ANNUAL REPORT

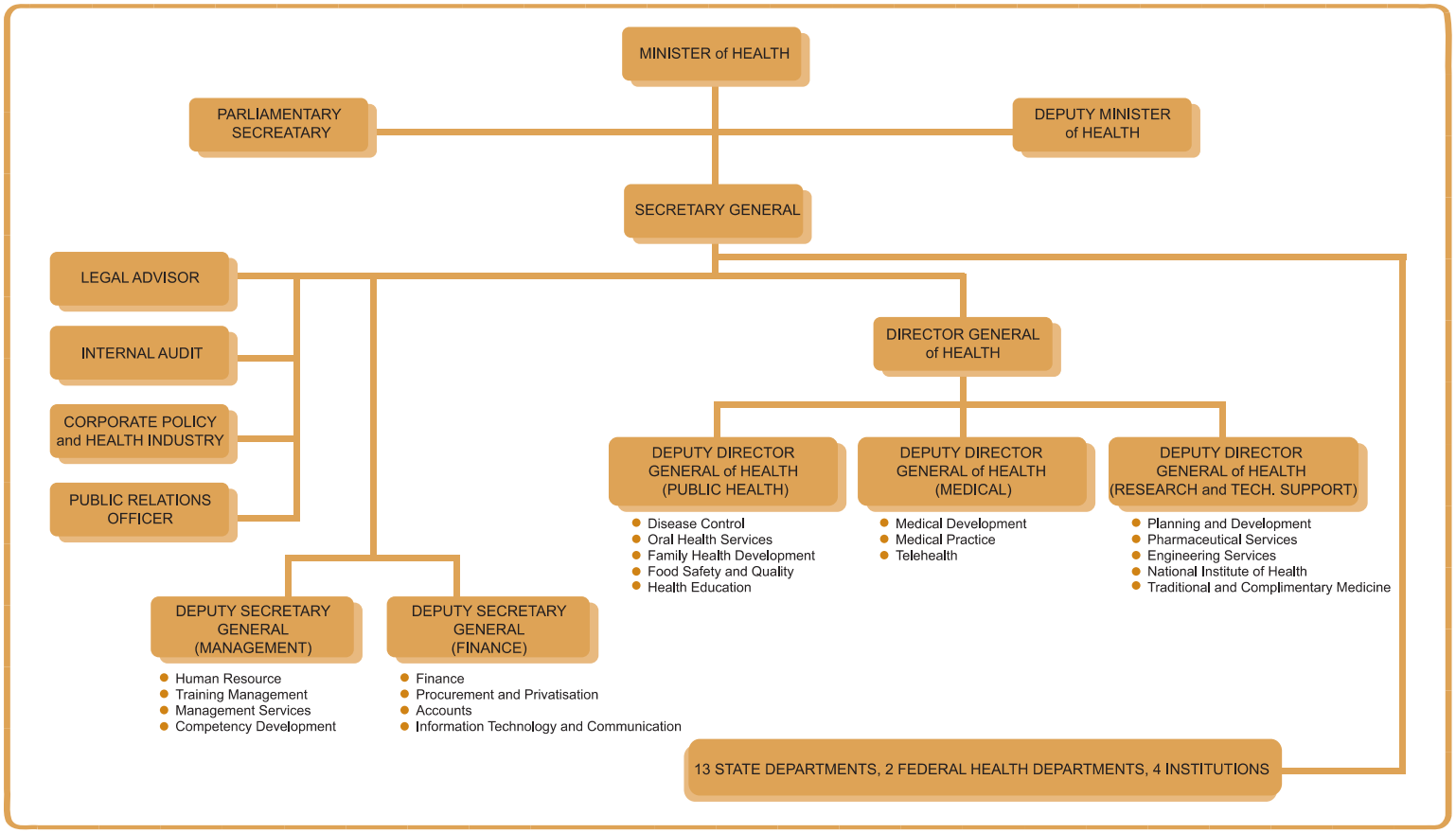
Annual Report
Ministry Of Health Malaysia

2005

CONTENTS

EDITORIAL BOARD

ORGANISATION CHART
OF THE MINISTRY OF HEALTH, MALAYSIA



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.

1
HEALTH STATUS

Annual Report
Ministry Of Health Malaysia
2005

HEALTH STATUS

Generally, the health status of the population in Malaysia has and will continue to improve. The Ministry of Health continue to actively pursue its public health promotion and education campaigns alongside routine disease prevention and control programmes. The government continues to take the lead in physically providing health services of a reliable standard to each and everyone and lends support to all other healthcare providers in its effort to ensure that the Malaysian community gets the best affordable care.

POPULATION STRUCTURE

The estimated population of Malaysia in 2005 was 26.13 million with a population growth rate of 2.1 per annum. The geographical distribution of the population by states and their respective densities remained largely unchanged from the pattern in 2004. The state of Selangor still has the highest resident population of 4.7 million and the Federal Territory of Kuala Lumpur and Penang are still the most densely populated with 6,404 and 1,426 persons occupying approximately 243 squares kilometers and 1,030 squares kilometers of land respectively. The situation in 2005 is as shown in Table 1.

TABLE 1
Population Density by State, Malaysia 2005

State	Population ('000)	Area (Sq.km)	Density (per Sq. Km)
Perlis	224.5	795	282
Kedah	1,848.1	9,425	196
Pulau Pinang	1,468.8	1,030	1,426
Perak	2,256.4	21,005	107
Selangor*	4,736.1	7,979	594
F.T Kuala Lumpur	1,556.2	243	6,404
Negeri Sembilan	946.3	6,657	142
Melaka	713.0	1,652	432
Johor	3,101.2	18,987	163
Pahang	1,427.0	35,965	40
Terengganu	1,016.5	12,955	78
Kelantan	1,505.6	15,020	100
Sabah	2,931.7	73,997	40
F.T Labuan	83.5	92	908
Sarawak	2,312.6	124,450	19
Malaysia	**26,127.5**	**330,252**	**79**

Source : Department of Statistics, Malaysia
* Includes F.T Putrajaya

In 2005, 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 age below 20 years i.e population of youth is 42.3% while the distribution of population for age above 60 years i.e the elderly still forms about 6.6% of the population. The economically-productive or working age population, classified as person age 15 to 64 years is a sizeable 16 million people or 63.1% of the population. While the economically-dependent, that is people below 15 years and above 64 years, is about 36.9% of the population.

Analysis of the population by gender, there was no changes in the pattern in 2004 where males continue to outnumber females by a total of 50.9%, while female is about 49.1%. About 63% of the population live in the urban areas and 37% in rural areas. The urban population is up marginally by 2.4% while the rural population dropped by 1.6%. Table 2 shows some of the basic demographics features of the Malaysian population in 2004 and 2005.

TABLE 2
Demographic Indicators, Malaysia 2004 - 2005

Indicator	2004		2005	
	Number (Thousands)	% of Total Population	Number (Thousands)	% of Total Population
Population of Males	13,023.3	50.9	13,302.7	50.9
Population of Females	12,557.7	49.1	12,825.0	49.1
Population of Youths (Below 20 years old)	10,916.5	42.7	11,052.6	42.3
Population of Elderly (Above 60 years old)	1,661.7	6.5	1,731.2	6.6
Economically-Productive Population (Aged 15-64 years)	16,090.9	62.9	16,483.0	63.1
Economically-Dependent Population (Aged below 15 years & above 64 years)	11,990.8	46.9	9,644.7	36.9
Urban Population	16,071.1	62.8	16,465.2	63.0
Rural Population	9,509.9	37.2	9,662.4	37.0

Source : Department of Statistics, Malaysia

NATALITY, MORTALITY AND NATURAL INCREASE

In 2005, 512,700 live births were recorded. The crude birth rate was 19.6 per 1,000 population. With the crude death rate at 4.4 per 1,000, the rate of natural replacement was 15.2 per 1,000 population.

VITAL STATISTICS

For the year 2005, statistics analysis showed a decreased trend in perinatal mortality, neonatal mortality and infant mortality as compared to the year 2004. This is because of intensive immunisation efforts, improvement in nutritional status of the children and better environment conditions. There are no changes in toddler mortality rate and maternal mortality rate since year 2003. Table 3 shows the vital statistics figures for the year 2001 to 2005.

TABLE 3

Demographic Indicators, Malaysia 2001 - 2005

Indicator	2001	2002	2003	2004	2005(p)
Crude Birth Rate per 1,000 population	21.9	19.8	20.6	20.1	19.6
Crude Death Rate per 1,000 population	4.4	4.4	4.5	4.5	4.4
Perinatal Mortality Rate per 1,000 total Births	6.2	6.8	5.3	4.7	4.1
Neonatal Mortality Rate per 1,000 Live Births	3.6	3.8	3.1	2.7	2.2
Infant Mortality Rate per 1,000 Live Births	5.7	6.5	5.8	5.4	5.1
Toddler Mortality Rate per 1,000 Population aged 1- 4 years	0.6	0.5	0.5	0.5	0.5
Maternal Mortality Rate per 1,000 Live Births	0.4	0.3	0.4	0.4	0.4
Life Expectancy at Birth (Age in years):					
Male	70.2	70.2	70.4	70.4	70.6
Female	75.2	75.6	75.9	76.2	76.4

* P - Provisional Figures
Source : Department of Statistics Malaysia

LIFE EXPECTANCY

For the year 2005, the life expectancy at birth for male is 70.6 years and 76.4 years for female. There are a lot of improvement in comparison to the life expectancy for the Malaysians in 1957 which were 56 years for male and 58 years for female. This is related with the decreasing trend in mortality rates, better environment, improvement in nutritional status and improved sosio-economic status of the population.

MORBIDITY AND MORTALITY BY CAUSE

Based on Ministry of Health statistics, the leading causes of hospitalization in MOH hospitals for the year 2005 includes normal deliveries, followed by complications of pregnancy childbirth and the puerpeirum and accidents. All causes related to reproductive health such as normal deliveries, complication of pregnancy childbirth and puerpierum and certain conditions originating in the perinatal period constitute about 30% of all causes of hospitalization in MOH hospital whereas the percentage of hospitalization due to accident is about 8.93% from all causes.

However, the major cause of deaths is due to Septicaemia, followed by Heart Disease and Diseases of Pulmonary Circulation. Table 4 and 5 shows the ten principle causes of hospitalization and deaths in MOH Hospitals in 2005 respectively.

TABLE 4
Ten Principal Causes of Hospitalization in Ministry of Health Hospitals in 2005

10 Principal Causes of Hospitalization	Percentange
1. Normal Delivery	15.18%
2. Complication of Pregnancy, Childbirth and the Puerperium	12.03%
3. Accidents	8.93%
4. Diseases of The Circulatory System	7.07%
5. Diseases of The Respiratory System	6.98%
6. Certain Conditions Originating in the Perinatal Period	6.25%
7. Diseases of the Digestive System	5.11%
8. Diseases of the Urinary System	3.73%
9. Ill-Defined Conditions	3.34%
10. Malignant Neoplasms	3.00%
Total Admission (1,852,401)	**100%**

Source : Information and Documentation System Unit, MOH

TABLE 5
Ten Principal Causes of Death in Ministry of Health Hospitals in 2005

10 Principal Causes of Death	Percentange
1. Septicaemia	16.54%
2. Heart Diseases and Diseases of Pulmonary Circulation	14.31%
3. Malignant Neoplasms	10.11%
4. Cerebrovascular Diseases	8.19%
5. Accidents	5.67%
6. Pneumonia	5.30%
7. Diseases of the Digestive System	4.45%
8. Certain Conditions Originating in the Perinatal Period	4.37%
9. Nephritis, Nephrotic Syndrome and Nephrosis	3.89%
10. Ill-Defined Conditions	2.82%
Total Number of Death (39,602)	**100%**

Source : Information and Documentation System Unit, MOH

2

MANAGEMENT PROGRAMME

Annual Report
Ministry Of Health Malaysia
2005

INTRODUCTION

The objective of the Human Resource Division (HRD) is to ensure that the Ministry of Health (MOH) has a well-organized structure with optimum number of productive and quality personnel who will be able to assist the organization in implementing its activities efficiently and effectively. The HRD consists of two (2) sections namely the Organizational Development Section and the Resource Management and Development Section, and both sections are divided into 12 units as follows:

A. Organizational Development Section

(i) Scheme and Allowance Unit
(ii) Establishment Unit
(iii) Policy and Regulatory Unit
(iv) Human Resource Management Information System (HRMIS) Unit
(v) Counseling Unit

B. Resource Management and Development Section

(i) Management and Professional Unit
(ii) Paramedic and Auxiliary Unit
(iii) Common User and Support Unit
(iv) Promotion Unit (Management and Professional)
(v) Promotion Unit (Support)
(vi) Specialization Evaluation Panel Unit
(vii) Disciplinary Unit

The HRD is lead by an Under Secretary with the assistance of two (2) Deputy Under Secretaries and 185 officers and staff. This division is responsible for activities related to organizational development such as reviews of services, schemes and allowances. In addition, this division also caters to personnel management matters such as filling of posts, recruitment of support staff under the delegation of power by the Public Service Commission Malaysia (PSC), promotions and disciplinary actions. The HRD is also responsible in giving response towards claims voiced out by the relevant unions.

ACTIVITIES AND ACHIEVEMENTS

Scheme And Allowance Review

A total of eight (8) enhancement proposals of scheme of services in MOH were approved. These enhancements were made to increase the level of professionalism among the MOH personnel and they are as follows:

- Establishment of the service scheme for Trainers Grades U41, U44, U48, U52 and U54 involving 1,166 personnel.
- Establishment of an allied service scheme for Nurses, Assistant Environmental Health officers and Radiographers Grade U29, U32, U36, U41/U42, U44, U48, U52 and U54, involving 40,604 personnel.
- Upgrading the service scheme for Public Health Assistants from Grades U11 and U14 to Grades U17, U22 and U24, involving 5,983 personnel.

- Fixing the entry-level emolument for Grade U41 Pharmacists from P1T1 (RM1, 783.43) to P1T4 (RM 1,978.01).
- Enhancement of Promotion by Appointment (KPSL) for the service schemes of Medical Assistants, Medical Laboratory Technologists and Dental Nurses to the service scheme of Science Officers effective 1st of January 2005.
- Conversion of the classification of the service scheme for Dieticians from C (Science) to U (Health & Medicine), involving 202 personnel.

In addition, a total of four (4) allowances enhancement proposals were approved as follows:

- Increase the On-Call Allowance as illustrated in Table 1 effective 1 June 2005.
- Mortuary Incentive at the rate of RM 100.00 per month for Medical Assistants stationed full-time at mortuaries effective 1 January 2006.
- Incentive for the treatment of psychiatric, tuberculosis and leprosy patients at the rate of RM 60.00 per month for Medical Laboratory Technologists and Assistant Medical Lab Technologist who are working at the laboratories of the National Leprosy Control Centre and the Institute of Respiratory Medicine effective 1 January 2006.
- Enforcement Allowance at the rate of RM 200.00 per month for Pharmacists carrying out enforcement duties effective 1 January 2006.

Reinforcement of Structural Organization

- A total of 22 reviews were carried out amongst 14 reviews were implemented. Among the reviews that were implemented include the restructuring of the Corporate Policy and Health Industry Division, the establishment of the Policy and Regulatory Unit and the Specialization Evaluation Panel Unit in the HRD, the establishment of the Core Team Medical Devices in the Engineering Service Division to monitor the use of medical devices, the establishment of the National Institute of Natural Products, Vaccines and Biological Products (IKPAVB), the establishment of the Institute for Research in Health Systems (IPSK), the establishment of the directorate of National Institute of Health (NIH) and the reinforcement of the structural organization of the Allied Health Science College (KSKB), Sungai Buloh.

- Under the '*Sistem Saraan Malaysia (SSM) 2005'*, creation of promotional posts through the *'Anggaran Belanja Mengurus (ABM) 2006'* was carried out. The general principles used such as creation of new posts through trade-offs, retaining a horizontal organization structure, upgrading of grades based on job values and retaining relativity and parity. In addition, the creation of additional posts under the ABM was due to the increase workload of existing facilities as well as new projects in the MOH.

- As of 31 December 2005, there are a total of 158,127 posts in the MOH which shows an increment of 11,183 posts (7.6%) as compared to 2004. Distribution of posts is as shown in Figure 1.

Post Filled

- As of 31st December 2005, a total of 133,816 (84.6%) posts were filled. The overall figure is as shown in Table 2 while details according to categories are shown in Table 3, 4 and 5. The vacancies were due to the creation of promotion posts at Grades 44 and 52, retirement and renunciation.
- As of 31 December 2005, the Public Service Commission (PSC) has hired a total of 1,050 Medical Officers, 165 Dental Officers and 535 Pharmacist to fill in the vacancies.
- MOH has taken various efforts and measures to retain and reduce the shortage of Medical Officers as well as Specialists and Dental Officers by hiring contract officers from foreign countries mainly India, Myanmar, Pakistan, Indonesia, Bangladesh, Sri Lanka and Egypt. As of 31 December 2005, a total of 387 contract Medical Officers, 238 Specialists and 66 Dental Officers were hired. Apart from that the Government has allowed medical officers to undergo locum in order to increase their income and to be hired on contractual basis (up to 65 years old) after their mandatory retirement age provided they have excellent performance, and are fit mentally and physically.
- In term of overcoming the shortage of Paramedics, a total of 359 Paramedics who have reached their mandatory retirement age were also hired on contractual basis (as of 31 December 2005).

Recruitment

The HRD is also responsible in the recruitment of certain support staff group under the delegation of power by the PSC such as Administrative Assistant, Hostel Supervisor, Assistant Producer, Health Attendant, Driver, Cook, Junior General Assistant, Autoclave Operator and Motorboat Operator. The number of support staff recruited in 2005 is shown in Table 6.

Service

- As of 31st December 2005, a total of 7,999 confirmations of date of appointment, 6,474 confirmations of appointment, 4,192 emplacements in pensionable scheme, 9,842 for transfer and placement and 4,587 of other services were processed by the HRD.
- In order to motivate the members of the Ministry, the HRD has carried out superintend exercises involving a total of 1,918 officers in various posts and grades from the Management and Professional group and 2,671 staff of the Support group. A total of 164 officers from the Managerial and Professional group and 217 from the Support group were promoted.
- In addition to the superintend exercises, the HRD has also approved a total of 3,678 application for acting. 876 applications were approved for the Management and Professional group and 2,802 for the Support group.

Disciplinary Action

- The HRD has taken several actions by penalizing the culpable officers in order to enhance and stabilize the MOH administration. As of December 2005, the HRD has taken action on 274 cases, whereby three (3) cases were from the Management and Professional group and 271 from the Support group. This is an increase of 347% when compared to 79 cases in 2004.

- In order to reduce the number of disciplinary cases among the staff, the HRD has organized a number of workshops and talks regarding discipline management for the staff and the Secretariat of the Disciplinary Board. In 2005, a total of ten (10) seminars and four (4) workshops have been organized as compared to seven (7) seminars and three (3) workshops in 2004.

Unions / Employers Activities Management

On 7th June 2005, the MOH has organized a meeting between Chief Secretary of the MOH and the representatives of 50 unions/societies in order to ensure a good relationship between employer/employee. The purpose of the meeting was to share and discuss all kind of job related issues.

Other Innovations of 2005

- Efforts also have been made to improve the appointment mechanism of Medical Officer to recognize their skill and knowledge in encouraging them to join the public sector.
- A proposal has also been presented to the Government to promote the Medical Officer (Clinical Specialist) from Grade U41 to U48. The exercise will benefit 1,022 Medical Officers who had attended the Specialist Degree Programmes before the implementation of the SSM (November 2002).

