
Perak	21,425	5,427	160	491	578	28,081	77	37,004	6
Selangor	31,467	6,714	192	1,237	819	40,429	111	56,063	29
Federal Territory	16,378	5,339	75	657	208	22,657	63	26,057	33
Negeri Sembilan	10,080	2,752	90	150	147	13,219	36	20,744	4
Malaka	7,134	2,501	23	128	80	9,866	27	15,114	4
Johor	36,452	6,762	175	1,031	612	45,032	123	60,966	10
Pahang	17,099	3,168	71	381	149	20,868	57	27,396	8
Terengganu	15,760	2,033	57	204	196	18,250	50	24,040	7
Kelantan	21,380	2,806	52	20	206	24,464	67	32,860	7
Sabah	37,116	4,694	71	608	657	43,146	118	54,280	21
Sarawak	30,933	4,281	68	608	663	36,553	100	46,062	0
TOTAL	281,304	54,710	1,164	6,323	4,850	348,351	955	462,995	142

Source: Information and Documentation System Unit, MOH

SURGICAL SERVICES

The Surgical services consist of general surgery, orthopaedic, ophthalmology, urology, neurosurgery, plastic surgery and Otorhinolaryngology (ORL) which was previously known as Ear Nose & Throat. There are various subspecialties under surgery and these include gastrointestinal surgery, vascular surgery, hepatopancreaticobiliary surgery, breast & endocrine surgery, cardiothoracic surgery, colorectal surgery and paediatric surgery.

For hospitals without specialists, the service is provided through networking and outreach programmes in order to provide better services to more patients. A networking for vascular services were established in Kota Bahru Hospital and Alor Star Hospital in 2005 and in 2006 the networking has been expanded to Queen Elizabeth Hospital, Kota Kinabalu, Sabah.

The number of beds for surgical specialties also increased from 7,496 in 2005 to 7,918 in 2006. The increase in beds was seen in the disciplines of general surgery, orthopaedic and neurosurgery disciplines. Table 11 shows the number of hospitals which provide the surgical services according to disciplines.

TABLE 11
Surgical Specialist Hospitals and Number of Beds by Surgical Disciplines, 2005-2006

Disciplines	Number of Specialist Hospitals		Number of beds	
	2005	2006	2005	2006
General Surgery	40	47	3,549	3,603
Orthopedic	39	42	2,513	2,691
Ophthalmology	33	33	597	638
ENT	27	31	302	338
Urology	7	7	187	216
Neurosurgery	6	7	168	193
Cardiothoracic	3	3	40	68
Plastic Surgery	7	8	128	131
Hand and Microsurgery	1	1	12	12
Hepatopancreaticobiliary	3	3	NA	28
TOTAL	166	182	7,496	7,918

Source: Information and Documentation System Unit, MOH

NA: 'Not available'

Surgical Specialist Clinic Services

Overall there was 7.1% increase in the number of patients attending these clinics in 2006 as compared to 2005. The highest increase in attendances was registered by plastic surgery (11.1%), followed by urology (10.6%) and otorhinolaryngology (8.3%) clinics (Table 12).

TABLE 12
Number of Outpatients by Surgical Specialist Clinics, 2005-2006

Disciplines	No. of Outpatients		Difference (%)
	2005	2006	
General Surgery	445,172	472,008	6.0
Orthopaedics	558,282	592,055	6.0
Ophthalmology	508,518	548,976	8.0
Otorhinolaryngology	289,296	313,447	8.3
Urology	78,398	86,727	10.6
Neurosurgery	21,776	23,410	7.5
Cardiothoracic	13,812	14,068	1.9
Plastic Surgery	27,512	30,560	11.1
Hand & Microsurgery	4,569	3,446	-24.6
Hepatopancreaticobiliary	NA	NA	NA
TOTAL	1,947,335	2,084,697	7.1

Source: Information and Documentation System Unit, MOH

NA: 'Not available'

In-Patient Surgical Services

In-patient surgical services cater for patients admitted for operations and peri-operative stay in the wards including those with surgical related cancers requiring chemotherapy. There was an overall increase in number of patients admitted to the surgical wards in 2006 as compared to 2005 especially for orthopaedics, ophthalmology and otorhinolaryngology. The surgical related disciplines contributed 21.3% of the total admissions to MOH hospitals with Orthopaedics accounting for 29.2% of the total surgical admissions.

For the year 2006, Neurosurgical accounted the second highest BOR (78.50%) among all surgical disciplines in MOH hospitals (Table 13). This was due to the limited number of hospitals that provide the service to cater the head injury patients in the country. The cardiothoracic services are available at Penang Hospital, Sultanah Aminah Hospital and Sarawak General Hospital besides those provided by the National Heart Institute.

TABLE 13
Number of Beds, In-patients and Bed Occupancy Rate by Surgical Disciplines, 2005-2006

Disciplines	No. of Beds		No. of In-patients		Bed Occupancy Rate(%)	
	2005	2006	2005	2006	2005	2006
General Surgery	3,549	3,603	223,890	224,913	60.36	65.44
Orthopaedic	2,513	2,691	110,772	118,367	64.99	65.44
Ophthalmology	597	638	26,997	30,346	45.94	47.42
Otorhinolaryngology	302	338	10,871	13,512	51.00	52.49
Urology	187	216	9,340	8,894	73.23	61.98
Neurosurgery	168	193	4,630	4,975	86.49	78.50
Cardiothoracic	40	68	728	687	69.49	34.08
Plastic Surgery	128	131	2,144	2,565	44.56	46.40
Hand & Microsurgery	12	12	389	365	61.89	69.54
Hepatopancreaticobiliary	NA	28	1,456	1,042	113.68	84.79
TOTAL	7,496	7,918	391,217	405,666		

Source: Information and Documentation System Unit, MOH

NA : Not available

Number of Operations

Table 14 shows the number of surgical operations carried out in 2006 for elective and emergency surgery. The number of emergency operations for general surgery, orthopaedics and neurosurgery superseded the number of elective operations. It was also noted that the majority of these emergency operations were as a result of trauma. The emergency operations accounted for about 60% of the total operations carried out by MOH hospitals.

TABLE 14
Number of Elective and Emergency Operations, 2005-2006

Disciplines	Number of Elective Operations		Numbers of Emergency Operations	
	2005	2006	2005	2006
General Surgery	90,398	83,674	131,061	165,414
Orthopedic	53,438	51,888	179,588	187,383
Ophthalmology	31,820	33,763	8,435	7,404
ENT	26,919	28,476	11,657	11,036
Urology	17,640	17,717	3,953	3,652
Neurosurgery	1,325	1,357	4,648	5,397
Cardiothoracic	1,212	1,321	438	280
Plastic Surgery	4,647	4,072	1,539	2,245
Hand and Microsurgery	NA	NA	NA	NA
Hepatopancreaticobiliary	NA	NA	NA	NA
Total	227,399	222,268	341,319	382,811

Source: Information and Documentation System Unit, MOH

NA : Not available

Urology services had conducted a Robotic Surgery Workshop from 15-30 March 2006. This was a collaborative effort between Vatticutti Hospital, USA and Urology Institute of Kuala Lumpur Hospital. During this workshop, 45 cases of robotic surgery were done. Most of the robotic surgeries done were for laparoscopic radical prostatectomies for cancer of the prostate. The other uses of the robotic arm are for nephrectomies, ureterolithotomies, pyeloplasties, pyelolithotomies and reconstruction operations. The number of robotic surgeries done in 2006 are shown in Table 15.

TABLE 15
Number of Urology Robotic Surgery Performed in Sultanah Aminah Hospital and Kuala Lumpur Hospital

Hospital	No. of Operations	
	2005	2006
Sultanah Aminah Hospital, Johor Bahru	15	36
Kuala Lumpur Hospital	33	83
TOTAL	48	119

Source: Urology Institute, Kuala Lumpur Hospital

Emergency Services

For the year 2006, a total of 4,415,619 patients were registered at Emergency Departments of MOH hospitals (Table 16).

TABLE 16
Numbers of Cases Seen at Emergency Departments Nationwide, 2006

Location	No. of cases	Percentage (%)
Peninsular Malaysia	3,425,273	77.6
Sabah	565,120	12.8
Sarawak	425,226	9.6
TOTAL	4,415,619	100.0

Source: Medical Development Division, MOH

Presently, there are 27-gazetted Emergency Physicians serving in the country, which will help to improve the deliverance of emergency care to the public.

Pre Hospital Care Services

Pre Hospital Care is one of the important elements of emergency services under the 9th Malaysian Plan. Three states, namely Pulau Pinang, Johor and Klang Valley have been identified for the pre hospital care pilot project.

Road Traffic Accidents (RTA) statistics in 2006 indicates that there is a need to develop Pre-hospital Care in order to improve the quality of response time to emergency call. The development of Pre-hospital Care will be able to reduce mortality and morbidity due to RTA.

TABLE 17
Statistics of Road Traffic Accidents, 2006

Causes	Total Injured	Total Death	Grand Total
Pedestrian	1,512	35	1,547
Bicycle	1,758	21	1,779
Motorcycle	26,708	376	27,084
Three Wheel Motor Vehicle	130	0	130
Car	3,245	75	3,320
Van	494	4	498
Heavy transport	368	2	370
Bus	129	0	129
Other land transport	130,553	2,734	133,287
Water Transport	81	0	81
Air Transport	42	0	42
Unspecified transport vehicle	42	6	48
TOTAL	165,062	3,253	168,315

Source: Traffic Police Headquarters, Kuala Lumpur

ANAESTHESIOLOGY SERVICES

Anaesthesiology services consist of two equally important services namely anaesthetic services and intensive care services. The Departments of Anaesthesia and Intensive care provide comprehensive peri-operative care, intensive care as well as pain management services. Currently, 75 hospitals provide peri-operative care services and 40 of which also provide intensive care services. There were 277,271 anaesthesias administered in 2006, of which 124,511 were for elective surgeries and 152,160 for emergency surgeries. These figures represented an increase of 5.7% as compared to 2005. Half of the increase was due to new hospitals operation theatres that started their operations in 2006, which were in Serdang Hospital, Sungai Buloh Hospital, Ampang Hospital, Temerloh Hospital and Sultan Ismail Hospital.

The number of patients admitted to the intensive care units increased by 24.6% from 13,027 in 2005 to 16,234 in 2006.

Chronic pain management clinics are available in 4 hospitals, namely Selayang Hospital, Ipoh Hospital, Kota Bharu Hospital and Sultan Ismail Hospital. In future, chronic pain management clinics will be established in more state hospitals.

TABLE 18
Workload for Anaesthesiology Service, 2006

Workload	Numbers
Number of anaesthetics administered in MOH Hospitals	277,271
Number of patients who received various pain control analgesia	31,121
Number of general ICU admissions	16,234
No. of patients attending anaesthesiology outpatient clinics	9,948
Chronic pain clinics	1,258

Source: Department of Anaesthesiology, Kuala Lumpur Hospital

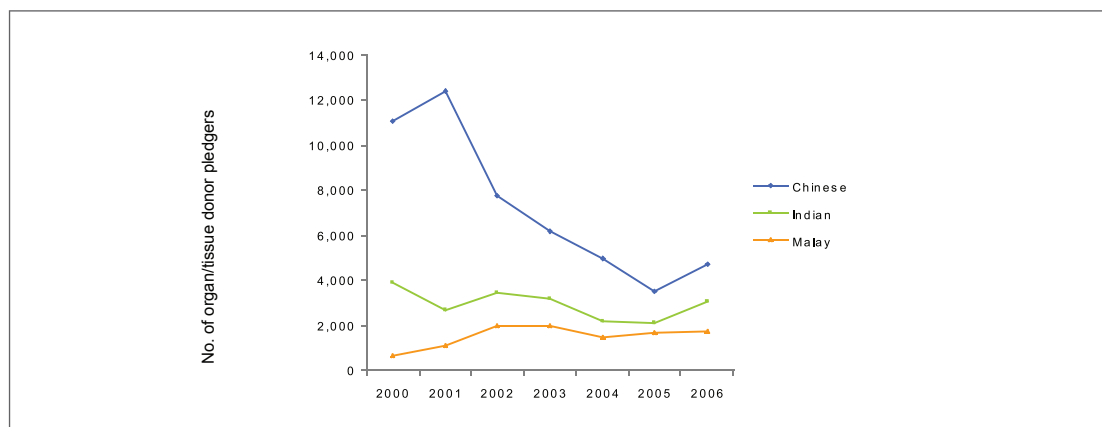
TRANSPLANT SERVICES

Transplant services had started since late 1960's. In 1975, kidney was the first organ transplanted. Transplantation services have evolved progressively in the last 3 decades. A National Coordinating Committee was established in 1998 to monitor the progress of the services. With the advancement of technology and expertise in various transplant services, the Division and relevant stakeholders are developing a National Policy on Organ, Tissue and Cell Transplantation, which will serve as a guide to the practice and development of transplantation service in the country. The National Policy will focus on key areas including ethics and development strategy.

Rate and Distribution of Donors

Organ/tissue donor rate for 2006 was 0.96 donations per million population (pmp), which improved from 13 donations or 0.57 donations pmp recorded in 2005. However, the rate was still very low as compared to other countries in the world. The number of Malaysians who pledged to be the organ/tissue donors in 2006 had increased by 29% and currently there are a total of 101,421 donor pledgers in Malaysia with Chinese registered the highest percentage of donors (62.7%). The number of Malays who registered as organ/tissue donor pledgers showed a slight improvement of 3%. Out of 25 actual donors in 2006, 12 were Chinese, 11 were Indians, 1 was Malay and 1 was unknown (Figure 1).

FIGURE 1
Numbers of Organ/Tissue Donor Pledgers by Ethnic Group, 2000-2006



Source: National Transplant Resource Centre, Kuala Lumpur Hospital

DIAGNOSTIC SERVICES

Pathology

The Pathology Services include Biochemical, Medical Microbiology, Haematology, Genetic, Histopathology and Cytology tests for the purposes of diagnostic services, screening services, confirmatory services as well as monitoring the management of outpatients and inpatients in all MOH hospitals and 6 medical institutions.

MOH is upgrading the Pathology Services through the concept of Centralization and Consolidation. This will be done in stages to improve the equipment, manpower, training, laboratory information system and transport system with the aim of providing quality, fast and accurate quality services.

The total workload for Pathology Services for the year 2006 was 114,062,350 which increased by 13.2% as compared to 2005 (Table 19). For the year 2006, the workload for outpatients was 54.15% of the total workload at the hospitals and medical institutions while the inpatients was 45.85% (Table 20).

TABLE 19
Workload of Pathology Services in MOH Hospitals and Medical Institutions, 2001-2006

Year	Pathology Workload
2001	52,142,134
2002	63,923,857
2003	75,764,983
2004	84,741,355
2005	100,740,760
2006	114,062,350

Source: Information and Documentation System Unit, MOH

TABLE 20
Workload of Pathology Services According to Outpatient and Inpatient Services, 2001-2006

Hospital	Inpatients	Outpatients	Total
Peninsular Malaysia	43,791,805	50,636,065	94,427,870
Sabah	3,870,452	4,565,821	8,436,273
Sarawak	4,336,738	4,609,788	8,946,526
Medical Institution	301,171	1,950,510	2,251,681
Total	52,300,166	61,762,184	114,062,350

Source: Information and Documentation System Unit, MOH

Blood Transfusion Services

The objective of Blood Transfusion Services is to provide a continuous supply of blood and blood products, which are safe, of good quality and easily accessible to those in need. The National Blood Centre (PDN) in Kuala Lumpur is responsible to plan and develop the Blood Transfusion Services and other activities related with blood donation in the country. The PDN also carried out activities in Microbiology Transfusion, Hematology, Immuno-hematology, Production and Fractionation of Blood Products, Haemostasis, Histocompatibility, Cord Blood Collection and Health Education. To ensure that the provision of Blood Transfusion Services are well-planned and systematic, 6 Regional Centres and 16 Blood Screening centres are being and will be developed with the relevant and necessary infrastructure and equipment.

Workload of Blood Transfusion Services in 2005 and 2006 is shown in Table 21, while the total blood collected and total recipients of blood and blood products by state in 2006 are shown in Table 22.

In 2006, PDN conducted series of training courses for the staff involved in the Blood Transfusion Services in hospitals throughout the country, involving Medical Officers, Scientific Officers, Medical Laboratory Officers and Nurses.

TABLE 21
Blood Transfusion Services Achievements, 2006

Activity	2005	2006
Blood collection at Centres/Hospitals	124,163	122,924
Blood collection by Mobile Units	348,071	354,441
Total	472,234	477,365
Voluntary donation	468,156	473,866
Replacement donation	4,077	3,499
Total Recipients of Blood and Blood Products	220,673	253,968

Source: Medical Development Division, MOH

TABLE 22
Total Blood Collections and Recipients of Blood and Blood Products by State, 2006

State	Total Blood Collection	Total Recipients of and Blood Products
Perlis	5,526	2,169
Kedah	30,021	15,352
Pulau Pinang	30,347	10,708
Perak	44,992	29,227
Selangor	18,986	31,558
Federal Territory Kuala Lumpur & Putrajaya	110,897	28,469
Negeri Sembilan	14,667	6,945
Melaka	26,232	12,296
Johor	50,403	30,177
Pahang	24,556	10,301
Terengganu	13,401	6,369
Kelantan	14,185	9,930
Sabah	57,524	47,233
Sarawak	35,628	13,234
TOTAL	477,365	253,968

Source: Medical Development Division, MOH

Medical Forensic Services

The Medical Forensic Services includes Clinical Medical Forensic Services, Anthropology Medical Forensic and Toxicology Medical Forensic Services. In order to provide a well-planned and quality Medical Forensic Services in the country, these services are provided in 6 Regional Medical Forensic Centres, each of which supervises two satellite centres.

The workload of the Medical Forensic Services in the whole country for the year 2006 is shown in Table 23. A total of 11,166 post-mortems (police cases) were conducted in 2006 out of 38,352 deaths.

TABLE 23
Workload of MOH Forensic Services by State, 2006

State	Normal Death	Police Cases (post-mortem)
Perlis	639	104
Kedah	2,584	995
Pulau Pinang	3,335	957
Perak	5,794	1,500
Selangor	3,988	1,565
Federal Territory of Kuala Lumpur	2,971	708
Negeri Sembilan	1,691	450
Melaka	1,745	375
Johor Baru	2,744	640
Pahang	2,448	844
Terengganu	2,348	863
Kelantan	2,459	432
Sabah	3,828	581
Sarawak	1,778	1,152
TOTAL	38,352	11,166

Source: Medical Development Division, MOH

DIAGNOSTIC IMAGING (RADIOLOGY) SERVICES

Radiology services are provided in all MOH hospitals. The services provided covers all type of imaging modalities including magnetic resonance imaging (MRI), Ultrasound (US) with Doppler, fluoroscopy, mammography (MMG) and general radiography systems. However, in hospitals without specialists, only general radiography and ultrasound examinations were provided.

In the year 2006, 64-slice CT scanners were installed in Selayang Hospital and Seberang Jaya Hospital, Pulau Pinang. With the introduction of these high-end CT scanners, the available examinations have moved from the Cross-Sectional CT studies to the 3-dimensional and volumetric studies thus enhancing our diagnostic capabilities. Besides striving to provide fast and accurate diagnosis, interventional/ therapeutic radiology services provided a multitude of safe, non-invasive procedures. Basic interventional procedures are provided in all MOH hospitals with radiologists whilst the more complex procedures are performed in Kuala Lumpur Hospital and Selayang Hospital.

In 2006, fistuloplasty (salvage of AV fistulae used for renal dialysis) was commenced in Selayang Hospital. This procedure helped to enhance the quality of life of renal failure patients.

Besides that, Sultan Ismail Hospital in Johor, Sultan Abdul Halim Hospital in Kedah, Serdang Hospital, Ampang Hospital and Sg. Buluh Hospital are equipped with state-of-the-art ICT technology utilizing Radiology Information System (RIS). Serdang Hospital is the next hospital after Selayang Hospital and Putrajaya Hospital that has Picture Archiving Communication System (PACS). These systems are telemedicine-ready and will contribute towards achieving the MOH vision to provide continuous and seamless healthcare.

The in-service training for radiologists and radiographers was conducted regularly in 2006. Among the courses were the Musculoskeletal Radiology and Neuroradiology for radiologists, Trauma Imaging for radiographers and Mammography for both radiologists and radiographers. A post-basic course called "Post-Basic Trauma for Radiographers" was introduced in 2006 as a pilot project. Currently, there are two radiologists pursuing subspecialty training overseas in the field of Interventional Radiology and another two radiologists in Breast Imaging. The workload of Radiology is shown in Table 24.

TABLE 24
Total Number of Imaging Performed, 2002-2006

Imaging Modalities	2002	2003	2004	2005	2006
General Radiography	2,158,694	2,276,705	2,478,354	2,680,627	2,955,958
Special Radiography	26,529	35,663	28,586	30,440	30,517
Computerised Tomography	80,243	89,541	101,830	114,267	141,471
Magnetic Resonance Imaging	8,690	11,845	16,037	16,432	24,182
Ultrasonography	152,400	159,553	203,469	239,442	268,776
Additional Examinations	23,837	26,270	28,165	36,095	35,403
TOTAL	2,450,393	2,599,577	2,856,441	3,117,303	3,456,307

Source: Medical Development Division, MOH

Nuclear Medicine Services

The Nuclear Medicine Services comprise of the investigative and diagnostic services which uses radioactive substances. It is given to patients according to the type of scans carried out and is used in the diagnosis and also in treatment of cancer. The service was introduced in 1964 as an unit in the Radiotherapy Department in Kuala Lumpur Hospital. The service was expanded to Sarawak General Hospital in 1986, while in Penang Hospital and Sultanah Aminah Hospital, Johor Bahru in 1995 and 1997 respectively. The main objective of the Nuclear Medicine Services is to provide patients with

high quality diagnostic, treatment and interventional (elective and emergency) services to ensure the optimal level of recovery.

The Nuclear Medicine Services were made up of 3 main components:

- Clinical Division: Diagnostic, Treatment and Interventional
- Radiopharmacy Division
- Physics Division

The Clinical Division deals with the referral cases for diagnosis and treatment. The Radiopharmacy Division is involved in the procurement, preparation and quality control of the radiopharmaceutical products especially in the activity of injecting dose to the patients. The Physics Division helps in quality control of the equipment and monitoring the aspects of safety and protection from radiation.

In 2006, most of the staff in the Nuclear Medicine Services were given training either within or outside the country. The Nuclear Medicine Department and the International Atomic Energy Agency (IAEA) co-sponsor the overseas training. The workload for this service is shown in Table 25.

TABLE 25
Total Nuclear Medicine Scans/Treatment, 2004-2006

Hospitals	Total Scan		
	2004	2005	2006
Kuala Lumpur Hospital	4,365	4,493	6,222
Hospital Umum Sarawak	877	849	995
Penang Hospital	1,893	2,082	2,422
Sutanah Aminah Hospital, Johor Bahru	971	1,241	951
TOTAL	8,106	8,665	10,590

Source: Medical Development Division, MOH

REHABILITATION SERVICE

Rehabilitation services form an integral part of the treatment component of modern medical services. Its goal is to provide necessary training and tools to patients with disabilities in order to enable them to overcome their physical, psychological, social and emotional limitations to normal or at least to the optimum. The services focus on the preventive measures, disability assessment and the rehabilitation therapy process.

Medical Rehabilitation services require a holistic approach and can only be achieved through close cooperation and teamwork by various disciplines and agencies. At present, most of the rehabilitation services are offered through various individual clinics supported by the physiotherapist, occupational therapist as well as the speech therapist. The rehabilitation services offered by the physiotherapist and the occupational therapist are basically confined to the physical rehabilitation and mainly concentrate on the activities of daily living. They include consultation services that also include the assessment activities, treatment and patient care, nursing, Physiotherapy, Occupational Therapy, Medical Social service, Speech therapy, Orthotic and Prosthetic services and Educational programme for patients and care givers.

Rehabilitation Medicine specialist services have been extended to more hospitals including Serdang Hospital, Tengku Ampuan Rahimah Hospital, Pulau Pinang Hospital, Raja Perempuan Zainab II Hospital and Sarawak General Hospital in addition to the existing hospitals, namely Kuala Lumpur Hospital and Seremban Hospital. At the same time, the non-specialized rehabilitation services are also provided in hospitals and health clinics throughout the country.

Apart from the basic rehabilitation services, emphasis was also given to the rehabilitation of spinal cord injuries and stroke patient, rehabilitation activities in pediatric patients including cerebral palsy and delayed developmental milestones, cardiac rehabilitation as well as the Prosthetic and Orthotic services for amputees. Botulinum Toxin Injections were also given to patients with spasticity problems. Rehab Physicians in several MOH hospitals also conducted Urodynamic Test for patients with spinal cord injuries, suffering from neurogenic bladder problems. The combined clinic with other specialists from related fields was also implemented.

Generally, there were more outpatients received physiotherapy treatment than inpatients in MOH hospitals in 2006 (Table 26). The distribution of manpower for the Rehabilitation Services is shown in Table 27.

TABLE 26
Physiotherapy Treatment in MOH Hospitals, 2006

State	In Patient			Out Patient			Total		
	No. of Treatment	No. of Patient	Treatment/ Patient	No. of Treatment	No. of Patient	Treatment/ Patient	No. of Treatment	No. of Patient	Treatment/ Patient
Perlis	27,631	6,985	4	51,015	10,910	5	78,646	17,895	4
Kedah	115,374	22,909	5	215,748	53,309	4	331,122	76,218	4
Pulau Phang	160,238	53,631	3	273,783	81,692	3	434,021	135,323	3
Perak	113,026	52,694	2	255,979	84,679	3	369,005	137,373	3
Selangor	198,819	61,405	3	231,065	59,690	4	429,884	121,095	4
Federal Territory	367,491	95,941	4	289,561	69,014	4	657,052	164,955	4
Negeri Sembilan	64,023	20,355	3	74,472	26,416	3	138,495	46,771	3
Melaka	62,957	16,989	4	57,209	14,280	4	120,166	31,269	4
Johor	196,856	59,212	3	207,960	62,116	3	404,816	121,328	3
Pahang	85,676	23,294	4	169,304	49,320	3	254,980	72,614	4
Terengganu	36,920	12,226	3	120,162	41,001	3	157,082	53,227	3
Kelantan	68,885	18,785	4	108,157	25,233	4	177,042	44,018	4
Peninsular Malaysia	1,497,896	444,426	3	2,054,415	577,660	4	3,552,311	1,022,086	3
Sabah	214,287	54,783	4	169,280	51,781	3	383,567	106,564	4
Sarawak	137,774	32,291	4	149,643	37,381	4	287,417	69,672	4
Institution	21,797	6,759	3	3,719	1,433	3	25,516	8,192	3
MALAYSIA	1,871,754	538,259	3	2,377,057	668,255	4	4,248,811	1,206,514	4

Source: Medical Development Division, MOH

TABLE 27
Distribution of Manpower for Malaysian's Rehabilitation Services, 2006

Category	MOH		Welfare	University	NGOs	Private
	Hospitals	Health Clinics	Centres	Hospitals		
Rehabilitation Medicine Specialists	13	-	-	6	-	3
Physio Therapists	405	-	-	-	-	218
Occupational Therapists	328	10	5	55	8	16
Speech Therapists	25	-	-	38	-	20
Audiologists	60	-	-	60		

Source: Medical Development Division, MOH

AUDIOLOGY SERVICES

Audiology is the main field of hearing conservation and it is currently expanding in Malaysia due to increase awareness among the population. It was established in National University Malaysia in 1994, and was followed by MOH hospitals in 2001. The main functions of Audiology are the hearing conservation, hearing amplification, assessment, intervention, auditory training and rehabilitation of the hearing problems. With at least one or two Audiologists being posted to the state hospitals, the Audiology Services are available throughout the country. The officers carried out the main clinic at the state hospitals and regular visits at the district hospitals in their respective states. The three main activities carried out in Audiology Services were Audiology Assessment, Screening for high risk babies and Auditory Amplification.

ANCILLARY SERVICE

Dietetics and Catering Services

In 2006, Catering and Dietetics Department changed its name to Dietetics and Catering Department, signifying the evolving responsibilities of dietetics as well as a significant increase in the number of Dietetics Officers.

Among other achievements and contributions of the services were the development of Hospital Diet Manual 2006 as standard and guidelines in MOH hospitals in Malaysia. This service had been carried out in 4 hospitals, namely Sultan Ismail Hospital in Johor Bharu, Serdang Hospital, Ampang Hospital and Sungai Buloh Hospital in Selangor by outsourcing their catering services.

The total amount of diets supplied to various MOH hospitals in 2006 was 12,432,724, out of which 559,870 diets were supplied to the First Class Ward, 787,444 for the Second Class Ward, 10,147,946 for the Third Class Wards and the remaining 937,464 formed the Paediatrics' Diet. There were 25% of the total diets comprised of therapeutic diet. A total of 120,702 patients were referred to Dietetics Officers in all MOH hospitals and out of these 70,360 were inpatients while 50,342 were outpatients.

Efforts were also made to put greater emphasis on specific dietetics requirements in Medical Nutritional therapy provided to the patients. There is also the need for a continuous training of Dietetics Officers specializing in Clinical dietetics. The scope of nutritional support was also expanded with special attention in improving the Enteral Tube Feeding and care in ICU. Nutrition Support Course has been conducted to train Dietetics Officer while studies were conducted for Enteral Feeding, NIA that involved updating the existing Protocols as well as formulation of the dietary standard for critical care. Several trainings were conducted for all categories of staff in dietetics and catering.

Dietetics services were also further expanded towards clinical specialization. For the catering service, efforts were made to further improve the quality of the diet served and at the same time supervising and monitoring the catering services that are being outsourced.

MEDICAL RESOURCE & EQUIPMENT

The Medical Resource Unit is responsible for managing the budget as well as to provide technical input for medical equipment procured for MOH's hospitals, which was approved under the Annual Operational Budget.

Medical Budget

i. Expenditure Target (ET)

In 2006, the Medical Program was allocated a total amount (ET) of RM5,015,477,386, an increase of 8% as compared to 2005. This amount was 64% of the total amount allocated to the Ministry of Health. A total of 107.48% was spent, of which 55.82% of the total consist of services and provision expenditure. Expenditure for emolument amounted to 43.63%.

ii. New Policies (*Dasar Baru*)

A total of 70 "New Policies" were approved for the year 2006 which involved RM114.139 million (OA 20000). The total allocation for assets under 'One-Off' was RM33.62 million.

MEDICAL CARE QUALITY SECTION

The goal for Quality of the Patient Care Services QAP is "Internalising and Institutionalising Quality" in the Medical Programme so that the clients and patients will receive high quality healthcare as well as attain improved health status. A number of approaches to Quality Improvement are used namely:

- Indicator Approach
 - National Indicator Approach (NIA)
 - Hospital-specific approach (HSA)
 - Key Performance Indicator (KPI)
- Organisational Audit of Quality Management Systems
 - Hospital Accreditation
 - MS ISO 9000
- Clinical Audit
 - Perioperative Mortality Review (POMR)
 - Adult ICU Audit
 - Nursing Audit
- Clinical Risk Management
 - Patient Safety Council
 - Incident Reporting
 - Hospital Infection Control
 - Occupational Safety and Health
- Interpersonal Quality
 - Patient Satisfaction Surveys
 - Patient Centred Services
 - Complaints Management

ACTIVITIES AND ACHIEVEMENTS

National Indicator Approach (N.I.A)

Since 2001, performances for 53 indicators were monitored nationally. Efforts to review these indicators started in 2005. During the National Meeting in July 2006, a total of 57 Indicators were proposed for implementation beginning July 2007. A Centralised National Data Collection and Analysis Software (electronic NIA/eNIA) is planned as a pilot project in 2007.

Hospital-Specific Approach (H.S.A.)

The HSA training for trainers courses was one of the main activities carried out and in 2006, the second phase of the training was done in Perak involving 75 participants.

Key Performance Indicators (KPI)

Key Performance Indicators (KPI) was initiated in 2005. Through several meetings and workshops, KPI was developed for the State Health Department (Medical), Hospitals and 16 clinical departments. These indicators will be reviewed by the National Committee before its implementation in mid-2007.

Hospital Accreditation

As of December 2006, a total of 60 out of 128 hospitals (46.9%) and 1 out of 5 institutions in MOH have achieved full accreditation status awarded by the Malaysian Society of Quality in Health.