CONCLUSION

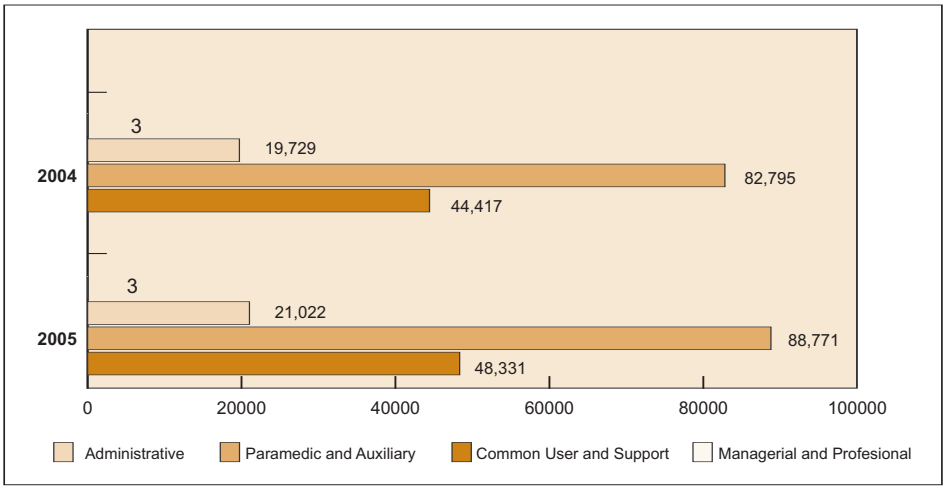
The HRD will continuously ensure that the MOH personnel are productive, skilful and competent, and working in a conducive environment.

TABLE 1
Revised On-Call Allowance for Medical Officers and Medical Assistants

Duties	Previous Rate (RM/Night)	New Rate (RM/Night)
Active On-Call		
Medical Officers and Medical Assistants on-call continuously for more than 15 hours per day during :		
- Full working days	75.00	150.00
- Weekends/Public Holiday	113.00	170.00
Passive On-Call		
(i) Medical Officers on stand-by at home and called for duty for more than 4 hours:	45.00	90.00
- Full working days	68.00	100.00
- Weekends / Public Holiday		
(ii) Medical Officers on stand-by at home and called for duty for less than 4 hours or not called for duty:		
- Full working days	23.00	50.00
- Weekends/Public Holiday	34.00	55.00
(iii) Post graduate officers on call continuously for more than 16 hours		
- Full working days	25.00	100.00
- Weekends/Public Holiday	25.00	110.00

Source : Human Resource Division, MOH

FIGURE 1
Distribution Of Post by Categories, 2005



Source : Human Resource Division, MOH

TABLE 2
Posts Filled by Categories, 2005

Groups	Number of Post	Filled	% Filled
Administrative	3	3	100.00
Managerial and Professional	21,022	14,443	68.7
Paramedic and Auxiliary	88,771	77,488	87.3
Common User and Support	48,331	41,882	86.7
Total	**158,127**	**133,816**	**84.6**

Source : Human Resource Division, MOH

TABLE 3
Managerial And Professional Posts Filled, 2005

Post	Number of Post	Filled	% Filled
Medical Administrative Officer	559	438	78.4
Medical Specialist	3,310	1,321	39.9
Medical Officer	10,285	7,327	71.2
Dental Administrative Officer	159	135	84.9
Dental Specialist	113	72	41.0
Dentist	1,296	812	62.7
Pharmacist	1,351	1,051	77.8
Others	3,949	3,287	83.24
Total	**21,022**	**14,443**	**68.7**

Source : Human Resource Division, MOH

TABLE 4
Paramedic And Auxiliary Posts Filled, 2005

Post	Number of Post	Filled	% Filled
Nurse	34,189	32,580	95.3
Trainers	1,165	758	65.1
Therapist	958	770	80.4
Radiographer	1,405	1,141	81.2
Medical Assistant	7,427	6,678	89.9
Assistant Environmental Health Officer	2,440	2,134	87.5
Medical Laboratory Technologist	3,683	3,305	89.7
Pharmaceutical Assistant	2,867	2,504	87.3
Dental Nurse	2,320	2,073	89.4
Dental Technician	785	616	78.5
Community Nurse	15,184	14,443	95.1
Assistant Nurse	7,105	3,370	47.4
Others	9,243	7,116	76.99
Total	**88,771**	**77,488**	**87.3**

Source : Human Resource Division, MOH

TABLE 5
Common User And Support Posts Filled, 2005

Posts	Number of Posts	Filled	% Filed
Assistant Administrative Officer	724	683	94.3
Administrative Assistant	6,932	5,626	81.2
Administrative Assistant (Finance)	1,360	1,241	91.3
Administrative Assistant (Secretarial)	277	221	79.8
Junior Administrative Assistant	1,811	1,331	73.5
Driver	5,717	5,244	91.7
Health Attendant	21,861	19,618	89.7
General Worker	4,407	3,608	81.9
Junior General Assistant	1,001	841	84.0
Others	4,241	3,469	81.8
Total	**48,331**	**41,882**	**86.7**

Source : Human Resource Division, MOH

TABLE 6
Number Of Support Staff Recruited, 2005

Post/Grade	Total
Health Attendant, Grade U3	2,905
Driver, Grade R3	255
Cook, Grade N1	161
Junior General Assistant, Grade N1	103
Autoclave Operator, Grade R3	13
General Worker, Grade R1	258
Motorboat Operator, Grade R1	1
Administrative Assistant, Grade N17	18
Hostel Supervisor, Grade N17	2
Assistant Producer (Translator) , Grade N17	1
Total	**3,717**

Source : Human Resource Division, MOH

INTRODUCTION

The Training Management Division (TMD) is responsible in providing management services to human resource development of the Ministry of Health Malaysia (MOH), which includes managing the training of Allied Health Science Personnel (AHSP) in the training colleges of MOH.

In the year 2005, the TMD continued to strengthen its training activities, reviewed certain training policies, restructured and evaluated the curriculum of the Basic and Post Basic courses, developed the curriculum of some new Post Basic courses and introduced certain changes in the management of examinations. The training colleges of MOH were further consolidated in line with efforts to ensure that their education and training functions were carried out effectively to produce quality AHSP to meet the critical manpower needs in the health care sector. The priority issues dealt by TMD throughout the year 2005 were :

i) Improved the examination results of the Diploma of Nursing course;
ii) Implemented the credit system to the Diploma of Nursing course;
iii) Restructured and incorporated the concept of credentialing and privileging for certain identified Post Basic courses for AHSP;
iv) Conducted pre-service courses for the Public Health Assistants;
v) Reviewed the projection in the requirements and stocks of Medical Doctors, Dentists, Pharmacists and the Allied Health Sciences Personnel (AHSP);
vi) Increased the intake of the number of trainees of AHSP to reduce the shortage.

In the provision of training infrastructure and facilities, the TMD has achieved its target for the year 2005. The number of MOH's training colleges in 2005 was 35, less from 37 in 2004, as three of the training colleges were integrated to form the College of Allied Health Sciences, Kuching. This college commenced operation in October 2005 and provides training for Medical Assistants, Medical Laboratory Technologist, and Nurses. This is the second model of Allied Health Sciences integrated college after the one in Sungai Buloh. Table 1 showed the number of colleges according to the disciplines.

WORK FORCE

In the year 2005, the TMD had 1,247 posts approved under the training management programme, of which 117 posts were in the TMD and 1,131 posts of tutors in the training colleges. From the total number of posts that were filled, 91 (78%) were for the various posts in the TMD, whilst 746 (66%) were filled for the posts of tutors in the training colleges. There was an increase in the number of posts in the TMD and posts of tutors in the training colleges in the year 2005 over the year 2004 respectively. Tables 2 and 3 showed the list of posts in the TMD and the number of tutors in the training colleges in 2004 and 2005.

FINANCIAL RESOURCES

The approved financial allocation for the year 2005 under the Operating Budget amounted to a total sum of RM215, 637,126.90 and RM201, 445,807.29 (93.42%) was spent. In comparison to the year 2004, the approved financial allocation under the Operating Budget was RM229, 690,942 and RM 215,959,324 (94.02%) was spent.

TABLE 1
Number of Training Colleges by the Disciplines of AHSP

No.	Disciplines of AHSP	No. of Colleges
1.	Assistant Environmental Health Officer	1
2.	Radiographer (Radiography and Radiotherapy)	1
3.	Nurse	15
4.	Community Nurse	10
5.	Dental Nurse	1
6.	Dental Technologist	
7.	Dental Surgical Assistant	
8.	Medical Laboratory Technologist	1
9.	Medical Assistant	3
10.	Public Health Assistant	1
11.	College of Allied Health Sciences, Sg. Buloh	1
	Nurse *(two colleges)*	
	Assistant Environmental Health Officer	
	Physiotherapist	
	Radiographer (Radiographer and Radiotherapy)	
	Pharmacy Assistant	
	Occupational Therapist	
12.	College of Allied Health Sciences, Kuching	1
	Medical Assistant	
	Medical Laboratory Technologist	
	Nurse	
	Total	**35**

Source : Training Management Division, MOH

TABLE 2
Number of Tutors in Training Colleges

Grade of tutors	2004			2005		
	Post	Filled	Vac.	Post	Filled	Vac.
U40	24	11	13	24	18	6
U38	53	29	24	55	47	8
U36	193	109	84	198	169	29
U32	856	533	323	854	512	342
Total	**1,126**	**682**	**444**	**1,131**	**746**	**385**

Source : Training Management Division, MOH

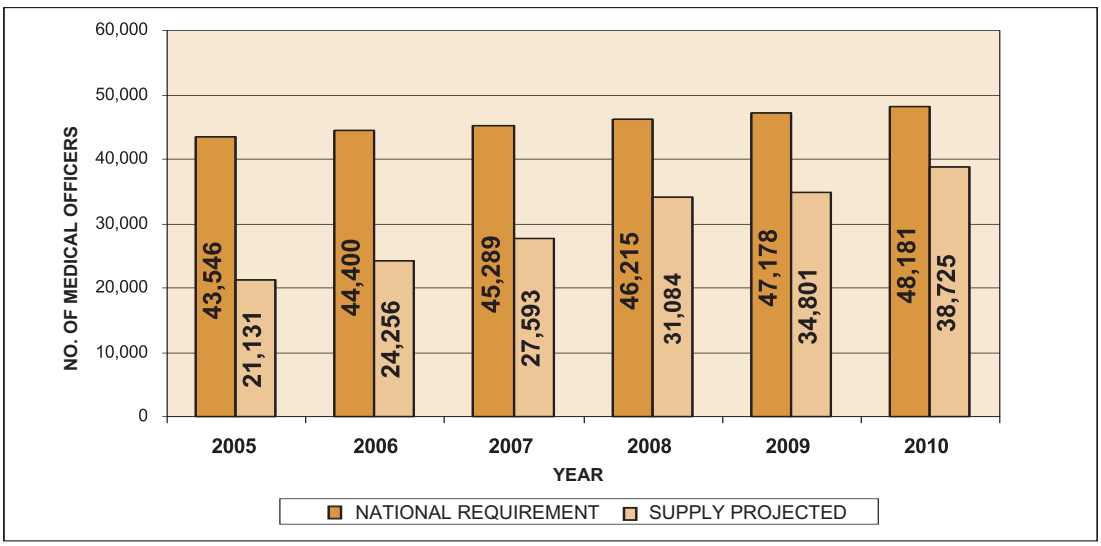
ACTIVITIES AND ACHIEVEMENTS

Manpower Projection for the Health Care Sector

The TMD had reviewed the projection of health human resources supply and requirements for the period of 2005 to 2010. The review had focused on the projection of the supply and demand of Medical Doctors, Dentist, Pharmacist, Medical Specialist and the AHSP for the period of 2005 to 2010.

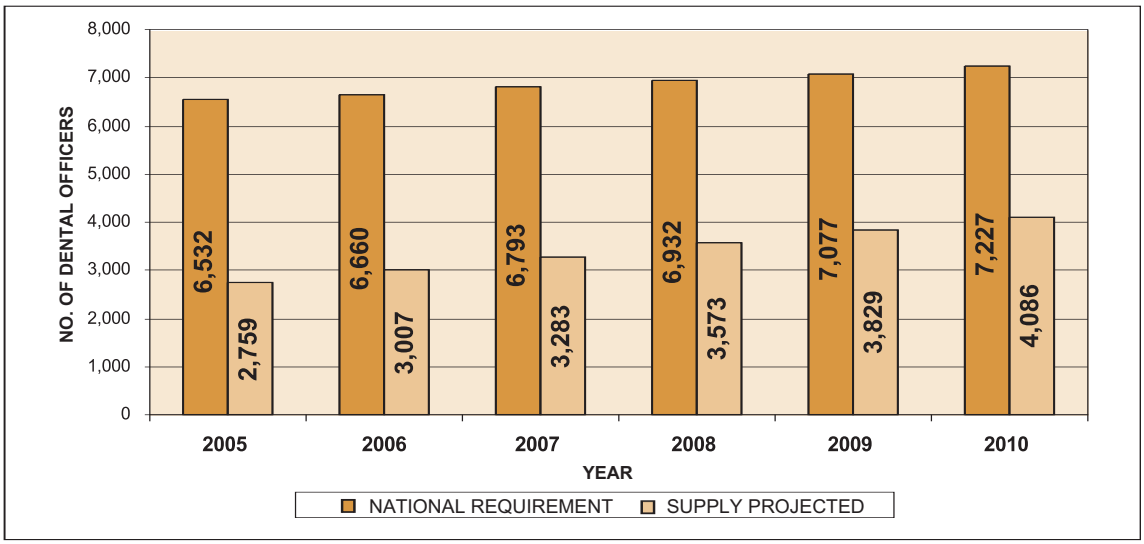
The projection indicated that the increase in the supply of those categories of health humance resources for the next few years to come would still be inadequate to meet the increasing needs of the nation. Figure 1, 2, 3 and 4 showed the current and projected national requirement and supply of Medical Doctors, Dentist, Pharmacist and the AHSP.

FIGURE 1
Current and Projected Requirement and Supply of Medical Doctors



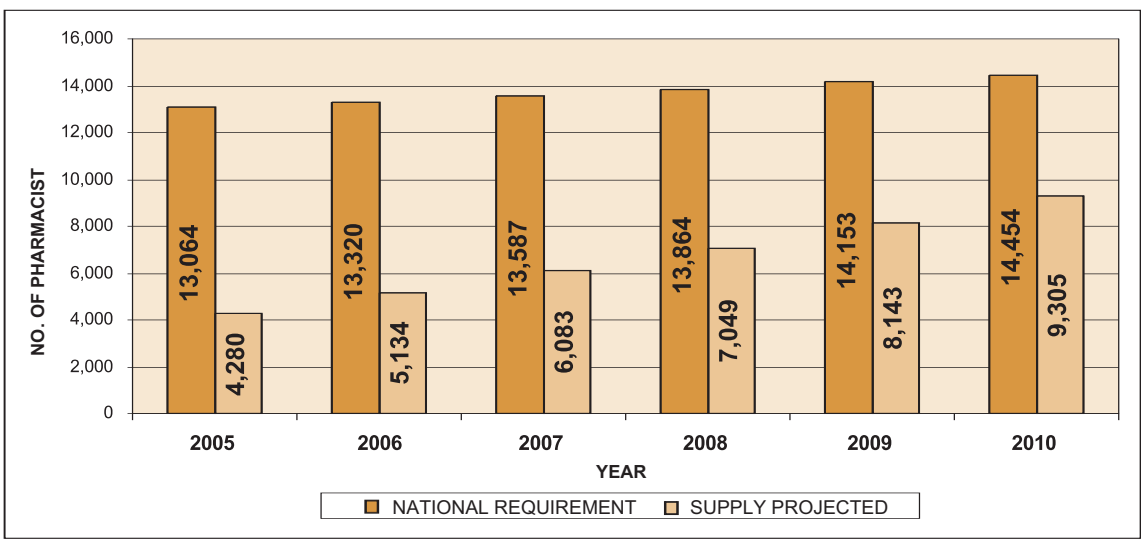
Source : Training Management Division, MOH
Note : Based on the norm of 1 : 600 population

FIGURE 2
Current and Projected Requirement and Supply of Dentists



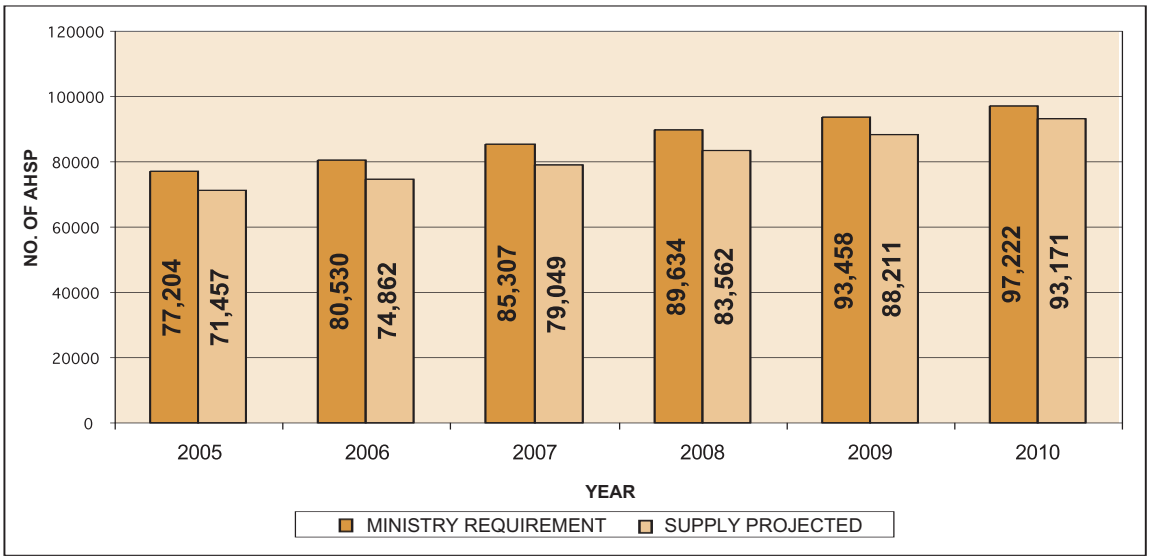
Source : Training Management Division, MOH
Note : Based on tho norm of 1 : 4000 population

FIGURE 3
Current and Projected Requirement and Supply of Pharmacists



Source : Training Management Division, MOH
Note : Based on the norm of 1 : 2000 population

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



Source : Training Management Division, MOH

Training

In the year 2005, as compared to the year 2004, there was an increase in the intake of trainees for various categories of training, with the exception of, the Post Basic courses and the Short Term In-service courses (overseas), as shown in Table 3.

TABLE 3
Intake of Trainees by Types of Training

No.	Types of Training	2004	2005
1.	Basic Training (AHSP)	5,459	6,061
2.	Post Basic Training	2,160	1,991
3.	Specialist Training (Medical Officers)	414	421
4.	Sub-Speciality Training	41	100
5.	Masters / Doctoral courses	43	50
6.	Short Term In-service courses (Overseas)	206	193
7.	In-Service Conversion courses	102	154
8.	Induction courses	9,526	10,465

Source : Training Management Division, MOH

a) Basic Training (AHSP)

The intake of trainees for the Basic courses in the year 2005 was 6,061. Table 4 shows the intake of trainees for the Basic courses according to disciplines for the year 2004 and 2005.

b) Post Basic Training

A total of 1,991 AHSP attended Post Basic training courses in 33 different disciplines in the training colleges of MOH. Table 5 showed the number of AHSP who have attended Post Basic Training according to disciplines for the year 2004 and 2005.