MS ISO Certification

As at the end of 2006, a total of 57 hospitals and 4 institutions in MOH had obtained the MS ISO 9001:2000 certification. An Internal Audit for Medical Programme in MOH was carried out in May 2006 and this Programme is expected to achieve MS ISO Certification by end of 2007.

Peri-operative Mortality Review (POMR)

There were 37 MOH hospitals, 3 university hospitals and 1 military hospital participated in this activity. The review involved the clinical audit for Pediatric Surgery, Obstetric and Gynecology, Colorectal Surgery, Polytrauma & Neurotrauma and Anesthetic Services. In 2006, 4 POMR Committee meetings at national level were held and 404 cases of peri-operative mortality were discussed. A total of 3 POMR Bulletins were published and distributed in 2006. In addition, ongoing audits on morbidity and mortality reviews were implemented for 9 critical areas since April 2006 which include Peri-operative Blood Transfusion, Operative EDH in mild and moderate category, Traumatic lumbar spine surgery, Oesophageal Atresia in pediatric cases, endoscopic retrograde cholangiopancreatogram (ERCP), Laproscopic Cholecystectomy, Oesophagectomy, Abdominal Hysterectomy, and CABG & Thoracic Aneurysm.

The Second POMR Conference was held in September 2006 involving 300 healthcare professionals and staff. Issues related to Surgical and Anesthetic services were highlighted and discussed.

National Audit on Adult Intensive Care Units (NAICU)

The NAICU began in 2002 with participation of 14 state hospitals. In 2006, another 8 hospitals participated making a total of 30 participating government hospitals. The 4th Annual Report was published in December 2006. The report highlighted the need to increase the number of ICU beds to address the acute shortage and to this end a total of RM50 million has been allocated under "*Dasar Baru*".

Patient Safety

Patient Safety Council of Malaysia

The Patient Safety Council of Malaysia was officially established on 23 January 2003 following a cabinet directive. To assist the council, 4 Technical Advisory Committees were formed:

- Medical Care Safety Technical Advisory Committee
- Medication Safety Technical Advisory Committee
- Transfusion Safety Advisory Committee
- Consumer Education & Continuing Education Technical Advisory Committee

A set of 12 strategies to improve patient safety were presented to the Council in 2004. These strategies were revised by a WHO Consultant in 2005 and a final draft on Patient Safety Strategies for Malaysia will be produced in 2007.

World Alliance for Patient Safety & Global Patient Safety Challenge 2005/06

On May 15th 2006, The Honourable Minister of Health Malaysia signed a Malaysia's pledge to support the WHO'S Global Patient Safety Challenge which among others emphasized on the delivery of safe health care through effective hand hygiene as well as other elements of the WHO Alliance for Patient Safety such as "Solutions for Patient Safety" Research.

Incident Reporting

The reporting of "incidents" is an important component of clinical risk management in view of its contribution to patient safety. A total of 30 incidents comprising 16 clinical and 14 non-clinical were identified and reportable to the MOH Secretariat.

Hospital Infection Control

The Infection Control Unit was established in early 2002 with the objective of systemically monitoring and enhancing hospital-acquired infection activities and developing policy related to infection control. In early 2003, the Infection Control Committee of the Medical Programme adapted the Universiti Kebangsaan Malaysia Hospital (HUKM) "Policies and Procedures for the Infection Control Programme" to produce the National Policies and Procedures on Infection Control which to be reviewed every 2 years.

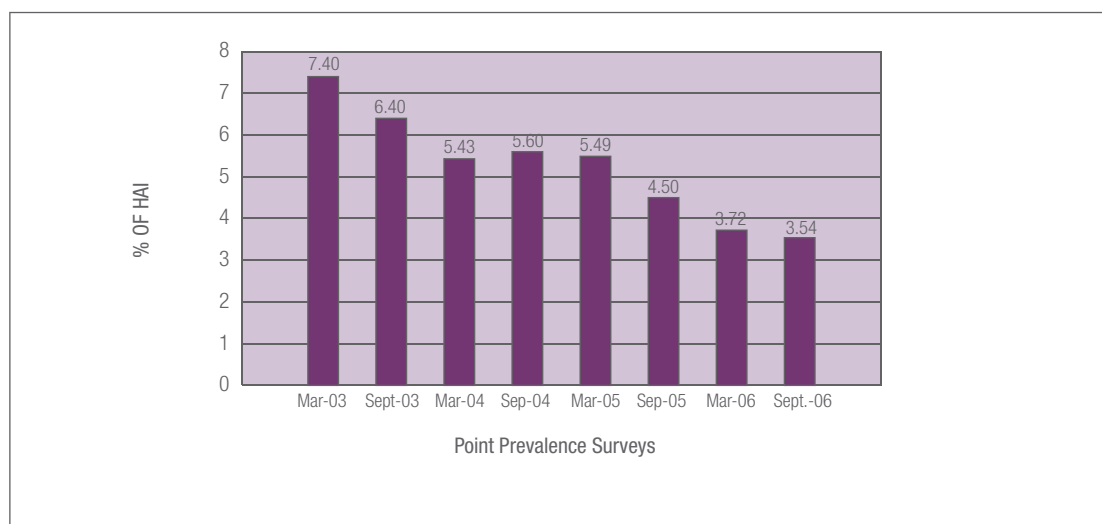
Review of Guidelines

Policy and Guidelines for Disinfection and Sterilization was reviewed in 2006 and the draft will be completed in 2007. Meanwhile, two (2) special committees were established to review the National Antibiotic Guidelines (1994) and National Disinfectant Guidelines respectively. The second committee was established to review the number of disinfectants that are currently in the market which are to be used in Government institutions. Both committees were coordinated by Medical Development Division and Pharmaceutical Division. Both guidelines are expected to complete in 2007.

Point Prevalence Survey

Since March 2003, the point prevalence study was conducted in 14 State hospitals in MOH as well as 3 University hospitals in March and September. Figure 2 demonstrates the rates for each point prevalence survey conducted.

FIGURE 2
Average of Hospital Acquired Infections (HAI), 2003- 2006



Source: Medical Development Division, MOH

Pneumonia was the most common type of infection in the early point prevalence surveys, which the National Audit on Intensive Care Unit (NAICU) has successfully controlled. Since March 2005 to September 2006, the Surgical Site Infections was the most common point prevalence surveys. Urinary tract infection was the least common HAIs type of infection in all the point prevalence surveys.

Methicillin Resistant Staphalococcus Aureus (MRSA) Surveillance

MRSA Surveillance is conducted monthly in 14 State hospitals as well as 3 University hospitals. MRSA for the period of 2003-2006 had shown a downward trend from 0.35% in 2003 to 0.25% in 2006.

Extended Spectrum Beta Lactamase (ESBL) Klebsiella Surveillance

In 2006, all hospitals recorded the ESBL annual mean rates below 0.5%. The ESBL annual mean rates showed a declining trend from 0.22% in 2003 to 0.12% in 2006.

National Hand Hygiene Campaign

“Clean Care Is Safer Care” Campaign focused on improving hand hygiene standards in healthcare and implementing successful interventions in accordance with MOH commitments to the Global Patient Safety Challenge 2005-2006. A total of 16 MOH hospitals and 3 University hospitals participated in this campaign involving 2,318 healthcare professionals.

MEDICAL PROFESSIONAL DEVELOPMENT SECTION

i. Specialists and Medical Officer

Gazettement & Credentialing of Clinical Specialists

In 2006, a total of 324 specialists were gazetted and credentialed. The largest number was from the discipline of Internal Medicine, followed by Surgery and Obstetrics & Gynaecology (Table 28). The use of a logbook, which was introduced in 2005 has facilitated the clinical specialists gazettment process. Special Medical Committee meeting that was held 3 times a year and monthly meetings were scheduled to expedite the process.

TABLE 28
Number of Specialists Gazetted Based On Specialty in 2005 and 2006

Specialty	2005*	2006
Internal Medicine	52	46
Pediatric	41	32
Psychiatric	12	7
Orthopedic	27	22
Pathology	6	21
Ophthalmology	31	16
Anesthesiology	36	29
ORL	3	19
General Surgery	37	43
O&G	41	39
Radiology	13	21
Radiotherapy & Oncology	2	-
Nephrology	11	2
Plastic Surgery	-	4
Urology	-	2
Gastroenterology	1	1
Cardiothoracic Surgery	-	2
Neurology	1	-
Cardiology	4	3
Emergency Medicine	5	5
Respiratory Medicine	-	5
Sport Medicine	1	-
Pediatric Surgery	1	-
Dermatology	3	-
Neurosurgery	6	3
Rehabilitation	4	1
Rheumatology	3	1
TOTAL	341	324

Source: Medical Development Division, MOH

Fellowship Training

Applications to join fellowship training were increasing every year. In 2006, there were 290 specialists who underwent fellowship training, an increase of 16% as compared to 2005. Currently, there are 70 subspecialties being offered. The most popular subspecialty is gastroenterology, followed by cardiology, urology and nephrology.

Specialists Requirement

In 2006, there were 2,191 specialists from various specialty including 261 specialists who were on contract basis in MOH. Even though there was an increase of 12.7% in the number of specialists, it still did not meet the need of the country.

Engagement of Private Practitioners

Private practitioners continued to be employed on a sessional or honorary basis since there was a need for the provision of certain specialties in some of the MOH hospitals. There were only 18 applicants in 2006 as compared to 29 in 2005.

Continuos Medical Education (CME)/Continuos Profession Development (CPD)

This Section coordinates sponsorship and selection of candidates under Medical Program including staffs from hospitals, to attend courses/ workshops and seminars. In 2006, a total of 115 courses were conducted involving 3,296 participants with total expenditure of RM1,082,683.50.

TABLE 29
CME activities for 2005 and 2006

Year	Number of CME	Participants
2005	124	3,667
2006	115	3,296
TOTAL	239	6,963

Source: Medical Development Division, MOH

MOH was given an allocation of training budget under the 9th Malaysia Plan for human resource development. A sum of RM987,016.00 was distributed to all states to sponsor the officers to attend courses/workshops/seminars. A total of 8,259 officers were sponsored to attend 274 courses in 2006.

ii. Allied Health Professional Development

Among the activities and achievements in 2006 were:

Credentialing & Privileging

In 2006, the Medical Development Division had introduced the pilot implementation of credentialing and privileging system for nurses and medical assistants working in critical care/specialized areas (intensive care, peri-operative care, emergency care and ophthalmology). A Director General's Circular Bil. 3/2006 dated 20th June 2006 on 'Guidelines For Credentialing & Privileging of Nurses And Allied Health Personnel in the Ministry of Health Malaysia' was circulated to all State Health Departments and hospitals for smoother implementation of the activities.

Foreign AHPs Employed by the Private Hospitals/Institutions

The Ministry of Health (MOH) acknowledges the shortage of certain categories of allied health professionals in the health services (government or private). MOH had identified certain categories of foreign allied health professionals who can be employed by the private hospitals/institutions. In 2006, the Unit processed and obtained approval for 44 applications from foreign allied health professionals (excluding nurses) to work with the private hospitals.

Engagement of Private Allied Health Professionals on Sessional Basis

The MOH also acknowledges the need of certain categories of allied health professionals to be employed on sessional basis in the MOH hospitals such as clinical psychologists, orthoptists, embryologists and etc.

The 6th Combined Scientific Meeting of Allied Health Professionals

The Allied Health Unit has been the organizer for the 'Combined Scientific Meeting of Allied Health Professionals' since 1996. The '6th Combined Scientific Meeting of Allied Health Professionals' was held on 18th -20th September 2006 with a theme of 'Human Capital Development – Meeting Health Care Needs'. More than 300 participants from various categories of AHPs participated in the meeting.

Training For Health Care Assistants (Health Attendants) In MOH

The training of '*Latihan Peningkatan Pembantu Perawatan Kesihatan*' were divided into 3 levels. Level 1 & 2 were conducted at the state level, while level 3 (for health care assistants working in operating theatre, physiotherapy unit, CSSU and forensic) was conducted centrally by this Unit since 2002. As of December 2006, a total of 22,801 certificates were issued to those who have completed the theory and practical training of Level 1 (11,642), Level 2 (10,319) and Level 3 (840).

Collaboration with Higher Centres of Learning

As of December 2006, a total of 38 institutions had the approval to use the MOH hospitals for the practical training of nursing and allied health sciences programmes. There were 13 institutions had signed the Memorandum of Agreement/Understanding (MOU/MOA) with the MOH in 2006.

HEALTH TECHNOLOGY ASSESSMENT SECTION

The function of the Health Technology Assessment (HTA) Unit includes providing input for policy making on adoption or use of technology, disseminating HTA information to healthcare providers, providing HTA expertise to healthcare facilities, advising on standards and norms, acting as a clearing house for HTA, coordinating the formulation and implementation of evidence-based clinical practice guidelines.

The core activities of the HTA Unit include conducting HTA at the national as well as at hospital level, technology reviews and developing evidence-based clinical practice guidelines. Other activities include production of HTA newsletter; training activities for clinical specialists and other personnel from health facilities in MOH, coordinating research activities for the Medical Program of MOH, networking at regional & international levels, and publication of Health Technology Assessment reports, evidence-based Clinical Practice Guidelines and Technology Review reports. Table 30 shows the overall performance of this Section in 2006.

TABLE 30
Activities and Achievements of Health Technology Assessment Section, 2006

Activity	Issues Started	Previous Years Issues	Number (%) of Completed Issues
Health Technology Assessment Report	5	2	1(20.0)
Clinical Practice Guideline	7	18	4(28.0)
Technology review	38	-	34(89.5)
Training	6	-	5(88.3)
HTA Newsletter	1	-	1(100.00)

Source: Medical Development Division, MOH

An oral presentation were presented at the "9th Scientific Meeting of the National Institute of Health" by the Division's representative in year 2006. The Division had given technical advice on the establishment of Medical Device Regulations, which coordinated by the Engineering Services Division, MOH. Meanwhile, the Division had also contributed its expertise at the international level through collaborative research with WHO through Evidence Informed Policy-making Network (EVIPNET).

TELEHEALTH

INTRODUCTION

The Government of Malaysia launched the Telemedicine Blueprint in 1997 as an initiative to lead the country's healthcare system into the information age. The Telehealth project was launched as one of the seven flagship applications under the Multimedia Super Corridor (MSC). The Telehealth Unit which was initially setup as a project based unit (to implement the telemedicine flagship projects), in the Ministry of Health in the year 2000, has been upgraded to a division in the 9th Malaysia Plan (9MP). The unit is in the process of formalizing its new status with the Civil Service Department (Jabatan Perkhidmatan Awam). The Telehealth projects were organized as follows:

- Teleconsultation
- Health Online
- Continuous Professional Development
- Lifetime Health Record
- Call Centre

ACTIVITIES AND ACHIEVEMENTS

Teleconsultation

The Teleconsultation project was reactivated in June 2005. A series of user acceptance tests (UAT) was conducted at all 38 participating hospitals in May 2006. These hospitals were certified to have successfully reactivated the Teleconsultation service from the June 2006.

The Teleconsultation (TC) service currently focuses on consultations between the caregiver at the district hospital and a consultant for a given specialty at the state hospital. This tele-consultation occurs through the Virtual Private Network (VPN) provided for the TC Project. This VPN enables all text files, audio files and images of the patient to be shared between the two communicating doctors in a fast and secure environment. Based on the consultation, the patient could remain and be managed by the doctor at the district hospital with the advice of the state consultant, or be referred to the state hospital as needed for appropriate care.

There are 5 disciplines actively involved in Teleconsultation services namely, Cardiology, Radiology, Neurosurgery, Dermatology and Emergency & Traumatology. There were 665 cases transmitted using the TC Network between June to December 2006. The most active disciplines were Radiology (158) and Neurosurgery (210), while Dermatology (94) and Cardiology (91) were moderately active. The Radiology and Neurosurgery TC services accounted for 60% of cases transferred via the TC Network.

Health Online

Health Online provides a platform for the dissemination of health information and education for the public through the Internet. The Portal has been operational since November 2005 and was officially launched during the World Health Day Celebration on 25 April 2006 by Y.A.Bhg. Datin Seri Rosmah Mansor.

The portal is supported by an Editorial Board and several Content Groups. A panel of specialists provides advice through e-mail. The Health Online Portal provides the following services:

- Health Topics
- Health News / Articles
- Health Service Directory
- Health Events
- Health Alert
- Discussion Forum
- Advisory Services
- Polls/Surveys

As of December 2006, 500 topics have been hosted and the portal has received 200,000 hits. Awareness campaigns have been conducted through the media, expositions and meetings with the public at hospitals & clinics. The portal has also been accessed through linkages from other health related sites.

Continuous Professional Development (CPD)

The objective of this project is to assist the CPD programme in MOH by making available CME activities and materials to improve the knowledge and skills of all health staff. Through this online programme (Virtual Library and Modular Distance Learning), all health staff will have equal access and opportunity to update CPD activities and materials. The CPD project comprises of 3 components:

i. Online Monitoring of CPD (OMCPD)

This is a centralized MOH CPD database for healthcare providers to enable planning, recording, tracking and verification of CPD activities to complement PTK for career development. The system will create the following:

- CPD logbook
- CPD credit points
- Calendar of events
- Competency assessment

The project has been awarded to vendor on December 2006.

ii. Virtual Library

- Knowledge database of medical and health subjects
- Subscribed e-journals and e-books
- Libraries network linkage within MOH

The tender document has been completed and approval from MAMPU was obtained on 11 December 2006

iii. Modular Distance Learning (MDL)

- Topics of selected medical and health related subjects to be accessible online.
- Interactive sessions of learning.

The pilot project was implemented in Hospital Putrajaya and Hospital Selayang between September to December 2006.

Lifetime Health Record (LHR)

The Lifetime Health Record (LHR) Project is the precursor for the implementation of the Lifetime Health Plan (LHP). The ultimate objective of the LHP project is to design develop and implement a personalized proactive and prospective lifetime health plan to achieve a continuum of care in order to keep the individual in the highest possible state of health.

LHR services refer to the services provided to facilitate integration amongst health care providers, to support interaction with the individual and to promote individual participation towards seamless care. The objectives of LHR are:

- To provide an individual's health record in a timely and appropriate manner to ensure continuity of care
- To enable sharing of health information among healthcare providers to support life long wellness and management of illness to an individual
- To provide information for the creation of Personalised Lifetime Health Plan (PLHP)
- To enable data capture to support specific outcome monitoring

IN 2006, project planning was undertaken through a consultancy service which defined the LHR business and technology frameworks and the development of the implementation plan for the project. The system specifications were defined, and the tender document for the development of the system was prepared.

Call Centre

The Telehealth Call Centre will provide an avenue for the public to seek health advice through the telephone. The Centre will be manned by Call Agents who are trained to respond to enquiries from the public.

A working paper detailing the requirement to operate the call centre was presented to the MOH ICT Steering Committee.

WAY FORWARD

Teleconsultation

An evaluation of the effectiveness of the reactivation of TC services will be carried out in 2007. Other issues like increasing bandwidth connectivity and enabling the video conferencing module of the TC product to be fully functional will be addressed. There is a plan to expand TC services to include more disciplines and as many as 20 additional hospitals.

Health Online

Other interactive services shall be added to Health Online Portal such as Health Risk Assessment (HRA). This feature allows individuals to conduct self-assessment on their state of health and thus take proactive steps towards wellness. The Portal will eventually provide an access link to personal health data and plans generated through the Lifetime Health Record (LHR) system.

Continuous Professional Development

i. Online Monitoring of CPD

The system is expected to go live in June 2007. The OMCPD will be integrated with PTK for career development.

ii. Virtual Library

VL system will function as a “one-stop knowledge centre” for the medical practitioner.

iii. Modular Distance Learning (MDL)

The national roll-out plan for this programme is being consolidated.

Lifetime Health Record (LHR)

The Phase 1 of the project will include all existing hospitals and clinics with ICT systems and three healthcare facilities in the North Seberang Prai district area. The national roll-out will follow in phases after an evaluation of the Phase 1 project.

Call Centre

Development of the necessary reference documents to guide Call Agents in responding to public enquiries will be initiated.

CONCLUSION

The Telehealth Division will strive to achieve successful implementation of its projects through teamwork and close collaboration with the respective program owners and end users, as well as effective project management based on the experiences and lessons learnt from the previous implementations.

NURSING

INTRODUCTION

The Nursing Division was reinstated in the Ministry of Health (MOH) on 01 Jun 2006 and consists of 2 units, namely Nursing Board Malaysia and Midwifery Board Malaysia. As the regulatory bodies cited in Nurses Act 1950 Regulation 1985 and Midwifery Act 1966 Revised (1990), the Division is responsible for the training, registration and discipline of nurses and midwives and nursing practices in the country.

ACTIVITIES AND ACHIEVEMENTS

Activities conducted by the Division are in accordance with the Nurses Act 1950 and the Midwives Act 1966 which includes:

Registration of all categories of nurses

Graduates from the various categories of Nursing Programmes including General Nursing, Assistant Nurses, Community Nurses, Public Health Nurses and Mental Health Nursing, Midwives Division I & III are registered with the Nursing and Midwifery Board as required in the Nursing Act 1950 and Midwifery Act 1966. In 2006, a total of 3,543 Nurses, 198 Assistant Nurses, 1,126 Community Nurses, 76 Public Health Nurses and 7 Mental Health Nurses were registered by the Nursing Board.

Issuance of Annual Practising Certificate (APC)

The APC with yearly renewal was issued to different categories of nurses practising in the public as well as private sector. A total of 59,665 APC were issued to 43,782 nurses in the public sector and 15,883 nurses in the private sector. The total APC issued in 2006 increased by 17.8% as compared with 50,663 in 2005.

Examinations for all nursing programmes

Another important component of the activities involves preparation for the various nursing examinations which include setting questions, preparation of question papers, marking answer papers, announcing examination results and issuing training certificates.

In 2006, the Division conducted examinations for the Community Nurses 2½ training programme and Midwifery Division 1. There were 1,412 candidates sat for the Community Nurses examination in 2006, of which 1,392 or 98.6% passed as compared to 97.8% in 2005. Meanwhile, a total of 832 sat for the Midwifery Division 1 examination, of which 783 (94.1%) passed while 49 (5.9%) failed. The percentage of candidates who passed in 2006 had increased as compared to 75.5% in 2005.

Approval and Accreditation of nursing curriculum

The Nursing Board is also responsible for accreditation and approval of the curriculum for all Nursing Programmes. Supervision, monitoring and evaluation of all Nursing Colleges and Institutes of Higher Education in the public and private sectors (IPTA and IPTS) as well as all designated health/hospital facilities used for the training of nurses were carried out to ensure quality nursing services.

In 2006, a total of 3,648 candidates from Basic Diploma Program sat for the registration examination of which 3,466 (95.0%) passed and 182 (5.0%) failed. Meanwhile, the percentage of candidates from IPTS who passed the Assistant Nurse examination in 2006 had increased to 100% as compared to only 97.8% in 2005.

Issuance of Temporary Practising Certificate (TPC)

Other activities include processing applications for registration of local nurses trained overseas, and issuance and renewal of temporary practicing certificates (TPC) for foreign nurses working in Malaysia.

In 2006, a total of 813 TPC were issued to nurses from 22 countries of which 342 were new and 471 renewals. The total had increased by 68% as compared to 484 issued in 2005. There were 54 foreign nurses from Indonesia (1), Sudan (10), Brunei (41), Japan (1) and Nigeria (1) involved in attachment programme in Malaysia in 2006.

Monitoring and supervision of nursing services

The Division is also responsible for the verification of training/verification of registration, confirmation of transcripts for purposes of pursuing higher education or job placements and replacement of badges, certificates lost or damaged. There were 252 confirmation of training transcripts issued in 2006 as compared to 183 in 2005. Meanwhile, the confirmation of registration, duplicate badges and statement of registration in 2006 had increased to 229 (2005:154), 105 (2005:73) and 85 (2005:63) respectively. Retention of names has increased to 1,704 in 2006 as compared to 1,032 in 2005.

The board also contributes towards nursing education with the objective to improve the skills and competencies of nurses. National or international seminars, conferences, and workshops are planned and coordinated together with the cooperation of the public and private agencies locally and abroad to ensure the excellence and quality in the development of nursing in Malaysia

WAY FORWARD

The On-line Continuous Professional Development (eCPD) will be implemented in 2007 in line with the Division mission to become a Division that portrays professionalism and excellence in its services.

CONCLUSION

As a regulatory body that controls quality of nursing services, the Nursing Division will continue to provide efficient service to all clients. The Division ensures that the nursing care given is of high quality and is managed by nurses with skills, caring attitude and caliber. This is made possible by the implementation of regulatory process and Code of Professional Conduct.

RESEARCH AND TECHNICAL SUPPORT PROGRAMME

HEALTH PLANNING & DEVELOPMENT

INTRODUCTION

The Planning and Development (P&D) activity which was first established in 1972 is one of the four activities under the Research and Technical Support Programme. This division has undergone various changes to improve its performance to support the health sector in health planning and development, including the provision of health information.

The vision of the Planning and Development Division is 'Leadership and excellence in health system planning and development for the health sector towards realizing the Vision for Health'. The mission of this Division is to create and build stakeholder partnership, to develop core expertise in health planning, health facility planning and development as well as health information management.

The Planning and Development Division has three core businesses namely:

- i) Health System Planning and Development
- ii) Health Facility Planning and Development
- iii) Health Information System Planning and Management.

The main objectives of this Division are as follows:

- To formulate, implement, monitor and evaluate the health sector plan to meet national policies and objectives.
- To plan and develop health facilities to meet changing health needs using appropriate technologies and available resources.
- To provide for an integrated and comprehensive health and health related information system for the country, that is timely and of quality, with participation from all stakeholders.

ACTIVITIES AND ACHIEVEMENTS

HEALTH SYSTEM PLANNING AND DEVELOPMENT

Implementation and Monitoring of the Ninth Malaysia Plan (9MP) (Health Sector), 2006-2010

The Ministry of Health through the Planning and Development Division had successfully formulated, finalised and documented the Health Chapter of the 9th Malaysia Plan (9MP), Country Health Plan (Book I) and Programme Health Plan (Book II) of the health sector in early 2006. With the launching of the 9MP on the 30th March 2006 by the Honourable Prime Minister, all these documents were distributed to MOH Programme Directors, State Health Directors, Institution Directors, Hospital Directors and relevant health related public and private agencies nationwide.

In order to facilitate the implementation of the 9MP (Health Sector), the Planning and Development Division, MOH conducted a series of briefings to the various levels in the Ministry namely State Health Departments, Health Institutions and Divisions on the implementation, monitoring and evaluation of the 9MP.

Each Programme and Activity of MOH had identified the indicators and targets towards achieving the thrust and goals of the 9MP as stated in Book II (Programme Health Plan). The thrust of the 9MP (Health Sector) is "towards achieving better health through consolidation of services". The goals are to prevent and reduce disease burden, to enhance healthcare delivery system, to optimize resources including human capital development, to enhance research and development, to manage crisis and disasters effectively and to strengthen the health management information system.

These indicators and targets were subsequently reviewed and refined taking into consideration input and suggestions from every Programme and Activity. The Economic Planning Unit (EPU) also identified and extracted several indicators and targets related to the prospects stated in the Health Chapter of the 9MP to be monitored on a regular basis. The progress performance of these identified indicators by EPU have been obtained for the year 2006. This Division is also in the process of analysing the performance status of the identified indicators for the year 2006 in preparation for the 9th Malaysia Plan Mid-Term Review.

National Health Policy

The Malaysian National Health Policy (MNHP) document addresses the type and general magnitude of health sector changes expected over the next 15 years (up to 2020) and the values that will guide this policy. It also defines the various roles and responsibilities of all relevant stakeholders in health. A draft MNHP taking into consideration input from the relevant stakeholders, consultant and members of MOH was circulated to all relevant Divisions in the MOH for further improvement. This revised draft has categorised MNHP into 3 main objectives, namely improving population health, national capacity building in the health sector and enhancing competitiveness of the Malaysian healthcare industry. Several workshops, dialogues and a conference involving the MOH and relevant stakeholders in health (non MOH) are planned for 2007 towards finalisation of the revised draft MNHP prior to the final presentation to the Cabinet for approval.

Health Sector Reform

Since the 8th Malaysian Plan (8MP) period (2000-2005), the Ministry of Health (MOH) and Economic Planning Unit (EPU) have intensified efforts towards the development of a proposed National Healthcare Financing Mechanism (NHFM). The need for a good healthcare financing mechanism was further emphasised in the 9th Malaysian Plan (9MP). In early 2005, the proposal to engage consultancy services for NHFM was approved by the EPU and this consultancy service was jointly funded by the United Nations Development Programme (UNDP) and the Government of Malaysia. A consortium of consultants was officially engaged in March 2006. The period of consultancy was 15 months. Three committees have been developed, namely the National Steering Committee, the Advisory Committee and the Technical Committee to ensure the smooth running of the consultancy service. As of December 2006, the consultancy project was in the interim phase.

In preparation for the NHFM, the Division also has been actively involved with other Divisions within MOH in discussions relating to the Case Mix, Private Fee Schedule, Managed Care Organization, National Health and Morbidity Survey 3 and Globalisation and Liberalisation of Health Industry.

Issues and challenges faced by the present health care delivery system indicates that there is a need for change. The preparatory works include MOH capacity building particularly in enhancing the capability of health personnel in addressing healthcare reform. Towards achieving this capacity building, the Division has obtained funds from WHO for consultancy services for 2007 to increase the knowledge of MOH personnel on the experiences and lessons learnt from healthcare reform of other countries.

HEALTH FACILITY PLANNING AND DEVELOPMENT

In the 9th Malaysia Plan (9MP), a development allocation of RM10.176 billion was approved for Ministry of Health to finance the development of 1,644 projects which include hospitals (new and upgrading), urban and rural health facilities, training facilities for health personnel, equipment and vehicles, ICT, health offices, staff facilities (quarters and hostels), health promotion activities, research and development and capacity building (Table 1). In 2006, a total of 27 projects including new and carry forward projects from the 8th Malaysia Plan (8MP) were implemented with an allocation of RM1.246 billion. As of December 2006, a sum of RM1.069 billion was spent which represented 82.49% of the total allocation (Table 2).

TABLE 1
Health Facility Project and Development Allocation for the 9th Malaysia Plan (9MP)

Project Detail	Facilities	Number of Projects	Allocation (RM'000)	Percentage (%)
001	Training	37	1,511,870	14.86
002	Public Health	654	2,204,618	21.66
003	Upgrading of Hospital Facilities	316	2,086,826	20.51
004	New Hospitals	41	1,521,930	14.96
005	Research & Development (R&D)	11	127,800	1.26
006	Upgrading and Maintenance	1	300,000	2.95
007	Land Acquisition & Maintenance	1	130,000	1.28
008	ICT	12	547,560	5.38
009	Staff Facilities/quarters	232	1,090,941	10.72
010	Promotion	2	50,000	0.49
011	Equipment & Vehicles	337	604,455	5.94
Total		1,644	10,176,000	100.00

Source: Planning and Development Division, MOH

TABLE 2
Development Allocation and Expenditure for Health Facilities Project, 2006

Project Detail	Facilities	Number of Projects	Allocation (RM)	Expenditure (RM)	Percentage (%)
001	Training	15	173,099,980	166,203,002	96.02
002	Public Health	156	133,200,010	96,773,291	72.65
003	Upgrading of Hospital Facilities	54	346,200,000	320,714,272	92.64
004	Hospitals	23	397,500,000	390,223,971	98.17
005	Research & Development (R&D)	3	40,000,010	36,954,675	92.39
006	Upgrading and Maintenance	1	146,765,810	142,149,369	96.85
007	Land Acquisition & Maintenance	1	60,000,010	56,142,107	93.57
008	ICT	11	0	0	0
009	Staff facilities	58	0	0	0
010	Promotion	2	0	0	0
011	Equipment & Vehicles	93	0	0	0
Total		417	1,296,765,820	1,069,701,383	82.49

Source: Planning and Development Division, MOH

As 2006 represented the first year of the implementation of the 9MP, therefore most of the activities involved were planning which include identification of project scope, formulation of brief requirement, approval from relevant authorities and design development. Standard Plans for health clinics were reviewed to meet the current service needs, such as the emerging or re-emerging of infectious diseases demands and progressive upgrading of the health service programme. Apart from planning, rigorous monitoring of existing projects under construction were also carried out to ensure conformance to projects' scope and standards. As of December 2006, a total of 23 projects listed under 9MP have been completed. Among those completed projects were 3 hospitals (Hospital Sungai Petani, Hospital Pitas and Hospital Cameron Highlands), and clinics.

As for capacity building in the aspect of project planning, the Division conducted various courses, workshops and conferences in order to improve the knowledge and skills of staff involved in facility planning and development which include personnel from State Health Department, hospitals and clinics. The courses conducted include project monitoring system, land acquisition/procurement and hospital planning and design.

HEALTH INFORMATION SYSTEM PLANNING AND MANAGEMENT

Health Information Management System (HIMS) is crucial as managers at different management levels require information in order to monitor and assess the performance and achievement of the existing programmes, as well as the evaluation of resource allocation.

HIMS Blueprint

In 2006, Information and Documentation System Unit (IDS) had developed HIMS Blueprint, with the theme "Towards Excellence in Health Information Management". The purpose of this blueprint is:

- a. To outline the policies, strategies, organization, and action plan for Health Information Management for the health sector in the country.
- b. As reference document and forms the basis for planning and implementation of programmes and activities related to health information management in MOH and other related agencies, NGOs and private sector.
- c. To provide a platform for various stakeholders involved in health and health related information to share a common vision and goals.

The deliverables identified for implementation in the HIMS Blueprint include the following:-

- i. The establishment of a Health Informatics Center which will be responsible for all health and health related information in the country.
- ii. The development of an electronic reporting system (HMIS E-reporting) i.e. an electronic reporting system for the collection, collation and analysis of health information in MOH facilities. A web-based reporting system is being developed through which all health and health related data transactions from MOH facilities, non-MOH facilities and private sector are accurate and can be obtained fast.
- iii. The establishment of a National Health Data Warehouse (NHDW) in MOH to manage the health and health related information for population health projections, predictions and analysis. The implementation of an electronic reporting system is essential prior to the design of the NHDW.

Health Informatics Centre

The establishment of a Health Informatics Center was approved by "Jawatankuasa Dasar Perancangan Kementerian Kesihatan (JDPKK)" and is currently waiting for the creation of new posts. This center will be responsible for strategic planning of National Health information, health informatics standards development and maintenance, as well as operations and documentation.

HIMS E-Reporting

All HMIS sub-systems forms were reviewed prior to the design of the HIMS e-reporting project. An additional sub-system of data collection for private facilities have been developed. The HIMS e-reporting project commenced in April 2006 will be fully implemented in July 2007.

Publication of reports

Publication of several reports and annual publications in 2006:

- a. MOH Annual Reports, 2005
- b. Indicators for Monitoring and Evaluation for Strategy for Health For All, 2005
- c. Health Facts, 2005
- d. HMIS report by sub systems, 2005
- e. My Health

Training and Conference

- i. In compliance with the WHO requirement on reporting of diseases using International Statistical Classification of Diseases, Tenth Revision (ICD-10), the Information and Documentation System Unit (IDS) conducted several training sessions for Medical Record Officers and Assistant Medical Record Officers (AMRO) throughout the country. IDS Unit in collaboration with the Medical Practice Division MOH and Association of Private Hospitals Malaysia also conducted a training session for the private sector.
- ii. A Health Informatics conference was conducted to increase awareness and knowledge on the health informatics and application of computer technology to improve patient care.

Development of Standards

Standardization of health data and health information is vital especially in sharing of information across health care settings both locally and internationally. Various technical working groups have been formed to develop the standards for the various disciplines and activities. The IDS Unit as the custodian of health informatics standards continued to participate in the development, monitoring and updating the standards. Standards for Facility Codes, National Health Data Dictionary and Lifetime Health Record were among the standards and datasets that have been developed. This project was done in collaboration with Telehealth Division MOH, universities and other related industries.

Malaysia National Health Accounts

The Malaysia National Health Accounts Unit was established in 2005 with the main objective of providing the Malaysian government, on an annual basis, with information on total health expenditures for Malaysia using a framework that is internationally accepted. Following the completion of the MNHA Project and upon recommendation by the Steering Committee, Malaysia is currently using

the framework that is adapted from the Organization of Economics Cooperation and Development (OECD) countries.

The first report on the national health expenditures for the years 1997 – 2002 was published in 2006 and has been distributed to the main stakeholders of health system in Malaysia particularly the main data sources for MNHA. A policy dialogue was held in December 2006 with all the main stakeholders

WAY FORWARD

Among the challenges that the Planning & Development Division will be facing in in the 9th Malaysia Plan (9MP) period (2006-2010) include the development of the National Health Policy, review and evaluation of the health plan, preparatory works for the implementation of the National Health Financing Mechanism and Restructuring of MOH Healthcare Delivery System, enhancing the management of Health Information System, establishment of Health Informatics Centre, and planning and implementation of new healthcare facilities including the National Cancer Institute, Women's and Children Hospital and others.

To facilitate project implementation, the Ministry of Finance has issued a circular allowing the MOH to implement projects that cost less than RM 5 million, while the remainder of projects will still be handled by JKR. With the issuance of the circular, it will to a certain extent expedite the implementation of projects under the 9th Malaysia Plan.

To further strengthen monitoring of projects as instructed, various committees have been set up, namely Jawatankuasa Tindakan Pembangunan, Jawatankuasa Pengurusan dan Pemantauan Tanah, and Jawatankuasa Pelaksanaan Projek Pembangunan. All these committees are chaired by the Secretary General of Health.

For the following year, facility development activities will also focus on evaluation of the impact and outcome of a newly completed project as required by *Surat Pekeliling Am Bil. 3 Tahun 2005*. Post Occupancy Evaluation activities of selected completed projects are also planned to study the effectiveness of planning and facility utilization and efficiency of design to serve as input for subsequent planning.

CONCLUSION

The Planning and Development Division of the MOH will continue to support all programmes and activities within the Ministry and also other sectors, so as to steer the country towards achieving the best in all health related endeavors. This Division will also continue to play an important role in ensuring that MOH activities are geared towards achieving national objectives and Vision 2020.

ENGINEERING SERVICES

INTRODUCTION

The Engineering Services Division consists of 4 main sections, namely Environmental Health Engineering, Healthcare Facility Engineering, Radiation Health and Safety and Hospital Support Services Regulatory.

The objectives of the Division are:-

- Establish and implement suitable programmes to protect public health;
- Ensure that the National Drinking Water Quality Surveillance Programme is implemented effectively following the guidelines as to safe-guard the health of the consumer;
- Ensure that Environmental Sanitation Programme is implemented effectively so that potable safe drinking water and sanitation are available to every household in the rural areas and are maintained satisfactorily;
- Provide quality technical services for the implementation of development projects and procurement of engineering and medical equipment;
- Coordinate and monitor the maintenance and minor works programme for Minister of Health's (MOH) buildings and facilities and provide technical advice where appropriate;
- Issues licences under the Atomic Energy Licensing Act 1984 (Act 304) for the usage of radiation apparatus radioactive materials in medicine; and
- Ensure the safe and optimum use of radiation on medicine

ACTIVITIES AND ACHIEVEMENTS

Environmental Health Engineering Section

The Environmental Health Engineering activities have 4 core programmes which include Water Supply and Environmental Sanitation Programme, National Drinking Water Quality Surveillance Program (NDWQSP), Clinical Waste Management Programme and the Environmental Health Protection Programme. These programmes are formulated and planned to meet the following goals:

- To plan, implement, monitor and coordinate preventive health programmes through the application of environmental health engineering principles and methods.
- To improve the environmental sanitation of the rural areas and reduce waterborne diseases.
- To ensure all public water supplies are safe.
- To ensure that environmental health is protected through proper management of solid, clinical and toxic waste.
- To protect public health through proper planning, design, implementation, operation and maintenance of wastewater management systems.
- To protect public health from adverse air quality and indoor environment conditions.

Water Supply and Environmental Sanitation Programme

This programme involves the construction of rural water supply systems, sanitary latrines and proper facilities for the disposal of sullage water and solid waste in rural areas. It was initiated in 1974 as an effort to reduce/control the incidence of water-borne and excreta related diseases, through the provision of water supply and sanitation facilities.

Rural Water Supply

One of the objectives of this programme is to provide adequate safe water supply to rural community. The programme incorporates simple technological principles that emphasized on simple design, construction and maintenance. The requirement for the system is to deliver sufficient quantities of water that meets the basic health and hygiene requirement at minimum cost. These systems produce untreated but wholesome water and therefore the rural people are advised to boil their drinking water. The type of systems installed throughout rural area in Malaysia are gravity-feed system, sanitary well, sanitary well with house connection and rainwater collection system.

The development of rural water supply in the water supply and rural environmental sanitation programme was planned according to 5 year Malaysia Development Plan. A total of 4,640 of various types of systems were installed in 2006. These systems provided service to 6,426 houses. The overall status of rural water supply coverage is about 95.27% that represented 1,661,322 rural houses (Table 1).

Sanitary Latrines

The construction of sanitary latrines provides the means to initiate the effort to educate rural people on the use of more comfortable and hygienic method for disposal of excreta. The most effective and cheap method for disposal of excreta in rural areas is by pour-flush latrine. Population densities, soil conditions, cultural habits, the depth of water table and the availability of water to flush the bowl are the criteria considered for the system to operate satisfactorily. The system eliminates odours, flies and generally provides a more aesthetic environment.

In 2006, MOH had constructed a total of 4,596 pour flush latrines. The coverage of sanitary latrines at the end of 2006 was 98.47%, that represented 1,717,133 of rural houses (Table 2).

Sullage and Solid waste Disposal

In the early stage of BAKAS programme, the installation of sullage and solid waste disposal were given less priority due to urgent needs for water supply and sanitary latrines. As the coverage of water supply and sanitary latrines is almost 100%, the installation of sullage and solid waste disposal has been given a higher priority. In 2006, a total of 3,437 sullage disposal systems and 3,171 solid waste disposal systems were constructed which represented a total household coverage of 59.52% (1,037,834) and 67.99% (1,185,641) respectively (Table 2).

TABLE 1
Construction Of Rural Water Supply Project By Ministry Of Health in 2006

State	Total Houses In Rural Area	Sanitary Well		Sanitary Well With House Connection		Gravity Feed System		Rainwater Collection		JKR/MOH Connection		Total		Total Houses Supplied (Cumulative)	Coverage (%)
		Nos. Built	No. Of Houses Supplied	Nos. Built	No. Of Houses Supplied	Nos. Built	No. Of Houses Supplied	Nos. Built	No. Of Houses Supplied	Nos. Built	No. Of Houses Supplied	Nos. Built	No. Of Houses Supplied		
Perlis	38,522	0	0	0	0	0	0	0	0	163	163	163	163	37,968	98.56
Kedah	179,009	12	23	0	0	0	0	0	0	555	555	567	578	173,185	96.75
P.Pinang	70,868	0	0	0	0	1	3	1	1	235	235	237	239	70,549	99.55
Perak	148,785	7	18	0	0	4	41	0	0	93	93	104	152	146,211	98.27
Selangor	99,625	0	0	0	0	1	20	0	0	0	0	1	20	99,625	100.00
N.Sembilan	65,804	3	4	0	0	2	28	0	0	80	142	85	174	65,574	99.65
Melaka	69,050	0	0	0	0	0	0	0	0	12	12	12	12	67,701	98.05
Johor	146,089	3	3	0	0	5	283	39	39	89	89	136	414	146,017	99.95
Pahang	150,880	13	34	1	7	7	183	2	2	144	144	167	370	148,798	98.62
Terengganu	131,781	4	4	0	0	0	0	0	0	332	332	336	336	124,001	94.10
Kelantan	247,545	0	0	263	378	3	82	0	0	1,652	1,652	1,918	2,112	202,496	81.80
Sarawak	192,550	0	0	0	0	22	621	480	480	3	16	505	1,117	186,487	96.85
Sabah	203,282	14	202	0	0	7	149	388	388	0	0	409	739	192,710	94.80
Malaysia	1,743,790	56	288	264	385	52	1,410	910	910	3,358	3,433	4,640	6,426	1,661,322	95.27

Source: Engineering Services Division, MOH

TABLE 2
Construction Of Latrines, Sullage and Solid Waste Disposal System By Ministry of Health in 2006

State	Total Houses In Rural Area	Latrines			Sullage			Solid Waste Disposal System		
		Nos. Built Supplied	No. of Houses (%)	Coverage	Nos. Built Supplied	No. of Houses (%)	Coverage	Nos. Built Supplied	No. of Houses (%)	Coverage
Perlis	38,522	98	38,300	99.42	79	19,568	50.80	78	22,604	58.68
Kedah	179,009	535	176,661	98.69	340	68,556	38.30	380	99,202	55.42
P.Pinang	70,868	221	70,684	99.74	300	53,178	75.04	387	63,535	89.65
Perak	148,785	366	147,519	99.15	488	77,698	52.22	488	93,464	62.82
Selangor	99,625	170	98,315	98.69	225	86,349	86.67	366	91,709	92.05
N.Sembilan	65,804	38	65,759	99.93	119	52,184	79.30	29	49,712	75.55
Melaka	69,050	41	68,451	99.13	88	47,895	69.36	64	59,888	86.73
Johor	146,089	216	145,814	99.81	400	133,515	91.39	19	136,175	93.21
Pahang	150,880	342	148,416	98.37	249	100,969	66.92	158	99,849	66.18
Terengganu	131,781	264	131,027	99.43	173	65,359	49.60	215	83,792	63.58
Kelantan	247,545	1386	244,332	98.70	254	78,719	31.80	115	126,084	50.93
Sarawak	192,550	593	189,538	98.44	681	116,165	60.33	612	110,796	57.54
Sabah	203,282	326	192,317	94.61	41	137,679	67.73	260	148,831	73.21
Malaysia	1,743,790	4,596	1,717,133	98.47	3,437	1,037,834	59.52	3,171	1,185,641	67.99

Source: Engineering Services Division, MOH

National Drinking Water Quality Surveillance Programme

The National Drinking Water Quality Surveillance Programme (NDWQSP) is designed for continual improvement of drinking water quality towards zero defects. Guidelines for the implementation of an effective and comprehensive NDWQSP were formulated with co-operation of agencies such as World Health Organization (WHO), Public Works Department (PWD), Department of Chemistry (DOC) and Department of Environment (DOE) in early 1980s. These guidelines were the foundation for the launching of the NDWQSP in 1983. However, in 2004, the guidelines were revised and compiled into a NDWQSP manual that is used nationwide.

The principal objective of NDWQSP is to raise the standards of health by ensuring the safety and acceptability of the drinking water provided to the public within the standard stipulated, thereby reducing the incidence of water-borne diseases or intoxication associated with poor quality of public water supplies through effective surveillance. This programme ensures the public health and water work personnel will be alerted in time if the quality of drinking water deteriorates. Thus, this will enable them to take preventive or remedial measures before occurrence of any major outbreak of disease or poisoning can occur.

The NDWQSP provides a mechanism towards improving drinking water quality through five key programme elements; i.e. monitoring, sanitary survey, data processing and evaluation, remedial action and institutional examination. Since the implementation of the programme, the drinking water quality in the country has generally improved and the current status of drinking water can be readily assessed.

The main activity under the NDWQSP is the monitoring activity at public water supply systems. It covers all monitoring and assessment activities at public water supply systems (urban and rural areas); i.e. routine sampling, sanitary surveys, technical audits, etc. In 2006, a total of 154,080 water samples were taken from 479 water courses which cover all states in Malaysia. 178 sanitary surveys were implemented with 23 public water treatment plants that need a follow-up action (Table 3).

Other activities include the investigation and assessment at estates, resort islands and rural areas. Most of the water supply systems in these areas are privately owned or rural public water supply systems which were provided by the Ministry of Health through the Rural Environment and Sanitary Programme (RESP). More than 514 estates all over Malaysia and 127 resort islands in Johor, Kedah, Selangor, Pahang, Terengganu, Sabah and Sarawak were investigated and assessed in 2006. The investigation activities were also carried out in several affected areas in Johor during the water crisis in 2006.

In 2006, a training on National Sanitary Survey Course for Public Water Supply System in Kundasang, Sabah was conducted specifically for NDWQSP. Some technical comments were given to more than 50 local and international manufacturers for the packaged drinking water/natural mineral water licensing in 2006.

TABLE 3
Summary of Sampling Performance for 2006, Malaysia

State	Group 1			Group 2			Group 3			Group 4			Total Number of Samples Taken
	A	B	%	A	B	%	A	B	%	A	B	%	
Perlis	675	663	98.22	131	124	94.66	50	49	98.00	22	22	100.00	119,746
P.Pinang	4,112	4,064	98.83	811	873	107.64	322	348	108.07	92	88	95.65	
Kedah	10,475	10,322	98.54	2,246	2,225	99.07	682	679	99.56	250	242	96.80	
Perak	12,409	12,037	97.00	2,658	2,507	94.32	834	787	94.36	398	385	96.73	
Selangor	12,973	12,973	100.00	3,053	2,448	80.18	896	740	82.59	243	198	81.48	
F.T. Kuala Lumpur	2,213	1,108	50.07	454	109	24.01	153	37	24.18	24	22	91.67	
Negeri Sembilan	5,913	5,377	90.94	1,320	1,188	90.00	433	412	95.15	172	151	87.79	
Melaka	3,461	2,391	69.08	844	811	96.09	247	243	98.38	55	48	87.27	
Johor	15,789	14,759	93.48	4,045	3,614	89.34	936	880	94.02	375	362	96.53	
Terengganu	6,438	6,410	99.57	1,417	1,368	96.54	382	355	92.93	120	104	86.67	
Kelantan	6,410	6,369	99.36	1,429	1,417	99.16	510	510	100.00	240	230	95.83	
Pahang	14,279	13,672	95.75	4,044	3,844	95.05	1,167	1,092	93.57	641	586	91.42	
F.T. Putrajaya	406	392	96.55	89	83	93.26	24	24	100.00	4	4	100.00	
Peninsular Malaysia	95,553	90,537	94.75	22,541	20,611	91.44	6,636	6,156	92.77	2,636	2,442	92.64	119,746
Sarawak	20,995	18,011	85.79	4,818	3,416	70.90	1,565	1,151	73.55	673	440	65.38	
Sabah	9,715	8,827	90.86	2,132	1,345	63.09	688	431	62.65	271	135	49.82	
F.T. Labuan	450	442	98.22	100	96	96.00	20	20	100.00	20	20	100.00	
Malaysia	126,713	117,817	92.98	29,591	25,468	86.07	8,909	7,758	87.08	3,600	3,037	84.36	154,080

Source: Engineering Services Division, MOH

Note: Group 1 - Bacteriological and physical parameters.

Group 2 - Chemical parameters.

Group 3 - Heavy metals, trihalomethane and inorganic compounds.

Group 4 - Pesticides and organic compounds.

A = Number of samples analysed

B = Number of samples violated

Quality Assurance Programme (QAP) for National National Drinking Water Quality Surveillance Programme (NDWQSP)

Since 2004, the Quality Assurance Programme (QAP) standards were set based on 5 performance indicators namely, violation rates for residual chlorine, E.coli, combined residual chlorine and E.coli, turbidity and aluminium. The standards are revised each year so that it can be made more stringent to be consistent with any improvement of the national annual average.

Clinical Waste Management (CWM)

The Ministry of Health (MOH) has addressed the importance of hospital waste management in all its healthcare facilities since early 1990s. Through assistance from WHO, MOH had produced a guideline known as "Guidelines for the Management of Clinical and Related Wastes in Hospitals and Health Care Establishment" in 1993 to ensure that the implementation of CWM in all public healthcare premises complies with the Department of Environment (DOE). These guidelines will be extended to all private healthcare management as their standard operating procedure (SOP).

In 1997, the clinical waste service was privatized to three concession companies as follows:

- a) Faber Mediserve Sdn. Bhd - Northern zone, Sabah and Sarawak
- b) Radicare (M) Sdn. Bhd. - Eastern and Central zone
- c) Pantai-Medivest Sdn. Bhd. - Southern zone

Based on five years record (2002-2006) reported by the three companies, the total amount of clinical waste generated by the public hospital is as follows:

Concession Companies	Number of Hospitals/Institutions	Generated Clinical Waste (Kg)
Faber Mediserve Sdn. Bhd	78	12,584,077
Radicare (M) Sdn. Bhd.	47	12,113,924
Pantai-Medivest Sdn. Bhd	22	7,081,505
Total	147	31,779,506

Source: Engineering Services Division, MOH

The estimated annual increase of clinical waste generated was 11%. In 2006, the total clinical waste generated was 7,767,510 kg.

Environmental Health Protection

The main components of environmental health protection programme cover the area of wastewater management, solid waste management, and air pollution and indoor environment. The principal goal of this program is to establish a system to monitor the health aspects of all activities related to wastewater, solid waste, and air pollution and indoor environment to enable timely intervention on policy development, planning and implementation of programme to protect public health.

The Environmental Health Protection Programme also places a special attention for environmental health requirements to be properly and adequately considered in Environmental Impact Assessment (EIA) process. The current practice of EIA study only involved mainly the study of the impact of development projects on the physical or natural environment with a nominal touch on the impact of such projects on human health. In 2002, EHIA Guideline submitted to the Department of Environment was accepted and agreed to be included as one of the requirement in the EIA to be carried out by the project proponent.

Healthcare Facility Engineering Section

The objectives of Healthcare Facility Engineering Section were:

- To provide engineering services in order to ensure that all engineering systems, facilities and equipment in all healthcare facilities were properly installed and safe;
- To plan, implement and commission engineering projects related to upgrading the engineering systems, replacement of equipment and assets and renovation of facilities; and
- To provide technical support, advice and consultancy in the field of healthcare facility engineering and biomedical engineering to all medical and health programmes.

Activities

- Identify and plan the need for continuous physical improvement and upgrading of healthcare facilities, engineering systems, replacement of equipment in the existing MOH hospitals, clinics and institutions.
- Implement and manage the construction projects of new healthcare facilities, upgrading of engineering systems, replacement of equipment and renovation/refurbishment of facilities.
- Provide engineering inputs in the procurement of medical and non-medical equipment and engineering systems
- Develop guidelines and standards for related healthcare facility engineering

TABLE 4
Project Management

Type of Project	Cost (RM / Million)
Upgrade Healthcare Engineering Facilities and Systems	26.6
Procurement and Installation of Biomedical Equipment	13.8
Package 1: Construction of new Kluang Hospital	12.9

Source: Engineering Services Division, MOH

TABLE 5
Technical Support and Advisory Services

Technical Advice	Number
Technical evaluation of equipment/engineering system procurement	50

Source: Engineering Services Division, MOH

Radiation Health and Safety Section

The Radiation Health & Safety Branch (RHSB) consists of 2 programmes, namely, Licensing and Codes and Standards. Three activities were carried out in Licensing programme namely Licensing, Monitoring and Enforcement, while Codes and Standards carried out two activities i.e Ionising Radiation and Non-Ionising Radiation.

The main objectives of RHSB are to ensure the safe, optimum and efficacious use of irradiating apparatus and associated facilities in medicine. RHSB also ensure that the hazards associated with the application of ionizing radiation (IR) and non-ionizing radiation (NIR) in medicine are minimized and within acceptable levels.

Strategies of the RHSB programmes are:-

- o Ensuring that licenses are produced within specific time
- o Monitor the compliant of Act 304
- o Increase enforcement activities
- o Develop and review the regulation, guidelines, standard, codes of practice for IR and NIR

Activities and Achievements

• Licensing Under The Atomic Energy Licencing Act 1984 (Act 304)

A total of 903 licenses were issued to private sector in 2006 with 153 new and 750 renewal licenses. Table 6 shows a total government premises and private centers registered in 2006. The total number of equipment in both government and private centers by type of irradiating equipment is shown in Table 7.

TABLE 6
Total Number of Licenced and Registered Premises as of December 2006

Type of Premises	No. of Premises		Total
	Government	Private	
Hospital	146	93	239
Health Clinic	140	N.R.	140
Dental Clinic	337	923	1,260
Radiotherapy Centre	3	19	22
Radiology Clinic	N.R.	35	35
GP's/Non-X-Ray Sp. Clinic	N.R.	951	951
Veterinary Clinic	1	34	35
TOTAL	627	2,055	2,682

Source: Engineering Services Division, MOH

Note: N.R. - Not related

TABLE 7
Total of Irradiating Apparatus by Type as of December 2006

Type of Irradiating Apparatus	No. of Premises		Total
	Government	Private	
General/Mobile X-Ray	922	1,173	2,095
Dental (intra oral/OPG)	515	1,075	1,590
Fluoroscopy/C-Arm	138	200	338
Angio/Cath-Lab	19	47	66
CT Scanner	38	100	138
Mammography	30	83	113
Others	11	49	60
Linear Accelerator	9	27	36
Simulator	5	13	18
Co-60/Cs-137/Ir-192	5	47	52
Gamma Camera/PET CT	5	10	15
TOTAL	1,697	2,824	4,521

Source: Engineering Services Division, MOH

- **Monitoring & Enforcement**

These activities include inspection visits, monitoring of complaints, compliance with the quality assurance program requirement and enforcement of licensing activities. All enforcement activities including inspections, investigations, raids and prosecutions were carried out on all licensed premises to ensure maximum compliance to licensing requirements. A total of 218 premises were inspected, out of which 134 (61.5%) premises complied with all licensing requirements while 84 (38.5%) did not fully comply with all licensing requirements. A total of 63 warning letters were issued and 21 x-ray machines were sealed in premises that did not fully comply with the licensing requirements.

- **Quality Assurance Programme (QAP) & Medical Physics Advisory Services**

This service is designed for all MOH hospitals and clinics where ionizing radiation is used for medical purposes. It is aimed at ensuring the diagnostic images produced are of sufficiently high quality so that they consistently provide adequate diagnostic information at the lowest possible cost and with the least possible exposure of patient to radiation. Vetting and evaluation, inspection and monitoring, and surveillance are also carried out to assist MOH hospitals to conform to regulatory requirements.

In 2006, a total of 9 workshops on ionizing radiation including radiotherapy and non-ionizing radiation were organized to improve radiation safety and to enhance quality of medical diagnostic imaging service in government hospitals and health clinics.

- **Development of Codes & Standards**

The activities carried out to develop codes and standards include:

- Developing Guidance Notes in radiology, radiotherapy and nuclear medicine to complete the "Radiation Health and Safety Regulation (the use of Ionizing Radiation in Medicine, Dental & Veterinary)" which is in the process of being gazetted.
- Carrying out studies related to the safety of ionizing radiation and non-ionizing radiation usage.
- Participating in the International Advisory Committee (IAC) for International Electromagnetic Fields (EMF) Project developed by World Health Organization (WHO).
- Organising a national conference with stakeholders for the purpose of circulating information and obtaining feedback from the public.
- Review the "Guidance To Safety and Health Aspects of Base Stations and Mobile Phones" document for approval by Director General of Health before disseminate to general public.
- Collaboration with SIRIM in developing relevant standards.
- Carrying out "Study On Medical Radiation Exposure in Malaysia" in government and private sector. The data obtained will be used to form the basis guidance reference for the safe usage of radiation in medicine and as an indicator for good practice. It was in conjunction with the United Nation Scientific Committee on the Effects of Atomic Radiation (UNSCEAR) dose survey which will be finalised by the year 2010.
- Developing Safety Guidelines on Laser.

Hospital Support Services Regulatory Section

The privatization of Hospital Support Services (HSS) involved a total of 123 hospitals and 4 institutions of the Ministry of Health in 1997. This project involved an annual expenditure of more than RM500 million for a concession period extending for 15 years. The Concession Agreements between the Government of Malaysia and the three companies namely, Faber Medi-Serve Sdn Bhd, Radicare (M) Sdn Bhd and Pantai Medivest Sdn Bhd were signed on October 1996. The government had appointed an independent consultant, Sistem Hospital Awasan Taraf (SIHAT) to assist the Regulatory Unit to supervise the project.

The main programme of Regulatory Section is to implement the HSS that consist of 5 services, namely Clinical Waste Management Services (CWMS), Cleansing Services (CLS), Linen & Laundry Services (LLS), Facility Engineering Management Services (FEMS) and Biomedical Engineering Management Services (BEMS) at all contract hospital and institutions. Untill 2006, the number of contract hospitals and institutions receiving HSS had increased to 147 as compared to 127 in 1997 (year of implementation). The statistics on number of hospitals and institutions by concession companies is shown in Table 8 while Table 9 shows the comparison of asset number and contract value for HSS from 1997 to 2006.

TABLE 8
Number of Hospitals and Institutions by Concession Companies, 1997 and 2006

Concession	Number of Hospitals and Institutions	
	1997	2006
Faber Medi-Serve Sdn. Bhd.	71	78
Radicare (M) Sdn. Bhd.	37	47
Pantai Medivest Sdn. Bhd.	19	22
Total	127	147

Source: Engineering Services Division, MOH

In 2002, two services were incorporated under Quality Assurance Programme (QAP) namely FEMS and BEMS. The three other services namely CWMS, CLS and LLS were established since October 2006. This QAP is responsible in planning and implementing the quality control for all services, so that, the quality of all services could be improved continuously with the help of monitoring tools such as Central Management Information System (CMIS) at hospital, state, consortia or national level.

TABLE 9
Number of Assets and Contract Value for HSS, 1997 and 2006

Item	1997	2006
No. of Contract Hospitals	127	147
No. of Beds	36,319	42,456
Floor Area (m ²)	4,297,523	5,647,670
Assets FEMS	Estimate 250,000	307,307
Assets BEMS	81,254	139,870
Contract Value	RM /Million	RM / Million
FEMS	199.53	204.73
BEMS	100.69	104.89
LLS	62.73	102.04
CWMS	24.48	45.37
CLS	100.90	132.08
Variations 5 services	0.00	161.38
Total Value	488.33	750.49

Source: Engineering Services Division, MOH

WAY FORWARD

The advancement in the healthcare technology has posed major challenges to the engineers and physicists alike to keep abreast with such rapid changes. New technologies both in procedures and equipment require trained, competent and experienced personnel. In-house expertise and know-how should be enhanced. Continuous professional training, local and abroad, cannot be over-emphasized and should be provided to all the staff.

To become an effective Monitoring and Enforcement Unit has always been a big challenge to the Division. The common core business for all Sections in the Division is monitoring programmes, projects and services, and enforcement of legislative requirement. Being effective requires knowledge and adequate resources. Appropriate mechanism and definite parameters for monitoring need to be established. Right sizing of the organization is critical so that the monitoring activities can be implemented effectively. Apart from the manpower, the staff must be adequately equipped with the proper tools and equipment.

Hospital Support Services Regulatory Section is in the progress of re-structuring the organization through reinforcement of technical manpower by introducing more positions of various schemes in order to provide sufficient and competent manpower in every area of HSS.

Amongst the challenges is to provide technical input and professional project management in new development project and refurbishment or upgrading works. New hospitals and new projects must be installed with technologically appropriate and state-of-the art equipment, facilities and other engineering plans. Quality, standards and regulations must be taken seriously in all projects in order to fulfill the objectives and needs of MOH and the clients. All projects must be completed on time and within the specified budgetary framework.

CONCLUSION

In view to expand and strengthen the services in provision of healthcare to the patients and public and protecting the public health, the roles of engineering and scientific services have become more relevant in assisting the medical team to realize the vision of the MOH. To carry out the objectives that have been set out effectively, the implications of additional manpower and budget allocation is unavoidable. Recruitment of new engineers and physicists is necessary to ensure the continuity of all the programmes planned.

The need to improve and upgrade the current conditions of the building and equipment/system to cater for the rapid change in technology and demand of the medical services is inevitable. A well-planned program to upgrade, refurbish and replace the old and obsolete equipment and facilities need to be established to ensure that the healthcare facilities are functional and safe. The Healthcare Facilities Engineering will play a vital role in the implementation of the upgrading projects identified in the 9th Malaysia Plan. Thus, a systematic approach has to be identified to assist the Section to carry out the task efficiently and effectively.

In line with the MOH's vision in achieving the nation's vision, the RHSB had endeavoured to upgrade services in medical physics so as to expand rapidly and contribute towards the achievement of this vision. This service will also protect the public from the risk and danger that may result from the use of ionizing and non-ionizing radiation from medical purposes and to ensure that the benefit from both ionizing and non-ionizing radiation were minimized.