TABLE 4
Intake of Trainees by Category of AHSP 2004 - 2005

No.	Discipline	2004	2005
1	Nurse	2,215	2,655
2	Community Nurse	1,433	1,402
3	Medical Assistant	590	678
4	Pharmacy Assistant	109	126
5	Assistant Environmental Health Officer	213	233
6	Medical Laboratory Technologist	272	358
7	Radiographer	153	142
8	Dental Nurse	125	131
9	Dental Technician	28	40
10	Physiotherapist	74	57
11	Occupational Therapist	71	52
12	Dental Surgery Assistant	176	187
	Total	**5,459**	**6,061**

Source : Training Management Division, MOH

TABLE 5
Intake of Trainees for Post Basic Training

No.	Discipline	2004	2005
1	Midwifery	719	704
2	Emergency Care	131	60
3	Public Health Nursing	98	73
4	Environmental Health	16	18
5	Laboratory Management	28	-
6	Health Personnel Management	174	69
7	Primary Healthcare	41	24
8	Tranfusion Medicine	28	-
9	Gerontology	23	22
10	Coronary Care	60	84
11	Neonatal Nursing	55	56
12	Ophthalmic Nursing	33	38
13	Oncology Nursing	29	30
14	Orthopaedic Nursing	79	73
15	Paediatric Care	86	72
16	Perioperative Care	132	139
17	Psychiatric Nursing	41	33
18	Intensive Care	114	117
19	Renal Nursing	125	119
20	Legal and Prosecution	23	14
21	Cytology	22	23
22	Computerize Tomography	17	13
23	Anaesthesiology	10	8
24	Diabetic Management	25	50
25	Sports Medicine	23	49
26	Hemostasis	28	-
27	Occupational Health and Safety	-	-
28	Paediatric Dental Care	-	-
29	Forensic Medicine	-	19
30	Otorinolaringology Treatment	-	21
31	Microbiology	-	29
32	Food Safety and Cleanliness	-	4
33	Orthodontic Treatment	-	30
	Total	**2,160**	**1,991**

Source : Training Management Division, MOH

c) Specialist and Sub-speciality Training

A total of 421 Medical officers were offered for the Master in Medicine programme in various fields of specialization under the Federal Training Scholarship for the year 2005. For the same year too, 100 Medical Specialists were offered to undergo sub-speciality training. Tables 6 and 7 show the intake of Medical Officers and Medical Specialist for specialist and sub-speciality training for the year 2004 and 2005 respectively.

TABLE 6
Intake of Medical Officers for Specialist Programmes

No.	Discipline	2004	2005
1	Obstetric & Gynaecology	35	33
2	Anesthesiology	46	43
3	Paediatric	18	18
4	Internal Medicine	27	36
5	Psychiatry	15	25
6	Radiology	26	22
7	General Surgery	27	42
8	Ophthalmology	19	30
9	Orthopedic	43	34
10	Otorhinolaryngology	25	17
11	Pathology	34	30
12	Family Medicine	25	25
13	Public Health	46	40
14	Sports Medicine	2	0
15	Rehabilitation Medicine	10	3
16	Emergency Medicine	9	12
17	Neurosurgery	4	5
18	Plastic Surgery	1	1
19	Clinical Oncology	2	5
Total		**414**	**421**

Source : Training Management Division, MOH

TABLE 7
Intake of Medical Specialists for Sub-Specialty Training

No.	Disipline	2004	2005
1	Medicine	7	20
2	Surgery	3	10
3	Paediatric	4	7
4	Obstetric & Gynaecology	4	7
5	Anesthesiology	6	10
6	Orthopedic	6	15
7	Otorhinolaryngology	4	5
8	Ophthalmology	2	6
9	Psychiatry	-	2
10	Pathology	4	8
11	Radiology	1	2
12	Family Medicine	-	4
13	Radiotheraphy	-	1
14	Forensic Medicine	-	2
15	Palliative Medicine	-	1
	Total	**41**	**100**

Source : Training Management Division, MOH

d) Masters and Doctoral Courses

A total of 50 officers from various positions in the health sector were offered the Federal Training Scholarship to undertake Masters (43 officers) and Doctoral courses (7 officers) in different disciplines relating to health in the year 2005.

e) Short Term In–Service Courses

In the year 2005, a total of 193 personnel of the MOH had attended short-term in-service courses financed from MOH's operating budget or sponsored by other agencies and international bodies or foreign governments.

f) Conversion Courses (In-Service)

The following are details of the in service conversion courses conducted for the career advancement of Assistant Nurses, Community Nurses and Midwife in 2005.

TABLE 8
Number of AHSP in In - Service Conversion Courses

No.	Conversion Course	2004	2005
i.	Assistant Nurses to Nurses (11/2 years)	3	-
ii.	Community Nurses to Nurses (1 year)	99	154
	Total	**102**	**154**

Source : Training Management Division, MOH

Management of Examinations

In the management of examinations for the year 2005, the TMD had further strengthened certain aspects in the management of examinations for all the diploma and certificate courses conducted by the training colleges. The work processes in the preparation of the composite score of the induction courses for all level of staffs and the issuance of certificates to trainees on successful completion of courses had been enhanced further.

The TMD had continued to conduct workshops to review and develop examination questions to enlarge the pool of questions in the examination questions bank for Basic and Post Basic courses. The TMD had also conducted courses on the measurement and evaluation techniques with the cooperation of the Malaysian Examination Council for the tutors to update their knowledge and skill on the management of examinations. The TMD plans to conduct such courses every year to further develop the tutors' expertise in the management of examinations.

The TMD had also strengthened the work processes for the administration of appeal cases on examination results and the application for examination transcripts by trainees.

The final examinations conducted by TMD for the diploma and certificate courses in the year 2005 involved trainees from the intake of July 2002 until January 2003, totalling 5,774. Table 9 showed the number of candidates who sat for the examination in the years 2004 and 2005.

TABLE 9
Number of Candidates in Final Examinations for Basic Level

Level of Courses	Year	
	2004	2005
Basic Diploma	3,539	5,490
Basic Certificate	358	284

Source : Training Management Division, MOH

Generally, in year 2005, the achievements for all level of courses in the various disciplines were satisfactory. The percentage of passing was more than 90% and exceed the benchmark set in the Quality Assurance Programme (QAP). This final examination results analysis include the repeat examination. There was no significant difference between the final examination results for the years 2004 and 2005.

Development of Curriculum

Throughout the year 2005, the TMD had developed a number of new curriculum in specialised diciplines besides incorporating the concepts of credentialing and privileging.

The TMD implemented the credit system for the Nursing training program in the year 2005, where by all basic courses at the Diploma level conducted by the training colleges of MOH use the above system.

Otorhinolaryngology Nursing course is a new specialization course introduced. The College of Allied Health Sciences, Sg Buloh has been chosen as an academic centre and both the Kuala Lumpur Hospital and Selayang Hospital as the practical training centres. All the trainees for the course were selected from Nurses and Medical Assistants of both the hospitals. The Post Basic courses introduced using the concept of credentialing were as follows : -

- Intensive Care
- Ophthalmic Nursing
- Perioperative Care
- Emergency Care
- Orthopedic Care
- Coronary Care
- Paediatric Care
- Neonatal Care
- Renal Care
- Psychiatry Care

The new curriculum of Post Basic courses developed in 2005 were:-

- Neurosciences Care
- Infection Control
- Perianesthesia Care

Evaluation of Programmes

The TMD had strengthened identified aspects of quality improvement in the implementation of its key activities throughout the year 2005. This had lead TMD to organise the Quality Circle (QC) Convention of MOH at national level on the 3rd of October 2005 whereby 21 QCs at state level from the technical and management categories competed within their respective categories.

Two (2) surveys under TMD's Quality Assurance Programme (QAP) were carried out on the Basic training courses in the training colleges, each for the period of January - June 2005 and July - December 2005 respectively. The surveys evaluated the levels of compliance of the training colleges to the quality assurance indicators that were set. The findings of the surveys showed that the overall level of compliance was commendable.

The indicators used for the QAP were also reviewed and some modifications were made. Greater emphasis is given to the processes that lead to the improvement of the examination grades of trainees. The modified indicators of the QAP were presented to the Steering Committee of the QAP and will be used for the surveys in the forth coming year.

The TMD had also prepared projection on the requirements of MOH and the allocation of trainees to the private training institutions under its outsourcing programme. TMD has also monitored the teaching and training activities of the private training institutions under the outsourcing programme to ensure that they meet the needs and standards set.

CONCLUSION

In meeting the growing needs for trained personnel consequence to the expansion of health care services and the development in health care technologies, the TMD will continue its effort in developing flexible training action plans that are adaptable to changes. On the requirements for more medical officers, dental officers and pharmacists, KKM will continue to cooperate and collaborate closely with central agencies, Ministry of Higher Education, public and private institutions of higher learning and other related agencies.

INTRODUCTION

The total Federal Budget in 2005 was RM117.44 billion out of which RM89.14 billion was allocated for the Operating Budget and RM28.30 billion for the Development Budget. The trend of financial allocation for the Ministry of Health (MOH) and its proportion to the Federal Budget and Gross Domestic Product as well as the per capita allocation from 2001 to 2005 is as shown in Table 1.

Total budget allocation for MOH decreased from RM8.99 billion in 2004 to RM7.86 billion in 2005. This represents a reduction of 12.63% or RM1.14 billion as compared to the allocation of previous year. The Operating Budget saw an increase of 6.67% while the Development Budget reduce by 59.05% (Table 2). Based on the above allocation, MOH was the fourth highest recipient of allocations following the Ministry of Education, Ministry of Finance and Ministry of Defence.

MOH BUDGET ALLOCATION FOR 2005

In 2005, a sum of RM6.78 billion was originally approved for operating budget. Subsequently supplementary allocation of RM524 million was approved by the Federal Treasury thus resulting in the actual allocation for MOH in 2005 to be RM7.30 billion. Based on the actual Operating Budget allocation, RM3.26 billion was allocated for Emoluments (General Object 10000), RM3.74 billion for Supplies and Services (General Object 20000), RM0.12 billion for Assets (General Object 30000) and RM0.18 billion for Fixed Charges and Grants (General Object 40000).

At the end of 2005, MOH's total Operating Expenditure performance amounted to RM7.502 billion or 102.74% of the total actual allocation. The operating budget allocation and expenditure of MOH according to the four Programmes, New Policies and One-Off is as shown in Table 3. Medical Care and Public Health Programme consumed the most expenditure totaling RM4.79 billion and RM1.70 billion respectively.

Comparisons of operating expenditure by general objects for the year 2005 is as shown in Table 4. Among the factors contributing to the over expenditure for the year 2005 under emoluments (General Object 10000) were the increase in incentive payments for doctors on-call, increase in uniform allowances for nurses and other allied health professionals in MOH and the yearly bonus payment.

The original development allocation for year 2005 was RM1.08 billion while a supplementary allocation of RM0.11 billion was approved. Total actual development allocation for the year 2005 thus amounted to RM1.197 billion. This allocation for the implementation of 385 projects involve the construction of hospitals, buildings, upgrading of clinics and hospital laboratories and medical and non medical equipment throughout the country. Total expenditure in year 2005 was RM1,194 billion or 99.77%. Table 5 shows the development allocation for the year 2005 according to each project.

Under the Eighth Malaysia Plan (8MP), a total of RM5.50 billion has been approved for MOH. Subsequent to the mid term review of 8MP, the ceiling allocation for the development budget was revised to RM9.50 billion. 2005 was the fifth and final year of the implementation of the 8MP. The overall expenditure performance of MOH under the 8MP period was RM9.33 billion or 98.21% of the total ceiling allocation of development budget for MOH. Table 6 shows the development budget expenditure from the year 2001 to 2005 under the 8MP.

Besides fulfilling the needs of the citizens through Existing Policies Programmes, MOH is also responsible for providing financial assistance to Non-Government Organizations (NGO) and for administering the Medical Assistance Fund (TBP). The Medical Assistance Fund (TBP) replaced the National Health and Welfare Fund (TKKK).

For the year 2005, a sum of RM9.77 million was allocated by MOH to 24 NGOs in the form of capital grant and financial aid to support health related programmes and activities such as counseling sessions, awareness campaigns, treatment for cancer and tuberculosis patients. MOH also allocated a sum of RM16.06 million to 44 NGOs as subsidies for haemodialysis treatment. The allocation for the Medical Assistance Fund was approved by the Ministry of Finance and amounted to RM25 million. Under the Fund, a sum of RM5.99 million was used to provide assistance to 391 patients. This fund was created to assist the needy and the disabled who require medical treatment including treatment on a prolonged basis. Assistance provided was in the form of financing medical cost, cost of medicine, medical equipment and equipment for rehabilitation which is not provided by government hospitals.

CONCLUSION

An upward trend in the amount of allocation and expenditure for MOH demonstrates full commitment of the government in upgrading the health status of the people and in fulfilling its social obligation to people in the urban and rural areas.

TABLE 1
Ministry of Health (MOH) Annual Budget 2001 - 2005

Year	MOH Annual Budget (RM)			National Budget (RM)	National Budget (%)	Gross Domestic Product GDP (RM)	GDP (%)	Per Capita Allocation (RM)	Population
	Operating	Development	Total						
2001	4,545,407,400	1,220,146,010	5,765,553,410	91,046,791,410	6.33%	211,227,000,000	0.30%	240.10	24,012,900
2002	4,883,820,770	1,415,253,000	6,299,073,770	100,518,506,120	6.27%	220,422,000,000	4.40%	256.83	24,526,500
2003	5,765,836,400	1,790,170,000	7,556,006,400	109,801,554,460	6.88%	232,359,000,000	5.40%	301.66	25,048,300
2004	6,354,128,200	2,642,883,000	8,997,011,200	112,490,000,000	8.00%	248,954,000,000	7.10%	351.71	25,580,900
2005	6,778,264,700	1,082,165,800	7,860,430,500	117,444,984,600	6.69%	261,395,000,000	5.00%	300.85	26,127,700

Sources : Federal Budget 2001 - 2005,
Economic Report 2005,
Malaysia Yearbook of Statistics 2005

TABLE 2
MOH Budget Year 2004 - 2005

Type Of Budget	2005	2004	%
	RM		
National Budget	117,444,984,600	112,490,000,000	4.40%
MOH Budget	7,860,430,500	8,997,011,200	-12.63%
Operation Budget (B42)	6,778,264,700	6,354,128,200	6.67%
Development Budget (P42)	1,082,165,800	2,642,883,000	-59.05%

Source : Federal Budget 2004 -2005

TABLE 3
Operating Budget Actual Allocation And Expenditure By Programme For Year 2005

Programme Code	Programme	Actual Allocations (RM)	Expenditure (RM)	Expenditure (%)
010000	Management	749,631,859	717,193,500	95.67%
020000	Public Health	1,624,421,540	1,709,515,476	105.24%
030000	Medical Care	4,641,259,671	4,798,958,430	103.40%
040000	Research and Technical Support	127,573,430	129,349,466	101.39%
050000	New Policies	94,404,813	86,097,348	91.20%
060000	One-Offs	64,973,387	61,779,710	95.08%
	Total	**7,302,264,700**	**7,502,893,930**	**102.74%**

Source : Finance Division, MOH

TABLE 4

Operating Budget Actual Allocation And Expenditure By General Object For Year 2005

General Object	Actual Allocation (RM)	Expenditure (RM)	Expenditure (%)
10000 (Emoluments)	3,257,133,278	3,562,957,450	109.38%
20000 (Supplies and Services	3,738,878,085	3,656,131,310	97.78%
30000 (Assets)	124,856,201	121,365,431	97.20%
40000 (Fixed Charges and Grants)	181,397,136	162,439,739	89.54%
Total	**7,302,264,700**	**7,502,893,930**	**102.74%**

Source : Finance Division, MOH

TABLE 5

Development Budget Actual Allocation And Expenditure For Year 2005 By Project

Projek Detail	Project	Actual Allocation (RM)	Expenditure (RM)	Expenditure (%)
00100	Training	42,160,000	38,937,412	92.36%
00200	Public Health	221,868,000	216,220,984	97.45%
00300	Hospital Facilities	403,402,000	410,962,949	101.87%
00400	New Hospitals	428,499,800	430,218,167	100.40%
00500	Concultancy and Feasibility Studies	13,723,000	12,391,045	90.29%
00600	Upgrading and Maintenance	34,933,000	33,475,469	95.83%
00700	Land Maintenance and Procurement	52,180,000	51,838,649	99.35%
	Total	**1,196,765,800**	**1,194,044,675**	**99.77%**

Source : Finance Division, MOH

TABLE 6

Development Budget Expenditure For 8MP

Year	Expenditure (RM)
2001	1,569,959,407
2002	1,513,611,553
2003	2,691,430,181
2004	2,364,437,679
2005	1,194,044,675
Total	**9,333,483,495**

Source : Finance Division, MOH

INTRODUCTION

Information Technology and Communication Division or also known as *Bahagian Teknologi Maklumat dan Komunikasi (BTMK)* is responsible in planning, developing, monitoring and coordinating of ICT Projects in the Ministry of Health (MOH), Malaysia.

The main role and functions of the Division are as following:-

- ***Advisor/consultant for ICT Projects***
  Provide advice / consultancy in ICT projects planning, development, implementation and technical support.
- ***Developing Application Systems***
  Developing in-house / joint development application systems
- ***Monitoring Implementation of ICT Projects***
  Monitor and resolve issues related to ICT Projects implementation
- ***Coordinating ICT Projects in MOH***
  Enforcing regulations and decisions made by ICT Steering Committee of MOH.

OBJECTIVE

Four (4) main objectives of Information Technology and Communication Division are:-

- To assist MOH in planning long term and short term strategies in ICT field in order for the Ministry to realise and achieve its mission and vision more efficiently and effectively.
- To create, monitor, measure and revaluate policies, processes and procedures related to ICT either manually or electronically inline with the acts formulated.
- To act as a driving force for Ministry of Health to plan, create, manage, monitor and evaluate the use of ICT systematically and effectively so as to benefit MOH personnel.
- To plan, identify, manage and coordinate infostructure, infrastructure, procedures and ICT interfacing facilities to translate function and design of ICT system in an integrated manner.

ICT DIVISION PROFILE

In October 2004 Public Services Department (PSD) has approved a warrant of allocation to structure Information Technology and Communication Division which has brought about additional responsibilities and an increase number of personnel. The personnel strength has increased from fifty five (55) to one hundred and six (106). The vacant positions were filled from March 2005 onwards.

The Information Technology and Communication Division is divided into five (5) Departments:

- Policy and ICT Planning Department
- Project Development Department
- Documentation and Monitoring Department
- Security and ICT Infrastructure Department
- Administrative and Finance Department

ACTIVITIES AND ACHIEVEMENT

INFORMATION TECHNOLOGY STRATEGIC PLANNING (ISP)

Information Technology and Communication Division has formulated an Information Technology Strategic Plan (ISP) for year 2006-2010 and it acts as a blue print for carrying out all ICT requirement for MOH. Formulation of ISP is one of the requirement or criteria in order to get Malaysian Administrative Modenisation and Management Planning Unit approval for all ICT projects in MOH.

During the process of formulating the ISP for MOH, the following activities were carried out:-

- Analyzing the current business environment of MOH
- Analyzing the current ICT environment of MOH
- Analyzing the ICT shortfalls and opportunities pertaining to MOH
- Analyzing the future ICT environment of MOH

Chronology of events to ISP Document Development

- The ISP Framework was approved by ICT Steering Committe (JPICT), MOH No. 1/2005.
- Appointed consultant to produce the ISP Document for MOH
- ISP workshop was held in Port Dickson from 18th -21st September 2005.
- Six (6) series of dicussion took place.
- ISP Draft briefling was presented in the Morning Meeting on 30th November 2005
- A Workshop on ISP Document Writing was held from 19th -21st December 2005.
- ISP Document was sent to Malaysian Administrative Modenisation and Management Planning Unit (MAMPU) on the 31st December 2005.

ICT STEERING COMMITTEE

Information Technology and Communication Division acts as the secretariat for the ICT Steering Committee, MOH chaired by the Secretary General and the Director General of Health. The ICT Steering Committee is responsible for approving all ICT projects prior to implementation. This is to ensure that the health services given are effective with the use of ICT as an enabler. In 2005, three (3) meetings were held where seventeen (17) ICT projects were approved for implementation.

HELPDESK

A centralized helpdesk unit was initiated by the ICT Division in August 2005. The helpdesk acts as a center where all problems and complaints related to ICT can be reported to. The end users can now report an ICT related problem to just these two numbers i.e. 03 – 8883 3388/7. The operating hours are from Monday to Fridays 7.30am to 5.30pm.

MINISTRY OF HEALTH VIRTUAL PRIVATE NETWORK (MOHVPN)

The MOHVPN (single entry and single exit) was first initiated at the end of 1999 through the implementation of Health Management Information System Phase II (HMIS II). All the State Health Departments were connected to the *Pusat Teknologi Maklumat* (IT Center) in *Bangunan PERKIM* through COINS Frame Relay while the District Health Centers and Hospitals are connected via dial-up to the respective State Health Departments.

The MOH's headquarters in *Jalan Cenderasari,* Kuala Lumpur and all other institutes under the Ministry in the Klang Valley are connected to the Data Center via leased line.

In 2005, the Division has planned for an upgrade of the network whereby the frame relay technology will be changed to Internal Protocol Virtual Private Network (IPVPN). The upgraded network of MOH*Net will include all the State Health Departments.

QUALITY MANAGEMENT SYSTEM (MS ISO 9001 : 2000)

To ensure effectiveness and efficiency of the Division, a quality management system is being developed. Development of the quality management system namely MS ISO 9001:2000 started in fourth quarter of 2005. SIRIM has been duly appointed as the consultant for this project. The following activities were carried out in 2005:

- The staff and officer were exposed to implementation mechanism of MS ISO 9000.
- Three (3) officers attended Lead Auditor Training for MS ISO 9000.
- Gap Analysis is carried out on existing system using MS ISO 9000.

The system is expected to be implemented successfully in 2006.

APPLICATION SYSTEMS

There are four (4) programmes in the Ministry namely Management, Medical, Public Health and Research and Technical Support. Below are some of the application systems implemented according to the programmes indicated above.

a. **Management Programme**
- Asset and Inventory Management System (AIMS)
- Oversea Travel Application System (1st Phase)
- Competency Management System (1st Phase)
- Letter Monitoring System

b. **Medical Programme**
- Hospital Information System (HIS)
- In Patient Management System
- Medical Treatment Information System
- Medical Practitioners Control System (MedPCs)

c. **Public Health Programme**
- Tele Primary Care System (TPC)
- Communicable Disease Control Information System (CDCIS)
- Measles Investigating System

d. **Research and Technical Support Programme**
- Land Information System
- Public Health Laboratory Information System
- Blood Bank Information System (BBIS)

THE WAY FORWARD

Information Technology and Communication Division is entrusted by MOH to ensure that all targets below are achieved through the Information Technology Strategic Planning (2006-2010). The ten (10) targets set are:-

- All health e-service delivery systems shareable by 2010.
- A single MOH portal for information and service assess by 2007.
- Multi-channels delivery options from 2006.
- Increase knowledge workers by 20% per year starting 2007.
- 90% basic ICT literacy (ISAC) of MOH personnel by 2010.
- PC : Staff Ratio
  – Management & Professional & Support 1 (1:1)
  – Support 2 (1:3)
- A MOH Knowledge-Based system by 2007.
- All hospital linked to states using MOH*Net by 2006.
- Percentage of research / researcher using ICT to increase by 20% beginning year 2007.
- Number of e-enabled research documents / researcher content to increase by 20% beginning 2007.

CONCLUSION

Information Technology and Communication Division will continue to play an important role as an advisor and manager for ICT projects in Ministry of Health. Besides that, the Division will ensure all application systems development progress smoothly and monitor all ICT projects from time to time in line with the role and functions of the Division.

In line with the government's effort to create a computer literate community and equip them with basic knowledge and job skills, the Division will be the main driving force in the effort to close the digital divide gap among the personnel's at MOH.

3

PUBLIC HEALTH PROGRAMME

Annual Report
Ministry Of Health Malaysia
2005

INTRODUCTION

The provision of oral health care in the country by the public sector is mainly through the Ministry of Health. The Oral Health Division is located within the Ministry of Health headquarters at the Federal Administrative Centre in Putrajaya. The Division takes responsibility for the formulation of strategies, planning of programmes, and monitoring as well as evaluation of activities. Meanwhile, programme implementation and data collection are carried out by the state dental services. Direct linkage between the Oral Health Division and the state dental departments ensures continual feedback and interaction. In addition to management of national oral health (dental) services, the Oral Health Division has as its main roles the development of policies on oral health, oral health promotion, and the formulation as well as enforcement of laws and regulations related to dentistry in the country.

The Division is the lead agency for oral health in the country and is responsible for ensuring collaboration between dental and non-dental agencies, from both the public and private sectors, in striving for improvement of the oral health status of the nation. In addition, the secretariat of the Malaysian Dental Council is located on the same premises as the Oral Health Division, and is responsible for the practice of dentistry in the country.

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.

ACTIVITIES AND ACHIEVEMENTS

• ORAL HEALTH PROMOTION

With the intention of marketing oral health, inter-agency collaboration is considered a necessity. These collaborations are with other divisions in the Ministry of Health, as well as with other governmental and non-governmental agencies.

In the Ministry of Health, efforts are combined between departments during celebrations and campaigns. The Oral Health Division and the Selangor Dental Department participated in an exhibition held in conjunction with *Hari Kesihatan Sedunia 2005* on 10 April 2005. Oral health exhibits were provided during the exhibition held at the launch of the *"Jom Kayuh"* programme in Putrajaya on 14 May, 2005 as part of the Healthy Lifestyle Campaign 2005. Oral health information was prepared for online health education under 69 topics for the "Health Online" portal of the Ministry of Health.

There were other oral health exhibitions held in 2005. One of these was in conjunction with the Asia-Pacific Dental Congress 2005 held at the Putra World Trade Centre on 24-29 May, 2005. Community projects were also conducted to promote oral health. An oral cancer screening project was held at *Pulau Carey* in April 2005 by the Oral Health Division, together with the Selangor Dental Department and the Malaysian Dental Association.

A large number of oral health promotion activities have been conducted especially with the Ministry of Education. The Mesyuarat Kordinator Program Pra-sekolah was held in September, 2005 to reinforce implementation of the oral health care programme for pre-schoolers amongst pre-school teachers. There was also provision of technical input into *Kuiz Kesihatan Sekolah Rendah Peringkat Kebangsaan*.

The oral health promotion unit at the Oral Health Division has a responsibility to educate the public through issuance of oral health education materials. Among these was the printing of pamplets on "Use of Toothpaste for Children". Additionally, a manual on oral health education to be used by teachers was also prepared. Resource material for oral health personnel in the form of pamplets supporting tobacco cessation entitled *"Kekalkan Kesihatan dan Senyuman Anda - Jauhi Tabiat Merokok"* was produced. For local and international interest, the book entitled "Oral Healthcare in Malaysia" was updated. This was distributed at the Asia-Pacific Dental Congress in May, 2005.

In addition, a course on "Dentists' Role in Tobacco Cessation" was organised to provide training for dental officers and nurses in promoting anti-smoking messages and for oral cancer awareness. This was held on 8-10 August 2005. CDs on Oral Health Care for Toddlers for the training of childcare providers were distributed to all states.

Monitoring of Oral Health Promotion Activities

Oral health promotion activities conducted in the states include dental health talks (DHT), toothbrushing drills (TBD), puppet shows, exhibitions, campaigns, and talks over radio or television. Previously, data was also collected for slide shows and film shows, however since these activities are normally conducted with DHT, a decision was made not to include these categories. Following the implementation of the new Health Management Information System (Dental Sub-System) formats for primary oral health care in January 2005, these latter two categories have been replaced by the categories "role play" and "community service". It is now apparent that a large proportion of what constituted the "others" category was actually "role play". In 2005, the "others" category has been reduced to a very small proportion (1.21%) compared to previous years where it used to form about 8-9% of total DHE activities. Now, 8% of the activities consist of "role play". "Community service" (0.37%) encompasses activities conducted at community halls, government offices and government quarters (e.g. fire department, police), villages and FELDA schemes. These activities are normally carried out during school holidays, when the school dental service eases up.

Promotional activities are undertaken by dental officers and dental nurses. There were a total of 2,427 dental officers and dental nurses involved in these activities in 2005. A comparison of the dental health education activities for years 2004 and 2005 can be seen in Table 1.

TABLE 1
Dental Health Education Activities, 2004 - 2005

Type Of Activity	2004	%	2005	%
TBD	243,293	49.75	193,774	44.63
DHT	188,056	38.45	191,884	44.15
Slide Shows	7,363	1.51	-	-
Role Play	-	-	35,543	8.18
Puppet Shows	2,236	0.46	2,478	0.57
Exhibitions / Campaigns	2,510	0.51	2,137	0.49
In - Service Training	609	0.12	718	0.17
TV / Radio	286	0.06	746	0.17
Film Shows	42	0.01	-	-
Comm. Service	-	-	1,625	0.37
Others	44,654	9.13	5,251	1.21
Total	**489,049**	**100.00**	**434,156**	**100.00**

Source : Information and Documentation System Unit, MOH

TBDs and DHTs each form about 45% of the activities under DHE. Until 2004, the categories of participants for which TBD and DHT were collected were classified as pre-school children, primary school children, secondary school children, ante-natal mothers and adults. Beginning from year 2005, the following additional categories have been included for data collection : toddler programme, children with special needs, teachers' training college programme, and oral cancer screening programme. The number of participants for TBD and DHT can be seen in Table 2.

TABLE 2
Number of Participants for TBD and DHT, 2004 - 2005

Target Group	TBD 2004	TBD 2005	DHT 2004	DHT 2005
Pre-School Children	1,113,686	1,038,996	860,236	911,302
Pri. School Children	4,247,568	3,900,010	2,886,949	2,953,622
Sec. School Children	12,531	18,109	567,458	629,825
Ante-Natal Mothers	137	-	61,434	78,098
Adults	1,863	-	71,438	83,396
Sub-Total	**5,375,785**	**4,957,115**	**4,447,515**	**4,656,243**
Toddler Programme	-	29,361	-	117273
Children with Special Needs	-	31,475	-	28,559
Teachers Training College Programme	-	2,550	-	7,398
Oral Cancer Screening Programme	-	7,559	-	10,255
Total	**-**	**5,028,060**	**-**	**4,819,728**

Source : Information and Documentation System Unit, MOH

• FLUORIDATION OF PUBLIC WATER SUPPLIES

Fluoridation of public water supplies forms the cornerstone of the dental public health programme in Malaysia, and is a population-based approach for the prevention and control of dental caries.

Following a cabinet approval in 1972 to institute water fluoridation, this programme has been implemented incrementally throughout the country, targeting water treatment plants of more than I mgd capacity. In 2005, a directive was issued to change the optimum level of fluoride in water supplies from 0.5 – 0.7 ppm to the new level of 0.4 – 0.6 ppm. This level was a recommendation following a study on fluoride levels in the country.

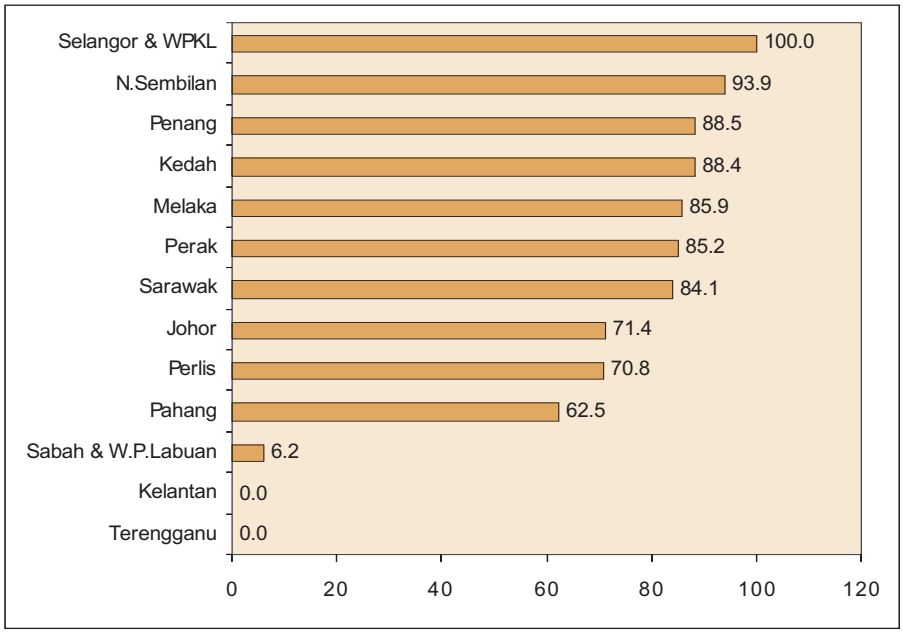
About 69% of the total Malaysian population received fluoridated water in 2005 (Table 3). For most of the states, more than 70% of the population received fluoridated water except for the states of Pahang (62%), Sabah (6.2%), Kelantan (0%) and Terengganu (0%). The population in Kelantan and Terengganu do not derive the benefits of water fluoridation due to discontinuation of the programme in years 1995 and 1999 respectively (Figure 1).

TABLE 3
Population Receiving Fluoridated Water Supplies, 2003 - 2005

Year	2003	2004	2005
Total population receiving fluoridated water supplies	15,627,772	16,322,380	18,043,684
Proportion of population receiving fluoridated water (%)	62.4	64.8	69.1

Source: Oral Health Division, MOH
Information and Documentation System Unit, MOH

FIGURE 1
Population Receiving Fluoridated Water by State, 2005



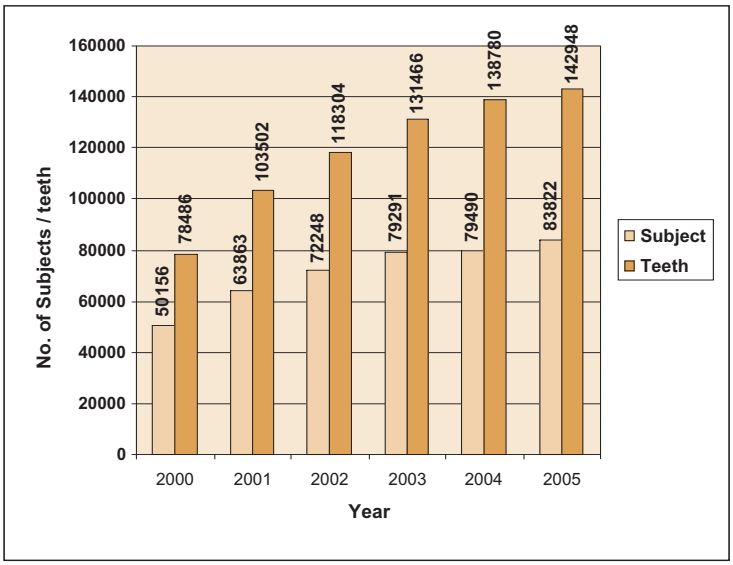
Source : Oral Health Division, MOH

• CLINICAL PREVENTION / FISSURE SEALANT PROGRAMME

Clinical prevention is provided for children through the school-based fissure sealant programme. This recommendation was highlighted following the National Oral Health Survey of School Children 1997 (NOHSS '97) when it was found that the carious lesions were mainly found to be on the occlusal surfaces of teeth, and that the teeth most affected by caries were the first and second molars. The fissure-sealant programme is focused on Year 1 and 2 school children, as well as those at high-risk.

There can be seen to be a trend of increase in the number of fissure sealants placed by subjects and by teeth for primary school children (Figure 2).

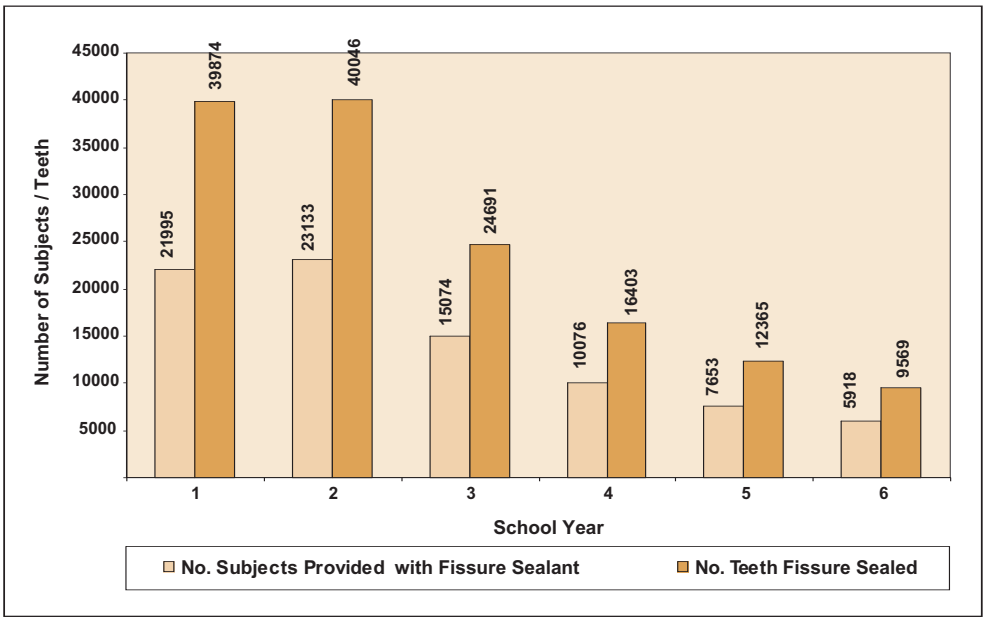
FIGURE 2
Number of Subjects / Teeth Provided With Fissure Sealants 2001 - 2005



Source : State Oral Health Departments, MOH

Provision of fissure sealants is also considered an integral part of incremental oral health care in the School Dental Service for primary school children, and as such, the emphasis will be on the Year 1 and 2 schoolchildren, in order to reduce caries incidence and prevalence. There were 53.8% Year 1 and 2 school children who were provided with fissure sealants in 2005 while the proportion of their teeth which were fissure sealed was 55.9% (Figure 3)

FIGURE 3
Subjects / Teeth Provided With Fissure Sealants by School Year in 2005



Source: Oral Health Division, MOH

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

This is a high-risk strategy involving screening for oral mucosal lesions in captive communities, and also involves opportunistic screening of patients who attend dental clinics. Oral pre-cancer and cancer in the country is predominant among certain identified communities, i.e. the Indian ethnic group and the indigenous groups. Apart from ethnic origin being a factor, these communities also practice risk habits found to be associated with oral lesions, namely quid chewing, tobacco use and alcohol consumption.

In 2005, a total of 9,002 (10.9%) of the high risk population in 317 estates/villages were screened. Of these, 374 (4.3%) were found with oral lesions and 8,664 (96%) were given oral health education, particularly on oral cancer prevention.

- **PRIMARY ORAL HEALTH CARE**

Primary oral health care is delivered to the population based on target groups. To strengthen the provision of care, 2 sets of guidelines were printed and circulated for MOH oral health care providers during 2005. These were :

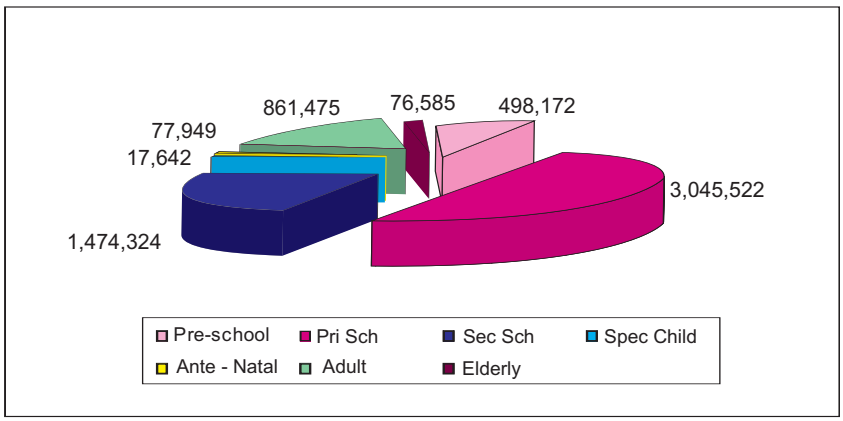
- Guidelines on Oral Health Care for Ante-natal Mothers, and
- Oral Healthcare for Children with Special Needs - Guidelines for Implementation

Seminars were also conducted to ensure smooth implementation of programmes :

- Seminar for Children with Special Needs was held on 12-14 September, 2005, and
- Seminar for Co-ordinators of the Pre-school Programme was held on 26-28 September, 2005.