MEDICAL DEVICE CONTROL

INTRODUCTION

The term medical device refers to medical technology, supplies and equipment which encompasses a wide array of healthcare products use in diagnosis, prevention, monitoring or treatment of illness or handicap but excludes drugs. The World Health Organisation (WHO) reported that in 2001, more than 50,000 different types of medical devices were available on the global market ranging from simple contact lenses to precise robotic arm and sophisticated computed tomography machines, radiation-emitting equipment and implanted heart valves.

ACTIVITIES AND ACHIEVEMENTS

Proposal to develop and implement medical device regulatory programme

Malaysia is currently developing Medical Device Regulatory Programme to address public health and safety issues as well issues related to medical device trade and industry. The regulatory programme will ensure timely availability and access to safe and effective medical devices and at the same time prevent sub-standard, unsafe and ineffective devices from reaching the market. In the context of trade and industry, the regulatory programme provides a favourable environment for the growth of the industry with the existence of mechanisms for fair and rules-based trade competition.

In February 2005, the Cabinet had approved the proposal for the development of Medical Device Regulatory Programme which includes the following:

- (i) Promulgation of Medical Device Bill and its subsidiary regulations to provide legislative support for the medical device regulatory programme;
- (ii) Establishment of an agency to enforce the regulatory programme;
- (iii) Development of medical device registration and surveillance system;
- (iv) Capacity building and human resource training; and
- (v) Development of infrastructures and mechanisms for effective and efficient implementation of the regulatory programme.

Establishment of Medical Device Bureau

Subsequent to the Cabinet approval, the Medical Device Core Team Unit (later known as Medical Device Bureau) was established in September 2005 to develop and implement medical device regulatory programme by performing the following functions:

- (i) Planning and policy development;
- (ii) Registration;
- (iii) Surveillance and vigilance; and
- (iv) International relations and industry assistance.

A total of 22 posts (16 professional and 6 support staffs) were assigned to the Bureau. Currently 7 professional posts and 6 support staffs have been filled.

Promulgation of Medical Device Legislations

Legislative support is crucial to ensure effective implementation of the proposed regulatory programme. The draft Medical Device Bill has been submitted to the Attorney General's Department in July 2006 for review and comments. Among others the draft Bill sets the provisions for the establishment of an implementation agency as well as pre-market and post-market requirements for a medical device to be put on the Malaysian market. The draft Bill is scheduled to be presented to Parliament in 2007. The preparation of the relevant subsidiary legislations has also been initiated. The first draft of Medical Device (Pre-market) Regulation was completed at the end of 2006.

Development of Standards and Guidance Documents

The development of the medical device regulatory programme is guided by the global harmonisation trend which encourages convergence in standards and regulatory practices. This is crucial as a means to minimise regulatory barriers, promote technological innovation and to gain access in the global market. Development of standards as well as adoption and adaptation of international standards pertaining to medical devices were undertaken by the Industrial Standard Committee for Medical Device (ISC R) which was established in collaboration with the Standards and Industrial Research Institute of Malaysia (SIRIM). By the end of 2006, a total of 77 international standards pertaining to various aspects of medical devices have been adopted and adapted as Malaysian Standards. The ISC R will continue to identify, develop, adopt and adapt many more standards which are relevant to medical devices in the future.

Guidance documents form a set of references for the regulatory system and elucidate various aspects of the regulation in greater detail. The drafting of guidance documents is undertaken with the assistance of 4 working groups, i.e. Working Group on Pre-Market Assessment, Working Group on Quality System and Auditing, Working Group on Post-Market Surveillance and Vigilance, and Working Group on Proper Usage of Medical Devices. By the end of 2006, a set of guidance documents dealing with various aspects of medical device regulatory control has been prepared and compiled. It contains 24 sections which include subjects on risk classification, essential principles of safety and performance, risk management, labelling and packaging, conformity assessment, quality management system and auditing, clinical evidence, nomenclature system, post-market surveillance, distribution record, complaint handling, recall, incident investigation, adverse event reporting, effective operation and good maintenance management and disposal of medical devices.

Medical Device Utilisation Survey

Accurate information on the utilisation and the industry of medical device is one of the many important steps in formulating an effective regulatory programme. In 2006, a survey on the utilisation of dental devices in Malaysia was conducted, as an initial step of a larger scope of medical device utilisation survey. The primary objectives of this survey were to obtain a measurement on the magnitude and range of medical devices available on the Malaysian market as well as to gather the reactions of the stakeholders on the proposed medical devices regulatory programme.

A sample of 414 dental practitioners (including dental specialists) from 123 dental practices and 30 companies supplying dental devices throughout Peninsular Malaysia participated in this survey. A list of dental devices obtained from this Survey provides an in-sight on the range and volume of dental devices available for use in Malaysia. Approximately 545,000 units from 414 dental device items were used by dental practices participating in the survey; of which 95,000 units were equipment and instruments and 450,000 units were consumables and materials.

On the proposed regulation, there were mixed reactions amongst both dental practitioners and dental device suppliers. The key positive reaction was that it would lead to better quality, safer and more reliable devices. However, there were also concerns amongst them and to alleviate this, they need to be convinced that the Government has the best interests of all parties. Their active participation is crucial in the development process to ensure successful implementation of the proposed regulation.

Voluntary Registration Scheme for Establishments Dealing with Medical Devices (MeDVER)

Registration of medical devices and their manufacturers or authorised representatives is the most important component in medical device regulatory control. As an initial step in the enforcement of a mandatory regulatory environment, a voluntary registration scheme called the Voluntary Registration Scheme for Establishments Dealing with Medical Devices (MeDVER) was launched in early 2006. The scheme was introduced to:

- (i) familiarise all the affected parties with the registration process;
- (ii) gauge the readiness of establishments dealing with medical devices in conforming the regulatory requirements;
- (iii) prepare a smooth transition into the mandatory phase and full enforcement of medical device regulation in Malaysia; and
- (iv) obtain a profile of the Malaysian medical device industry.

Registration in MeDVER is done on-line and those dealing with medical devices in Malaysia are encouraged to voluntarily register their establishments and list their devices. By the end of 2006, a total of 271 establishments dealing medical devices in Malaysia have voluntarily registered with MeDVER. Of those who registered, 80% were distributors and importers, 10% were exporters, 5% were manufacturers of medical devices whilst the remaining 5% were doing other types of business related to medical devices. A total of 3,332 medical devices have also been listed in MeDVER. The implementation of MeDVER will continue until the draft Bill is approved by Parliament.

A number of dialogue sessions with the industry as well as meetings with the Bureau were held throughout 2006. Some 60 companies have come forward to seek clarification about MeDVER and other matters related to the control of medical devices.

International Relations and Industry Assistance

The Government recognises the contribution of the medical device industry to the economic growth and actively facilitates local manufacturers to position themselves in the global arena. The Malaysian Industrial Development Authority (MIDA) reported that currently, Malaysia is the world's leading producer of rubber-based products such as medical gloves, catheters, condoms and the industry is shifting into manufacturing of devices made from plastics, silicone and metal alloys as well as devices used in cardiovascular, orthopaedic, transplants, ultrasound imaging and patient monitoring systems. Many downstream industries and non-manufacturing services related to medical devices industry will also be created along with the manufacturing sector. During the period of the Third Industrial Master Plan (IMP3) (2006-2020), greater emphasis will be given to medical device industry to broaden its global market access and to sustain its competitiveness. The Ministry of Health is working together with MIDA, Ministry of International Trade and Industry (MITI), Standards Malaysia, local medical device industries, local higher learning institutions as well as other Government agencies in planning the implementation strategies to achieve the set goals of IMP3.

One of the identified strategies under the IMP3 was the adoption of a harmonised system for the placement of medical devices into the global market. In this respect, the Government through the ASEAN Economic Ministers forum has agreed to develop a common system for medical devices in ASEAN which is in accordance with the vision of the ASEAN leaders on the establishment of the ASEAN Economic Community (AEC) by the year 2020. Malaysia plays the lead role in the ASEAN Medical Device Product Working Group (MDPWG) to spearhead the harmonisation of medical device regulatory requirements within ASEAN member countries. In addition, Malaysia also leads the Asian Harmonisation Working Party (AHWP), a non-profit organisation which is working towards harmonisation of medical device regulations in Asia.

Both the ASEAN MDPWG and AHWP which consist of members from Government regulators and industry representatives are embarking on various projects towards developing a common system for medical devices, which include:

- (i) Comparative study on medical device regulations;
- (ii) Development of a common submission dossier template for medical device products approval;
- (iii) Formalisation of a post-market alert system; and
- (iv) Capacity building through training.

The project on comparative study which was lead by Malaysia has been completed in 2006, whilst the other projects are still ongoing.

The Ministry is also working together with other relevant agencies in bilateral and multilateral negotiations with other countries to facilitate Malaysian medical device industry to gain and broaden global market access. Among others, the Ministry is currently involved in free-trade negotiations with the United States and trade negotiations with Australia.

Surveillance and Monitoring

The monitoring activity of medical device that are already in the market is very crucial to identify medical devices that have problems so that appropriate action can be taken to prevent any adverse incident that may cause public health and safety problem. This is done by screening and gathering safety information from medical device authorities in other countries such as United States, United Kingdom, Singapore and Hong Kong. Medical device alert system has also been established as a means to inform users on post-market activities related to medical devices which include device advice, device alert and device recall.

Human Resource Development

Trained manpower is an important component to ensure effective implementation of the regulation. All the professional staffs of the Medical Device Bureau have attended a number of short courses both locally and overseas. Amongst the topics include quality management system, auditing of quality management system, medical device regulatory requirements in other countries, medical device electromagnetic compatibility, IEC 60601, risk management of medical device, biocompatibility and sterilisation of medical device. In addition, attachment of the professional staffs at the regulatory agencies in other countries such as the Medicinal and Healthcare products Regulatory Authority of the United Kingdom, the Therapeutic Goods Administration of Australia and the Health Sciences Authority of Singapore were also done to provide them with hands-on experience of the real works of a regulatory authority.

WAY FORWARD

An effective and efficient medical devices regulatory programme requires an appropriate pre-market system which includes controls on product and manufacturing, establishments, representation, post-market surveillance and vigilance, operation, usage, disposal and quality system. It also requires an effective and efficient support in regulatory and trade matters, ICT as well as administration and finance. In addition, there is a need to educate all the relevant stakeholders.

A “step-by-step” approach will be taken in developing the regulatory programme and it is envisaged that the development process will complete by the end of the Ninth Malaysia Plan. In 2007, a Voluntary Registration Scheme for Conformity Assessment Bodies (CAB) will be developed to register all CABs operating or plan to operate in Malaysia. The post-market surveillance system will be improved by introducing an on-line system to further enhance its effectiveness. More studies, surveys and situational analyses will be carried out to gather information related to medical devices and medical device regulation. A series of consultation sessions with the relevant stakeholders will continue to be held as a means to educate and getting their feedback.

In terms of implementation, right-sizing the organisation is critical and more staffs will be required so that all the activities can be carried out more effectively. Being efficient and effective requires knowledge and experience and to achieve this continuous professional training, local and abroad will be planned for the staffs.

As an agency that has been identified to support the Malaysian medical device industry, the Bureau will continue to participate in the ASEAN and Asian groupings in their effort towards harmonisation of medical device regulatory requirements within the regions and to participate in trade negotiations with Malaysian trading partners. The Bureau will also continue to participate in implementing relevant strategies in the development of the Malaysian medical device industry as well as downstream and non-manufacturing services related to the industry.

CONCLUSION

The primary goal of the regulatory programme is to protect public health and safety by preventing sub-standard, unsafe and ineffective medical device from reaching the market. It also aimed at facilitating medical device trade and industry. The framework and strategic plan have been outlined and initial steps for the transition to mandatory regulatory environment have been implemented. It is envisaged that this will help the affected parties to be less burdensome when the mandatory phase takes place.

TRADITIONAL AND COMPLEMENTARY MEDICINE

INTRODUCTION

The Traditional and Complimentary Medicine Division (TCM) was established in December 2004. The roles of TCM is to coordinate, plan and handle various activities related to practitioners, practice, product and research in traditional and complementary medicine in Ministry of Health Malaysia towards enhancing the health and quality of life of Malaysians. It consists of 3 Technical Sections, namely Policy and Development, Practice and Registration, and Standard and Quality.

POLICY AND DEVELOPMENT SECTION

ACTIVITIES

Integrated Hospital

Traditional and complementary services in integrated hospitals will be implemented in public hospital in stages in the 9th Malaysian Plan. Three hospitals have been identified to provide this service. They are Kepala Batas Hospital in Pulau Pinang, Sultan Ismail Hospital in Johor and Putrajaya Hospital. Services offered by these hospitals are those which have been scientifically proven, such as acupuncture, traditional Malay massage and herbs for oncology as an adjunct treatment to cancer. The necessary infrastructures in Kepala Batas Hospital and Putrajaya Hospital has been completed and several guidelines are in the process of completion.

Drafting Traditional and Complementary (T/CM) Bill

With the establishment of Traditional and Complementary Bill, a Traditional and Complementary Council will be formed for the purpose of overseeing the registration, licensing and qualifications of the practitioner, accreditation of training centres and establishment of service scheme for practitioners in public hospitals. In 2006, the Bill was in the final phase of drafting and was prepared by a committee consisting of Ministry of Health Legal Advisor Department, Medical Practice Division, Pharmaceutical Service Division and Malaysia Medical Council.

Health Tourism Seminar

In 2006, several seminars were conducted according to zone. The primary objective of these seminars was to create awareness to Ministry of Health officers, and traditional and complementary medicine practitioners about the potentials of traditional and complementary medicine within the health tourism industry.

PRACTICE AND REGISTRATION SECTION

ACTIVITIES

Foreign Practitioners' Application

In 2006, there were 216 applications from foreign practitioners, of which only 92 applications (43%) fulfilled the requirements.

TABLE 1
Number of TCM Foreign Practitioners Approval by Type, 2005-2006

Whole Body System Therapy	2005	2006	Total
Chinese Physicians	26	39	65
Acupuncturists	14	9	23
Ayurvedic Physicians	23	34	57
Siddha Physicians	0	2	2
Naturopathist	0	1	1
Manipulative Therapy			
Thai Massage Therapist	65	27	92
Tuinalogist	2	9	11
Reflexologist	34	14	48
Chiropractic	11	7	18
Balinese Massage Therapist	0	2	2
Others (Herbalist, Myoterapist and Podiatrist)	3	0	3
Total	178	144	322

Source: Traditional and Complimentary Medicine Division, MOH

Registration of TCM Practitioners in Malaysia

There were 5 practitioner bodies selected by the Ministry of Health to assist in registering and monitoring traditional and complementary medicine practitioners. Currently, there are approximately 6,000 traditional and complementary medicine practitioners registered with these practitioner bodies (Table 2).

TABLE 2
Number of Traditional and Complementary Medicine Practitioners Registered with Practitioner Bodies, 2006

Practitioner Bodies	Number
Malay Traditional Medicine (PUTRAMAS)	291
Chinese Traditional Medicine (FCPMDAM,FCPAAM & MCPA)	4,154
Indian Traditional Medicine (PEPTIM)	92
Homeopathy	122
Complementary Medicine (MSCT)	1,322

Source: Traditional and Complimentary Medicine Division, MOH

STANDARD AND QUALITY SECTION

ACTIVITIES

Identify Minimum Requirement of TCM Practitioners

The Standard and Quality Section is responsible for updating database of 50 practices in identifying the level of education of practitioners. There are two type of modalities, namely structured and non-structured. Structured modality refers to the field of practice with references and syllibus, while non-structured modality refers to field of practice without proper references and syllibus (Table 3).

The Unit is also responsible in the development of standard and criteria for TCM practitioners. Several meetings, workshops and trainings were carried out involving various committees to discuss the standard and criteria required for the TCM practitioners. Visits to training centres organized by practioner bodies were also conducted in 2006.

Awareness Programme for Practitioners

The standards for establishment of training centres for TCM modalities will be set up through visiting training centres in overseas. Three (3) Joint Committee meetings between Ministry of Health (MOH) and Ministry of Higher Education (MOHE) were held for the planning of the programme. The Cabinet approval for visits to training centres in China, India and Indonesia was obtained. In 2006, the Minister of Health had visited China and several hospitals in Singapore.

TABLE 3
Type of Modalities by Category

Non-Structured Modalities	Structured Modalities
Malay Traditional Medicine (14)	Chinese Medicine (3)
- Malay Traditional Medicine	- Acupuncture
- Malay Traditional Massage	- Tuina
- Fracture Bone Treatment	- Internal Medicine
- Obstetric Treatment	Indian Medicine (3)
- Inner Energy Treatment	- Ayurveda
- Gynaecology Treatment	- Siddha
- Traditional Malay Exercise	- Unani
- Rhinitis Treatment	Homeopathy (1)
- Herpes Treatment	Complementary Therapy (5)
- Hernia Treatment	- Reflexology
- Renal Stone Treatment	- Aromatherapy
- Cancer Treatment	- Naturopathy
- Spiritual Treatment	- Chiropractic
- Traditional Malay Cupping	- Massage

Source: Traditional and Complimentary Medicine Division, MOH

Awareness Programmes for MOH Personnel

Three (3) Continuous Medical Education (CME) were conducted in MOH hospitals, while 5 workshops were conducted in Sabah and Sarawak. The aim of CME is to educate health care providers in MOH on the latest development and status of Integrated Hospital and also on the importance of integration between modern, traditional and complementary medicine.

Creating Programmes for Public

The objective of this programme is to create awareness for public on the need to seek for qualified practitioners when obtaining TCM services. The research promotion of TCM services has been identified through cooperation with Herbal Research Medical Centre, Institute for Medical Research (IMR). Among the research carried out include 'Malay Post Natal Care in Peninsular Malaysia' and 'Level of Education of Practitioners in Ayurveda, Siddha and Unani in Malaysia'. For the promotion of TCM practices, 3 meetings were conducted with Political Secretary of MOH for the promotion of Traditional Massage.

MS ISO 9001:2000

Traditional and Complementary Medicine Division is in the process of getting ISO 9001:2000 certification. In 2006, the Working Committee had 2 meetings to determine the work procedure of the Division.

ALLOCATION AND EXPENDITURE

In 2006, approximately RM1 million was spent on activities as well as upgrading the basic infrastructure of TCM Division (Table 4).

WAY FORWARD

The TCM Division has taken a big step to help and facilitate foreign practitioners by developing online registration which will be conducted in phases and will be subsequently implemented in stages. The first phase was implemented involving online registration and application of certificate. The second stage involves online payment and production of digital certificates. The Division is also actively involved in conducting CME in MOH hospitals throughout Malaysia in providing an update information on the implementation of Integrated Hospitals.

CONCLUSION

The Traditional and Complementary Medicine aims was to ensure that traditional and complementary medicine will be optimally integrated into the Malaysian healthcare system. The quality of TCM practitioners will be upgraded by providing trainings and courses to enhance the quality of practices and eventually achieving better quality of life for the population.

TABLE 4
Total Expenditure by Activity for TCM, 2006

ACTIVITY	EXPENDITURE (RM)
Health Tourism	498,728.88
MS ISO	14,032.00
Renovation	80,000.00
Travel claim	49,422.10
Transfer claim	2,798.62
Utility Bills	579.48
Rent	19,911.03
Food	2,842.00
Petrol	5,717.91
Office Supplies	30,806.90
Minor Alteration	60,535.00
Hotel and services	22,642.16
Assets	133,600.00
Consultant services	199,925.00
Development for small projects	199,555.40

Source : Traditional and Complementary Medicine Division, MOH

NATIONAL INSTITUTE OF HEALTH

The seven institutes under the National Institutes of Health (NIH) continued their activities in research, training, consultancy and diagnostic services to support the programmes of the Ministry of Health (MOH). Each institute continued to focus research in their prioritized and main research areas thus further strengthening their functions as centres of excellence for health research. One of the main activities in 2006 was formalizing the national health research priorities of the 9th Malaysia Plan (9MP). These health research priorities served as the basis for the NIH to lead, conduct and/or facilitate the research activities during the 9MP period. In 2006, from approximately RM9 million allocated for research, about RM5 million was disbursed to the NIH institutes to conduct research. The NIH institutes conducted 95 research projects and produced 60 publications in 2006.

INSTITUTE FOR MEDICAL RESEARCH

The Institute for Medical Research (IMR) is the research arm of the MOH and its main function is to carry out research to identify, elucidate, control and prevent diseases and health issues prevalent in the country. The IMR also provides specialized diagnostic services, training in specialized fields and consultative/advisory services.

The IMR has 671 posts, of which 544 (81%) have been filled. There were 168 personnels in the Managerial and Professional Group, comprising scientists, doctors, dentists, veterinarians, librarians, system analysts, a statistician, a pharmacist and administrative officers, while the remaining 376 personnels belong to the Technical and Support group. The total expenditure of the Institute in 2006 was about RM38 million.

RESEARCH ACTIVITIES

In 2006, staff members of the Institute were engaged in 52 projects. The Institute published 58 scientific papers and produced 13 reports. The reports were generally prepared to meet specific requests made by various government departments and agencies. In addition, staff of the Institute presented 177 papers at local and international seminars.

Allergy & Immunology Research Centre

In 2006, the Allergy and Immunology Research Centre was engaged in the study of Allergic Fungal Sinusitis (AFS) and Rheumatoid Arthritis (RA). The study showed that the most common fungal allergens implicated locally were the penicillium and cladodporium species. The study also showed that causative fungal allergen was better determined by the skin prick test than by in vitro measurement of specific IgE. The study of RA, which is a collaborative study with the Karolinska Institute, is a study on biomarkers and immunogenetics of the disease. Towards the end of 2006, several studies were started in food allergies, KIR genes and on chronic granulomatous disease (CGD). The Centre also provided a specialised diagnostic service, which included the tissue typing for all the transplant programmes in all MOH hospitals.

Cancer Research Centre

The Haematology Unit continued to explore areas of breast cancer and haematological disorders and malignancies through NBD and MAKNA grants respectively. The Unit serves as the National Referral Centre for Bone Marrow Cytogenetic studies and molecular diagnosis for thalassaemia. The unit is the sole provider of molecular testing for alpha thalassaemia confirmation for MOH. It continues to provide Haemoglobin Analysis for the screening of thalassaemia and haemoglobinopathies and high end specialized diagnostics tests. This include molecular testing using real time polymerase chain reaction for the rapid quantitation of bcr/abl transcript in Chronic Myeloid Leukaemia patients and RT PCR in detection of the common translocations present in Paediatric Leukaemias.

The Molecular Pathology Unit continued its research focuses on cancer and human genetics. The Unit embarked on studies in cellular signalling which are relevant for cancers. Work in the unit found that a subfraction of algae extract exhibited cytotoxic activity against nasopharyngeal carcinoma cells. Studies on metal complexes in cancers showed antiproliferative activities of Cu(phen)(edda) against breast cancer cells. Mutation studies were carried out on tumour suppressor genes in nasopharyngeal carcinoma. Mutations of the CYP21 gene were identified in patients with congenital adrenal hyperplasia. The unit continued providing molecular diagnostic tests for Prader Willi Syndrome/Angelman Syndrome, SMA, NARP and MELAS. Toxocara antibody tests were carried out using the Toxocara recombinant protein previously developed by the Unit. The Unit was also involved in industrial training and offered research attachment for paediatricians undergoing subspecialty training.

Cardiovascular, Diabetes & Nutrition Research Centre (CDNRC)

In 2006, Diabetes & Endocrine Unit continued the study on water-soluble Kacip Fatimah in collaboration with the Karolinska Institute, Sweden. This study comprises the effect of Kacip Fatimah on body weight and biochemical composition in ovariectomy-induced (OVX) Sprague Dawley rats. Results from the study suggested that *Labisia pumila* var *alata* exerts an effect on the body weight of the OVX rats. Further study will be carried out to elucidate the mechanism of this property at the molecular level. The study on *Tinospora crispa* or *patawali* has progressed to isolation of single compounds. Bioassays are carried out to determine the bioactive compound with insulin-releasing activities.

The Nutrition Unit continued to provide services in food samples analysis that includes proximate analysis, minerals, vitamins and sugars from both government and private sectors. It also conducted analysis on some parameters in blood and urine samples from the hospitals and State Health Departments. As the national reference laboratory for Iodine Deficiency Disorders (IDD), this Unit also continues to supply rapid test kits for the determination of iodine levels in salt and water samples to identified iodine deficient areas of Kedah, Perak, Pahang, Kelantan, Terengganu, Sabah and Sarawak. A modified method to determine urine iodine has been established and the training on the new method has been organized for the IDD laboratory staff of the MOH.

Environmental Health Research Centre (EHRC)

The EHRC three major projects were: (i) development and assessment of the proposed Environmental Health Indicators; (ii) microbial risk assessment of drinking water and (iii) coastal recreational waters: quality and impact on health. A number of small research projects were also carried out covering various aspects of environmental health such as on environmental toxicology and environmental microbiology.

As part of services provided during the year, the EHRC has taken over from the Bacteriology Unit in performing laboratory tests for coliforms, *Staphylococcus aureus*, *Bacillus cereus*, *Salmonella* spp., *Vibrio cholerae* and *Vibrio parahaemolyticus* on random samples of fertilizers from the Agricultural Department.

The EHRC continued to maintain an environmental quality management system through the MS ISO 14001:2004 certification. In 2006, the theme for the annual environmental health forum was 'How safe is our food? - pressing issues in Malaysia'.

Herbal Medicine Research Centre

The Information Unit continued to participate in the Global Information Hub on Integrated Medicine (GlobinMed) project. This project entered its second year through its two main activities i.e. system and content development. The migration of the system from NHlonDemand, its partner in the United States of America, was successfully conducted and the localization process is on-going. The development of the content is gaining momentum and the challenge of securing international partners is taken heads on. Introductory campaign was conducted locally and internationally, targeted for the public and professionals. The official launching is expected to be in July 2007.

Research-based surveys were conducted to collect data on several aspects concerning Traditional and Complementary Medicine (TCM) in Malaysia. 'A Survey of Information Requirement on TCM' was aimed at gathering the views of general public, traditional practitioners and medical communities on the information pertaining to TCM. Result of the survey would be used to refine the existing information in GlobinMed website. Preliminary work in determining the population of traditional Malay midwives in Peninsular Malaysia was started at the end of 2006. This was in preparation for the embarkation of the full study with the objective of developing a standard on the practice of traditional Malay natal care.

Documentation of medicinal plants information through the collection of voucher and live specimens is an ongoing activity in the Unit. Data on specific plants is obtained from practitioners and researchers as well as literature review from journals and other publications. The specimens collected were documented, treated and stored in the Voucher Specimen Collection Room in IMR. The live plants collected were placed in the newly-constructed green house. In 2006, the collection of specimen were conducted around Kuala Lumpur and in other parts of the country during visits and

fieldworks. Among the places visited were Behrang, Perak; Klang, Selangor; Gua Musang and Kota Bharu, Kelantan. Contributions for the collection were also received from other HMRC staff.

Phytochemistry Unit continued to provide phytochemical analysis in herbal that focused mainly on the chemical standardization of herbal extracts leading to production of quality herbal products. Under this scheme, extraction and fractionation of *Murayya koenigii*, *Vitex negundo*, *Centella asiatica*, *Labisia pumila*, *Ganoderma*, *Ageratum conyzoides*, *Ficus deltoidea*, *Momordica charantia* and *Cassia alata* have been carried out. Some of these extracts demonstrated promising results as anticancer agents. Further studies shall be carried out to identify the potent anticancer compound present in these extracts.

In 2006, few projects were carried out by Toxicology & Pharmacology Unit which focused on the in vitro and in vivo genotoxicity study of *Andrographis paniculata* and *labisia pumila* extracts and the development of disposable sensors for detection of heavy metals in herbal products.

Infectious Diseases Research Centre (IDRC)

The Bacteriology Unit focused on research on molecular diagnosis of infectious diseases and analysis of some herbal drugs. One of the studies conducted were on molecular characterization of antibiotic resistance in *Helicobacter pylori* strains. The aim was to determine the molecular mechanisms of antibiotic resistance in local *Helicobacter pylori* strains using PCR technique. The antibiotics tested were metronidazole, clarithromycin, amoxycillin, tetracycline, levofloxacin and ciprofloxacin. The result showed that some strains were resistant to certain types of antibiotics.

In view of the importance of dengue, the Entomology Unit conducted a number of studies on the dengue vectors. The bioefficacy of several control agents and devices were evaluated. *Aedes* pheromones were isolated, identified and characterised using SPME approach. Laboratory and field studies on modified IMR autocidal trap as a tool in dengue vector control showed promising results in controlling *Aedes* population. Dengue vector surveillance studies were carried out in endemic areas in Kuala Lumpur and Selangor. In a malaria vector study, bamboo surface sprayed with deltamethrin (20 mg/m²) showed high mortality (>90%) against *Anopheles maculatus* and *Ae. aegypti* for up to 3 months, while deltamethrin-treated bednet exhibited >90% mortality of both species for up to 6 months. Determination of dual infection with dengue and chikungunya virus in *Ae. aegypti* confirmed that *Ae. aegypti* is the major vector of both viruses but it was not yet able to transmit dual infection at the same time. Studies on the field effectiveness of the mosquito trapping device, known as SkeeterVac®SV-35 and mosquito repelling lamp, E Da were carried out where trapping and repelling effects against *Cx. quinquefasciatus* were observed, respectively.

Studies on other insects include:

- i. determination of housefly as a mechanical vector of flu viruses;
- ii. attractiveness of various food to myiasis-producing flies under field conditions;
- iii. microalgae associated with *Leptoconops* breeding sites in selected sandy beaches of Malaysia; and
- iv. anti-bacterial agent(s) from larvae of *Lucilia cuprina* (Wiedeman).

Studies on insecticides covered:

- i. detection of pyrethroid resistance in mosquitoes of public health importance;
- ii. monitoring of the acute toxicity using temephos against *Aedes* mosquitoes collected from Taman Samudera and Kampung Banjar, Selangor;
- iii. susceptibility of *Ae. aegypti* and *Ae. albopictus* to temephos in four endemic sites in Kuala Lumpur and Selangor;
- iv. efficacy of two commercial formulations of cypermethrin;
- v. Insprin 50EC and Insprin 250EC against *Ae. aegypti*, *Ae. albopictus*, *Ae. togoi*, *Cx. quinquefasciatus* and *An. maculatus* larvae;
- vi. laboratory bioefficacy of Creek® 1.0G (temephos) against *Ae. aegypti* larvae; and
- vii. testing of pyriproxyfen-coated concrete block against *Ae. aegypti*.

Parasitology Unit continued to study the zoonotic transmission of simian malaria, *Plasmodium knowlesi* in field conditions. It was observed that, human acquired the infection during hunting in the forest, or when they return from the farm around dusk. The mosquito acquires infection of *P. knowlesi* came mainly from the monkey population, since there was no evidence of malaria cases within communities in long houses and infected mosquitoes were not found in long houses. Forest exploitation for economic purposes had increased the contact between monkeys, mosquitoes and human.

Studies on the use of nested polymerase chain reaction and restriction enzyme (RE) digestion showed potential application of these techniques to distinguish between true *E. histolytica* and *E. dispar* infection as shown in the study done on the aborigines in Cameron Highlands. Meanwhile, studies on intestinal parasites among the aborigines in Pos Senderot and Pos Lenjang, Kuala Lipis, showed that almost 100% of the population infected with at least one parasite. Helminths detected were hookworm, ascaris, trichuris and strongyloides, while pathogenic protozoa were *E. histolytica*, *Giardia lamblia* and *Blastocystis hominis*.

The Virology Unit focused on research pertaining to locally important medical viruses, aiming to determine the epidemiology of the viruses and the development of new technology for rapid diagnosis of these viruses. The Unit performed satisfactorily in WHO organised quality assurance programmes conducted in 2006 and has been accredited as WHO National Laboratory for Polio Eradication since 1998.

In 2006, the Unit was involved in investigating several outbreaks suspected to be of viral aetiology in Peninsular Malaysia. In February, the unit identified dengue as the causative agent of a meningoencephalitis outbreak in Tanah Merah, Kelantan. Between February to March, there were three outbreaks of avian influenza in poultry and birds in Kuala Lumpur (Gombak), Perak and Penang. The unit assisted in these outbreaks by ruling out avian influenza in human presenting with acute respiratory infections (ARI) in the affected areas. From March till July, the Unit was involved in the investigation of the Hand, Foot and Mouth Disease (HFMD) outbreak in Pulau Pinang and Johor. In March and April, the unit identified influenza B as the causative agent of an outbreak of ARI in two boarding schools in Penang. In April, both the Bacteriology and Virology Units identified leptospira and influenza B as causative agents of an outbreak of ARI in the National Service Camp in Malacca.