The proportion of the Malaysian population who attended for primary oral healthcare at Ministry of Health (MOH) facilities in 2005 was 25.5% (Figure 4), about the same as in 2004 (25.2%). From records of new attendances for various categories, the highest was by primary school children (51%), as in previous years, due to the strong school programme which has matured especially in primary schools. Lowest attendances recorded were for the category of "special children".

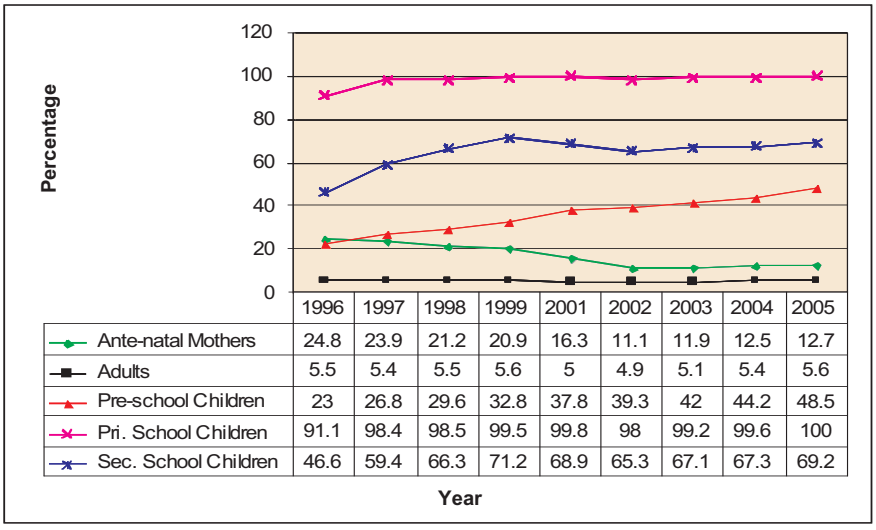
FIGURE 4
Attendance for Primary Oral Health Care by Category of Patient, 2005



Source : Information and Documentation System Unit, MOH

Of the total estimated population for each target group, the proportion who attended MOH oral health facilities over a 10-year time span, i.e. from 1996 until 2005, can be seen in Figure 5. It appears that in 2005, all primary school children (100%) have been covered while 69% of the secondary school children population is under coverage. The proportion of adults receiving primary oral health care at MOH facilities is only 5.6%. The assumed reason is that the majority of adults seek care from the private sector. The new category of "special children" has just been included for data collection, from year 2005.

FIGURE 5
Patients Receiving Primary Oral Health Care, 1996 - 2005



	1996	1997	1998	1999	2001	2002	2003	2004	2005
Ante-natal Mothers	24.8	23.9	21.2	20.9	16.3	11.1	11.9	12.5	12.7
Adults	5.5	5.4	5.5	5.6	5	4.9	5.1	5.4	5.6
Pre-school Children	23	26.8	29.6	32.8	37.8	39.3	42	44.2	48.5
Pri. School Children	91.1	98.4	98.5	99.5	99.8	98	99.2	99.6	100
Sec. School Children	46.6	59.4	66.3	71.2	68.9	65.3	67.1	67.3	69.2

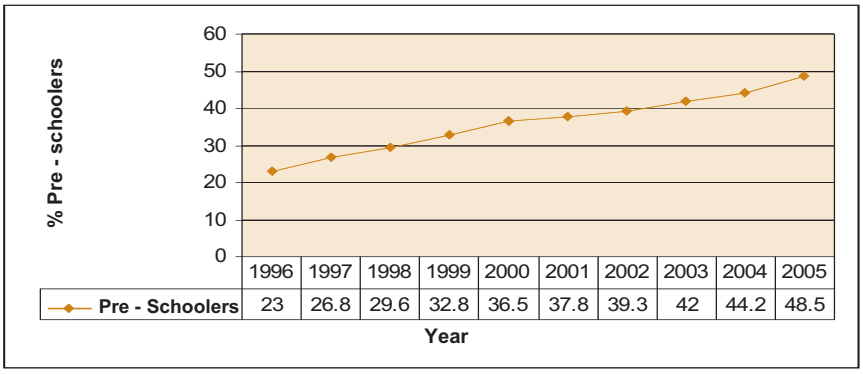
Source: Information and Documentation System Unit, MOH

Pre-school Children

Pre-school activities conducted are essentially promotive and preventive in nature. However, the simple non-invasive, non-threatening technique of ART (Atraumatic Restorative Treatment) is also provided for children, if found necessary, at the kindergartens. Pre-schoolers are also referred to dental clinics for further management. Pre-school teachers are enlisted for co-operation in the oral health programme.

The new attendances of pre-school children have increased, and from the previous year, a 4.3% increase was registered (Figure 6).

FIGURE 6
Pre - School Children Receiving Primary Oral Health Care, 1996-2005



	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Pre - Schoolers	23	26.8	29.6	32.8	36.5	37.8	39.3	42	44.2	48.5

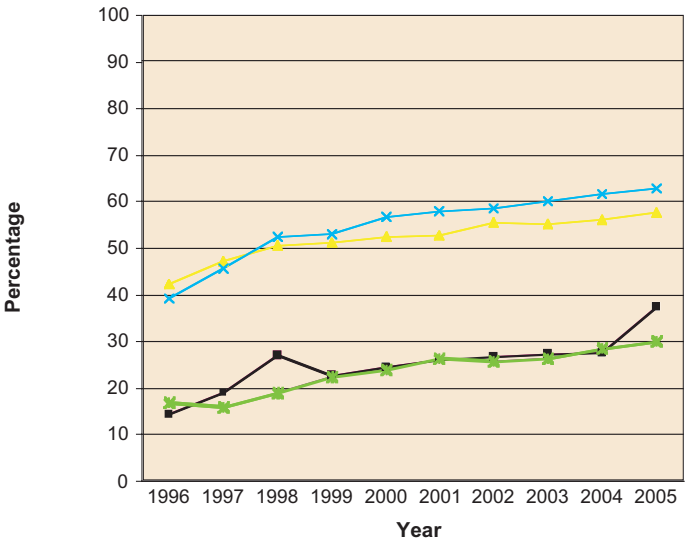
Source: Information and Documentation System Unit, MOH

Primary and Secondary School Children / School Dental Service

The School Dental Service (SDS) delivers care to primary and secondary school children, utilising the Incremental Oral Health Care approach, which was first implemented in the early 1980s. Monitoring of impact indicators (Figure 7) reveals that the oral health status of school children has improved.

There was an increase in the proportion of 6-year-olds with caries-free mouths to 37.4% in 2005. The emphasis placed on the pre-school programme may have a role in the marked increase from the year before. The proportion of caries-free 12-year-olds and 16-year- olds also increased in the last year, to 57.8% and 30.2% respectively.

FIGURE 7
Impact Indicators for School Dental Service 1996-2005



	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
% of 6 year-olds with caries-free mouth (CFM)	14.3	18.9	26.9	22.6	24.5	26.2	26.6	27.2	27.6	37.4
% of 12-year-olds with DMFX=0	42.3	47.1	50.7	51.1	52.4	52.9	55.5	55.3	56.2	57.8
% of primary school children with NTR	39.2	45.8	52.5	53.2	56.7	58.1	58.6	60.1	61.8	63
% of 16-year-olds with DMFX=0	16.9	16.1	18.9	22.4	23.8	26.3	25.7	26.5	28.5	30.2

Source : Information and Documentation System Unit, MOH

Primary school coverage was 92.3% in 2005, an increase from 91.2% in 2004. The highest coverage for primary schools was in the states of WP Kuala Lumpur (99.5%), Melaka (97.7%), Pahang (97.4%) and Johor (97.0%) while lowest was in the state of Sabah (79.7%). Meanwhile the school coverage for secondary schools was 75.4% as compared to 55.8% registered in the year before.

The coverage for school children was also good in the primary schools, being 89.6%, while for secondary school children it was about 70%. The lower coverage for secondary schools and secondary school children thus indicate that more emphasis has to be placed on the secondary school programme.

The objective of the school programme is to achieve an orally-fit status for the school child, using a systematic and comprehensive approach. The SDS, together with the fluoridation programme, has helped to control caries in school children. Using the outreach mode, extensive coverage of school children has been possible. Mobile teams provide care at schools either through the use of mobile dental clinics, or not, as the case may be.

Ante-natal Mothers

Mothers are deemed to be very influential in moulding the habits of their young. This is considered so for oral health, too. The objective of the ante-natal programme is to impart oral health knowledge to mothers in order that they may stimulate behavioural change in their young. The ante-natal mothers are provided free basic dental care. Ante-natal mothers who frequent the Maternal and Child Health Clinics are referred for oral health promotion sessions and dental examinations to the nearest government dental clinic.

However, the coverage for ante-natal mothers at primary oral health care facilities remains poor. In year 2005, of the population estimate of 614,351 ante-natal mothers, the proportion of ante-natal mothers who utilised primary oral health care facilities was 12.7%.

Adults

No oral health care programme similar to other target groups exists for adults. Adults attend primary oral health facilites based on demand. In 2005, of the estimated adult Malaysian population of 16,916,285, only 938,060 (5.6 %) were provided primary oral health care at MOH dental clinics. Higher percentages were seen in the states of Perlis (11.7%), Negeri Sembilan (9.8%) and Terengganu (9.2%).

The Elderly

From data collected through the Health Management Information System, it can be seen that 43,373 patients above the age of 60 years was seen by MOH dental personnel in 2005. These patients are seen at dental clinics, or through the outreach programmes at institutions and community/day care centres. Plans are for domiciliary care, however it is envisaged that this will not be possible in the near future due to logistical problems and insufficient personnel.

Of the patients seen, 51.4% were males. About 18.9% of patients were found to be edentulous and those who possessed 20 or more teeth in their mouths constituted only 30.0%. The average number of teeth was 12. However, this data is not reflective of the population, as the patients seen are mainly those who are already in need of care.

The oral health care programme for the elderly is to create awareness of oral health for the elderly and their carers, the development of appropriate self-care practices, and provision of care to the elderly at the various locations, with the objective of improved oral health and quality of life. However, in order to see an improvement in the oral health status of the elderly group, a strong programme for adults below 60 years of age needs to be in place.

• SPECIALIST ORAL HEALTH CARE

Specialist oral health care is provided by clinical dental specialists and dental public health officers. Clinical specialists are based in dental clinics at primary oral health care facilities in major cities and towns, or at hospitals. The clinical dental specialists in the MOH are the oral surgeons, orthodontists, paediatric dental specialists, periodontists, oral pathology/oral medicine specialists, and restorative dental specialists. Dental officers with public health post-graduate qualifications are not gazetted as dental specialists. The dental public health specialist, unlike the clinical specialist who treats the individual, has the community as "the patient".

In 2005, the number of clinical dental specialists in the Ministry of Health was 97 (Table 4). In comparison to the beginning of the decade, the increase has been slight for each clinical discipline, except for periodontics, where the numbers have doubled. Attrition has to be considered when looking at the numbers, as specialists have also resigned or chosen optional retirement.

The Fellowship of the Royal Australasian College of Dental Surgeons (FARCDS), Doctor in Clinical

TABLE 4
Clinical Dental Specialists by Discipline Ministry of Health Malaysia, 2000 - 2005

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

Source : Oral Health Division, MOH

Dentistry (Oral Pathology) from the University of Adelaide, and the Master in Orthodontics (UKM) were granted recognition. Following a subscribed period of attachment, the holders of these qualifications can be gazetted as specialists in the Ministry of Health Malaysia. A document entitled "Quality Procedure for the Recognition of Post-Graduate Degree in Dental Specialties" was prepared and completed.

Dental specialists have been involved in the development of Clinical Practice Guidelines (CPG). In 2005, several CPGs were completed and approved by the CPG Council (Table 5). These CPGs will be printed in 2006.

TABLE 5
Clinical Practice Guidelines Completed and Approved in 2005

CPG Topic	Discipline
Management of Unerupted and Impacted Lower Third Molar Teeth	Oral Surgery
Management of Unilateral Condylar Fracture of the Mandible	Oral Surgery
Management of Early Childhood Caries	Paediatric Dentistry
Management of Chronic Inflammatory Periodontal Disease	Periodontology

Source : Oral Health Division, MOH

Monitoring of Specialist Oral Health Care Programme

a. Oral Surgery

There was an increase in the number of patients (new attendances) in 2005 (Table 6). Adults form 87.3% of utilisers of oral surgery specialist care, followed by secondary school children (5.2%), primary school children (3.7%), pre-schoolers (3.3%) and ante-natal mothers (0.5%).

TABLE 6
Oral Surgery Specialist Care, 2003 - 2005

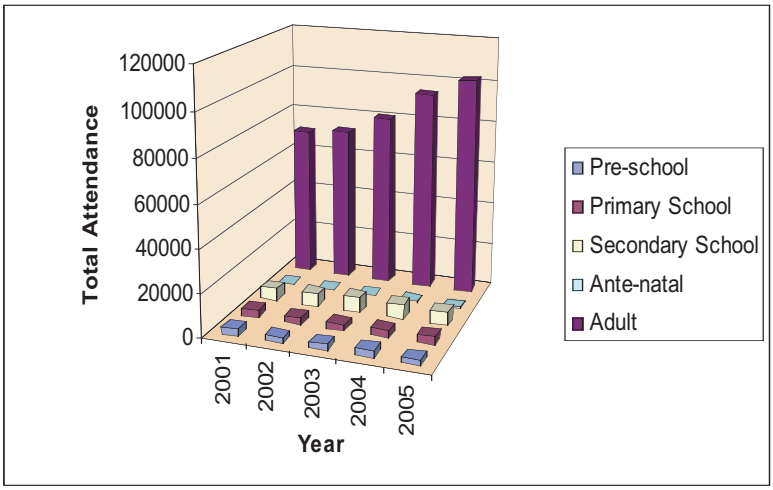
Year / Category of Patients	No. of Patients			Total Attendance		
	2003	2004	2005	2003	2004	2005
Pre-school	1,254	1,414	1,315	2,847	3,320	2,781
Primary School	1,158	1,443	1,475	3,124	3,465	3,793
Secondary School	2,229	2,318	2,103	7,228	7,052	6,380
Ante-natal	213	233	218	395	318	340
Adult	28,598	32,623	35,143	80,655	93,603	101,895
Total	**33,452**	**38,031**	**40,254**	**94,249**	**107,758**	**115,189**

Source : Information and Documentation System Unit, MOH

Total attendances (Figure 8) show a trend of increase over the last three years. The number of visits made per patient at 2.9 in 2005 is comparable to 2.8 visits per patient made in the year before.

Patients are seen on an in-patient or out-patient basis at hospitals, following referrals from dental clinics or medical clinics, both from the public and private sectors. Care provided by the oral surgeons include : biopsy, surgery, management of complications following extractions, management of trauma (soft tissue, bone or dento-alveolar), and management of the temporo-mandibular joint. In trauma management, bone plates, wiring or other methods may be used. Prosthetic care is also provided, which include provision of obturators and various facial prostheses.

FIGURE 8
Total Attendances at Oral Surgery Clinics, 2001 - 2005



Source : Information and Documentation System Unit, MOH

b. Orthodontics

There has been an increase in the number of orthodontic patients (new attendances) compared to the previous year (Table 7). The largest proportion of orthodontic utilisers are the secondary school children (60.2%), which is understandable since orthodontic treatment is generally undertaken by children of this age group.

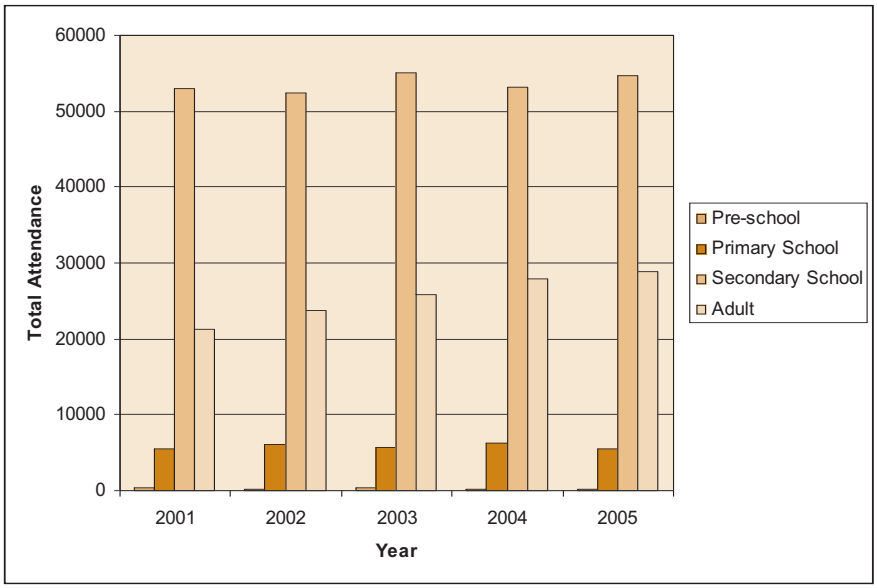
Total attendances have also shown an increase (Figure 9). Each patient made, on average, 3.9 visits in year 2005, the same as in 2004.

TABLE 7
Orthodontic Specialist Care, 2003 - 2005

Year / Category of Patients	No. of Patients			Total Attendance		
	2003	2004	2005	2003	2004	2005
Pre-school	160	118	148	311	225	221
Primary School	2,156	2,536	2,289	5,672	6,193	5,600
Secondary School	13,607	13,852	13,947	55,058	53,230	54,668
Adult	5,596	6,008	6,782	25,733	27,833	28,898
Total	**21,519**	**22,514**	**23,166**	**86,774**	**87,481**	**89,387**

Source: Information and Documentation System Unit, MOH

FIGURE 9
Total Attendances at Orthodontic Clinics, 2001 - 2005



Source : Information and Documentation System Unit, MOH

The care provided by orthodontists is classified into these categories : consultation (I and II), X-rays taken, impressions taken, types of treatment given (sub-categorised as removable and fixed appliances), active treatment completed and review/retention cases. Breakdown for some items is shown in Table 8. The number of cases from the waiting list beginning orthodontic treatment (Consultation II) has decreased from the previous year. The number of cases of active treatment completed and the number of review/retention cases have shown an increase from the last year.

TABLE 8
Types of Orthodontic Care Provided, 2003 - 2005

Items of Care		2003	2004	2005
*Consultation	I	7,665	7,912	8,032
	II	4,011	4,293	3,884
Removable Appliances	New	6,981	7,064	7,455
	No. of Patients	4,778	4,792	5,012
	Adjustment	11,777	12,625	13,771
Fixed Appliances	New	5,433	5,356	5,503
	No. of Patients	3,654	3,265	3,707
	Adjustment	52,596	52,677	51,912
	Change of archwire	19,332	20,353	19,910
Active Treatment Completed		2,844	2,711	2,793
Review/Retention Cases		8,675	8,023	8,198

Source : Information and Documentation System Unit, MOH

*Consultation I = First time Orthodontist examines patient following referral
Consultation II = Orthodontic treatment begins

c. Paediatric Dentistry

In 2005, there was an increase in number of patients for Paediatric Dental Specialist services by 25.6% from the previous year (Table 9). The patients at these clinics comprise pre-school children (27.8%), primary school children (25.8%), secondary school children (14.9%) and children with special needs (31.4%).