The project on maternal-child HIV disease initiated in 1990 aimed at determining epidemiology of paediatric HIV and evaluation of available diagnostic tests to facilitate early diagnosis of paediatric HIV infection. The Polymerase Chain Reaction (PCR) technique since 1995 routinely provides early diagnosis of HIV infection in the paediatric age group. The programme of HIV sero-surveillance continues with the Division serving as the National Reference Centre for the study of cases with difficult or unresolved serology. The HIV-2 sero-surveillance was introduced several years ago and current data indicates that HIV-2 has not been introduced into the local Malaysian population.

The Unit also carried out surveillance programme on circulating dengue virus serotype, nipah, JE, influenza and Hand, Foot and Mouth diseases for Ministry of Health (MOH). The dominant circulating dengue serotype for 2006 was Dengue 1. As for influenza, A/New Caledonia/20/1999-like and B/Malaysia/2506/2004-like strains were found to be the predominant strains for influenza A and B respectively.

Specialised Diagnostic Centre (SDC)

The Biochemistry Unit continued its research activities in developing and evaluating new screening and confirmatory methods to determine the incidence of various Inborn Error of Metabolism (IEM) in Malaysia. A new project for rapid screening of Inherited Metabolic Disorders (IMD) in neonatal dried blood spot using Tandem Mass Spectrometry has been carried out since June 2006. More than 11 hospitals all over the country will collaborate in this project. Another screening method is also being developed for the diagnosis of galactosemia in neonates.

There was an increase in the number of samples received for biochemical genetic testing from 11,769 to 13,315 in 2006. The Vanylmandelic acids (VMA) testing which is used as a marker for pheochromocytoma has been stopped since July 2006 and the test was taken over by Pathology Department in Kuala Lumpur Hospital and Putrajaya Hospital.

The Molecular Diagnostics and Protein Unit research activities focused firstly on full mtDNA genome mutation analysis in patients diagnosed with mitochondrial cytopathy. Out of 115 probable mitochondrial cytopathy patients, mutations were detected in 8 probands and 2 of the probands' mothers. Four have been identified as different mutations causing Leigh syndrome and 1 maternally-inherited LS associated with mtDNA T8993G point mutation.

With the acquisition of an Ultra Performance Liquid Chromatography-Quadrupole Time of Flight Mass Spectrometry System (UPLC-QTOF) at the end of 2006, the Unit plan to initiate a proteomics characterization of the different isotypes of Multiple Myeloma as an initial research in advanced proteomics study.

The Medical Resource Research Centre (MRRC) consists of eight units, namely Biotechnology, Biomedical Museum, Epidemiology & Biostatistics, Information Technology, Laboratory Animal Resources, Electron Microscopy, Library & Information Resource and Medical Photography & Audio Visual. The Epidemiology and Biostatistics Unit involved in 9 research projects. The Unit also provide training for statistical software programs applied to research and special courses on research methodologies especially for the young and new researchers of IMR. The Biotechnology Unit carried out research on the role of the Interleukin-1 beta gene polymorphism in systemic lupus erythematosus (SLE). Research on CYP11B2 gene polymorphism and coronary heart disease (CHD) were also carried out in the Unit. The Unit was also involved and carried out a study on leptospira. The study aimed to detect antibody of leptospira in rodents and to determine seroprevalence of leptospira in sera of local rodents using in house ELISA.

DIAGNOSTIC SERVICES.

Four (4) laboratories were accorded accreditation in the field of Medical Testing by National Association of Testing Authorities, Australia (NATA). The Units were Parasitology, Stomatology, Virology and Toxicology & Pharmacology. A total of 146,875 tests were performed in 2006 as compared with 246,385 tests in 2005. This represented a decrease of 40.4%.

CONSULTATIVE SERVICES

IMR staff provided advisory and consultative services to the Ministry of Health (MOH) Malaysia, other government departments, as well as international organizations. Most Units also serve as referral centres to MOH Laboratories throughout the country. Throughout 2006, 48 staff members provided consultative services at the national level, while 11 staff members provided such services at the regional/international level.

SCIENTIFIC AND TECHNICAL TRAINING PROGRAMMES

The Institute conducts regular courses annually as well as ad hoc industrial training programmes. The regular training courses include the SEAMEO-TROPED postgraduate courses namely, the

Diploma in Applied Parasitology and Entomology and The Diploma in Medical Microbiology courses. In 2006, 21 training courses were conducted. The ad hoc programmes had provided training opportunities for 172 scientists, medical doctors and allied personnel from other departments and local and foreign institutes.

CONFERENCES AND STAFF DEVELOPMENT

In 2006, a total of 373 staff attended 222 conferences, seminars and scientific meetings, whilst 270 attended short courses at national and international level. At present, five officers are studying their Master degrees while 12 are pursuing their PhDs.

WAY FORWARD

The IMR will enhance its research program in line with the national health research priorities identified in the 9th Malaysia Plan. The main research thrust will continue to be on tropical diseases specifically targeting malaria, dengue and tuberculosis. In the area of malaria control and epidemiology research, the IMR will continue to export its expertise to developing countries through collaborative research.

The Institute will strengthen its research capacity and capability in medical biotechnology, to tackle emerging infectious diseases in this region such as Avian Influenza and leptospirosis. In addition, the Institute will continue to focus research on cancer, drug addiction, allergy, environmental health, herbal medicine, TCM, cardiovascular diseases and diabetes.

The Institute's partnership with other research institutions and universities (local and overseas) will be further enhanced. Recent linkages established include the Karolinska Institute, Oxford University and the University of New South Wales.

The Institute will seek to strengthen existing and establishing new national reference centres to meet its activities as provider of specialized diagnostic services. These would be in the area of biochemical, immunological, viral, microbiological and molecular diagnostics.

Appropriate and sufficient resources of manpower, infrastructure and financing are crucial to support the various functions of the Institute ranging from research, consultation, specialized diagnostic services and training. The personnel shall be trained and equipped with appropriate skills to conduct high tech/state of the art research, and to have access to research information and technology. The Institute will look into strategic recruitment of experts such as hiring foreign consultants and scientists, as well as encouraging Malaysian scientists based overseas to return and work in the IMR.

The research infrastructure in the IMR need to be extended to ease the congestion of the existing IMR complex, so that the work environment is more conducive. In addition, expansion of its infrastructure is important to enable achievement of Good Laboratory Practice and other relevant accreditations to ensure acceptance of research findings.

INSTITUTE FOR PUBLIC HEALTH

The Institute for Public Health (IPH) was created during the Second 5-year Rural Development Plan (1961-1965). The importance of training in health and research for the purpose of raising the health status was the main reason for the setting up of this Institute. The IPH has developed rapidly with core functions in research, training, information distribution and consultation. Since its formation, it has successfully trained various categories of public health personnel at the basic and advanced levels. In future, the IPH has planned to place greater emphasis on research as its main function besides preserving training to provide a higher quality and professionalism in service.

OBJECTIVES

The objective of the IPH is to be the main provider for the training of public health personnel and public health research for the Ministry of Health in addition to providing consultancies. The Institute plays a major role in providing training to fulfill the needs of public health personnel in human resource development in Teaching Methodology, Public Health Nursing, Information Technology, Epidemiology and Disease Control, Occupational Health, Family Health and Nutrition, and Food Safety and Quality Control of Drink Water. It also carries out relevant public health research based on the national priorities in collaboration with other departments in the Ministry of Health, Universities, other government agencies and NGO's.

In addition to research and training, the IPH provides technical consultancies both locally and regionally in the Transfer and Training Technology for ACT Malaria and Burden of Disease for Program Managers for all categories of personnel in the Ministry of Health.

STRATEGIES

The strategies include faculty development through continuing education, creating a conducive physical and social environment for continuous professional development, inter-sectoral and intra-sectoral collaboration in research and training, continuous performance appraisal of the staff, use of the latest educational technology, networking and building linkages with centres of higher learning locally and internationally and publication and dissemination of relevant research and workshop findings.

RESOURCES

The Institute's academic force constitutes of 30% of the total number of staff. It includes officers from medical and public health fields, assistant environmental health officers, nursing, and other related fields consisting of nutrition, food technology, microbiology, entomology, chemistry and statistics. The rest of the staff comprise of the administrative and support groups.

RESEARCH PROJECTS

In 2006, several major research projects were carried out either by the IPH or in collaboration with several agencies and funding from MOH. These include the National Health & Morbidity Survey III (NHMS III) and National Ear and Hearing Disorders Survey. The National Health and Morbidity Survey is conducted at a 10 year interval by this Institute. This provides community based data on load of illness, pattern of health utilization and prevalence of chronic diseases in Malaysia. This evidence based data is used by the MOH to review health priorities, programme strategies and activities as well as planning for allocation of resources

SPECIAL PROJECTS

The IPH conducted an Occupational Safety and Health on 21 - 25 August 2006. Among the activities were Health Screening, Talks on Ergonomics and Occupational Safety and Health Act 1994, Stress Management, First Aid Course and a Demonstration on Using Fire Extinguisher.

TRAINING

There were seven (7) long courses conducted in the Institute. These include the Post Basic training for Assistant Environmental Health Officers, namely Investigation & Prosecution of Public Health Legislations (12 months), Environmental Sanitation (6 months) and Safety Hygiene and Safety (6 months) and two intakes of Public Health Nurses Training (6 months). A new course was conducted at the national level by the Family Health and Nutrition Division in collaboration with World Health Organization known as 'Gender and Rights in Reproductive and Maternal Health'. In addition, a total of 28 short courses were conducted for public health personnel in 2006 as in Table 1.

TABLE 1
Short Courses Conducted for Public Health Personnel, 2006

Field	No. of Courses Conducted
Orientation Course for Nutritionist Officer	1
Food Safety & Inspection Course	1
TB Management for Medical Officers	2
Breastfeeding Counselling	1
Teaching Methodology Course	2
TB Management for Paramedics	2
Epi Info 3.3.2 For Medical Officers and Paramedics	1
Local Preceptor Course (Public Health Nursing)	2
Health and Counselling Training for Teenagers (Primary Health Care)	1
Surveillance and Malaria Control	1
Diabetic Mellitus Diseases Control	1
Introductory Course for Sanitary Survey in Water Quality Control Program	1
Quality Information Assessment	1
Diet Management Training	1
Occupational Safety and Health Training for Medical Officers	1
Time Series Analysis and Outbreak Prediction	1
Body Weight Management (Adult)	1
Effective Communication	1
Public Speaking	1
Drinking Water Quality Control (KMAM)	1
Risk Communication	1
Occupational Safety and Health Training for Paramedic	1
Training of the ICD-10 Coders	2
Field Application of Control Agents for Vector Control	1
Care of The Elderly	1
Risk Assessment Course :Chemistry and Microbiology	1
SPSS Usage in Research Methods	1
Supervisors Course for Field Training	1

Source: Institute for Health Management

CONSULTANCY SERVICES

The Institute also provides consultancy services, especially in the field of Burden of Disease, Breast Feeding, Epi-Info, Chemistry (Analytical & Organic), Family Health and Nutrition.

STAFF DEVELOPMENT

To equip the staff in the IPH with the latest educational technology and to keep abreast with the latest developments in the relevant fields of public health and information technology, staff members attended various courses, workshops, seminars and conferences under the local training budget. The Training Division of the Ministry of Health sponsored 2 officers for 4 weeks overseas attachments in their respective disciplines. A dietician was sent for a community attachment on 'Dietary Rehabilitation for children with Special Health Needs' in New Zealand and a microbiologist in 'Outbreak Management' in Queensland, Australia.

CONCLUSION

The Institute for Public Health aspires to become a regional centre for public health training and to be in the forefront of public health research. In surmounting these challenges, the Institute has already undertaken the Third National Health and Morbidity Survey and The National Ear and Hearing Disorders Survey and is also increasing the number of short courses as requested by its clients.

CLINICAL RESEARCH CENTRES

The Clinical Research Centre (CRC) was established in 2000 as the clinical research arm of the Ministry of Health to conduct clinical trials, clinical epidemiology and economic research, and manage complex medical databases. Under the purview of the National Institutes of Health (NIH), the CRC promotes, supports and conducts quality and ethical research to improve patients' outcomes. With a network of 14 centres throughout the country, the CRC acts as a One-Stop-Centre by providing a single point of contact to access all MOH hospitals and clinics for clinical trial in Malaysia. As a "One-Stop-Centre", the CRC will provide services that include a single point of contact for sponsors to facilitate the recruitment of qualified clinical investigators and trial sites. The One-Stop-Centre offers services that include single research agreements, Good Clinical Practice Certification (GCP) training, provision of GCP certified investigators and qualified nurses as research coordinators and insurance coverage if required.

The Network of CRC includes: Kuala Lumpur Hospital; Ipoh Hospital, Sultanah Aminah Hospital, Johor Bahru; Penang Hospital, Raja Perempuan Zainab II Hospital, Kelantan; Sarawak General Hospital; Queen Elizabeth Hospital, Kota Kinabalu; Malacca Hospital; Selayang Hospital; Tengku Ampuan Rahimah Hospital, Klang; Alor Setar Hospital, Tuanku Ja'afar Hospital, Seremban; Tengku Ampuan Afzan Hospital, Kuantan; and Sultanah Nur Zahirah Hospital, Kuala Terengganu.

ACTIVITIES AND ACHIEVEMENTS

Since its establishment, the CRC has completed over 40 clinical research projects and operates more than 10 disease registers, in a wide range of therapeutic and disease areas, from both academic and research institutions and industry. CRC had published 19 papers in international journals including 4 papers in 2006. Up to 2006, CRC has conducted 12 workshops and trained more than 1,600 participants in various workshops such as Good Clinical Practice Workshop, Research Methodology and Biostatistics and Clinical Economic Workshops. The participants were mainly from the MOH with a few from the private hospitals and pharmaceutical agencies. The majority of participants were clinicians, nurses, medical assistants, clinical research associates and researchers.

In fulfilling its role to promote, support and conduct clinical research, the CRC showed a gradual increase in the number of research consultations clinics over the past three years. The requests for consultations were mainly from clinicians and Master's student on attachment in Kuala Lumpur Hospital. In 2006, more than 80 clients requested consultancy services in study design, sample size planning, proposal/ protocol development, data management and statistical analysis. Depending on the clients' needs, the CRC team of clinical epidemiologist, clinical trial physician, clinical economist and biostatistician were made available for the discussion. The CRC was also invited to conduct international discussion such as the Clinical Trial Methods and GCP Methodology training workshops for the Aga Khan University in Lahore, Pakistan and similarly in Bandar Seri Begawan, Brunei.

WAY FORWARD

The CRC is currently carrying out a pilot test on the National Medical Research Registry (NMRR) for the Ministry of Health Malaysia (MOH) that will serve as trial registry and investigator registry. The NMRR will enable the MOH to streamline research approval procedures, reduce the research review time as well as enable investigators to track the status of their research online. It also enables MOH management to track the progress of the approved research.

The launching of the CRC network and the One-Stop Centre will be carried out in 2007 by the Director General of MOH. With this launching, CRC will move forward to promote Malaysia as the Clinical Hub in this region.

CONCLUSION

With the official launch of the Network of CRCs as a One-Stop-Centre, clinicians will have easy access for consultation and advice on conducting clinical research. CRC will continue to seek MOH's support in all aspects and to work towards achieving the nations' mission of becoming the clinical research hub in the region.

INSTITUTE FOR HEALTH MANAGEMENT

Institute for Health Management (IHM) is the research and training wing in Health Management. It was fully operational in 2001. As an organization that focus on Health Management, IHM aspires to contribute towards a health system that has well trained managers who are effective, responsive and proactive to the needs of the nation and who can provide effective leadership. Despite its small number of trainers and researchers, it hopes to achieve its objectives by optimizing linkages and networking, both locally and globally. IHM is committed towards human capital development, who are competent through training, research and consultancy services. It will ensure that quality service is delivered to the community based on continued betterment appraisal.

The Vision of IHM is to become the “Centre of Excellence” in Health Management. In line with its main function, IHM aims to produce health managers who are competent, responsive and proactive that enables a health system in fulfilling the nation’s needs.

RESOURCES

The total workforce of IHM for the year 2006 was 76, comprising of 42 and 32 permanent and temporary staff respectively. However there were 9 vacancies in the professional and support group. IHM is in the process of preparing the restructuring paper to increase the number of staff in the institute.

FINANCE

For the year 2006, IHM received a total allocation of RM7,552,102, and of this amount, a total of RM2,924,225 was for procurement and services, whereas RM1,008,246 was for emolument. There was a substantial increase in the allocation for research in 2006 to RM1,079,891 as compared to RM73,057 in 2005. The increase in the allocation was inline with the increase in the number of research carried out by IHM and this included research undertaken in collaboration with Management Division, Department of Public Health, Institutes of Higher Learning (IPTA) and others.

IHM also spent approximately RM58,000 on procurement of assets. For the year 2006, IHM also received allocation under “*Dasar Baru*” that is for the payment of Non-clinical and Support Service amounting to RM1,361,740.

QUALITY OBJECTIVES

Quality Objectives of IHM are as follows:-

- To undertake all research projects that had been agreed upon.
- To document all research findings as a report or to be published in a journal.
- To conduct a minimum of 80 % of courses as scheduled in the calendar.
- To obtain a minimum overall score of 5 from the scale of 1 to 7, for evaluation on courses conducted from participants.
- Every Educator should have a certificate in Teaching Methodology.
- To execute consultancy services in Health management as agreed upon.
- To minimize complaints of clients.

ACTIVITIES AND ACHIEVEMENTS

Institute for Health Management has managed to increase inter-agency collaborations. Most of the collaborative activities were with government agencies, private and NGOs. The activities included trainings, research, meetings, seminars, forums and launching ceremonies. In 2006, there was an increase of 50% in collaborative activities as compared to the previous year.

Research undertaken by IHM is instrumental to support and determine the type of health management trainings that are required at all level of services. In 2006, 21 research studies were undertaken as compared to only 6 studies in 2005, 10 research studies were exhibited through poster and oral presentation and another 11 research studies were published in journal of Health Management, Vol.1/2006. Many research findings have been published in the form of reports and scientific journal (Table 2).

TABLE 2
Research Studies Undertaken by IHM, 2004 – 2006

Research	Year		
	2004	2005	2006
Number of Research Studies Planned	6	6	21
• Research > RM 10,000	-	2	19
• Research < RM 10,000	6	4	2
Number of Research Done	4	13	21
Number of Research Findings Exhibited (Oral/Poster)	5	11	10
Number of Research Findings Published in Journal	3	1	11

Source: Institute for Health Management

Training activities have shown remarkable improvement and achievement during the 5 years duration of IHM establishment. In 2006, IHM had trained 17 educators at Institute Amminudin Baki, Ministry of Education. The increase number of educators and the upgrading facilities of IHM have resulted in the increase number of courses conducted. In 2006, 53 training activities were conducted as compared to 47 in 2005. Training activities conducted by IHM for 2005 and 2006 is shown in Table 3 which include those planned at the beginning of the year and courses conducted upon request.

TABLE 3
Training Activities Organized by IHM and Achievement for 2005 and 2006

Training	Planned		Conducted		Achievement	
	2005	2006	2005	2006	2005	2006
Number of Training	47	53	43*	50*	91.5%	94.3 %

Note: *total does not include additional courses conducted upon request

Source: Institute for Health Management

TABLE 4
Number of Training Courses Conducted by Each Department, 2004 – 2006

Department	2004	2005	2006
Health Management Development	14	8	12
Quality in Health	10	12	16
Technology & Knowledge Management	10	16	8
Health Policy	2	6	6
Economics and Health Initiatives	-	6	12
Total	36*	48*	54*

Note: *total includes additional courses conducted upon request

Source: Institute for Health Management

Institute for Health Management has produced several publications that include modules, journals and books related to Health Management and training needs. In 2006, 8 books and journals were published as compared to 3 in the year 2005.

In 2006, IHM provided 15 consultancy services to agencies within MOH and outside agencies such as local universities and the private sector. At present, consultancy rendered is geared towards quality, health economics and financing, and information technology such as audit and documentation related to MS ISO 9001: 2000, action research and patient safety (Table 5).

TABLE 5
Consultancy Services Provided by IHM, 2004 – 2006

Consultancy	2004	2005	2006
Ministry Of Health	5	11	12
Outside Agencies	0	1	1
Universities	2	0	2
Total	7	12	15

Source: Institute for Health Management

Among other activities carried out by IHM in 2006 were:

- The launching of module in internalization of noble values in counter service as an initiative to educate health workers of soft skills, especially to those who deal directly with patients.
- A strategy presentation session on Health Human Resource Development in Public Sector (in collaboration with WHO Malaysia). This was to elicit the issues pertaining to human resource development in the public sector.
- Hosted the Regional Training of UNICEF Manila and Malaysia.
- Coordinated and Conducted the 9th NIH Scientific Meeting.

WAY FORWARD

In line with the nation's aspiration to realize Vision 2020, IHM has expanded its function and be part of a Think-Tank to Ministry Of Health especially in areas relating to client satisfaction.

The existing library shall be upgraded in terms of manpower, book collection and IT technology as it will serve as a 'knowledge center' to store, retrieve, refer and assess to information and knowledge for MOH and other agencies. The establishment of a Knowledge Center is vital to promote and ease the process of knowledge sharing among the health staff and clients of IHM.

IHM also has a role in coordinating training of Epidemiological Intelligence and Health Management as planned in the Malaysian Technical Cooperation Program (MTCP). The training is in collaboration with EPU, Prime Minister Department and the Disease Control Division, MOH.

As for facility development under the 9th Malaysia Plan (9MP), IHM were given allocation to build two (2) additional blocks to accommodate the current number of manpower. A paper on restructuring of IHM has been submitted to the relevant authorities.

CONCLUSION

The shortage of manpower is not a deterrent for IHM to pursue its mission to become a center of excellence in the field of Health Management. To overcome the problem, several means were taken, such as employment of temporary staff and application for new post. Despite its constraints, IHM have successfully carried out its three core functions of training, research and consultancy. IHM have successfully undertaken many collaborative activities, notable among them is the collaboration with WHO. IHM still upholds the ISO Certification, without any non-compliance report. Continuous support from top level management is crucial in ensuring all functions of IHM are fulfilled.

INSTITUTE FOR HEALTH SYSTEMS RESEARCH

The Institute for Health Systems Research (IHSR) has a technical staff strength of 18 (both medical professionals and allied health personnel). It has significantly developed itself into a full fledged research institute focusing in the field of Health Systems research (HSR).

ACTIVITIES AND ACHIEVEMENTS

Although the focus and forte of IHSR is research in health systems, the institute has progressed further to undertake research in areas of health policy, health outcomes, quality improvements, health economics, health financing and health informatics. It continues to be a WHO Collaborating Centre for HSR and QI (quality improvement) and also houses the Secretariat for the National QA Programme for the Ministry of Health.

The following activities had been successfully conducted by IHSR in 2006:

RESEARCH

i. Health Research Prioritisation for the 9th Malaysia Plan (9MP)

IHSR supported the role of the NIH Secretariat in spearheading the coordination and development of the national health research priority setting for the 9MP. The institute took the leadership in identifying and prioritizing research in health systems and policy. IHSR also facilitated the prioritization process for 8 other research groups using the Combined Approach Matrix (CAM) to identify important research needed to be addressed.

The highlight of this national priority setting exercise was IHSR's organization of the National Conference on Research Priorities in the Health Sector for the 9th Malaysian Plan. This conference was held in July 2006.

ii. Knowledge Translation

IHSR took a bold step in initiating activities relating to knowledge management. In 2006, the institute with the assistance of a local consultant developed a strategic action plan to get research into policy and practice. In addition, an outline of a training module was developed and two training workshops involving mid-level managers and researchers were subsequently organized.

The institute had also sought the services of another local consulting firm to assist in the introduction of knowledge management for its personnel. A significant product of the consultancy was the development of draft blueprint "Towards creating a knowledge-based organisation for all levels of facilities within the MOH".

iii. Health Policy Research in the Western Pacific Region (EVIPNet Asia)

The WHO Headquarters in Geneva and the Office for the Western Pacific Region (WPRO) initiated the development of networks to support informed decision making in low and middle income countries within the region. Known as EVIPNet Asia, Malaysia through the Institute for Health Systems Research has been involved in the formation of this network through participation in an international collaborative research with 4 other countries namely China, Lao PDR, Philippines and Vietnam. This research called for the submission of a proposal to implement an in-country network – EVIPNet Malaysia. In 2006, the Implementation Plan was submitted for peer review and competitive grant bidding. Malaysia was one of the first few participating countries to have succeeded in receiving some financial award from the WHO to initiate the operationalization of the Implementation Plan.

iv. National Health Research Systems Analysis in the WHO Western Pacific Region

In 2005, the Western Pacific Regional Office (WPRO) initiated a project with 5 countries including Malaysia to develop and test tools that are contextually appropriate to assess the national health research systems of countries within the region. Through a separate agreement of performance of work (APW) with the regional office, IHSR provided technical leadership to develop and test the said tools. An informal consultation with the 4 other participating countries (Cambodia, Mongolia, Philippines and Vietnam) was organized by IHSR in May 2006 in Penang. Since then, a data entry programme and a framework for reporting the study has been developed by IHSR and distributed to all the participating countries.

v. Hospital Information System: A preliminary assessment of end-user acceptance in Lahad Datu Hospital

The institute spearheaded a multidisciplinary research team involving researchers from the Public Health Department, Information Technology and Communication Division and Serdang Hospital to study the user acceptance of the hospital information system (HIS) in Lahad Datu Hospital. Amongst the critical areas covered include extent of usage of the HIS specifically looking into the element of user satisfaction. Preliminary results indicated a high acceptance rate amongst users.

vi. Patients Unvoiced Needs

A cross-sectional multi center study was conducted by IHSR in an attempt to study problems relating to patients' unvoiced needs and their unrevealed agenda during doctor-patient encounters. Data collection was carried out between March to August 2006. A total of 1,829 respondents responded to structured questionnaires. A preliminary report is expected in the first quarter of 2007 together with the development of an intervention package.

vii. Other Research Projects

In addition to the projects listed above, the institute had also spearheaded the following projects:

- Labuan Entertainment Girls (LEGS): A qualitative study
- Application of Data Mining Technique in Managing Long Waiting Time at Putrajaya Clinic
- Equity Sensitive Monitoring of the Maternal Health Millennium Development Goals
- Work Related Stress Among Nurses in Kuala Lumpur Hospital
- Pilot Study on Health Research Systems Analysis
- Qualitative Study on Full Paying Patients at Selayang Hospital
- Implementation of Client Charter in the Ministry of Health

In addition, the Institute facilitated more than 20 research projects as part of its on-going Research Methodology workshops where most of the projects are currently in the data entry and preliminary analysis phases.

TRAINING

The Institute conducted over 15 training courses for both in-service, post graduate and post-basic programmes. Courses were conducted in the fields related to research methodology in HSR, Health Outcomes and Quality Improvement.

As a WHO Collaborating Centre, the Institute had been a host to many Visiting Fellows, and international visitors. In addition, IHSR also provided attachment programmes for a number of undergraduate and masters students from local universities both medical and non-medical disciplines.

For the institute's staff development programme, IHSR continued its human resource strengthening and capacity building by providing opportunities for its officers to attend relevant training courses, both locally and internationally. The international attachment programmes were carried out to similar organizations in Singapore and Bangkok.

CONSULTANCY

Throughout 2006, IHSR's professional staff had been actively involved in providing consultancy and technical assistance services in various fields related to research and quality improvement. In addition, the IHSR staff had received invitation as speakers and panelists at various conferences and seminars organised both by the MOH and local academic institutions.

To chart its development further, IHSR also obtained external assistance from SIRIM to assist in the preparation of its Quality management System, in line with the implementation of MS ISO 9001/2000 certification. IHSR aims to acquire certification in early 2008.

PRESENTATIONS AND PUBLICATIONS

In 2006, the Institute made 40 presentations at various national and international forums. In addition, a total of 20 publications in journals and bulletins were produced by the institute.

WAY FORWARD

In 2006, IHSR started an initiative to promote the utilization of research results into action. In 2007, the institute is expected to take a bigger step towards supporting evidence based informed decision making through the research work of EVIPNet, Health Research Systems Analysis and other initiatives.

IHSR will also continue forging new and at the same time strengthen existing partnerships and collaborations to enable it to achieve its goal of being a centre of excellence for health policy and practice research.

CONCLUSION

The year 2006 saw further strengthening of the Institute in terms of manpower capacity and capability. This was reflected in the admirable output for the institute in terms of its 3 core businesses of research, training and consultancy.

INSTITUTE FOR HEALTH PROMOTION

The Institute for Health Promotion (IHP) was established in 1987. The activities of the institute are carried out by the Behavioral and Social Research Division in the Institute of Medical Research (IMR). During this period, the research activities carried out were focused on health behaviors which closely related to communicable diseases such as malaria, dengue, tuberculosis and leprosy. At the same time, emphasis was given in identifying factors influencing human health behavior. In 1996, the Ministry of Health decided to upgrade the Division into an Institute in order to widen its scope

and functions. In July 1999, IHP was officially established. In December 2005, the Health Education Division of the Institute for Public Health was merged with the existing staff of IHP.

ACTIVITIES AND ACHIEVEMENTS

RESEARCH

Research on Factors Contributing to Food Poisoning In School Canteens in Kelantan was one of the major studies carried out by the Institute. A proposal was put forward and a series of discussions with Kelantan Health Department was held. Meanwhile, a Nationwide Study on Aging Among Malaysians was initiated collaboratively with the Health Education Division of the Ministry of Health, Putrajaya and the the Institute of Gerontology, UPM.

The Institute also collaborated with the Institute for Public Health in a number of research studies notably the Third National Health and Morbidity Survey. IHP was actively involved in the Exclusive Breastfeeding Study in Negeri Sembilan, at the stage of data analysis.

IHP conducted a collaborative study with the Family Health Development Division of the MOH on the Effectiveness of Intervention In Rehabilitation Program for Malnourished Children in Kelantan and Sarawak. This study has been going on for the past two years and data collection was done in 2006.

In addition to the above, every student of the Post Graduate Program in Health Education carried out an intervention project (which encompasses a large part of research) which was closely supervised by the teaching staff from the Institute. There were 16 projects carried out in 2006.

TRAINING

IHP also conducted training programs in Health Education for newly appointed Health Education Officers. The course, consists of 13 modules, has been accredited by the National University (UKM) in 1997. The 15th Post Graduate Program in Health Education for 16 students was completed in May 2006. Eight health education officers registered for the postgraduate course in health education beginning July 2006.

CONSULTANCY

The Institute also provided consultancy services in various fields such as Risk Communication, Effective Communication, Communication Skills, Public Speaking and Health Promotion for members in and outside the MOH.

HUMAN RESOURCE DEVELOPMENT

Staff members were sent for various courses, workshops, seminars and conference. In 2006, among the courses attended by the staff members were:

- i. A fellowship to study health promotion research and activities in Canada and the United States of America particularly in Behavioral Risk Factor Surveillance Research, Healthy Aging and Diabetes Education;
- ii. A three week course on Risk Communication in Australia; and
- iii. Other courses such as Statistical Package for the Social Sciences (SPSS), Personality Profile, Psychological Evaluation and many more to upgrade their skills.

WAY FORWARD

IHP is determined to become a leading Institute in the field of health behavioral research and health promotion training center. The Institute has develop various plans including training in certain fields such as research methodology and training, increasing the number of personnel in the relevant fields of expertise from time to time, collaborating with a wide range of organizations and getting consultation services from WHO and other agencies. In its effort to accomplish its mission and objectives, IHP plans to widen its role in the field of research namely Behavioral Risk Factor Surveillance, Determinants of Health Behavior, Interventions and Communication.

CONCLUSION

IHP intends to establish itself as a world-class research center and an exemplary Institute in the Ministry of Health (MOH). Towards that goal, the Institute strives to achieve greater achievement and success in the field of health promotion generally and health behavior research specifically. This goal can be achieved with the dynamism and expertise of its staff together with the support from the top management of the MOH.

THE NATIONAL INSTITUTE FOR NATURAL PRODUCTS, VACCINES AND BIOLOGICALS

The National Institute for Natural Products, Vaccines and Biologicals (9BIO), celebrated the groundbreaking for its new vaccine and natural products research facility at Techpark @ Enstek, Negeri Sembilan on the 4th September 2006. The Prime Minister of Malaysia, Y.A.B. Dato' Seri Abdullah Hj. Ahmad Badawi officiated the groundbreaking ceremony to commemorate the start of the construction on the 25.1 hectar land.

The 50,000 square foot state-of-the-art R&D facility is the result of the Ministry of Health Malaysia's vision to fulfill Malaysia's need for self-reliance in vaccine production and security, and the development of our natural products specifically in herbal medicinal products.

Besides exploring into new avenues to cater for new vaccines required for disease prevalence in the ASEAN region, and ensuring adequate supply of basic childhood vaccines, the new institute will bring together an alliance of expertise within the Ministry of Health (MOH), other local research institutions and private entities with the purpose of integrating research, development, clinical trials and commercialization of potentially useful natural products.

To achieve the goals of the Institute, a Memorandum of Understanding (MoU) was signed with several partners, namely Glaxo Smith Kline Pharmaceuticals Sdn. Bhd, Ekovest Berhad, Faber Group Bhd, Emergent Bio Solutions, and Pharmaniaga Sdn. Bhd.

ACTIVITIES AND ACHIEVEMENTS

Several research projects for the development of vaccines, natural products and biologicals for emerging and preventable diseases initiated in 2005 are currently on going. These studies were:

- i. Research, development and production of viral infectious clones with special emphasis on SARS coronavirus, dengue virus and Hepatitis C virus;
- ii. Molecular characterization of a Malaysian Nipah virus isolate;
- iii. Innovative approaches for diagnosis and management of dengue virus infection;
- iv. Screening of anti-viral activities from natural products; and
- v. Clinical Trial of *Phyllanthus niruri* (Hepar P) in patients with Chronic Hepatitis B.

Plans for the construction of 9BIO has been initiated and is expected to complete by year 2009. Meanwhile, the research activities initiated will be conducted in the Institute for Medical Research and in Wisma Ekovest in Kuala Lumpur.

The following activities were carried out in the year 2006:

- i. Planning of the temporary location of the Corporate Office
- ii. Procurement of laboratory equipment.
- iii. Training of personnel in the relevant fields.
- iv. Recruitment of staff for 9BIO

WAY FORWARD

The Institute for Natural Products, Vaccines and Biologicals was registered as NINEBIO SDN BHD in August 2006 as a Government Linked Company (GLC) under the Ministry of Finance and is expected to operate in 2007.

The Institute plans to operate in 4 Units, namely: R&D, Commercial Production, Filling & Packaging and Marketing. The R&D forms the backbone of the institute and currently has ongoing projects. New research areas are also constantly being surveyed and looked into, for example, research into the field of Avian Influenza. The Commercial Production involves the building of seed vaccine capability and mass production for distribution. The Filling & Packaging will initially involve purchasing of bulk vaccines for filling, packaging and commercial distribution. It will eventually encompass the scaling up of successful R&D ventures for distribution commercially. The Marketing involves finding the market for *halal* vaccines as well as negotiations for supply to the Ministry of Health. As a member of the Self-Reliance Vaccine Production (SRVP) group, 9BIO is expected to assist in the supply of *halal* vaccines to OIC countries and if negotiations permit, to other countries as well.

One of the roles of 9BIO is to coordinate the R&D efforts in vaccines, natural products and biologicals in Malaysia so as to prevent duplication and to optimize resources. To achieve these strategies, alliances with national, regional and international research facilities as well as industry collaborators and partnerships will be formed.

CONCLUSION

Several MOUs were signed to facilitate the goal of 9BIO to be the region's most advanced global R&D institute dedicated to promote new sources of growth in natural products, and decrease Malaysia's dependence on essential vaccines from external sources as well as implementing, promoting and monitoring research in the up-and-coming area in medicine - Traditional and Complementary Medicine (TCM).

PHARMACEUTICAL PROGRAMME

PHARMACEUTICAL SERVICES

INTRODUCTION

The Pharmaceutical Services Division (PSD), Ministry of Health (MOH) as the key government agency in the pharmaceutical sector is responsible to ensure an equitable, adequate and affordable access by the people to safe, effective, good quality medicines and that they are used in a therapeutically sound and effective way to improve their health outcomes and quality of life.

This programme, which comprises of three main sub-divisions; the National Pharmaceutical Control Bureau (NPCB), Pharmaceutical Enforcement Branch and Pharmaceutical Care Management and Development Branch plays three major roles:

- i. Contributes directly to public health by establishing and implementing the national drug registration system besides regulating the pharmaceutical industry through the NPCB that assures the quality of medicines in the country;
- ii. Protects consumers from hazardous drugs, misleading medicine advertisements and unscrupulous practices through the enforcement of related drug and pharmacy legislation that control the importation, sale and advertisement of drugs and the practices of pharmacy in the country; and
- iii. Optimises drug therapy and the provision of pharmaceutical care by ensuring efficient management of selection, procurement, distribution of pharmaceuticals and ensuring the rational and cost-effective use of medicines through effective up-to-date clinical and professional pharmaceutical services in tandem with current global development.

PROGRAMME RESOURCES

The manpower of the whole PSD, MOH according to category and activity is shown in Table 1 and 2.

TABLE 1
Pharmacist Manpower of Pharmaceutical Services, 2006

Category/Activity	Grade	No. of Posts	Filled	Vacant	% Filled
Director	JUSA A	1	1	0	100
Pharmaceutical Care Management and Development	U41	1,255	1,169	86	93
	U44	250	122	128	49
	U48	105	84	21	80
	U52	35	34	1	97
	U54	10 *	7	3	70
	JUSA C	1	1	0	100
Licensing and Enforcement	U41	143	126	17	88
	U44	36	20	16	56
	U48	37	31	6	84
	U52	4	2	2	50
	U54	1	1	0	100
	JUSA C	1	1	0	100
Regulatory Control of Pharmaceuticals	U41	80	70	10	88
	U44	4	4	0	100
	U48	33	21	12	64
	U52	6	5	1	83
	U54	2	1	1	50
	JUSA C	1	1	0	100
Total		2,005	1,701	304	85

Source : Pharmaceutical Services Division, MOH

* 1 personal-to-holder post for JUSA C

TABLE 2
Pharmacy Assistant Manpower of Pharmaceutical Services, 2006

Category/Activity	Grade	No. of Posts	Filled	Vacant	% Filled
Pharmaceutical Care Management and Development	U29	2,385	2,199	186	92
	U32	330	273	57	83
	U36	55	35	20	64
	U38	23	12	11	52
	U40	2	0	2	0
Licensing and Enforcement	U29	7	2	5	29
	U32	9	5	4	55
	U36	3	3	0	100
	U38	0	0	0	0
	U40	0	0	0	0
Regulatory Control of Pharmaceuticals	U29	67	52	15	78
	U32	8	6	2	75
	U36	2	2	0	100
	U38	0	0	0	-
	U40	0	0	0	-
Total		2,891	2,589	302	90

Source : Pharmaceutical Services Division, MOH

ACTIVITIES AND ACHIEVEMENTS

ORGANISATIONAL AND HUMAN RESOURCE DEVELOPMENT

Organisational Restructuring

With the approval of several posts of U52 and U44 in 2006, the PSD was reorganised in order to strengthen planning activities, policy management, and services implementation of the programme. There are currently 15 portfolios for Pharmaceutical Care Management and Development, and 11 for Pharmaceutical Enforcement.

Improvement in Pharmacy Manpower

i. Increment of Posts

The increase in the number of posts for pharmacist and pharmacy assistant since 2001 to 2006 has been very encouraging especially in the appointments of U41 and promotional posts of U44 up to U52 for the pharmacists, and U32 up to U40 for pharmacy assistants (Table 3).

ii. Recruitment of New Staff

In 2006, a total of 519 Provisionally Registered Pharmacists (PRP) were recruited into the public service. In addition, a total of 416 have been appointed as Fully Registered Pharmacists (FRP), while 73 diploma holders were recruited as pharmacy assistant into the public service. There were an additional of 9 places for new re-employment and 4 places of re-employment of retired pharmacist assistants were approved for the year 2006.

iii. Promotion

As for the year 2006, there were 24 pharmacists with Grade U48 promoted to U52. On the other hand, there was one promotional interview session for both Grade U38 and U40 conducted for the pharmacy assistant.

TABLE 3
The Number of Posts for Pharmacy Personnel, 2001-2006

Category/Grade	2001	2002	2003	2004	2005	2006
Pharmacist						
U41	569	849	972	980	*916	1,478
U44				58	*217	290
U48	68	97	113	180	184	184
U52				21	21	45
U54	13	13	13	13	13	13(#)
JUSA C	3	3	3	4	4	3
JUSA A	1	1	1	1	1	1
Pharmacy Assistant						
U29	2,199	2,319	2,407	2,447	2,459	2,459
U32	201	245	277	248	329	347
U36	33	41	47	51	54	60
U38			5	9	23	23
U40				1	2	2

Source : Pharmaceutical Services Division, MOH

* In 2005, there was an increment of 94 new posts of U41, but in the same year, 158 posts have been traded-off for the higher grades of U44.

1 personal-to-holder post for JUSA C

REGULATORY CONTROL OF PHARMACEUTICAL

Pharmaceutical Product Quality Assurance

The regulatory control of pharmaceuticals is responsible to ensure the safety, efficacy, and quality of pharmaceuticals as well as safety and quality of traditional medicines and cosmetics marketed locally. Until the end of 2006, a total of 145,139 products have been registered. A total of 27,158 applications were received in 2006, a decrease of 14.56% as compared to 31,787 in 2005. The majority of applications were for the registration of cosmetics (90.4%), followed by traditional medicines (5.6%), non-poison drugs (2.3%) and 'scheduled poison' drugs (1.7%). The total revenue collected by NPCB was RM8.7 million. The statistics related to product registration are shown in Table 4, 5 and 6.

TABLE 4
Application for Product Registration, 1985-2006

Year	'Scheduled Poison' drugs	Non poison drugs	Traditional products	Cosmetics	Total	
					Yearly	Cumulative
1985-1990	9,166	5,935	-	-	15,101	15,101
1991	481	305	-	42	828	15,929
1992	150	60	3,973	145	4,328	20,257
1993	376	111	7,059	51	7,597	27,854
1994	400	168	4,080	31	4,679	32,533
1995	440	239	288	58	1,025	33,558
1996	617	671	415	130	1,833	35,391
1997	532	635	668	123	1,958	37,349
1998	587	606	938	277	2,408	39,757
1999	796	789	1,347	610	3,542	43,299
2000	427	444	1,523	262	2,656	45,955
2001	578	487	1,154	150	2,369	48,324
2002	509	448	1,603	214	2,774	51,098
2003	263	266	1,471	26,177	28,177	79,275
2004	529	720	2,220	30,630	34,099	113,374
2005	703	645	1,807	28,632	31,787	145,161
2006	465	609	1,526	24,558	27,158	172,319
Total	17,019	13,138	30,072	112,090	172,319	172,319

Source : Pharmaceutical Services Division, MOH

The quality of the registered products in the market is continuously monitored by NPCB through its surveillance activities. A total of 2,748 registered products were sampled for this purpose and this represented 1.89% of the number of registered products. A total of 2,631 labels and package inserts had been checked, 41 products were issued warning letters and 317 complaints had been handled. A total of 108 products were recalled from the market while 108 product batches were recalled within 30 days (Degree Three), comprising of 19 prescription drugs, 3 non-prescription drugs, 85 traditional medicines, and 1 cosmetic product.

TABLE 5
Cumulative Number of Registered Products, 1991-2006

Year	'Scheduled Poison' drugs	Non poison drugs	Traditional products	Cosmetics	Total
1991	5,332	3,331	-	-	8,663
1992	5,862	3,743	-	14	9,619
1993	6,131	3,867	5	109	10,112
1994	6,444	3,954	57	149	10,604
1995	6,691	4,023	339	183	11,236
1996	7,027	4,237	1,852	292	13,408
1997	7,525	4,830	4,347	476	17,178
1998	8,187	5,415	7,819	664	22,085
1999	8,792	5,942	7,966	1,235	23,935
2000	8,813	6,072	8,550	1,467	24,902
2001	8,993	6,696	9,894	1,776	27,359
2002	9,335	6,931	10,758	1,935	28,959
2003	9,659	7,206	12,107	6,656	35,628
2004	10,012	7,432	13,077	47,418	77,939
2005	10,339	7,732	14,385	83,430	115,886
2006	11,356	8,686	16,857	108,240	145,139

Source : Pharmaceutical Services Division, MOH

TABLE 6
NPCB Revenue Collection, 2006

ACTIVITY	RM
Product Registration	6,044,150.00
Certificate of Free Sale	300,200.00
Change Of Holder	387,400.00
Change Of Manufacturing Site	58,000.00
Export-only Product Registration	21,500.00
Clinical Trial Import License	107,000.00
Manufacturer license	350,000.00
Importer license	424,750.00
Wholesaler license	470,000.00
Good Manufacturing Practice (GMP) Auditing	79,285.00
Laboratory services	386,595.00
Published goods sale	7,635.50
Other sales	70,888.33
Total	8,707,403.83

Source : Pharmaceutical Services Division, MOH

The registration of 13 products were cancelled based on the fact that the samples tested were found to contain adulterants; sibutramine (2 products), analogues of sildenafil (4), tretinoin (3), hydroquinone (1), hydroquinone + tretinoin (1), phenylpropanolamine (1) and chlorpheniramine + chloramphenicol + ibuprofen + caffeine (1).

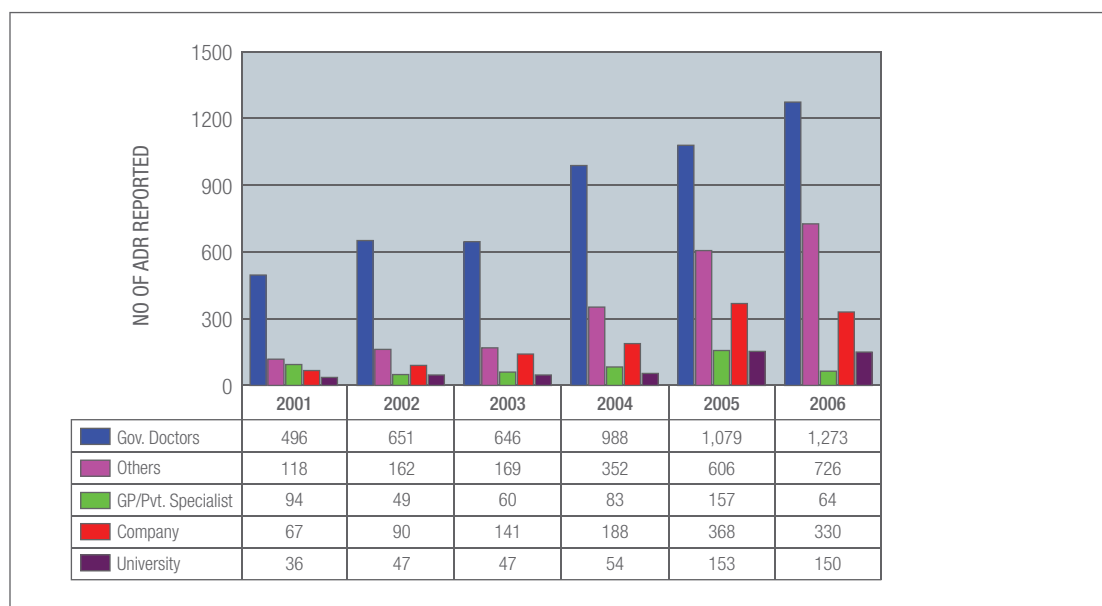
As for Adverse Drug Reaction (ADR) reporting, NPCB received a total of 2,543 reports, an increase of 7.62% as compared to 2005 (Figure 1). Out of these, 2,491 reports were evaluated and subsequently submitted to become a part of the WHO ADR Monitoring Centre database in Uppsala, Sweden. The majority of the ADR reports were submitted by medical practitioners from government hospitals.

On the aspect of Quality Control, a total of 63,410 tests were done on 5,185 samples of which 2,196 were samples for application for registration, 2,690 samples from surveillance activities, 110 samples from complaints, 154 samples from enforcement activities and 35 samples were from other sources (Figure 2).

A total of 336 manufacturing premise licenses were issued in 2006 of which, 85 were for pharmaceutical, 161 for traditional and 90 for cosmetics manufacturers (Figure 3). For importers, a total of 776 import licenses were issued comprising of 180 pharmaceutical, 149 traditional and 447 cosmetic import licenses. A total of 970 wholesaler licenses were issued of which 426 of these licenses were issued to wholesalers of 'scheduled poison' drugs and the remaining 544 licenses were issued to wholesaler of non-poison and traditional products as well as cosmetics. A monthly updated list containing information of the licensed premises is available on the NPCB website (www.bpfk.gov.my).

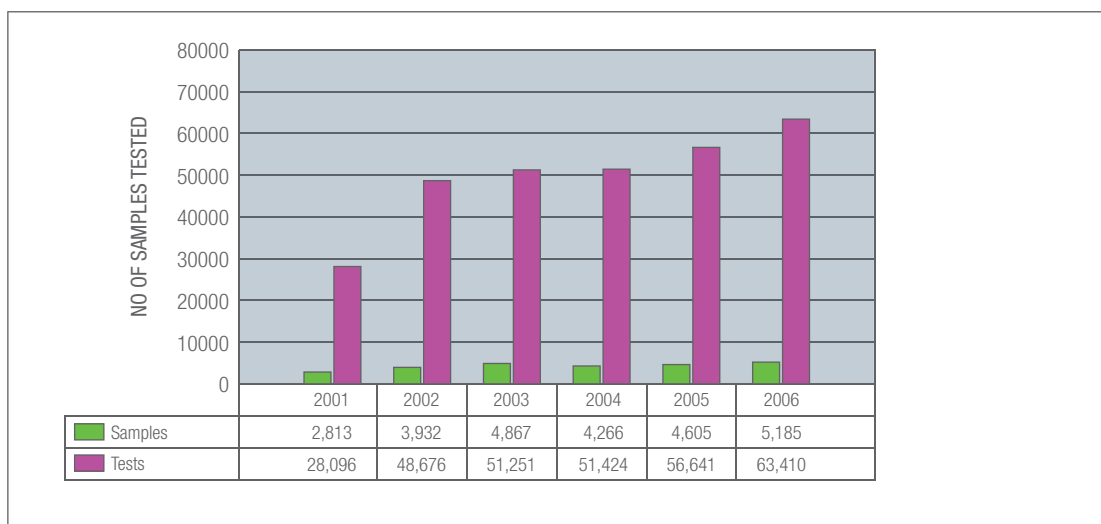
In 2006, the Information and Communications Unit of the Centre for Organisational Development of NPCB received 3,663 enquiries through telephone, e-mail, facsimiles, and letters from the government agencies, companies and general public.

FIGURE 1
Analysis of ADR by Reporters, 2001-2006



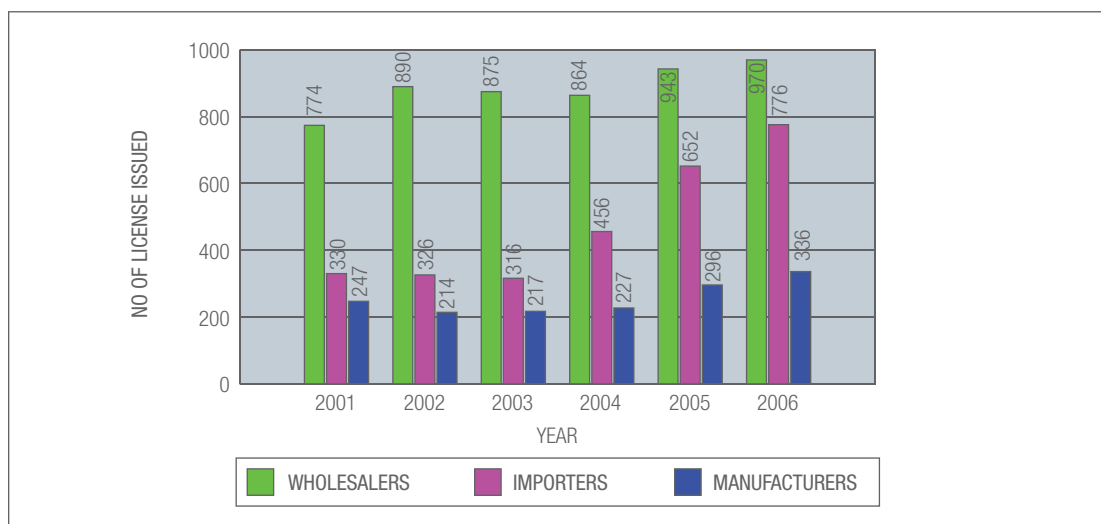
Source : Pharmaceutical Services Division, MOH

FIGURE 2
Samples Tested, 2001 – 2006



Source : Pharmaceutical Services Division, MOH

FIGURE 3
Total License Issued, 2001-2006



Source: Pharmaceutical Services Division, MOH

On-line Product Registration

All registration applications for pharmaceutical, traditional, cosmetics were submitted via the on-line system except for new chemical entity products and biotechnology products. In an effort to further enhance the quality of the service rendered by the NPCB as well as to meet the demand of clients, the NPCB has reviewed the Client's Charter in early 2006. The new charter is available for viewing in the NPCB website.

The NPCB had also undertaken the task of reviewing the registration process of health supplements in early 2006, with a view to expedite the registration of these products and also to overcome the backlog of applications for these products. A simplified registration process had been introduced and two additional evaluators were stationed at the Health Supplement Unit to assist the product evaluation processes. The new procedure was found effective and there was an increase in the productivity as well as it helped to overcome the backlog of the registration application for health supplements.

International Involvement

NPCB continued to play an active role in its regulatory harmonisation efforts through the ASEAN Consultative Committee for Standards and Quality (ACCSQ), Pharmaceutical Product Working Group (PPWG), ASEAN Cosmetic Committee (ACC) and Traditional Medicines and Health Supplements Product Working Group (PWGTMHS).

Other involvements include facilitating the fast track healthcare integration of ASEAN and Economic Co-operation EC-ASEAN towards quality, standards, and conformity assessments. NPCB was also involved in technical meetings as well as initiate bilateral arrangements with other ASEAN countries. NPCB cooperated with WHO and Pharmaceutical Inspection Cooperation Scheme (PIC/S) to handle training in the field of Good Manufacturing Practice (GMP) and undertook auditing/checking of GMP regionally under the Technical Co-operation program EC-ASEAN. Since its inception in the early 1980s, Malaysia has been designated as the Training Centre for Strengthening Quality Assurance and Non-pharmacopoeia Analytical Methods under the Asean Working Group on Technical Co-operation (AWGTCP). Malaysia participated actively in other AWGTCP projects such as Training Programs and Production and Utilisation of Regional Standards and Reference Substances.

Visits and Training of Guests from Overseas

Throughout the year 2006, NPCB received a total of 68 international visitors from various countries such as Singapore, Egypt, India, China, Taiwan, Brunei, Bhutan, Tanzania, and Sri Lanka. Those who came on educational visits were given training according to their respective specific needs. Training given was in the aspect of Quality Control, Product Registration, Good Manufacturing Practices and Licensing and Pharmacovigilance and Surveillance.

Publications

NPCB published the Drug Control Authority (DCA) bulletin entitled '*Berita Ubat-ubatan*' and the Malaysian Adverse Drug Reactions Bulletin to disseminate information on drugs, DCA policies and regulatory information.

ENFORCEMENT AND LICENSING

Medicine Advertisement Board

The Medicine (Advertisement and Sale) Act 1956 provides the basis for the control of advertisement of medicines, appliances, remedies and skill and services that relate to medical and health claims. The Act also provides in the formation of the Medicine Advertisement Board (MAB), which responsible for the regulation of the advertisements. The Board has issued two guidelines to help advertisers in devising advertisement formats to ensure that the public will not be misled by the misleading advertisements by the advertisers and media. Statistics on applications received for 2004-2006 is shown in Table 7.

TABLE 7
Applications for Advertisement, 2004 - 2006

ACTIVITY/YEAR	2004	2005	2006
Total number of applications	1,236	1,613	1,657
Total number of approvals	1,053	1,338	1,428
Number of approvals through the Fast Track (FT) System	751 (60.8%)	843 (52.3%)	1,028 (62.0%)
Total amount of fees collected (RM)	123,600	161,300	165,700

Source : Pharmaceutical Services Division, MOH

Advertisements Monitoring

In order to improve the monitoring of the advertisements, Pharmacy Enforcement Division had subscribed a programme from MediaBanc Sdn. Bhd. in August 2006. This company collects and uploads all type of advertisements from local media in their website daily. With this subscription, more advertisements in the media especially electronic media could be monitored. A total of 312 warning letters were issued in 2006 as shown in Table 8.

TABLE 8
Warning Letters Issued, 2006

Warning Letter Sent to	Number
Editors	11
Advertisers	94
Editors & Advertisers	207
TOTAL	312

Source : Pharmaceutical Services Division, MOH

Investigation Unit

The Investigation Unit is responsible to investigate any cases that violate any of the laws enforced by the Pharmacy Enforcement Division. Investigations cover various media and also based on public complaints. Activities carry out under this Unit include collection of exhibits (documents), taking statements and finally follow up with legal actions. The Advertisement Control Team Committee was formed in 2006 to carry out investigations of complex medicine advertisement cases such as advertisements in electronic media. The statistics on advertisement investigation carried out for the year 2006 are shown in Table 9.

TABLE 9
Statistics on Advertisement Investigations, 2006

Cases Referred to	Number
Pharmacy Enforcement Division, MOH	58
Pharmacy enforcement Branch (State)	62
TOTAL	120

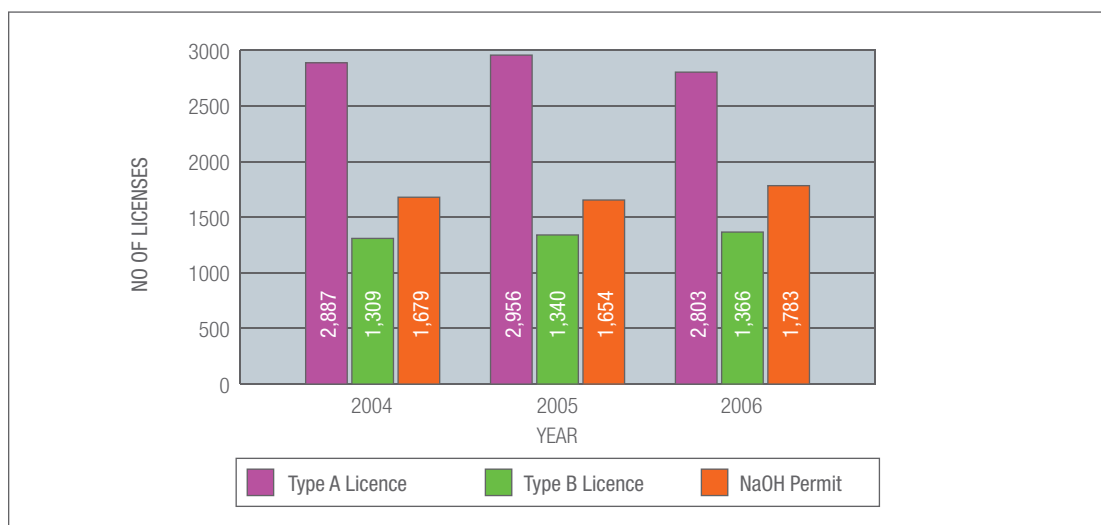
Source : Pharmaceutical Services Division, MOH

Licensing

A total of 2,803 Type A Poison Licenses were issued in 2006 i.e, 5.2% lesser as compared to 2,956 issued in 2005. The Pharmacy Enforcement Unit of Selangor had issued the highest number of Type A Poison License, followed by Federal Territory of Kuala Lumpur and Pulau Pinang. Although there was an overall decrease in the issuance of Type A Poison License for the year 2006 as compared to 2005, several states including Pulau Pinang, Federal Territory of Kuala Lumpur, Negeri Sembilan, Melaka, Johor and Pahang showed an increase in the number of licenses issued. A total of 1,366 Type B Poison Licenses were issued in 2006 with an increase of 1.9% as compared to 2005. There

was also an increase of 7.8% in the number of Sodium Hydroxide (NaOH) Permit issued in 2006 as compared to 2005 (Figure 4). Beginning January 2006, the Licensing Unit had issued a circular to all product holders to appoint only one distributor for each zone, namely Peninsular Malaysia, Sarawak and Sabah. The issuance of the new regulation was intended to control the wholesaling of psychotropic substances by the appointed distributors within the zones.

FIGURE 4
Licences Issued, 2004 - 2006



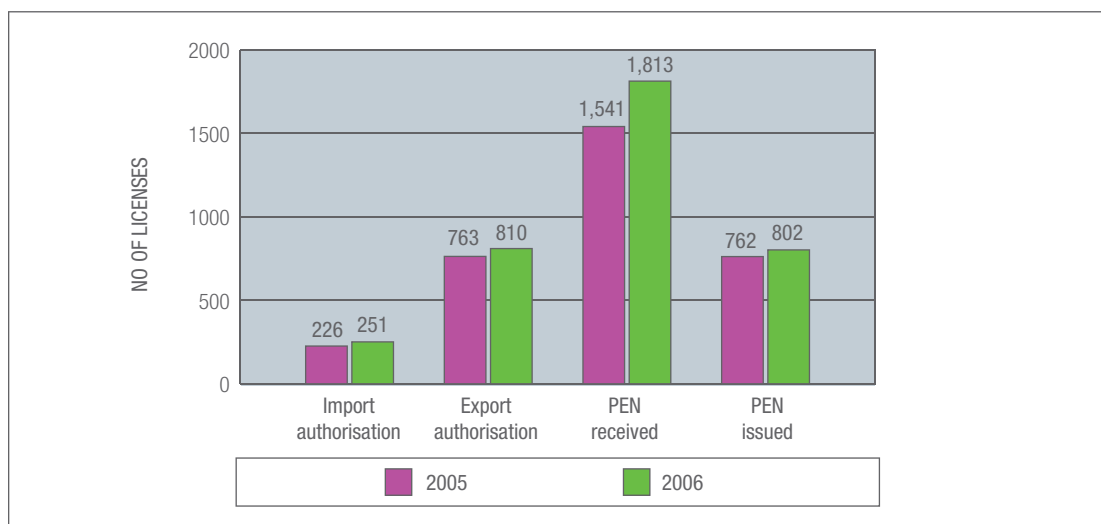
Source: Pharmaceutical Services Division, MOH

Control of Precursor and Chemical

Import/export of precursor and certain chemicals e.g. Potassium permanganate, beta-agonist and saccharin were monitored under the Customs (Prohibition of Imports/Export) Order. A total of 251 import and 810 export authorizations were issued in 2006 as compared to 226 and 763 respectively in 2005 (Figure 5).

Pre-export Notification (PEN) were issued to prevent precursor diversion to illicit market. The role of PEN was to inform importing countries regarding export of precursors listed under the UN Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances 1988. A total of 802 PEN were issued in 2006 as compared to 762 in 2005. The number of PEN received in 2006 were 1,813 as compared to 1,541 in 2005. PEN was issued for the export of preparations containing pseudoephedrine and ephedrine in 2006. Since September 2006, importers could apply for the import authorizations for items scheduled in the Customs (Prohibition of Imports) Order electronically. The use of e-permit has improved efficiency in the processing import authorizations.

FIGURE 5
Import/Export Authorizations and PEN Received/Issued, 2005-2006



Source: Pharmaceutical Services Division, MOH

Drafting of Pharmacy Legislations

Amendments to the current regulations were made to overcome the legal impediment, which poses a hindrance to the enforcement. In 2006, there were several amendments as follows:

- i. Poisons (Amendment of Third Schedule) Order 2006
- ii. Poisons List (Amendment) (No. 2) Order 2006
- iii. Third Schedule, Dangerous Drugs (Amendment) Regulations 2006
- iv. Dangerous Drugs (Hospital etc.) (General Exemption) (Amendment) Order 2006
- v. Control of Drugs and Cosmetics (Amendment) Regulations 2006

Special Task Operation

In 2006, a special attention was given to fight a war against the importation, manufacturing and distribution of products adulterated with poison, especially with sex stimulants and slimming agents, counterfeit medicines and to check the abuse and the diversion of psychotropic substances by private clinics and pharmacies. To achieve the objective, raids were carried out from time to time by Special Task Operation Unit, aided by the Surveillance, Diversion Control, and Special Task on Cosmetics Units as well as inputs from public complaints, media reports, information sharing among all state enforcement branches as well as from other enforcement agencies.