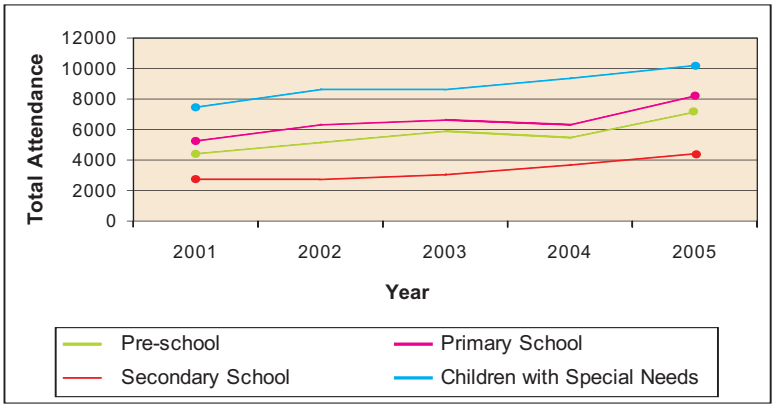
TABLE 9
Paediatric Dental Specialist Care, 2003 - 2005

Year / Category of Patients	No. of Patients			Total Attendance		
	2003	2004	2005	2003	2004	2005
Pre-school	1,901	2,091	2,825	5,872	5,423	7,188
Primary School	1,976	2,043	2,624	6,643	6,353	8,237
Secondary School	859	1,138	1,513	3,080	3,643	4,414
Children with Special Needs	2,133	2,809	3,191	8,638	9,371	10,194
Total	**6,869**	**8,081**	**10,153**	**24,233**	**24,790**	**30,033**

Source: Information and Documentation System Unit, MOH

Total attendances were seen to have increased (Figure 10). Each patient averaged 3 visits in the year, while for year 2004 it was 3.1 visits.

FIGURE 10
Total Attendances at Paediatric Dental Specialist Clinics, 2001 - 2005



Source : Information and Documentation System Unit, MOH

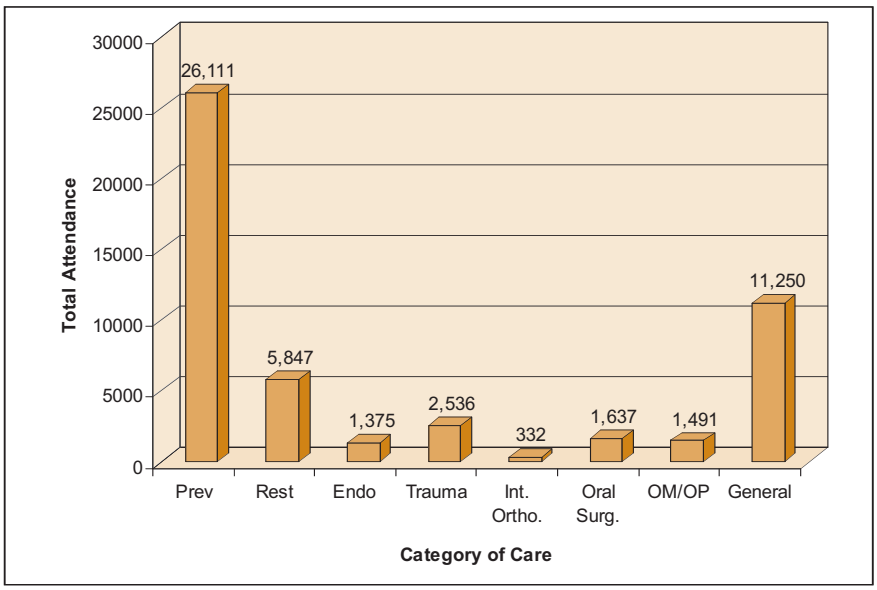
Referrals are accepted for children below the age of 16 years with reasons such as difficulty in management or require complex oral health care. The referrals are from medical units, paediatric surgical units, wards, Accident and Emergency Departments and out-patient departments in hospitals, as well as public and private medical and dental clinics.

Children managed may have dental problems, be medically-compromised, or may have special needs. They may have traumatic injuries (soft tissue injuries or dento-alveolar complex injuries), fractures of the basal bones, oral medicine and oral pathology problems, or early childhood caries. Prevention, restoration, pulpal therapy, trauma, interceptive orthodontics, provision of prosthesis, extraction, oral surgery, oral medicine/pathology, general anaesthesia, sedation, are among the types of care provided.

Preventive care is in the form of oral hygiene instruction and prophylaxis, diet counselling, topical fluoride therapy and fissure sealant application. Meanwhile, restorative care includes amalgam restorations, tooth-coloured (composite/glass ionomer cement) restorations, and inlays, crowns/veneers. Pulpal therapy involves deciduous pulpotomy and apexification. For trauma, soft tissue treatment, restoration of the traumatised teeth, dental alveolus treatment, bone treatment and splinting, are the methods of management. In interceptive orthodontics, appliances or space maintainers are issued, while for prosthetics, dentures or obturators are amongst the items provided. For the management of abscesses, soft tissue lesions, and hard tissue lesions, oral surgical treatment is undertaken. Dento-alveolar surgery is carried out for removal of supernumeraries, exposure of unerupted teeth, taking of biopsies, and apicectomies.

Total attendance by category of care shows that the highest for 2005 was for preventive care while the lowest was for interceptive orthodontics (Figure 11), similar to the previous year. There were 3,280 completed cases and 1,927 orally-fit cases during re-examination.

FIGURE 11
Care Provided by Paediatric Dental Specialist, 2005



Source: Information and Documentation System Unit, MOH

d. Periodontology

The number of patients for periodontic specialist care decreased in year 2005. Three out of the four categories of patients showed decreasing numbers (Table 10). Adults comprised 92.2% of utilisers for periodontic care, as periodontal conditions are more prevalent in the older age-groups.

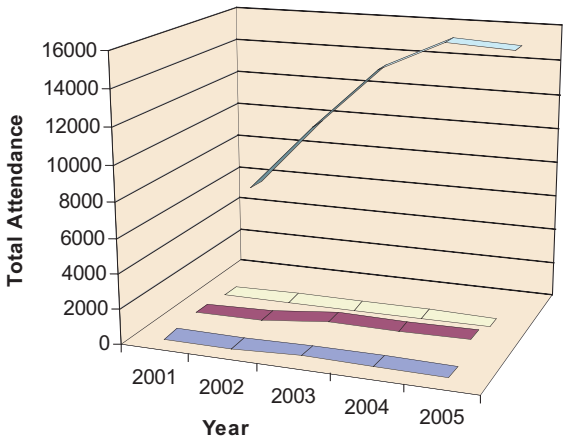
Total attendances also showed a drop (Figure 12). There were 3.3 visits by each patient for year 2005, very similar to 3.1 visits per patient in 2004.

TABLE 10
Periodontic Specialist Care, 2003 - 2005

Year / Category of Patients	No. of Patients			Total Attendance		
	2003	2004	2005	2003	2004	2005
Primary School	99	91	72	271	215	176
Secondary School	351	288	276	795	752	755
Ante-natal	38	26	27	82	72	80
Adult	4,855	4,775	4,497	13,313	15,140	14,931
Total	**5,343**	**5,180**	**4,872**	**14,461**	**16,179**	**15,942**

Source: Information and Documentation System Unit, MOH

FIGURE 12
Total Attendances at Periodontic Clinics, 2001 - 2005



	2001	2002	2003	2004	2005
Primary School	184	145	271	215	176
Secondary School	312	381	795	752	755
Ante-natal	49	92	82	72	80
Adult	5,513	9,620	13,313	15,140	14,931

Source: Information and Documentation System Unit, MOH

Care provided by periodontists is categorised into the following: restoration/extraction, inlay/crown/bridge, endodontics, surgery, prevention, prosthetics and abscess (periodontal or others). Surgical procedures carried out are flap surgery, gingivectomy, graft placement, frenectomy, root amputation, guided tissue regeneration, crown lengthening and surgery for implant placement. Laser treatment is also carried out by some clinics. Prostheses provided include full dentures, partial dentures, implants and others. Occlusal adjustment, splinting of teeth and the taking of study models are amongst other procedures carried out.

In 2005, there were 12,734 patients examined as compared to the 12,928 in the previous year, while 9,665 were cases for consultation/counselling in comparison to 10,267 for year 2004. Completed periodontal cases in year 2005 numbered 777 as opposed to 552 for the previous year, while 824 cases were under maintenance care compared to 832 cases in 2004.

• RESEARCH

National Oral Health Survey of Adults (NOHSA) 2000

The book was published in May 2005 with distribution done both locally and internationally.

Survey on Oral Health Knowledge, Attitudes, Perception and Behaviour of Young Adults

A collaborative survey between the Oral Health Division with the HSR Institute, MOH which has the objective of finding out the sources of, or barriers to, oral healthcare among young adults aged 18 to 29. This was conducted in Federal Territory Kuala Lumpur on young adults from five public workplaces, four private workplaces, seven public and five private training/educational institutions. The pilot study for the above was completed in 2005 and a report on the aspects of 'knowledge, perception and behaviour" has been written up.

Cross-Cultural Adaptation and Validation of the English Version Geriatric Oral Health Assessment Index (GOHAI) for use in Malaysia

The above project involving three agencies – the Oral Health Division, MOH; Clinical Research Centre, MOH and the Dental Faculty, University of Malaya (UM) was completed and the report was sent for publication in December 2005. A submission for inclusion into the National Health and Morbidity Survey (NHMS) 3 was however rejected by the main committee due to the complexity of the questionnaire for a community survey.

Clinical Pathways in Oral Healthcare

The study on 'clinical pathways' is a collaborative effort between the dental services of the Ministry of Health, and the Department of Community Dentistry of the University of Malaya. Pathways of care have been formulated for scaling and prophylaxis, restorations, extractions, fissure sealants, full and partial acrylic dentures, and the laboratory procedures pertaining to full and partial acrylic dentures.

In 2005, calculation on cost estimates for 2 procedures i.e. extraction and restoration, was started. Macro-costing data was also collected for 4 districts in Selangor.

National Pre-school Epidemiological Survey

The survey protocol was completed in 2005 and calibration and standardisation exercises were undertaken. Data collection has also been completed, and analysis of the data is being carried out.

Assessment of Blood and Urine Mercury Levels in Dental Personnel.

This project involves the Environmental Health Research Centre (EHRC) of the Institute for Medical Research and the Occupational Health Unit of the Department of Public Health, together with the Oral Health Division. All data collection was completed at state level. Mercury vapour analysis through the monitoring of air quality and those personnel identified with 'high levels' was started in September 2005.

A user manual for compliance to code of practice of dental mercury hygiene was completed and distributed to all State Deputy Directors of Health (Dental). The manual has also been handed over to the Section on Practice of Dentistry at the Oral Health Division for implementation under the Inspectorate System.

Oral Health Items for NHMS 3

The NHMS 3 will begin data collection in 2006. The oral health module comprising oral health items was completed and pre-tested by December 2005. This shall be included in the "instruction manual" for conduct of the survey.

Compendium of Abstracts

Compendium 2004 as well as Compendium 1998-2001 were sent for publication.

Monitoring of State Health Systems Research (HSR) Projects

State research projects continued to be monitored by the Oral Health Division.

CHALLENGES AND FUTURE DIRECTION

Oral health care in this country has advanced to such a degree that the oral health status of the population, particularly of school children, is able to match that of developed countries. Even so, there is still a lot to be done for adults, the elderly, pre-school children, the toddler group and the disadvantaged groups.

While primary oral health care has matured, further developments are required in specialist oral health care provision. Centres of excellence in various specialty disciplines need to be established. Provision of the latest advances in aesthetic dentistry also needs to be considered due to demands placed by societal standards. The way forward for the oral health services has to be in this direction.

The National Oral Health Plan for 2010 drawn up in 1999, with its circumscribed goals and strategies, has reached its mid-point. There is a need to assess the achievements up to this stage and conduct a review of the plan.

The stress on oral health as part of general health, and its necessity for quality of life is the guiding principle used by the Oral Health Division and the oral health services. All activities will thus be focused on co-operation and integration with other fields towards attaining optimum health of the population for success.

INTRODUCTION

Family Health Services in Malaysia began in 1956 with the Maternal and Child Health Programme. Since 1995 this programme was expanded and thus the Family Health Development Division was established. Three main sections in this division are responsible for the delivery of comprehensive services to all levels of the community through primary health care facilities. These sections are the Family Health, Nutrition and the Primary Health Care. The Family Health Development Division is responsible for the planning, implementation, monitoring and evaluation of activities related to family health, nutrition and primary health care.

General Objective of the Family Health Development Programme

To promote and maintain the physical, mental and social health of every family.
Specific Objectives :

i) To promote and maintain the health of women in the reproductive age group.
ii) To promote and maintain the health of infants and children up to school-going age.
iii) To promote and maintain the health of women besides their maternal and reproductive health.
iv) To promote and maintain the health of elderly members in the family.
v) To provide preventive, promotive, curative and rehabilitative health services to all members of the family at the first point of contact.
vi) To promote healthy nutrition practices and improve the nutritional status of the community.

MATERNAL AND PERINATAL HEALTH CARE SERVICES

The maternal and perinatal programme continued to carry out activities as scheduled in 2005. The National Maternal and Child Health Committee was reviewed to form a National Technical Advisory Committee on Maternal, Newborn and Child Health. The TOR of this committee is advisory to enable policy decision and directions on maternal, newborn and child health.

Activities and Achievements

Antenatal Care

The national coverage for antenatal services was 68.8% in 2005 as compared to 78.1% in 1990 (Table 1). This could be due to an increase in the services provided by the private sectors. The average antenatal visits by the pregnant mother to public health facilities increased from 6.6 in 1990 to 9.5 in 2005 (Table 2).

The national coverage for tetanus toxoid immunisation for pregnant mothers (completed dose) has been fluctuating between 86.8% in 2000 to 85.2% in 2005 (Table 2).

TABLE 1
Antenatal Service Coverage by Public Health Facilities, Malaysia,1990, 2000, 2003 – 2005

Region	Estimated No. of Pregnant Mothers					Antenatal Coverage				
	1990	2000	2003	2004	2005	1990	2000	2003	2004	2005
Pen. Malaysia	527,095	543,199	546,519	469,906	486,106	412,363 78.2%	398,773 73.4%	290,864 53.2%	333,255 70.9%	327,332 67.3%
Sabah	81,571	86,333	69,414	64,130	72,003	69,291 84.9%	64,073 74.2%	48,531 69.9%	51,489 80.3%	52,444 72.8%
Sarawak	67,716	62,132	58,039	53,416	56,242	46,375 68.5%	54,292 87.4%	42,950 74.0%	43,460 81.4%	42,894 76.3%
Malaysia	**676,382**	**691,664**	**673,972**	**587,452**	**614,351**	**528,029 78.1%**	**517,138 74.8%**	**382,345 56.7%**	**428,204 72.9%**	**422,670 68.8%**

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

TABLE 2
Average Antenatal Visits Per mother and Tetanus Toxoid Immunisation Coverage
1990, 2000, 2003 - 2005

Region	Average Antenatal Visits per Mother					Tetanus Toxoid Immunisation Coverage Completed Immunisation (2^{nd} & Booster Dose)				
	1990	2000	2003	2004	2005	1990	2000	2003	2004	2005
Pen. Malaysia	6.7	8.7	9.1	9.4	9.8	316,375 80.0%	337,043 82.9%	311,870 82.7%	278,050 75.3%	301,157 82.4%
Sabah	5.2	7.3	7.7	7.7	8.2	54,205 88.6%	59,887 97.5%	48,328 92.5%	47,257 92.1%	53,587 99.2%
Sarawak	7.3	8.3	8.4	8.3	8.5	43,865 86.4%	52,678 113.0%	38,988 89.6%	39,250 91.8%	38,561 91.4%
Malaysia	**6.6**	**8.5**	**8.8**	**9.0**	**9.5**	**414,445 81.7%**	**449,608 86.8%**	**399,186 84.4%**	**364,557 78.7%**	**393,305 85.2%**

Source : Information and Documentation System Unit, MOH.
Family Health Development Division, MOH.
Note : Estimated Livebirth used as Denominator for Tetanus Toxoid Coverage

Deliveries and Postnatal Care

The total number of registered births in Malaysia decreased from 507,900 in 2000 to 402,168 in 2005. However, deliveries conducted by trained health care providers increased from 96.6% in 2000 to 98.0% in 2005 (Table 3). All states had shown an increasing trend in the percentage of safe deliveries. Table 4, 5 and 6 shows the institutional and domiciliary deliveries in Peninsular Malaysia, Sabah and Sarawak for year 1990, 2000, 2003 to 2005.

TABLE 3
Percentage of Safe Deliveries in Malaysia, 1990 - 2005

Year	1990	1995	2000	2003	2004	2005
P. Malaysia	96.1	98.4	99.2	99.3	99.5	99.4
Sabah	74.2	75.5	78.9	85.0	88.4	90.3
Sarawak	90.9	96.5	97.8	98.3	98.1	98.4
Malaysia	92.8	95.1	96.6	97.5	98.0	98.0

Source : Information and Documentation System Unit, MOH.