The inspections and raids were carried out targeting the unlawful licensed and unlicensed pharmaceutical products manufacturers, importers, distributors, direct sales companies as well as clinics and pharmacies known to sell and divert psychotropic substances to drug addicts. Sex stimulants, psychotropic substances, and slimming agents were the most confiscated substances apart from unregistered traditional medicines and cosmetics containing poison, which are still flooding the market. Statistics related to these operations in 2006 are shown in Table 10, 11 and 12.

TABLE 10
Confiscated Amount by State, 2006

State	Confiscated Amount (RM)
Perlis	78,192
Kedah	615,682
Pulau Pinang	1,883,768
Perak	626,331
Selangor	3,187,222
F.T. Kuala Lumpur	7,834,168
Negeri Sembilan	276,604
Melaka	757,383
Johor	767,602
Pahang	401,595
Terengganu	53,090
Kelantan	195,538
Sarawak	240,108
Sabah	152,461
F.T. Labuan	5,010

Source : Pharmaceutical Services Division, MOH

TABLE 11
Confiscated Amount, 2002-2006

Year	Amount (RM)
2002	4,040,476
2003	7,240,812
2004	27,299,033
2005	9,918,023
2006	17,074,754

Source : Pharmaceutical Services Division, MOH

Pharmaceutical Diversion Control

i. Action on psychotropics and controlled medicines: 'Diversion Audit' approach.

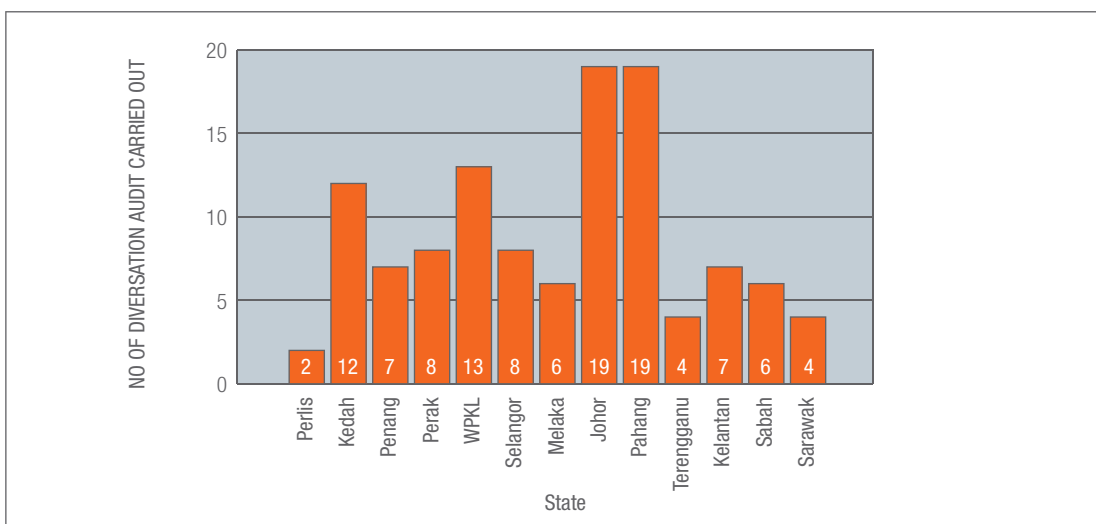
In 2006, diversion audit techniques were introduced and implemented in 122 private clinics and 30 licensed pharmacy outlets throughout Malaysia (Figure 6). Out of these total, 19 private clinics or 16% were found not following the law and were involved in abusing the supply of psychotropics. The Type A licences of 5 pharmacists have been revoked for illegal involvement in the diversions of dextromethorphan (2), midazolam (1), pseudoephedrine (1) and ketamine (1).

TABLE 12
Percentage of Confiscation by Product, 2006

Category of Products	Percentage (%)
Sex Stimulants	50
Psychotropics	32
Slimming	7
Cosmetics	4
Others	7

Source : Pharmaceutical Services Division, MOH

FIGURE 6
Diversion Audits on Private Clinics Conducted by State, 2006



Source: Pharmaceutical Services Division, MOH

ii. Methods of overcoming psychotropics diversions: 'Written Attestation' and 'Prohibitory Order'

In 2006, two courses were conducted on 'Written Attestation' and 'Prohibitory Order' to train officers on ways to overcome the psychotropics substances diversion problems.

Prosecution

As of November 2006, there were 332 complete prosecution cases with total collection of RM823,400 in fines imposed on the accused. The breakdown of prosecution completed within the period according to the Acts and state are shown in Table 13.

The highest fines collected were from offences under the Sales of Drugs Act 1952 with RM602,500 (73.2%), followed by offences under Poisons Act 1952 with RM130,450 (15.8%). The high collection of fines under the Sales of Drugs Act was mainly due to the high penalty imposed by Section 12(1) of the Act, with a maximum fine of RM25,000 for individual offenders and by Section 12(2), with a maximum fine of RM50,000 for corporate offenders. Furthermore, the total number of completed prosecution cases within this Act was the highest with 169 cases as compared to the number of cases under Poisons Act 1952 which was only 115 cases. The low collection in fines for offences committed under Medicines (Advertisement and Sales) Act 1956 was due to few number of cases being prosecuted and the low penalty imposed by the Act, with a maximum fine of RM3,000. Selangor showed the highest collection in fines amounting to RM161,450 (19.6%), followed by Johor with RM122,200 (14.8%) and Melaka with RM111,700 (13.6%). The amount of fines in Melaka was contributed by 16 cases prosecuted for offences committed under Section 12, Sales of Drugs Act 1952.

Consumer Protection

The main activities of the Consumer Protection Unit focused on the dissemination of information and education on the control, usage and selling of medicines and cosmetics in the market to the public; emphasizing on the role played by the target groups involving individual, family members and public in urban and rural areas and also government staff especially in MOH in using medicine and cosmetics wisely. The statistics in relation to this activity in 2006 are shown in Table 14 and Figure 7.

TABLE 13
Prosecution (Completed) According to Act and State as of November 2006

State	Poisons Act 1952	Poisons Act 1952 (Psychotropic Substances)	Sales of Drugs Act 1952	Medicines (Advertisement and Sales) Act 1956	Total Number of Cases	Total Fine Collected (RM)	Percentage (%)
Perlis	6	-	2	-	8	11,600	1.4
Kedah	3	5	5	-	13	17,800	2.2
Pulau Pinang	7	7	9	1	23	55,400	6.7
Perak	10	-	12	-	22	38,850	4.7
Selangor	14	1	19	-	34	161,450	19.6
F.T K. Lumpur	8	-	27	1	35	98,400	12.0
N. Sembilan	3	-	6	-	9	7,650	0.9
Melaka	-	-	16	-	16	111,700	13.6
Johor	23	15	26	-	64	122,200	14.8
Pahang	3	-	6	-	9	21,800	2.6
Terenganu	3	5	4	1	13	30,600	3.7
Kelantan	14	1	12	-	27	47,700	5.8
Sarawak	13	1	15	-	29	63,600	7.7
Sabah	7	2	9	1	19	27,500	3.3
F.T Labuan	1	-	1	-	2	1,500	0.2
BPF, KKM	-	-	-	7	7	5,650	0.8
TOTAL	115	37	169	11	331	823,400	100
Total Fine Collected (RM)	130,450	80,200	602,500	10,250	823,400		
Percentage (%)	15.8	9.7	73.2	1.3	100		

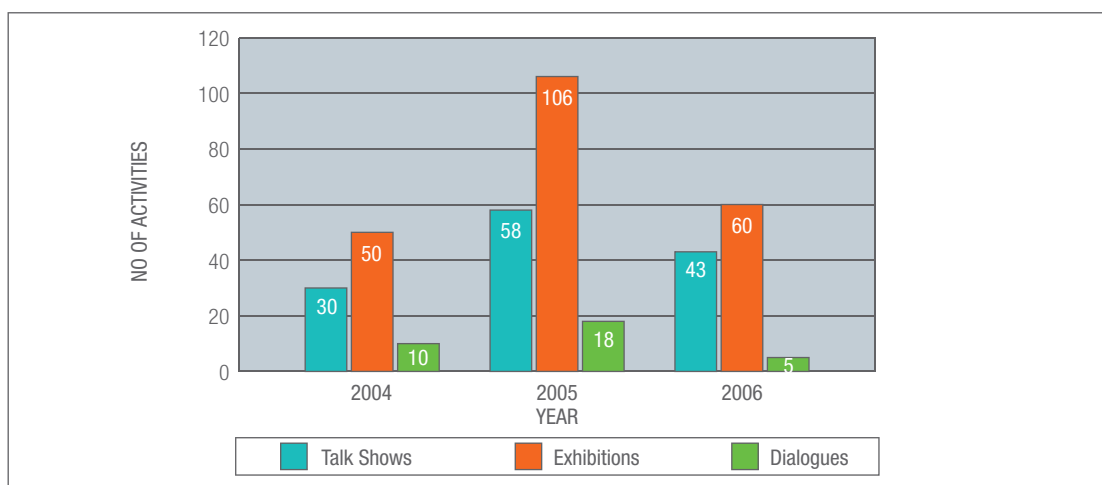
Source : Pharmaceutical Services Division, MOH

TABLE 14
Achievement on the Dissemination of Information, 2006

Activities	2006
Dissemination of Calendars	20,000 x set
Dissemination of Posters	15,000 posters
Dissemination of Post Cards	180,000 cards
Talks	43
Dialog	5
Exhibitions	60
Television Appearance	1(TV1)
Radio	2 (RTM) & 1 (Era)
Dissemination through Newspapers	3
Road show Exhibition JOM HEBOH TV3	2 times (Pulau Pinang and Shah Alam, Selangor)

Source : Pharmaceutical Services Division, MOH

FIGURE 7
Number of Talks, Educational Exhibitions and Dialogues Conducted, 2004-2006



Source: Pharmaceutical Services Division, MOH

PHARMACEUTICAL CARE MANAGEMENT

Procurement and Distribution

Three meetings to draw up the specifications of 132 drugs and 4 meetings to evaluate tender offers for 68 drugs were held in 2006. The total value of drug purchases from Syarikat Pharmaniaga Logistics Sdn. Bhd. for the year 2006 was RM462.1 million, while for medical equipments was RM87.5 million. The value of all drug contracts handled in 2006 was RM404.65 million. The PSD was actively involved in creating a stockpile of antivirals, namely Oseltamivir capsule and Zanamivir capsule as part of the National Influenza pandemic Preparedness Plan. There were 9 sites of the stockpile worth RM38.9 million were established.

Ministry of Health Drug Formulary Activities

i. Secretariat to the MOH Drug Reviewing Panel Meeting

A total of 197 proformas were received in the year 2006 consisting of 3 proforma A (proposal to delete any drug/dosage form/strength from the MOH Formulary), 97 Proforma B (proposal to add or alter formulation/dosage form/dose/prescriber's category/indication in the MOH Formulary) and 97 Proforma D (proposal to introduce a new drug into MOH Formulary) as shown in Table 15. A total of 1,341 preparations are currently listed in the Ministry of Health Drug Formulary as 17 drugs were added while only 4 drugs were deleted throughout the year 2006.

TABLE 15
Statistics for MOH Drug Formulary, 2000-2006

Year	Proforma Received	No. of Panel Meeting	No. of Drug Circulars	Drugs Approved		Drug Deleted
				Strength/ New Formulation	New Drug	
2000	201	2	1	13	15	76
2001	206	2	3	26	63	3
2002	199	2	3	18	31	8
2003	270	2	3	20	23	40
2004	192	3	3	20	36	17
2005	152	3	2	19	20	106
2006	197	3	4	8	11	4

Source : Pharmaceutical Services Division, MOH

ii. Drugs Outside MOH Formulary

Approval for use of drugs outside the MOH Drug Formulary must be from the Director General of Health. In 2006, 912 approvals for 169 types of registered drugs and 711 approvals for 147 types of unregistered drugs out of the MOH Drug Formulary were given to MOH hospitals/Institutions with an approximate value of RM18,152,974.13 and RM16,643,764.62 respectively (Table 16). A total of 438 requests were also received from private hospitals/Institutions for non-registered drugs. Whilst requests for non-registered drugs from university hospitals include 32 requests from Universiti Kebangsaan Malaysia Hospital (HUKM), 56 from Universiti Sains Malaysia Hospital (HUSM) and 74 from University Malaya Medical Centre (UMMC).

iii. Malaysian Drug Code (MDC)

The Malaysian Drug Code (MDC) is a code developed for a particular drug whereby the code depicts to the brand name. The second edition of the MDC was produced in 2006 for 4,995 products. This edition encompasses drugs in the MOH Formulary that are registered with Drug Control Authority (DCA) and is available in the Pharmaceutical Services Division's web at www.pharmacy.gov.my.

TABLE 16
Request of Drugs Outside MOH Formulary by MOH hospitals/Institutions, 2004-2006

Year	Status of Drugs	Description	Approved	Rejected
2004	Registered Drugs	Approximate cost (RM)	7,429,006.00	1,544,310.29
		Types of Drugs	120	82
		No. of request	501	153
	Non-Registered Drugs	Approximate cost (RM)	5,924,699.22	1,131,656.36
		Types of Drugs	140	51
		No. of request	323	67
2005	Registered Drugs	Approximate cost (RM)	11,936,387.00	3,551,758.38
		Types of Drugs	152	90
		No. of request	452	166
	Non-Registered Drugs	Approximate cost (RM)	11,345,203.00	1,191,774.53
		Types of Drugs	164	34
		No. of request	512	52
2006	Registered Drugs	Approximate cost (RM)	18,152,974.13	3,297,931.70
		Types of Drugs	169	105
		No. of request	912	175
	Non-Registered Drugs	Approximate cost (RM)	16,643,764.62	8,497,116.00
		Types of Drugs	147	33
		No. of request	711	69

Source : Pharmaceutical Services Division, MOH

Clinical Pharmacy Services

The Pharmaceutical Service of hospitals and health clinics under the Ministry of Health aims to provide comprehensive patient-centred pharmaceutical care. This is achieved through the provision of clinical pharmacy services such as medication counselling, Ward Pharmacy Service, Drug Information Service (DIS), Clinical Pharmacokinetic Service (CPS), Total Parenteral Nutrition (TPN), Oncology Pharmacy Service, and Nuclear Pharmacy service.

i. Pharmacy Ambulatory Care Service

Medication counselling through individual, discharge and group sessions was carried out by pharmacists to help patients achieve intended health outcomes through better compliance as well as handling of adverse drug events that may arise from their medication use. A total of 253,142 patients were counselled on their medications in 2006 as shown in Table 17.

A few major hospitals had established pharmacists managed Medication Therapy Adherence Clinics (MTAC) to provide pharmaceutical care to patients in critical areas of treatment such as renal transplant (Selayang Hospital), HIV/AIDS (Pulau Pinang, Alor Setar and Kangar Hospitals) and warfarin (Seremban and Duchess of Kent Sandakan Hospitals) to ensure the quality of drug used.

ii. Drug Information Service (DIS)

Hospital Drug Information Service (DIS) is equipped with sufficient resources to respond to queries by healthcare professionals and patients with the goal to improve the quality of patient care. In 2006, a total of 25,061 enquiries were received by hospital pharmacies. The Drug Information units also facilitated the reporting of 1,718 Adverse Drug Reactions (ADR) cases to the Malaysian Adverse Drug Reaction Advisory Committee (MADRAC).

iii. Ward Pharmacy Service

Almost all hospital pharmacies throughout the country have adopted individualized drug delivery system for in-patients by implementing the Unit-of-Use or Unit Dose System. Specialisation in clinical pharmacy practice in the following pharmacotherapy disciplines and hospitals had been established in 2006 to improve the quality of pharmaceutical care to patients:

- Respiratory pharmacy - Melaka Hospital
- Critical Care pharmacy - Selayang and Kuala Lumpur Hospital
- Nephrology pharmacy - Selayang Hospital

The Selayang and Melaka Hospital have also been designated as training centres for clinical pharmacists throughout the country.

iv. Clinical Pharmacokinetic Service

The Clinical Pharmacokinetic Service (CPS) is a major component of the Pharmaceutical Services in the country and is essential towards ensuring the safe and effective use of medications particularly those with narrow therapeutic windows and promoting positive outcomes in therapy.

In 2006, a total of 64,046 patients had received individualized drug therapy through the pharmacy clinical pharmacokinetic service (CPS) provided by 82 hospitals throughout the country. Through the CPS, pharmacists provide consultation on appropriate dosing of 14 types of drugs. The usefulness of CPS as a treatment tool in health care can be viewed by the increase in the number of cases for the past 7 years as shown in Figure 8.

Apart from that, the pharmacy provides 24 hours call service for toxicology serum monitoring and consultation of Paracetamol (PCM) poisoning. A total of 3,211 requests for toxicological monitoring were received in 2006 and 615 (19.15%) were in toxic range. 95.5 % of requests were for adults and 4.5% for paediatrics. The number of confirmed overdoses of PCM for adults and paediatrics are shown in Figure 9 and 10.

v. Total Parenteral Nutrition (TPN) and IV Admixture Service

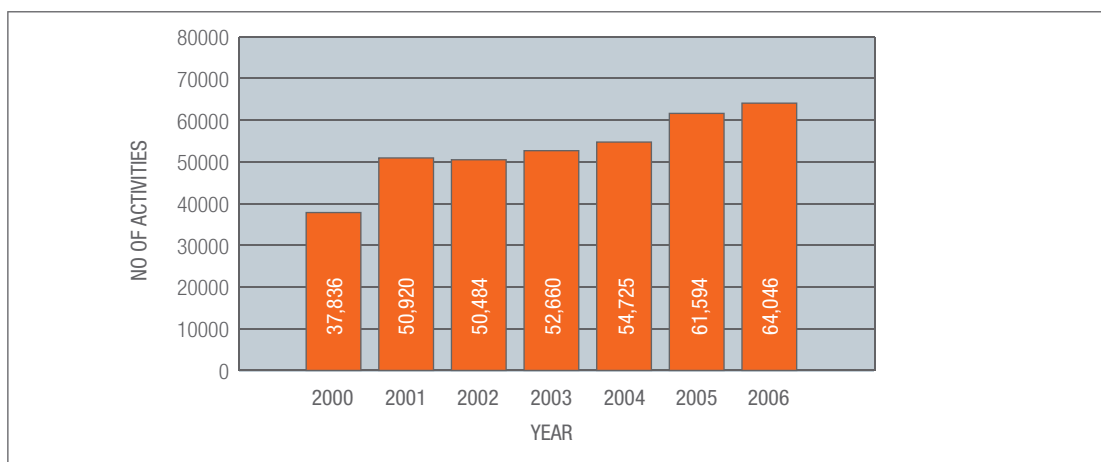
a. Total Parenteral Nutrition (TPN) Service

The goal of TPN service is to provide optimal nutrition support in critically ill patients to improve health outcome. By the end of 2006, there were 17 MOH hospitals providing total parenteral nutrition (TPN) service. A total of 23,260 and 11,700 TPN bags were prepared in 2006 for paediatric and adult patients respectively. The number of TPN bags prepared in 2006 was higher as compared to previous years (Figure 11).

b. IV Admixture Service

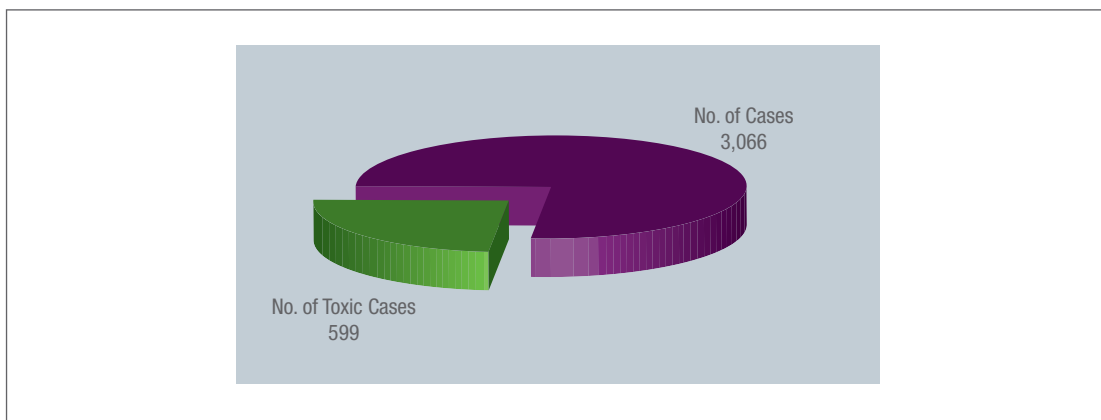
Currently, there are 16 hospitals with clean room facilities provide IV Admixture service enabling the supply of 97,259 ready to use preparations for 43,720 cases in 2006. This service will be further enhanced in the future to ensure preparations are carried out under Good Preparation Practice (GPP) to ensure their safe and effective administration to patients.

FIGURE 8
Number of CPS Cases Received, 2000-2006



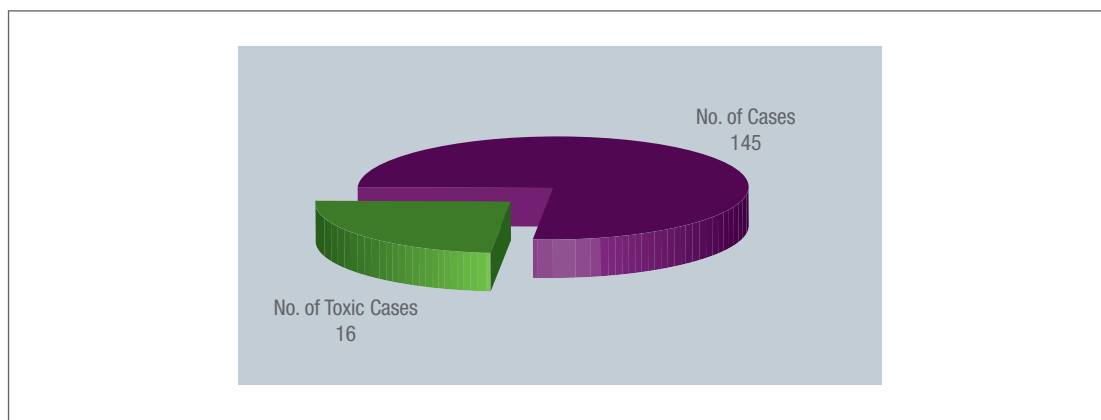
Source: Pharmaceutical Services Division, MOH

FIGURE 9
Number of PCM Poisoning Cases (Adult), 2006



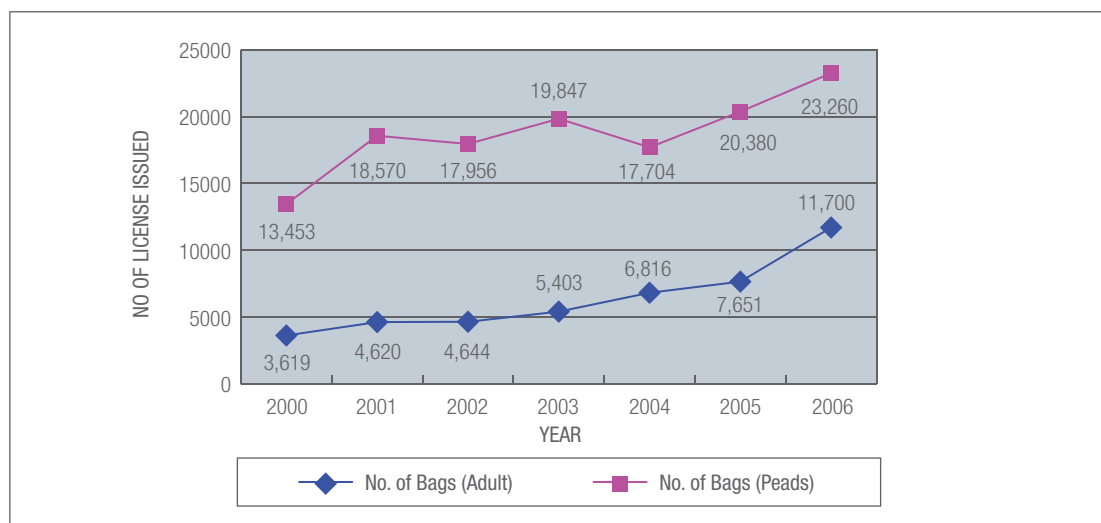
Source : Pharmaceutical Services Division, MOH

FIGURE 10
Number of PCM Poisoning Cases (Paediatric), 2006



Source : Pharmaceutical Services Division, MOH

FIGURE 11
Number of TPN Bags Prepared from the year 2000 to 2006



Source: Pharmaceutical Services Division, MOH

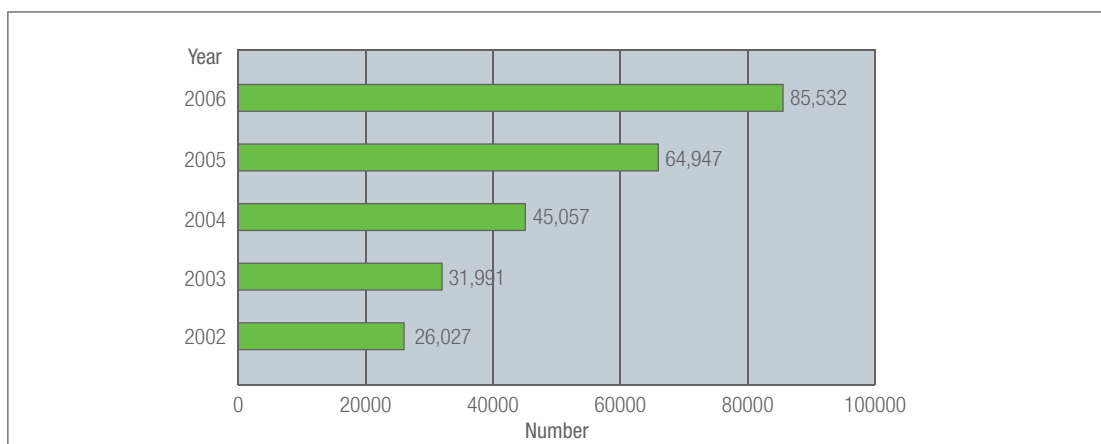
vi. Oncology Pharmacy Service

Oncology pharmacists play a significant role in cancer patient treatment by dispensing and reconstituting cytotoxic drugs. A total of 18 hospital pharmacies in the country dispense cytotoxic drugs to cancer patients. However, by the end of 2006, only 15 hospitals provided pharmacy cytotoxic drug reconstitution services. The 15 hospital pharmacies with CDR facilities were as follows:

• Kuala Lumpur	• Pulau Pinang
• Queen Elizabeth, Kota Kinabalu	• Melaka
• Ipoh	• Kulim
• Kuala Terengganu	• Seri Manjung
• Tg. Ampuan Rahimah, Klang	• Selayang
• Tengku Ampuan Afzan, Kuantan	• Likas, Kota Kinabalu
• RPZ II, Kota Bharu	• Sultan Ismail, JB
• Tuanku Jaafar, Seremban	

Statistics on the number of cytotoxic drugs reconstituted from year 2002 to 2006 are shown in Figure 12.

FIGURE 12
Number of Cytotoxic Drugs Reconstituted, 2002-2006



Source: Pharmaceutical Services Division, MOH

There was an urgent need to build new or upgrade current CDR facilities to meet GPP (Good Preparation Practice) standards to ensure that all reconstitutions are carried out under controlled environment and not in open wards for personnel safety as well as ensuring prepared products are free from microbial contamination. The Hospital Pharmacy Expert Group (HosPEG) established by the Pharmaceutical Services Division, had provided consultation on Good Preparation Practice (GPP) to 11 hospital pharmacies in 2006. A total of 6 hospital aseptic facilities were qualified by HosPEG.

TABLE 17
Application for Product Registration, 1985-2006

Services	2006
Medication Counselling Service	
i. No. of patients counselled:	
• Out-patient (Hospital)	118,241
• In-patient	33,643
• Ward Discharged	73,222
• Out-patient (Health Clinic)	28,036
ii. Total no. of patients counselled	253,142
Drug Information Service	
i. No. of enquiries received	25,061
ii. No. of ADR reported	1,718
Clinical Pharmacokinetic Service	
i. No. of hospitals	82
ii. No. of cases	64,046
iii. No. of drugs	14
Parenteral Nutrition Service	
i. No. of hospitals	17
ii. No. of bags (Adults)	11,700
iii. No. of bags (Paeds)	23,260
Intravenous Admixture Service	
i. No. of hospitals	16
ii. No. of cases	43,720
iii. No. of preparations	97,259
Cytotoxic Drug Reconstitution Service	
i. No. of hospitals	15
ii. No. of preparations	85,532
Drug Dispensing Service	
A. Hospital	
i. No. of prescriptions received	18,977,038
ii. No. of prescriptions intervened	175,080
B. Health	
i. No. of prescriptions received	23,037,904
ii. No. of prescriptions intervened	144,075
C. Total no. of prescriptions received	42,014,942
D. Total no. of prescriptions intervened	319,155

Source : Pharmaceutical Services Division, MOH

vii. Nuclear Pharmacy

Five hospitals have been identified to provide pharmacy nuclear services namely Pulau Pinang Hospital, Kuala Lumpur Hospital, Putrajaya Hospital, Sultanah Aminah Hospital and Sarawak General Hospital. As of December 2006, pharmacists from Pulau Pinang Hospital and Kuala Lumpur Hospital were involved in the Quality Control and preparation of radiopharmaceuticals for nuclear medicine use.

Monitoring of Activities and Plans of Pharmacies in Hospitals and Health Clinics

Five zone meetings were held to monitor the status and plans of all the pharmacy activities of hospitals and health in all states. The Pharmacy Division also provide advises in planning the new pharmacy unit in hospitals and clinics.

Pharmacy Internal Audit

Internal audit teams were set up to audit the Outpatient Pharmacy and the Pharmacy Store in selected hospitals and clinics. In 2006, the audit focus was on the waiting time at the Pharmacy Outpatient and the write-off of medicines at the store. A total of 8 hospitals and 2 clinics were audited in 2006.

Pharmacy in Health Clinics

The pharmaceutical care services rendered at health clinics aim at improving the patients' quality of life through their contributions towards disease prevention and harm reduction in primary care. The pharmaceutical care support activities include individual and group medication counselling, continuous medication education, home medication review and also community programmes. In 2006, specialised clinics such as for cigarette smoking cessation, home medication review and methadone therapy clinic were also formed and promoted.

Integrated Drug Dispensing System

The Integrated Drug Dispensing System (IDDS) was initially started as a pilot project from December 2001 to May 2002 where 7 states took part. By 2005, all states in Malaysia have started the system. The aim of IDDS is to provide a service to patients, particularly follow-up cases, to allow them to obtain medicines at health facilities nearest to home, especially to patients who stay in remote areas.

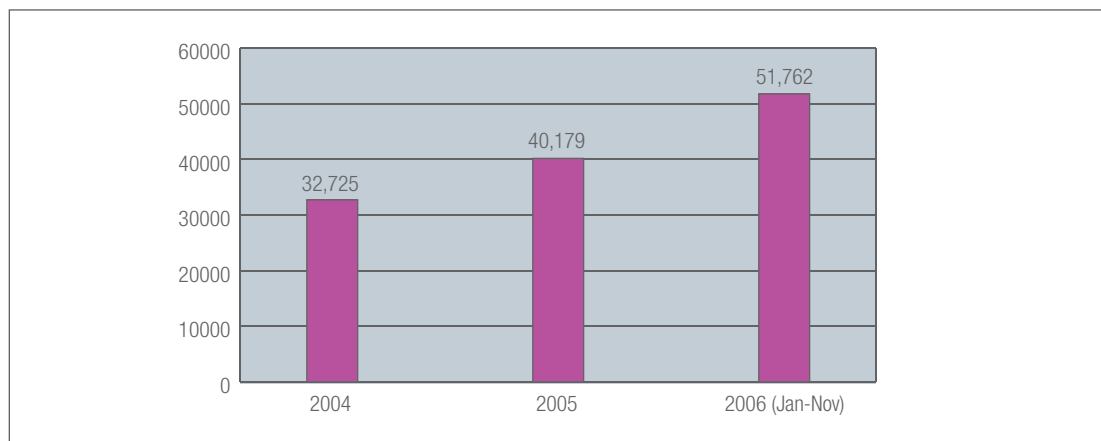
The number of patients using this service had increased by 28.8% in 2006 as compared to 2005. There was no obvious increase in costs, however, 67.6% of the total cost of drugs was mainly from the Category A drugs. The statistics in relation to IDDS are shown in Table 18 and Figure 13.

TABLE 18
Transactions for Integrated Drug Dispensing System, 2004-2006

Transactions	2004			2005			2006		
	Intra State	Inter State	Total	Intra State	Inter State	Total	Intra State	Inter State	Total
Total No. of Prescriptions	24,772	7,953	32,725	28,705	11,474	40,179	37,670	14,092	51,762
Total No. of Category A Drugs	18,710	8,419	27,129	25,914	12,868	38,782	30,936	12,419	43,355
Total No. of Category B & C Drugs	43,133	16,189	59,322	50,845	23,561	74,406	56,590	29,654	86,244
Total Cost for Category A Drugs (RM)	857,486	350,903	1,208,389	1,278,718	556,931	1,835,649	1,052,304	607,772	1,660,076
Total Cost for Category B & C Drugs (RM)	310,011	117,170	427,181	427,909	203,443	631,352	517,092	277,249	794,341
Total Cost for Drugs (RM)	1,167,497	468,073	1,635,570	1,706,627	760,374	2,467,001	1,569,396	885,022	2,454,418

Source : Pharmaceutical Services Division, MOH

FIGURE 13
Number of Integrated Drug Dispensing System Prescriptions, 2004-2006



Source : Pharmaceutical Services Division, MOH

Monitoring of prices of medicines

The Pharmacy Division started the monitoring of prices of medicines in 2006. Throughout 2006, medicines prices were collected in 40 government institutions and 40 private facilities. A total of 96 types of medicines were monitored. Findings from the prices collected will be published in a bulletin called 'my.MedPrice'. The bulletin is being prepared and is scheduled to be published in 2007. A price database computer application program has been drafted and is currently being reviewed.

Training

In 2006, a total of 35 courses/conferences/workshops on 30 topics were conducted by PSD. In addition, 68 pharmacists were sent for attachment in pharmacotherapy in Melaka Hospital, Sultanah Aminah Hospital, Johor and Selayang Hospital for nephrology and clinical pharmacokinetics.

Meanwhile, 36 pharmacists from NPCB underwent courses/workshops/tour study in overseas in 2006 which include Japan, Thailand, Australia, Italy, Hong Kong, China, Vietnam, Austria, Myanmar, Singapore, France, United States of America, Philippines, and Indonesia.

Pharmacy Board of Malaysia

The Pharmacy Board is responsible for the registration of pharmacists and corporate bodies throughout the country. The types of registrations were:

- Full Registration of Pharmacist
- Provisional Registration of Pharmacist
- Temporary Registration of Pharmacist
- Registration of Body Corporate

Statistics in relation to the activities carried out for the year 2006 are shown in Table 19 and 20.

TABLE 19
Types of Registration Issued in 2006

Category of Registration	Number Issued
Full Registration	430
Provisional Registration (PRP)	522
Temporary Registration	5
Registration of body corporate	108

Source : Pharmaceutical Services Division, MOH

TABLE 20
Annual Certificates Issued in 2006

	Number of Annual Certificates issued in 2006
Pharmacists	4,266
Corporate Bodies	267

Source : Pharmaceutical Services Division, MOH

NATIONAL MEDICINES POLICY

The National Medicines Policy (DUNAS) was approved by the cabinet as the official National Medicines Policy of Malaysia on 11th October 2006. DUNAS presents the framework of strategies and commitments of the government and all stakeholders in both public and private sectors to a common medium and long term goals for the national pharmaceutical sector. It comprises four main components namely Quality, safety and efficacy of medicines, Availability of medicines, Affordability of medicines and Quality use of medicines, and four supporting components i.e. Human resource development, Research and development, Technical co-operation and Management of the National Medicines Policy.

THE WAY FORWARD

The PSD will continue to intensify its various activities in the coming years given the improved manpower situation, to develop its services in tandem with the Ministry of Health's mission and vision.

In the years ahead, the existing regulatory system focusing on quality, safety and efficacy of pharmaceutical products to protect public health will be strengthened through a multi-tiered strategy of enhancement of quality control aspects among the manufacturers of traditional products, capacity building in specific fields such as biotechnology, inspection of clinical trial centres and licensing of manufacturing facilities of plasma and blood products. In 2006, NPCB continued the preparation for the registration of veterinary products and active pharmaceutical ingredients. When implemented, it will be the fifth and sixth phase, respectively of the overall product registration package. From the perspective of ICT upgrading, on-line registration for new chemical entities and biotechnology-derived products are currently being studied. Besides that, efforts are being taken to integrate different types of on-line modules such as product registration, premise licensing, analysing tests, surveillances, adverse drug registration (ADR) monitoring, and information dissemination to produce a more comprehensive regulatory system. The current computer system, QUEST 2 will be upgraded to QUEST 3 under the 9th Malaysian Plan. In terms of quality control, NPCB, which has been successful in attaining the MS ISO 9001:2000 certification, will continue the efforts towards obtaining ISO 17025 certification. To begin with, the focus will be on the testing of traditional products.

Improvement in the awareness and knowledge on health among the public will augment the efforts taken in the regulatory, enforcement and pharmaceutical care activities in ensuring the safety and quality use of medicines and pharmaceutical products. Improved strategies in public education and health knowledge especially on medicines and other pharmaceutical products will result in a more informed public. Greater involvement of the media and increase utilisation of information and communication technology would be looked into as strategies of improving public education in pharmaceutical-related matters.

Various strategies have been outlined towards improving and upgrading the quality of pharmacy practice, which include integrating pharmaceutical care service at all levels of healthcare, accreditation of pharmacy facilities, application of the latest information technology system in all pharmaceutical care service and improving the economic management of the pharmaceutical supply system. Rational utilisation of drugs will also be enhanced by improving the selection process of drugs into the MOH Drug List through pharmacoeconomics evaluation and drug utilisation researches. Efforts to strengthen the quality of these researches should be intensified and involve more pharmacists especially in multi-centred studies and encourage participations in scientific forums, conferences and publications. Greater efforts will be made to involve pharmacists at all practice levels to carry out evaluation of drug literature through hands-on training of critical appraisal and evidence-based evaluation.

The proficiency of the pharmacy personnel will be upgraded through credentialing, continuous professional development programme, and specialisation of pharmacy service for various disciplines of pharmacy. Oncology pharmacy, radio pharmacy, and clinical pharmacy are potential areas to be developed into specialised fields. In addition, specialities in pharmacokinetic laboratory techniques and analysis, pharmacoeconomics and regulatory activities should be expanded, as these expertises are unique to pharmacists. Pharmacists in those identified areas need to produce positive impacts in patient care. These developments will be the momentum towards an established pharmacy specialisation and the creation of pharmacy specialists.

Proposals for more scholarships to be awarded to pharmacists for postgraduate training will be continuously pursued. Specialisation in appropriate fields of pharmacy will be identified so as to ensure pharmacists who have completed their postgraduate degrees are placed appropriately. Besides postgraduate courses, specialisation programmes will be continued with hands-on training in the country as well as overseas.

CONCLUSION

The successful implementation of the various pharmacy service activities has contributed towards the availability and accessibility of medicines and pharmaceutical products that are of quality, safe and efficacious in the country. It has also contributed towards better provision of the service to patients and consumers.

The existing regulatory system continuously ensured the quality, safety, and efficacy of pharmaceutical products to protect public health through enhancement of pharmacovigilance activities, exchange of technical information and collaboration with other regulatory authorities on product evaluations and Good Manufacturing Practice (GMP) inspections. Regional cooperation on pharmaceuticals continued through the harmonisation efforts by the various ASEAN and WHO committees and working groups. This is also one of the means to ensure that Malaysian pharmaceutical products are of equal standing and accepted in the world market.

The maintenance of quality drugs in the market is further strengthened by the enforcement of the relevant pharmacy legislations and guidelines. Enforcement activities that include licensing, surveillance, raids, prosecution, and precursor control were also enhanced in 2006. Raids and inspections have been stepped up to stamp the illegal sale of poisons, unregistered products, and adulterated traditional medicines that can cause harm to consumers. Efforts have also been intensified to improve the control of illicit trade of psychotropics substances and precursors through regional cooperation. Monitoring of advertisements has been enhanced to ensure public access to correct and reliable information on medicines and health services.

The MOH Drug Formulary has undergone a major restructuring process with the inclusion of the Malaysian Drug Code that is based on the WHO Anatomical Therapeutic Classification. The code is important for future incorporation of the MOH Drug Formulary into any computerised system and also for drug utilisation analysis and studies. The provision of pharmaceutical care has been enhanced through the improvements of the various clinical activities. The improvements carried out include the upgrading of infrastructure in various hospitals and strengthening of pharmacist's skills. More pharmacists were given training through workplace attachments either locally or overseas. The field of Clinical Pharmacy Specialities has also been broaden and strengthened to enable pharmacists' to contribute more significantly towards the health of patients.

HEALTH LEGISLATION

HEALTH LEGISLATION

INTRODUCTION

In addition to its regular duties and activities namely advisory, drafting, vetting of legal documents and revision of laws, the Legal Advisor's Office was increasingly involved in international meetings and negotiations in view of the opening up of trade in relation to services.

ACHIEVEMENTS

In 2006, the Private Healthcare (Facilities & Services) Act 1998 (Act 586) was enforced on 1 May 2006. The enforcement of the Act 586 was made possible by the publication in the Gazette of its two main subsidiary legislations, namely:

- i. Private Healthcare Facilities & Services (Private Hospitals and other Private Healthcare Facilities) Regulations 2006; and
- ii. Private Healthcare Facilities & Services (Private Medical Clinics or Private Dental Clinics) Regulations 2006.

The enforcement of Act 586 automatically repealed the Private Hospital Act 1971.

A new Act namely, the Malaysian Health Promotion Board Act 2006 (Act 651) had approved by Parliament in 2006. With this new Act, the Ministry of Health has created its first statutory body. The Act 651 provides for the establishment of the Malaysian Health Promotion Board whose role is to plan, develop and implement health promotion programmes and activities for the benefit of the community. It also empowers the Board to allow active participation of health related Non-Governmental Organizations (NGO) in promoting healthy lifestyles to the community with emphasis programmes for the youth.

At the same time, several existing health laws were revised and amended to keep in line with health requirement. They were:

Food Act 1983 (Act 281)

There was one amendment to the Food Act 1983, namely the Food (Amendment) Act 2006 which sought to incorporate a prescribed form of notification for purpose of enforcement particularly offences under the Control of the Tobacco Product Regulations 2004.

Prevention and Control of Infectious Diseases Act 1988 (Act 342)

A new subsidiary legislation was made under Act 342, namely the Prevention and Control of Infectious Diseases (Importation and Exportation of Human Remains, Human Tissues and Pathogenic Organisms and Substances) Regulations 2006 which came into force on 25 May 2006.

A declaration was made under Act 342 through Prevention and Control of Infectious Diseases (Declaration of Infected Local Area) Order 2006 and was gazetted on 10 Mac 2006 to declare several areas in Sarawak that were infected with hand, foot and mouth disease as a result of an epidemic.

The First Schedule to Act 342 was also amended through the Prevention and Control of Infectious Diseases (Amendment of First Schedule) Order 2006 which came into operation on 12 October 2006.

Fees Act 1951 (Act 209)

Some minor ammendments were made to Fees (Medical) Order 1982 where charges for Pet CT scan investigations were inserted. This ammendment was reflected in the Fees (Medical) (Amendment) Order 2006.

Sales of Drugs Act 1952 (Act 368)

The Control of Drugs and Cosmetic Regulations 1984 prescribed under Act 368 also went through major amendments, which can be found in the Control of Drugs and Cosmetic (Amendment) Regulations 2006. The amendment came into force on 11 September 2006.

There was also termination of appointment of members and appointments of alternate members of Drug Control Authority which was gazatted on 12 October 2006.

Poisons Act 1952 (Act 366)

The First and Third Schedule to Act 366 were amended through Poisons (Amendment of First Schedule) Order 2006 and Poisons (Amendment of Third Schedule) Order 2006 respectively and were gazetted on 7 September 2006.

Dangerous Drugs Act 1952 (Act 234)

Two subsidiary legislations, namely Dangerous Drugs (Amendment) Regulations 2006 and Dangerous Drugs (Hospital, etc.)(General Exemption) Order 1952 were published in the Gazette on 7 September 2006.

WAY FORWARD

In the era of globalisation and rapid technology advancement, challenges and responsibilities faced by the Legal Advisor Office in particular and in Ministry of Health (MOH) in general will require more efforts and commitments. There are proposals of new primary and subsidiary legislations to ensure that the MOH achieved its objective of delivering safe and quality healthcare. Some of the important proposed new legislations are:

- i. Pathology Laboratory Bill;
- ii. Medical Devices Bill;
- iii. Fee (Medical) (Full Paying Patient) Order.

The MOH also plan to revise the Medical Act 1971 (Act 50) and to enforce the Mental Health Act 2001 (Act 615). Besides that, all existing health or health related laws will be updated and amended continuously, where necessary.

INTERNAL AUDIT

INTERNAL AUDIT

INTRODUCTION

In May 1980 the Internal Audit Division (IAD) of Ministry of Health (MOH) was established in accordance with Treasury Circular 2 of 1979 and further reinforced by Treasury Circular 9 of 2004. IAD was established administratively and reports directly to the Secretary General of MOH. The main role of the IAD was to assist MOH to achieve its objectives through systematic and continuous evaluation ensuring effectiveness of internal control processes and good governance.

ACHIEVEMENTS

In 2006, IAD successfully carried out financial audits, performance audits, special/on call audits and follow-up audits. In addition, officers from IAD were also invited by other MOH Divisions to give lectures/advisory services on financial management issues and audit observations as shown in Table 1.

Financial Audit

Financial audit includes the review of internal controls and compliance to government laws, regulations and directives on financial management. It covers 4 major aspects of office management, revenue, expenditure and assets of MOH. In 2006, IAD had carried out financial audits on 36 Responsibility Centres (RC) throughout the country.

Performance Audit

In order to ensure that MOH utilized its limited resources economically, efficiently and effectively, IAD also carried out performance audits on MOH programs, activities and projects. Through this audit, IAD was able to identify weaknesses or short-comings on the management and operation of MOH programs/activities/projects and suggest practical proposals to overcome the issues and challenges, in order to ensure the quality service delivery to all stakeholders. In 2006, IAD had carried out 6 performance audits involving 35 RC.

Special Audit/Investigation

Special audits or investigations were carried out based on reports or instructions from the Secretary General. In 2006, IAD had carried out 12 special audits or investigations.

Lectures/Advisory Services

IAD officers were also invited by various MOH Divisions to give lectures cum advisory services on financial managements issues/audit observations. A total of 26 lectures cum advisory services were carried out by IAD officers in 2006.

MOH Internal Audit Committee Conference

In 2006, IAD MOH had carried out the 2nd Conference of Internal Audit Committee (IAC) involving 85 members of IAC throughout the country. The objective of the conference was to highlight the roles and functions of IAC to all members. The IAC is a step forward to enhance accountability and good governance in the financial and programs/activities/projects management of MOH in line with government's call to spend wisely.

TABLE 1
IAD Targets and Achievements in 2006

Programs/Activities	Target	Achievement
Financial Audit	32 RC	36 RC
Performance Audit	8 topics (22 RC)	6 topics (35 RC)
Special Audit	8 cases	12 cases

Note : RC – Responsibility Centres
Source : Internal Audit Division, MOH

CONCLUSION

IAD of MOH had successfully carried out its programs/activities as planned. With this commitment and full cooperation, IAD is confident that MOH could enhance further the financial and programs/activities/projects management. MOH must seriously take actions to rectify/remedy the issues and weaknesses reported by IAD to avoid this recurring in future.

CORPORATE POLICY AND HEALTH INDUSTRY

CORPORATE POLICY AND HEALTH INDUSTRY DIVISION

The Corporate Policy and Health Industry Division which was established in 2002 is directly responsible to the Secretary General and its primary objective is to assist the top management in formulating corporate health related to the health industry. The Division deals with all 'cross-cutting' issues and serves as a focal point in MOH for inter and intra agency collaboration as well as international relations with regards to all health and health related issues. The Division is also responsible to promote and nurture the development of the local healthcare industry.

The Corporate Policy and Health Industry Division consists of three Sections namely:-

- (i) Corporate Policy and Secretariat Section;
- (ii) International Relations Section; and
- (iii) Health Industry Section.

ACTIVITIES AND ACHIEVEMENTS

Corporate Policy and Secretariat Section

The Corporate Policy and Secretariat Section's primary areas of responsibility are:-

- (i) non-clinical policy analysis and advice;
- (ii) policy research and evaluation;
- (iii) Post-Cabinet Meeting;
- (iv) high level meetings chaired by the Secretary General such as Morning Prayers, the Secretary General's Meeting with Undersecretaries and Deputy Undersecretaries, the Secretary General's Meeting with the State Health Directors, the Secretary General's Meeting with Deputy State Health Directors (Management) and Deputy Hospital Directors (Management) and Annual Work Plan Meeting for the Management Programme;
- (v) all matters related to the Malaysian Cabinet;
- (vi) all official feedbacks and responses by MOH on issues raised in important meetings such as the Conference of Ruler's Meetings, the Menteri Besar and Chief Minister's Meetings, the Secretary Generals and Head of Services' Meetings and Cabinet Committee Meetings; and
- (vii) the general administration and financial management of the Division.

Policy Research and Evaluation

The researches conducted and policy papers presented by the Section in 2006 were:

- (i) Utilisation of MOH Facilities by Foreign Patients which was presented at the Cabinet Meeting;
- (ii) Collection of Non-medical Revenue which was presented at the MOH Finance and Accounts Management Committee Meeting;
- (iii) Issues of Unpaid Medical Bills by Foreign Patients in MOH Hospitals which was conducted in 24 hospitals in the country identified with the highest arrears; and
- (iv) RM1 Fee in MOH Health Facilities.

Cabinet Meetings and other High Level Meetings

For the year 2006, a total of 37 Cabinet Notes and 29 Memorandum from MOH were evaluated and processed for presentation in the Malaysian Cabinet Meetings. The Section also monitored and facilitated 52 official comments on Memorandums submitted by other Ministries and 88 official feedbacks on decisions taken by the Cabinet throughout 2006. The Section also processed one Notification Paper for the Menteri Besar and Chief Minister's Meeting.

High Level Meetings within MOH

The Corporate Policy and Secretariat Section was also the secretariat for the following meetings in 2006:

- (i) 35 Post-cabinet Meetings;
- (ii) 22 Morning Prayers;
- (iii) 2 Secretary General's Meetings with the Undersecretaries and Deputy Undersecretaries;
- (iv) 1 Secretary General's Meeting with State Health Directors;
- (v) 2 Secretary General's Meetings with Deputy State Directors (Management) and Deputy Hospital Directors (Management);
- (vi) 2 Annual Work Plan Meetings for the Management Programme; and
- (vii) 5 meetings on Full Paying Patients in MOH Hospitals.

Course and Seminar

The Section conducted 2 Introductory Health Economics Courses for Administrative Officers in MOH in 2006. A total of 46 officers have successfully completed the course. This was a one week awareness course to introduce health economics concepts and application of analytical tools that are commonly used in decision making with regards to resource allocation, expenditure, financing, policy-making and project evaluation in the health sector.

A workshop on Intellectual Property Rights (IPR) entitled "Economic Modeling of Likely Impact of Stronger Intellectual Property on Medicine Prices" was conducted from 9 to 11 July 2006, followed by a seminar on "Impact of Changing IPR Provisions on the Pharmaceutical Industry" on 12 July 2006. The purpose of this workshop was to equip the participants with the application of an economic model used by WHO to evaluate the impact of the FTA provisions on intellectual property rights.

Other responsibilities of this Section include coordinating the preparation on the implementation of Full Paying Patients project in two pilot hospitals, namely Putrajaya and Selayang Hospital.

International Relations Section

The International Relations Section's primary areas of responsibility are as follows:-

- (i) World Health Organisation (focal point for Malaysia);
- (ii) all issues pertaining to international relations and trade in health services and goods;
- (iii) coordination of Health Ministers Bilateral Meetings on Health;
- (iv) coordination of Senior Officials Bilateral Meetings on Health;
- (v) coordination of Minister's overseas visits; and
- (vi) coordination of visits to MOH by foreign dignitaries and officials.

World Health Organisation (WHO)

For the year 2006, the International Relations Section coordinated and processed applications of 59 participants and 9 temporary advisors consisting of MOH officers to attend 42 meetings/workshops/study visits overseas under the sponsorship of WHO. The Section also coordinated 18 WHO visits/study visits to MOH, 5 foreign WHO Consultants' placements and 4 fellowship programmes involving 6 participants in various institutions in Malaysia.

The Section also coordinated the attendance of Malaysian delegation led by the Minister of Health to meetings organised by WHO:

- (i) The Pre-World Health Assembly for Commonwealth's Minister of Health Meeting in Geneva, Switzerland on 21 May 2006;
- (ii) The World Health Assembly in Geneva, Switzerland, from 22 to 27 May 2006; and
- (iii) WHO Western Pacific Regional Committee Meeting in Auckland, New Zealand from 18 to 22 September 2006.

Bilateral and Multilateral Cooperation

In 2006, the International Relations Section continued to be involved in Joint Commission Meetings (JCM) between Malaysia and several countries. The JCM is a useful and important forum for fostering closer relations and cooperation in wide-ranging areas including health between Malaysia and other countries.

The International Relations Section also acts as the focal point for the deliverance of technical expertise and assistance to foreign countries through study visits and training attachments. In 2006, the Section facilitated 44 study visits and training attachments in various institutions and Divisions under MOH involving 568 foreign visitors from 17 different countries.

3rd Bilateral Meeting between Malaysia and Brunei Darussalam on Health Cooperation

The Section was the secretariat for the 3rd Bilateral Meeting between Malaysia and Brunei Darussalam on Health which was held from 21 to 23 November 2006 in Brunei Darussalam. The Senior Officials Meeting was held on 22 November 2006 and the Health Ministers' Meeting on 23 November 2006.

A Memorandum of Understanding (MoU) on Health Cooperation was signed by the respective Ministers on 23 November 2006. The areas of cooperation in health were:

- (i) Communicable Disease Surveillance and Control;
- (ii) Food Safety and Quality Control;
- (iii) Pharmaceuticals and Cosmetics Control;
- (iv) Tobacco Products Control;
- (v) Human Resource Development for Health Care Sector; and
- (vi) Cross-border Transfer of Patients

Inter-governmental Working Group (IGWG) Meeting on Public Health, Innovation and Intellectual Property

The Section and the National Pharmaceutical Control Bureau attended the Inter-governmental Working Group (IGWG) Meeting on Public Health, Innovation and Intellectual Property from 4 to 8 December 2006 in Geneva, Switzerland. Two documents were produced i.e. Global Strategy and Plan of Action to develop the mechanism and alternate funding incentive for the production of new drugs especially for the developing world.

Trade and Health

In the area of bilateral trade agreements, the Ministry of Health has been working closely with the Ministry of International Trade and Industry in providing input for Malaysia's position on issues related to the health sector in bilateral trade meetings between Malaysia and the following countries:-

- (i) Australia;
- (ii) New Zealand;
- (iii) India;
- (iv) Pakistan; and
- (v) United States of America.

Malaysia-United States Free Trade Agreement Negotiations

The Section participated in the Malaysia-United States Free Trade Arrangement (MUSFTA) negotiations and coordinated national positions on health issues with various Divisions in the Ministry, namely the Pharmaceutical Services Division, National Pharmaceutical Control Bureau (NPCB), Food Safety and Quality Division and the Medical Practice Division. The first negotiation was held in Pulau Pinang followed by the second negotiation in Washington D.C. The third round of negotiation was held in Kuala Lumpur from 30 October to 3 November 2006 and the fourth round of negotiation was scheduled in February 2007. The Ministry was involved in three areas of negotiation, namely:

- (i) Intellectual Property Rights (IPR);
- (ii) Sanitary and phytosanitary (SPS); and
- (iii) Services.

Health Industry Section

The Health Industry Section's primary area of responsibility is to promote and develop the country's healthcare industries related to:

- (i) Health tourism;
- (ii) Health goods; and
- (iii) Health services.

In the year 2006, a total of RM2 million special grant from the Ministry of Finance was allocated to the Section to jump start its activities. The Section was tasked to conduct dialogues and consultations with representatives in the health industry from public and private sectors so as to obtain feedbacks from the relevant stakeholders.

The Health Industry Section held 5 formal dialogues and consultations with the relevant health industries namely the pharmaceutical industry, multi-national pharmaceutical companies, cosmetics & toiletries, Medical Device Bureau and medical device industry. The Section also worked closely with other government agencies such as MITI, Ministry of Tourism, Tourism Malaysia, MATRADE and MIDA. Feedbacks from these parties have been useful for this Section to:

- (i) identify the aspirations and needs of relevant health industries and how the Government can assist them in their businesses;
- (ii) identify the development of required infrastructure within the Ministry to support the health and other related industries; and
- (iii) determine the direction and framework for the long term operation of the Section.

IMPORTANT EVENTS IN 2006

30 MAY

Official Opening Ceremony of Jeli Hospital in Kelantan was officiated by the H.R.H. Sultan of Kelantan Darul Naim, Tuanku Ismail Petra Ibni Al-Marhum Sultan Yahya Petra.

5 JUNE

"National Oral Health Plan Conference" was launched by the Y.B. Datuk Dr. Hj Abdul Latiff bin Ahmad, the Deputy Minister of Health at Institute For Health Management, Kuala Lumpur.

20 JUNE

"Oral Health Research Conference" was launched by the Y.Bhg. Datuk Dr. M.S. Pillay, the Deputy Director General of Health at Allson Klana Resort, Negeri Sembilan.

7 JULY

World Tuberculosis (TB) Day 2006 was launched by the Y.B. Datuk Seri Dr. Chua Soi Lek, the Minister of Health at Selayang Hospital, Selangor.

26 JULY

"Research Priorities in the Health Sector for the 9th Malaysia Plan Conference" was launched by the Y.Bhg. Tan Sri Datuk Dr. Hj. Mohd Ismail Merican, the Director General of Health Malaysia at Sunway Hotel, Selangor.

27 JULY

Renaming Ceremony of the Seremban Hospital to Tuanku Jaafar Hospital was officiated by the H.R.H. Tuanku Yang di-Pertuan Besar Negeri Sembilan Darul Khusus, Tuanku Jaafar Ibni Al-Marhum Tuanku Abdul Rahman.

25 AUGUST

"Jom Makan Secara Sihat Carnival" was launched by the Y.A.B. Dato' Seri Abdullah Haji Ahmad Badawi, the Prime Minister of Malaysia at Dataran Merdeka, Kuala Lumpur.

4 SEPTEMBER

"Ground Breaking Ceremony of The 9BIO Centre" at Nilai, Negeri Sembilan was launched by the Y.A.B. Dato' Seri Abdullah Haji Ahmad Badawi, the Prime Minister of Malaysia.

5 SEPTEMBER

Renaming Ceremony of the Kuala Pilah Hospital to Tuanku Ampuan Najihah Hospital was officiated by the H.R.H Tuanku Ampuan Negeri Sembilan Darul Khusus, Tuanku Najihah Binti Al-Marhum Tuanku Besar Burhanuddin.

IMPORTANT EVENTS IN 2006

12 JANUARY

"Voluntary Registration of Medical Devices Establishment" was launched by the Y.B. Datuk Seri Dr. Chua Soi Lek, the Minister of Health Malaysia at Marriot Hotel, Putrajaya.

16 JANUARY

Handing Over of Contributions from the Medical Assistance Fund (TBP) Ceremony was launched by the Y.B. Datuk Seri Dr. Chua Soi Lek, the Minister of Health Malaysia.

24 FEBRUARY

"13th Federal Dentaire International (FDI)/Malaysian Dental Association (MDA) Scientific Convention & Trade Exhibition" was launched by the Y.Bhg. Tan Sri Datuk Dr. Hj Mohd Ismail Merican, the Director General of Health Malaysia at Istana Hotel, Kuala Lumpur.

17 MARCH

"Annual Scientific Meeting Malaysia Society of Anesthesiologist 2006" was launched by the Y.B. Datuk Dr. Hj Abdul Latiff bin Ahmad, the Deputy Minister of Health at MITC Melaka.

27 MARCH

Renaming Ceremony of Temerloh Hospital to Sultan Haji Ahmad Shah Hospital was officiated by the H.R.H. Sultan of Pahang, Sultan Haji Ahmad Shah Al-Musta'in Billah Al-Marhum Sultan Abu Bakar Ri'ayatuddin Al Mua'dzam Shah.

31 MARCH

"3rd National Health and Morbidity Survey" was launched by the Y.B. Datuk Dr. Hj Abdul Latiff bin Ahmad, the Deputy Minister of Health Malaysia at Glory Beach Resort, Port Dickson, Negeri Sembilan.

7 APRIL

Press Conference by the Y.Bhg. Tan Sri Datuk Dr. Hj. Mohd Ismail Merican, the Director General of Health Malaysia on the "Launching of Photo Name Certificate, Malaysian Optical Council" at Ministry of Health Malaysia, Putrajaya.

14 APRIL

"Innovative Design for Cigarette Packaging and Pictorial Health Warnings" was launched by the Y.B. Dato' Lee Kah Choon, the Parliament Secretary of Health Malaysia at ABN-AMRO Building, Georgetown, Pulau Pinang.

25 APRIL

Ministry of Health Malaysia's PORTAL was launched by the Y.A.Bhg. Datin Paduka Seri Rosmah Mansor at Putra World Trade Centre, Kuala Lumpur.

7 NOVEMBER

Opening Ceremony of PET-CT & Cyclotron Facility at Putrajaya Hospital was officiated by the H.R.H Seri Paduka Baginda Raja Permaisuri Agong, Tuanku Fauziah Binti Al-Marhum Tengku Abdul Rashid.

14 NOVEMBER

"World Diabetes Day 2006" was launched by the Y.B. Datuk Seri Dr. Chua Soi Lek, the Minister of Health Malaysia at Celebration Square, Danga Bay, Johor.

25 NOVEMBER

"National Drug Substitution Therapy (NDST) Guidelines & Registry" was launched by the Y.Bhg. Tan Sri Datuk Dr. Hj. Mohd Ismail Merican, the Director General of Health Malaysia at Le Meridian Hotel, Kuala Lumpur.

30 NOVEMBER

Official Opening Ceremony of the Federal Health Science College Kuching, Sarawak (Represented by the Y.B. Datuk Dr. Hj. Abdul Latiff bin Ahmad, the Deputy Minister of Health Malaysia).

2 DECEMBER

Renaming Ceremony of the Kuala Terengganu Hospital to Sultanah Nur Zahirah Hospital was officiated by the H.R.H Sultan of Terengganu Darul Iman Al-Wathiqu Billah, Sultan Mizan Zainal Abidin Ibni Al-Marhum Sultan Mahmud Al-Muktafi Billah Shah.

5 DECEMBER

"World AIDS Day 2006" was launched by the Y.A.Bhg. Datin Paduka Seri Rosmah Mansor at Institute Health Management, Kuala Lumpur.

6 DECEMBER

Ministry of Health Conference on Management 2006 and Annual Dinner was launched by the Y.B Datuk Seri Dr. Chua Soi Lek, the Minister of Health Malaysia at Concorde Hotel, Shah Alam Selangor.

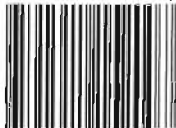
19 DECEMBER

"Good Manufacturing Practices" was launched by the Y.B. Datuk Seri Dr. Chua Soi Lek, the Minister of Health at Complex Putrajaya Centre.



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