TABLE 4
Institutional and Domiciliary Deliveries, Peninsular Malaysia 1990, 2000, 2003 - 2005

Type of Deliveries	1990	2000	2003	2004	2005
Total Registered Birth	371,519	400,690	313,219	352,571	307,255
Institutional Deliveries					
Government Hospitals	221,082	297,178	245,459	264,207	246,640
Private Hospitals / Maternity Homes	58,307	85,889	56,960	78,300	52,593
Estate Hospital	NA	109	42	22	0
Sub total	279,389 (75.20%)	383,176 (95.60%)	302,461 (96.60%)	342,529 (97.15%)	299,233 (97.39%)
Government Clinics / Dispensaries	1,359	5,440	3,807	3,788	2,944
Alternative Birthing Centre	NA	1,980	1,808	1,398	1,079
Sub total	1,359 (0.36%)	7,420 (1.85%)	5,615 (1.80%)	5,186 (1.47%)	4,023 (1.31%)
TOTAL	**280,748 (75.6%)**	**390,596 (97.5%)**	**308,076 (98.40%)**	**347,715 (98.62%)**	**303,256 (98.7%)**
Domiciliary Deliveries					
Government Midwives	76,334	6,925	3,112	2,847	2,226
Private Midwives	391	38	14	8	12
Village Midwives	1,435	3,029	162	83	37
* Others	12,793	102	1,897	1,918	1,724
TOTAL	**90,953 (24.4%)**	**10,094 (2.5%)**	**5,185 (1.6%)**	**4,856 (1.38%)**	**3,999 (1.30%)**
Deliveries Conducted by Trained Personnel					
Trained Government Personnel	298,775 (80.4%)	311,523 (77.7%)	254,186 (81.2%)	272,240 (77.2%)	252,889 (82.30%)
Trained Government and Private Personnel	357,082 (96.1%)	397,521 (99.2%)	311,146 (99.3%)	350,431 (99.46%)	305,482 (99.4%)

Note: *Others - include birth before arrival (BBA) cases and those conducted by untrained personnel eg. Husband, mother
Source : Information and Documentation System Unit, MOH

TABLE 5
Institutional and Domiciliary Deliveries, Sabah, 1990, 2000, 2003 – 2005

Type of Deliveries	1990	2000	2003	2004	2005
Total Registered Birth	59,927	61,722	51,713	51,721	52,781
Institutional Deliveries					
Government Hospitals	33,588	40,901	36,584	39,355	40,810
Private Hospitals / Maternity Homes	2,079	1,673	739	896	1,768
Estate Hospital	NA	NA	88	177	NA
Sub total	35,667 (59.51%)	42,574 (68.9%)	37,411 (72.34%)	40,428 (78.16%)	42,578 (80.67%)
Government Clinics / Dispensaries	1,243	632	2,629	209	181
Alternative Birthing Centre	NA	2,373	2,334	3,068	3,001
Sub total	1,243 (2.1%)	3,005 (4.9%)	4,963 (9.60%)	3,277 (6.33%)	3,182 (6.03%)
Total	**36,910 (61.6%)**	**45,579 (73.8%)**	**42,374 (81.94%)**	**43,705 (84.5%)**	**45,760 (86.7%)**
Domiciliary Deliveries					
Government Midwives	7,538	3,136	1,688	1,507	1,450
Private Midwives	98	820	559	536	440
Village Midwives	223	4,417	2,161	1,905	1,620
* Others	15,132	7,770	4,931	4,068	3,511
Total	**22,991 (38.4%)**	**16,143 (24.5%)**	**9,339 (18.1%)**	**8,016 (15.5%)**	**7,021 (13.3%)**
Deliveries Conducted by Trained Personnel					
Trained Government Personnel	42,369 (70.7%)	47,042 (76.2%)	43,235 (83.6%)	44,852 (86.7%)	45,442 (86.1%)
Trained Government and Private Personnel	44,448 (71.6%)	48,715 (78.9%)	43,974 (85%)	45,748 (88.4%)	47,210 (89.4%)

Source : *Others – include birth before arrival (BBA) cases and those conducted by untrained personnel e.g. Husband, mother
Note : Information and Documentation System Unit, MOH

TABLE 6
Institutional and Domiciliary Deliveries, Sarawak, 1990, 2000, 2003 – 2005

Type of Deliveries	1990	2000	2003	2004	2005
Total Registered Birth	44,750	45,488	41,921	43,188	42,132
Institutional Deliveries					
Government Hospitals	30,878	35,184	34,229	35,242	34,073
Private Hospitals / Maternity Homes	2,781	4,749	3,670	3,864	4,473
Estate Hospital	NA	NA	0	16	NA
Sub total	33,659 (75.2%)	39,933 (87.8%)	37,899 (90.4%)	39,122 (90.6%)	38,546 (91.5%)
Government Clinics / Dispensaries	6,738	4,523	3,295	3,226	2,878
Alternative Birthing Centre	0	0	0	0	0
Sub total	6,738 (15.1%)	4,523 (9.9%)	3,295 (7.9%)	3,226 (7.5%)	2,878 (6.8%)
Total	**40,397 (90.3%)**	**44,456 (97.7%)**	**41,194 (98.3%)**	**42,348 (98.0%)**	**41,424 (98.3%)**
Domiciliary Deliveries					
Government Midwives	259	31	9	9	15
Private Midwives	3	9	0	1	0
Village Midwives	14	10	4	2	5
* Others	4,080	982	714	828	688
Total	**4,356 (9.7%)**	**1,032 (2.3%)**	**727 (1.7%)**	**840 (2.0%)**	**708 (1.7%)**
Deliveries Conducted by Trained Personnel					
Trained Government Personnel	37,875 (84.6%)	39,738 (87.4%)	37,533 (89.5%)	38,494 (89.1%)	36,966 (87.7%)
Trained Government and Private Personnel	40,656 (90.9%)	44,487 (97.8%)	41,203 (98.3%)	42,358 (98.1%)	41,439 (98.4%)

Note : *Others – include birth before arrival (BBA) cases and those conducted by untrained personnel e.g. Husband, mother

Source : Information and Documentation System Units, MOH

Postnatal attendances at all health facilities increased from 67.0% in 1990 to 91.0% in 2005. Some of the activities conducted include identification of high risk mothers, increasing awareness on family planning, cervical cancer, breastfeeding and improving the health of the mother and baby (Table 7).

TABLE 7
Postnatal Coverage in the Public Health Facilities and Government Hospitals, Malaysia, 1990, 2000, 2003 – 2005

Region	Total Delivery					Postnatal Coverage				
	1990	2000	2003	2004	2005	1990	2000	2003	2004	2005
Pen. Malaysia	371,519	400,690	313,219	352,683	307,255	241,284 64.9%	312,467 77.9%	282,710 90.3%	300,098 85.1%	277,518 90.3%
Sabah	59,927	61,722	51,713	51,721	52,781	39,507 65.9%	55,641 90.1%	47,443 91.7%	50,052 96.8%	49,381 93.6%
Sarawak	44,750	45,488	41,921	43,188	42,132	38,162 85.3%	49,124 107.9%	38,840 92.7%	40,483 93.7%	39,016 92.6%
Malaysia	476,196	507,900	406,853	447,592	402,168	318,953 67.0%	417,232 82.1%	368,993 90.7%	390,633 87.3%	365,915 91.0%

Source : Information and Documentation System Unit, MOH

Confidential Enquiry into Maternal Deaths (CEMD)

Every maternal death in Malaysia is audited through the Confidential Enquiry into Maternal Deaths (CEMD) and classified according to ICD 10. The Confidential Enquiry into Maternal Deaths audit showed that among the leading causes of maternal deaths are Postpartum Haemorrhage, Hypertensive Disorders in Pregnancy and Associated Medical Condition. The most common medical condition is Heart Disease (Table 8). Training for health care providers in the management of these conditions are continuously carried out at district and state levels.

The National Technical Committee for CEMD revised the training manual on 'Management of Postpartum Haemorrhage' and developed a handbook for junior doctors on 'Lessons learnt from the Malaysian CEMD'. Interesting case illustrations on maternal deaths and the second CEMD newsletter to update the health care providers on the recent developments in the auditing of maternal deaths were published. A session on sharing of experience of the Malaysia CEMD was conducted at the 3rd Asia Pacific Conference on Reproductive and Sexual Health in November 2005.

TABLE 8
Causes of Maternal Deaths, 1991- 2000

Causes	1991		1995		2000	
	No.	%	No.	%	No.	%
Postpartum Haemorrhage	61	27.2	60	24.0	31	21.2
Hypertensive Disorders in Pregnancy	46	20.1	31	12.3	13	8.9
Obstetric Embolism	37	16.5	45	17.9	23	15.8
Associated Medical Conditions	19	8.5	44	17.5	22	15.1
Obstetric Trauma	10	4.5	4	1.6	12	8.2
Antepartum Haemorrhage	2	0.9	10	4.0	5	3.4
Puerperal Sepsis	22	9.9	6	2.4	6	4.1
Abortion	2	0.9	14	5.5	2	1.4
Ectopic Pregnancy	3	1.3	4	1.6	5	3.4
Unspecified Complications of Pregnancy & Puerperium	19	8.0	15	6.0	8	5.5
Associated with Anaesthesia	3	1.3	2	0.8	1	0.7
Others	5	2.2	16	6.4	18	12.3
Total	**229**	**100.0**	**251**	**100.0**	**146**	**100.0**

Source : Report of the CEMD, 1991,1995 and 2000
Family Health Development Division, MOH

Rapid Reporting of Perinatal Deaths

The Rapid Reporting of Perinatal Death showed that the leading cause of perinatal deaths are 'normally formed macerated stilbirths' followed by 'asphyxial conditions' and 'lethal congenital malformations'. 'Immaturity', 'Lethal congenital malformations' and 'asphyxial conditions' are the main causes of neonatal deaths. Strengthening pre-pregnancy and antenatal care is important to reduce perinatal deaths. Table 9 shows the perinatal and neonatal mortality rates by states for the year 2004 and 2005 as audited by the Perinatal Mortality Review Committee.

Prevention and Control of Thalassaemia

In 2004 the Programme for the Prevention and Control of Thalassaemia was approved by the Cabinet. Amongs the four components of this programme include comprehensive treatment, health education, screening for Thalassaemia and establishing the Thalassaemia registry. In 2005, the program for Prevention and Control of Thalassaemia was introduced. Among the activities conducted was on health education, a one day forum and training for Counsellor in Thalassaemia.

TABLE 9
Perinatal and Neonatal Mortality Rates by States, 2004-2005

State	Stillbirths				Perinatal Deaths				Neonatal Deaths			
	2004		2005		2004		2005		2004		2005	
	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate
Perlis	22	6.4	22	6.7	41	12.0	33	10.1	22	6.5	16	4.9
Kedah	217	6.7	208	6.7	329	10.2	347	11.1	150	4.7	159	5.1
P. Pinang	114	5.2	120	5.4	185	8.4	176	7.9	99	4.5	71	3.2
Perak	242	6.5	224	6.1	414	11.2	359	9.7	213	5.8	175	4.8
Selangor	289	3.4	303	3.5	468	5.5	461	5.4	240	2.8	222	2.6
F.T K.L	23	0.7	0	0	42	1.2	0	0	22	0.6	0	0
F.T Putrajaya	-	-	0	0	-	-	0	0	-	-	2	2.2
N. Sembilan	171	10.2	90	5.8	239	14.3	161	10.4	90	5.4	93	6.0
Malacca	53	4.4	61	5.0	100	8.3	106	8.8	61	5.1	61	5.1
Johore	315	5.6	332	5.9	556	9.9	543	9.6	302	5.4	274	4.9
Pahang	152	6.3	113	4.6	253	10.5	210	8.6	125	5.2	130	5.4
Terengganu	149	7.6	116	5.5	242	12.3	226	10.7	126	6.4	142	6.8
Kelantan	223	8.0	200	6.8	328	11.8	330	11.2	150	5.4	182	6.2
Sem. Malaysia	1,970	5.3	1,789	4.8	3,197	8.6	2,952	7.3	1,600	4.3	1,527	4.1
Sabah	509	9.8	541	10.2	764	14.7	858	16.2	328	6.4	404	7.7
F.T Labuan	-	-	13	8.3	-	-	24	15.4	-	-	12	7.7
Sarawak	266	6.2	258	6.1	428	10.0	440	10.4	224	5.2	230	5.5
Malaysia	**2,745**	**5.9**	**2,601**	**5.5**	**4,389**	**9.4**	**4,274**	**9.1**	**2,152**	**4.6**	**2,173**	**4.6**

Source: Information and Documentation System Unit, MOH

CHILD HEALTH SERVICES

This programme provides activities such as routine visits and examination for children, assessment of child growth and development, assessment of nutritional status which includes measurement of weight and height and health education.

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

Coverage of attendance to the health clinic in 2005 increased i.e. 95.5% compared to 93.3% as in 2003. The average at clinic visits made per infant, toddler and pre-school was 4.1, 3.2 and 1.9 visits respectively (Table 10).

TABLE 10
Coverage of New/first Clinic Attendance's of Children and Average Visits to Government Health Facilities per Children, 2000-2005, Malaysia

Coverage (%)*			Average Visit per Child		
Infant	Toddler	Pre-school	Infant	Toddler	Pre-school
102.3	**44.6**	**16.7**	**4.1**	**3.2**	**1.9**

Source : Information and Documentation System Unit, MOH
* Based on 1000 live birth

Immunisation

The overall immunisation coverage exceeded the set target (Table 11). The coverage for Hib and MMR immunisation were low, however have improved compared to 2004.

TABLE 11
Imunisation Coverage for 2005, Malaysia

BCG	Hepatitis B (Dos 3)	Polio (Dos 3)	DPT (Dos 3)	MMR	Hib (Dos 3)
98.3%	**91.5%**	**94.3%**	**95.3%**	**88.4%**	**84.7%**

Source : Information and Documentation System Unit, MOH

National Congenital Hypothyroidism Screening

The main objective of this programme is to detect congenital hypothyroidism early and manage appropriately so as to prevent mental disability. About 70 hospitals conducted this screening programme. Since the programme started in 1998, in stages, about 304 cases were detected and on follow-up at the hospitals. From the screening programme, the detection rate is about 1: 3390.

Integrated Management of Childhood Illness (IMCI)

The IMCI program which was implemented in 2002 in Sabah started in 5 clinics, it had been extended to more clinics in 2005. Training for implementation has been conducted in Sarawak and Pahang in 2005.

SCHOOL HEALTH SERVICES

School Health Coverage and Morbidities Among the School Children

Table 12 shows the coverage of School Health Services. Whereas the coverage by nurses is about 90% and the coverage by doctors need to be improve. The common health morbidities among the school children are visual defects (49.8% in year 1, 63.0% in year 6 and 57.9% in form 3), skin conditions (21.8% in year 1, 38.1% in year 6, 36.3% in form 3) and head lice infestation (30.3% in year 1, 26.1% in year 6, 3.2% in form 3).

TABLE 12
Coverage of School Health Services, 1999 – 2005, Malaysia.

Coverage by Health Nurse (%)			Coverage by Medical Officer (%)		
Year 1	Year 6	Form 3	Year 1	Year 6	Form 3
98.0	**97.8**	**94.7**	**34.2**	**28.8**	**20.4**

Source: Information and Documentation System Unit, MOH

Immunisation Among School Children

Table 13 showed immunization coverage in Malaysia. The overall coverage for immunization, in 2005 was more than 90%.

TABLE 13
Immunisation Coverage Among the School Children 2002-2005, Malaysia

Year 1								Form 3			
Polio, Booster Dose (%)				Double Antigen,Booster Dose (%)				Tetanus Toxoid (%)			
2002	2003	2004	2005	2002	2003	2004	2005	2002	2003	2004	2005
97.3	**94.1**	**94.3**	**93.3**	**97.3**	**94.0**	**94.4**	**93.7**	**96.4**	**97.5**	**91.6**	**96.0**

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 school children, need to undergo quality audit. Detection rate were 5.0% in Peninsular Malaysia, 4.45% for Sabah and 4.78% Sarawak.

ADOLESCENT HEALTH PROGRAMME

To achieve the goal of the National Adolescent Health Policy, seven strategies have been outlined. The strategies are 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. Till December 2005, a total of 418 (48.4%) health clinics provide adolescent health care services. The number of adolescents receiving treatment at the adolescent health clinics through out the country were 635,923 in the year 2005. These clinics provide health promotion, screening, counseling and curative care for the adolescent population. The number of adolescents who were given counseling have increased from 11,887 in 2004 to 21,216 in 2005 and 2,499 adolescents were referred to hospitals or other agencies for further management.

Guidelines on Adolescent Health Services at Primary Health Care Level which includes concepts, scopes, standard operating procedures, adolescents health screening forms, management of common diseases among adolescents and relevant returns format were distributed to all states. Three officers from the National, State and District levels were sent to attend a WHO Fellowship Programme on Adolescent Friendly Health Services in Australia in July 2005.

WOMEN'S HEALTH

The main activities of this unit are Pap Smear Screening Program, Family Planning Program and Breast Cancer Screening Program.

PAP SMEAR SCREENING PROGRAMME

The number of pap smear slides taken has slightly decreased from 413,692 in 2004 to 406,367 in 2005. The overall percentage of slides taken as compared to target was more than 40%. The percentage of unsatisfactory slides has decreased from 4.43% (2004) to 2.61% (2005) and the positive smear rate was 0.86% (2005). Pap smear services in cytology unit at Public Health MKA Sg. Buloh, Johor Bahru and Ipoh were further strengthened by increasing the resources.

FAMILY PLANNING SERVICES

The Family Planning Services were integrated into Ministry of Health since 1970s and the coverage of facilities has reached up to 99.9%. However the new Family Planning acceptors has decreased from 79,767 (2004) to 74,968 (2005). The most popular contraceptive methods were pills, condoms and injectables.

BREAST CANCER SCREENING PROGRAMME

MOH has been promoting Breast Self Examination (BSE) and clinical breast examination as part of breast cancer awareness campaign since 1995. However, the National Health Morbidity Survey II,1996 showed that only 34.2% of women did monthly BSE and 31.1% CBE. Since breast cancer remains a major threat to the health and life of Malaysian women, there is a need to develop an organized screening program on breast cancer. In 2005, A Health Technology Assessment was carried out to identify the most appropriate and evidence-based screening modalities for screening.

HEALTH CARE SERVICE FOR THE ELDERLY

Elderly underwent rehabilitation activity.

Till December 2005, a total of 610 (71.4%) health clinics, all over the country have implemented the health care services for the elderly. The services given include health promotion and education, health screening and assessment, medical examination and treatment, counselling, exercise for the elderly and recreational, social and welfare activities. There were 234 *Kelab Warga Tua* formed throughout the country.

Other services like rehabilitation, occupational therapy, home visit and home care nursing, were conducted by certain health clinics. It takes time to expand the services to other health clinics due to involvement of infrastructures and lack of trained staff. Until end of 2005, only 255 run rehabilitation services (41.8% of total number of health clinic which run health care programme for the elderly), the rest of the health clinics, do not have instruments to run this activity. However, there were 260 health clinics that had a space or room for rehabilitation.

From January to December 2005, 339,621 elderly people (20.44% out of expected total number of elderly through-out the country) attended our health clinics as new cases. This percentage of coverage was an increment of 5.62% compared to the year before. Five most common morbidities among them (according to the highest number of repeated visits) were hypertension, diabetes mellitus, osteoarthritis, asthma/COAD and heart problems.

HEALTH CARE FOR PERSONS WITH DISABILITIES

Health care programmes for Persons with Disabilities (PWD) include care of children with special needs and the prevention and control programmes for blindness and deafness. Main activities for the year 2005 were focused on improving quality of care for children with special needs. Among the activities were Pilot Project Screening for Autism at Health Clinics, Pilot Project instrument for the monitoring of progress in the development of children with special needs, Sexual and Reproductive Health for Children and Adolescents with Disabilities, Manuals on the Management of Children With Special Needs. A total of six manuals have been prepared. In 2005 a total of 130 clinics had offered services for rehabilitation of disabled children. Table 14 shows the number of children aged 0 to 12 years detected according to types of disabilities in the year 2005.

TABLE 14
Number of Children Aged 0 to 12 Years Detected According to Types of Disabilities 2005, Malaysia

Types of Disabilities												
Deaf	Blind	Physical	Cerebral Palsy	Delayed Development	Down Syndrome	Autism	ADHD	Mental Retardation	Specific Learning Disability	Slow Learner	Others	Total
66	46	148	360	375	665	140	61	148	72	186	414	2,681

Source: Information and Documentation System Unit, MOH

Below are activities planned for 2006 in order to strengthen and to improve the quality of service for this group of people:

- Strengthening rehabilitation services for adults with disabilities including stroke based on the plan of action approved at the Public Health EXCO Meeting.
- Increased efforts in training of health personnel with focus on care of children with Cerebral Palsy.
- Interagency collaboration for example working with Cheshire Home to produce manual on care of persons with disabilities in institutions and homes.
- Completion of the training module on care of children with special needs and training module on sexual and reproductive health for children and adolescents with disabilities as well as development of health education materials

COMMUNITY MENTAL HEALTH PROGRAMME

The Community Mental Health Programme established in 1997 has given emphasis to mental health promotion in 2005 whilst strengthening the existing services at the health clinics.

Healthy Minds Programme *(Program Minda Sihat)* is a health promotion package developed in 2005 as a community outreach initiative consisting of screening activities for stress and risk factors for depression and anxiety, including training skills on coping with stress. The screening tools consisted of Thermo Stres Test, DASS Test, Personality Test and Coping Ability Test. Other health promotion activities for the year included " Enhanced Healthy Minds " *(Pupuk Minda Sihat)* in conjunction with the national launching of the Healthy Life Style Campaign 2005 at Port Dickson Negeri Sembilan and the national celebration of World Mental Health Day 2005 at Kepala Batas, Penang. In conjunction with the World Suicide Prevention Month 2005, Guidelines for Media Reporting on Suicide was launched and a seminar on suicide prevention for health care workers, school and LPPKN *(Lembaga Pembangunan Penduduk dan Keluarga Negara)* counsellors were held in Selangor.

In 2005, 763 (88.9%) health clinics provided community mental health care which included the early detection and management of mental health problems, follow-up treatment and home visiting. There were 25 health clinics providing psychosocial rehabilitation services for stable mental patients with a total of 7,568 attendances.Training for health care workers were continued through courses and attachments to the psychiatric departments of the local hospitals.

NUTRITION SECTION

NUTRITION DEVELOPMENT AND NUTRITION SURVEILLANCE

The National Plan of Action for Nutrition Malaysia (NPANM)

The NPANM II draft was presented to the Food Safety and Nutrition Council on 22 February 2005. The final draft was approved by the Cabinet on 20 April 2005. The 10-year NPANM II (2006–2015) is a follow up of the NPANM I. The NPANM II are in fact implementation plans of the Policy detailing recommendations for specified activities, time frame, targets and the implementing agencies. It is a guide to the implementation of nutrition programmes and activities in Malaysia in the next Ninth and Tenth Malaysia Plans.

Four Technical Working Groups (TWG) have been set up at the national level to assist in the implementation of the activities in the NPANM. These are the TWG for Training, Research, Dietary Guidelines and Policy. The TWG for Research members had reanalyzed all the data on "KAP Study on Healthy Lifestyle 1997" and they are preparing the study report. While the "National Food Consumption Survey 2002/2003" team are currently in the phase of writing the Preliminary Report.

The TWG for Dietary Guidelines had developed and printed the Malaysian Recommended Nutrient Intake (RNI, 2005). The objective of developing this RNI is to give correct information to the public and society about daily recommended nutrient intakes for Malaysian.

The TWG for Policy was responsible for the development of The National Nutrition Policy. The goal of this Policy is to achieve and maintain the nutritional well being of Malaysian to enable them to contribute effectively towards nation building in line with the Vision 2020. This policy was printed and distributed to several agencies, universities, NGOs and professional bodies in 2005.

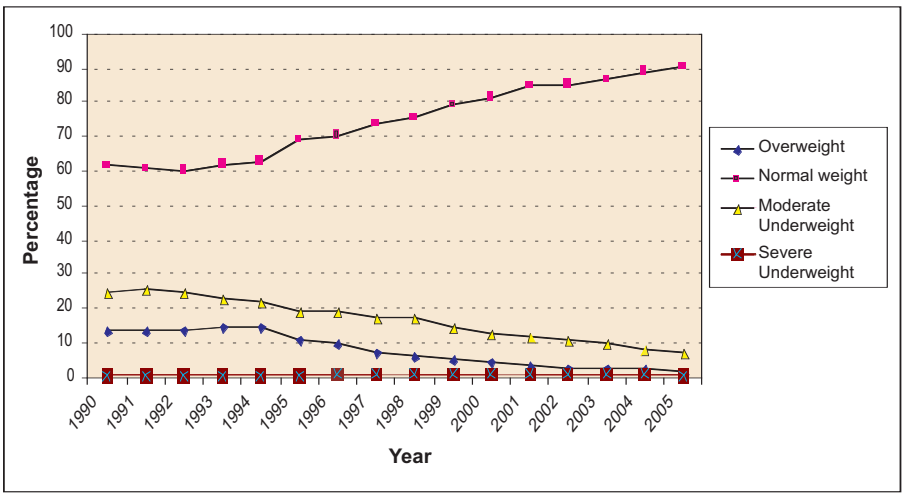
Role of NGOs in Nutrition

The Nutrition Society of Malaysia (NSM), The Malaysian Association for the Study on Obesity (MASO) and The Malaysian Dietitian Association (MDA) are the non-governmental organizations who are active. They had been given allocations from MOH to carry out nutrition promotion activities. In 2005 the NSM participated in several nutrition roads hows and exhibitions in collaboration with various organization and agencies. They were also involved in Nutrition Month of Malaysia 2005 in a collaborative effort with Ministry of Health and other professional bodies. They conducted Forum on Youth & Nutrition on 26th March 2005. MASO also had conducted MASO Camp with collaboration from PUSPANITA Kuantan Branch, Pahang. In this Camp weight management programme was conducted for those participants whose BMI were more than 27kg/m2. While MDA had continued its participation in several nutrition activities and road shows this year. The *"Persatuan Penasihat dan Pakar Laktasi"* had organized the launching of the "Breastfeeding Week" at national level.

Nutritional Surveillance for Children Below 5 Years of Age

This report is based on the nutritional status of children below five years of age who attended the child health clinics at the public health facilities. In 2005 the proportion of children below five years old in various categories of weight-for-age status are as follows : 0.6 % of the children were severely underweight for their age, 7.5 % were moderately underweight, 90.3 % classified as having normal weight, and 1.6 % were overweight. Figure 1 shows the trend in nutritional status of the children from 1990 until 2005, which indicates an improvement over this 15-year period.

FIGURE 1
Nutritional Status of Children Under Five Years, 1990-2005, Malaysia



Source : Information and Documentation System Unit, MOH

NUTRITION PROMOTION

Healthy Eating

Media Campaign for Healthy Eating 2005

The Healthy Eating Media Campaign 2005 utilised the broadcasting media to propagate messages on proper nutrition and healthy eating habits to the masses. Two 60-second television trailers and two 40-second radio advertisements were produced to promote the campaign, and was run from 12 December 2005 to 3 January 2006. A post-campaign survey to assess its effectiveness would be conducted.

Healthy Catering Project

A seminar on the preparation and serving of healthy food was held on 25 June 2005. It was attended by 70 hawkers and cafeteria operators from Putrajaya and its vicinity. A guide book on healthy food catering was produced and 10,000 copies were distributed to all State Health Departments.

Promotion of Healthy Eating via the Broadcast Media

The Nutrition Promotion Unit had contributed to 44 episodes of the Health Tips segment in the television breakfast show, *"Selamat Pagi Malaysia"*. Staff from the Unit had also participated in live interviews on healthy eating topics in the same show.

Healthy Lifestyle Campaign 2005

The "Healthy Eating" component had been integrated into the Healthy Lifestyle 2005 campaign. The theme was "Be Healthy For Life" with the aim of promoting healthy behavioural changes amongst workers.

Breastfeeding Promotion

World Breastfeeding Week (1-7 August 2005)

World Breastfeeding Week 2005 was themed " Breastfeeding and Family Foods : Loving and Healthy". It was successfully launched by Duli Yang Maha Mulia Permaisuri Nur Zahirah, D.K., S.S.M.Z., S.S.M.T., Sovereign of Terengganu at the Dewan Besar, Wisma Darul Iman, Kuala Terengganu, Terengganu on 1st August 2005. The event was organised by the Malaysian Breastfeeding Advisory Association (PPPIM). Various activities were co-organised and implemented during the week throughout the country.

Baby-Friendly Hospital Initiative (BFHI)

Up to December 2005, 114 (98%) out of 116 government hospitals under the Ministry of Health were designated as baby-friendly hospitals. Other hospitals were under the Ministry of Defence (2), Ministry of Education (1) and private hospitals (5). Before the end of year 2005, 43 baby-friendly hospitals had been reassessed and in 2005 one private hospital, the Penang Adventist Hospital, had gained the baby-friendly status.

Code of Ethics for Infant Formula Products

Vetting of Informational and Educational Materials on Infant Formula Products, a total of 134 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 the Vetting Committee on the Code of Ethics for Infant Formula Products to be vetted and approved.

Complaints of Violation Against the Code

The Disciplinary Committee on the Code of Ethics for Infant Formula Products received nine complaints pertaining to activities that possibly violated the Code. Categories of activities reported were direct or indirect promotion of infant formula products (Article 4.5), obtaining particulars of infants' parents (Article 4.11) and giving incentives to retailers for promotion of infant formula products (Article 4.10).

Monitoring of Code Violation

Review of the Guideline for Implementation of Monitoring Violations against the Code of Ethics for Infant Formula Products was completed on 20 September 2005. This guideline is meant to be used as a reference for the monitoring team involved in carrying out monitoring of activities relevant to the Code, at state and district level.

Nutrition Promotion in Schools

In 2005, the Unit had reviewed menus for the Suplementary Feeding Programme and drafted a proposal paper under Dasar Baru to establish nutritionist posts in boarding schools. A proposal paper on Healthy School Canteen was developed. This project is scheduled to be piloted in 2006. Targeted groups are the school canteen operators, school children, teachers and parents. A Parent Committee was set up to oversee the running of this project.

Healthy Community Kitchen Project (HCKP)

In 2005, more Healthy Community Kitchens (HCKs) were set up at both state and district levels. An allocation of RM400,000 had been distributed for this purpose. This year, 9 HCKs were set up which increased the total number of HCKs in the country to 34. A standardised format has been developed for ease of reporting. Guidelines for the implementation of HCKs were also printed to be distributed.

Nutrition in Institutions

The Nutrition Section had collaborated with the Association of Registered Childcare Providers Malaysia (ARCPM) to develop a module on the "Training of Trainers on Nutrition" which consists of 10 topics. A pilot test was conducted in May/ June 2005. Based on the Recommended Nutrient Intake for Malaysia (2005), 10 sets of menu for the elderly had been developed which included a weekly menu and Chinese, Indian and Western menus. A second training module, "Basic Care of People with Disabilities in Institution and Home (Nutrition Component)" was developed with the collaboration of Selangor Cheshire Home. A pilot test was conducted in January 2006 to assess the appropriateness and effectiveness of the two modules. The nutrition section had given input on the nutrition components in the preparation of the proposal paper *"Ke Arah Kesejahteraan Institusi Tahanan dan Pemulihan Awam"* in December 2005.

Nutrition Information Centre

The Nutrition Information Centre based in Putrajaya began its operations on 1st March 2005. The objective of the centre is to disseminate factual information on human nutrition, in an effort to promote healthier living among the masses.

Up to December 2005, the Nutrition Information Centre, Putrajaya had received 457 clients. Six road shows were conducted throughout the year. A smart partnership was formed with the National Fitness Council whereby a theoretical module on healthy nutrition was integrated into the training courses for fitness instructors. The main objective was to give basic information on healthy eating to participants. Seven courses involving 350 participants were successfully conducted this year .

NUTRITION REHABILITATION

The Nutrition Rehabilitation Section is responsible for developing, planning, coordinating and evaluating intervention programmes to prevent and control malnutrition. Its primary targets are pregnant mothers and children. In 2005, a new programme, the Prevention and Control of Obesity was established.

Nutrition Rehabilitation Programme for Malnourished Children

In 2005, 8,365 children from all the states in Malaysia, including those in Federal Territory of Kuala Lumpur, received the food supply under this programme. Out of these 8,365 children, 4,986 were repeated cases, whereas 3,366 cases were new recipients for 2005. Amongst these new recipients, 1,578 cases (46.9%) were severely underweight (weight-for-age more than 3 SD below the median of NCHS), 1,611 cases (47.9%) were moderately underweight children (weight-for-age between 2SD and –3SD below the median of NCHS), 125 cases (3.7%) were with clinical signs and symptoms of malnutrition and 52 cases (1.5%) were those chronic illness or disabilities. Examples of chronic illness among these children are asthma, acute respiratory infection, chronic diarrhoea and congenital heart disease. Examples of disabilities were cleft palate, Down Syndrome and cerebral palsy.

Throughout 2005, a total of 2,317 children had stopped receiving the food basket. Out of this number, 1,255 cases (53.8%) were rehabilitated, 471 cases (20.3%) had gone to school and 594 cases (25.6%) terminated due to other reasons, either relocation, death, refusal or the family are no longer considered as hard core poor. When compared to the total number of recipients in 2005, 20.7% were rehabilitated. At the end of the year, there were still 6,048 children receiving the food basket.

Overall, the states of Sabah, Sarawak, Kelantan and Perak have registered the most number of cases, whereas Johore, Federal Territory Kuala Lumpur and Perlis were the states with the least number of recipients.

Programme for the Prevention and Control of Iodine Deficiency Disorder (IDD)

In Malaysia, Iodine Deficiency Disorders is not a nationwide problem. Therefore, the Programme to Control Iodine Deficiency Disorders is focused on eight states namely Perlis, Kedah, Perak, Pahang, Terengganu, Kelantan, Sabah and Sarawak. Under this programme, water iodization and distribution of iodised salt are used as a strategy to the endemic areas. In 2005, a total of 37,112 kilograms of iodised salt were distributed to 37,112 pregnant mothers and malnourished children. There were new iodinators installed since 2003 due to the stoppage of supply of Rhodifused Iode.

To facilitate monitoring of the IDD program, field test-kits are used to determine the level of iodine in salt and water. Four laboratories have been equipped with facilities for urinary iodine determination. These labs are the Sungai Buluh Public Health Lab, Ipoh Public Health Lab, Sabah Public Health Lab and the Institute for Medical Research (IMR) Lab.

The monitoring of median urinary iodine level amongst school children aged 8 to 10 years in the states with IDD problems. Data showed that endemic districts in Kedah and Perak; and in the state of Pahang IDD remained as a mild problem (median urinary iodine between 52.8 µg/L to 90.9 µg/L), whereas Sabah and Federal Territory Kuala Lumpur were free from IDD (median urinary iodine 150.0 µg/L and 154.0 µg/L).

Obesity Prevention and Control Programme

Obesity Prevention and Control Programme is a new programme under the Family Health Development Division and is still at its planning stage. The objective of this programme is to prevent and manage individuals who have problems of overweight and obesity, to enable them to enjoy normal life and contribute to the country's productivity.

Budget under New Policy *(Dasar Baru)* was approved in 2005 for RM500,000.00 under the 20000 series and RM700,000.00 under the 30000 series. They were for activities which will be conducted in the year 2006 and 2007.

For the year 2005, efforts had been focused on producing the Nutrition Guidelines in Managing Overweight and Obese Adult, Guidelines for Overweight Children and Adolescent; and Standard Operating Procedures for the Management of Overweight and Obesity among these Age Groups.

Anaemia among Pregnant Mothers

In 2005, a draft guideline for the nutritional management of anemic mothers was prepared and it is expected to be printed in the year 2006.

The haemoglobin (Hb) level is being used as an indicator for anaemia among pregnant women who attended the government clinics. Data is based on Hb level at 36 weeks of gestation. Pregnant mothers with Hb level less than 9 gm% is considered having severe anemia, while Hb level between 9 to less than 11gm% is classified as moderate anaemia. Pregnant mothers with Hb levels of 11gm% and above are considered as normal.

Table 15 shows that in 2005, 2.3% of pregnant mothers attending government health clinics had severe anaemia, 30.3% had moderate aneamia and 67.3% were normal. Federal Territory Kuala Lumpur and Negeri Sembilan had the highest proportion of severely anaemic mothers (7.3% and 5.2%), moderate anaemia also highest in Negeri Sembilan (42.1%) followed by Perlis (43.2%) while Johor had highest proportion of pregnant mothers with normal Hb level.

TABLE 15
Haemoglobin Levels among Pregnant Mothers Attending Government Health Clinics, 2005, Malaysia

Hb < 9gm% % (no.)	Hb 9 - 11 gm% % (no.)	Hb ≥ 11gm% % (no.)
2.3 (5,084)	**30.3 (65,702)**	**67.3 (145,757)**

Source : Information and Documentation System Unit, MOH

PRIMARY HEALTH CARE

Primary Health Care (PHC) has moved very fast in the year 2005 and attained substantial achievement in its efforts to serve quality services to the community. Among its achievements are the implementation of pilot projects for Teleprimary care, the draft for the reviewed approach concept in PHC services, development of the emergency care in health clinics, improvement on the human resource requirement for primary health care services and strengthening the quality assurance activities in the health clinics.

Outpatient Services

The policy on Out-Patient Services that had been implemented since 1992 was amended in line with the current health service needs of the country. Starting from 15 July 2005, the public health program is only responsible for out patient services in the health facilities which are located outside the hospital area. The guideline on this policy change was circulated through the Director General of Health's Circulation No.5/2005.

Routine Medical Examination for Government Servants Aged 40 and Above

A total of 522 government departments have sent their employees for routine medical examination to the various health clinics throughout the country as compared to 417 departments participated last year. About 30% of 7,783 employees who had undergone the examination were found to have at least one medical problem and this drop in percentage is better than the previous year which captured about 32% of 7,589 employees having at least one medical problem. The state of Johor has the highest number of examinations done.

Health Clinics Advisory Panel

The year 2005 begins the new appointment for members of the Health Clinics Advisory Panel for the 2005-2007 term session. In all, there are 630 health clinics (74.1%) having advisory panel. Compared to the previous year, this is about 0.3% increase. Until the end of December 2005, there are about 8,424 members in all health clinics throughout the country. Johor out numbered other states with the highest number of members followed by Perak, Sarawak, Kelantan and Kedah. Generally, the advisory panel this year focussed on health promotional and preventive activities such as health camps, preventive and control of dengue, supportive care of patients with chronic diseases, geriartric and disabled people.

The 3rd National Convention for Health Clinics Advisory Panel was held in Johor Bharu on 6-9 July 2005 with the theme *"Masyarakat Bermaklumat Rakyat Sihat"*. About 550 participants attended the opening ceremony which was officiated by the Health Minister. Among the programmes held were the best poster and paper presentations, J-robic exercise demonstration and educational visits to 5 health clinics. The official logo and slogan *"Pemangkin Masyarakat Sihat"* for the Health Clinics Advisory Panel together with the new training manual titled *'Penjagaan Kesihatan Kanak-Kanak'* were also launched during this convention. Table 16 shows winners at this year's convention.

TABLE 16
Winners of the 3rd National Convention for Health Clinics Advisory Panel, 2005

Category	Paper Presentation	Poster Presentation
First	*'Katakan Tak Nak Kepada Merokok'* by PPKK Klinik Kesihatan Air Tawar, Perak	*'Perkongsian Pengalaman Program COMBI'* by PPKK Klinik Kesihatan Ampangan, Negeri Sembilan
Second	*'Mengurangkan Kelahiran Tidak Selamat'* by PPKK Klinik Kesihatan Nanga Engkuah, Sarawak	*'Kumpulan Penyokong PPKK Masyarakat Dinamik'* by PPKK Klinik Kesihatan Selising, Kelantan
Third	*'Peranan PPKK dalam Aktiviti Membanteras Denggi'* by PPKK Klinik Kesihatan Majidee, Johor Bahru	*'Katakan Tak Nak Merokok'* by PPKK Klinik Kesihatan Tengkawang, Terengganu

Source : Family Health Development Division, MOH

Ambulance and Emergency Services

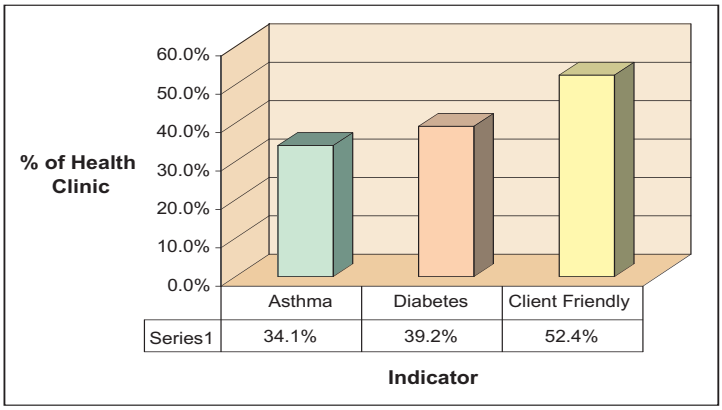
In 2005, the operational policies on ambulance and emergency services were produced with the objective of standardizing the implementation of ambulance and emergency services at primary care level. The norms for the vehicles required under the public health program which was used since 1993 was reviewed and expanded to meet the current needs. In the same year, 197 type B ambulances were received by the health clinics.

In order to upgrade the skills and knowledge of medical assistants in managing emergency cases at the health clinics, two training sessions were successfully conducted in Klang and Ipoh in collaboration with the hospitals. Eighty medical assistants from all over the states participated in the training.

Quality Assurance Programme

Starting 2005, only three Primary Healthcare QAP indicators will be implemented namely "Appropriate Management of Asthma", "Appropriate Management of Diabetes" and "Client Friendly Clinic". However, each clinic must implement at least two indicators which are soft skills (Asthma or Diabetes) and hard skills (Client Friendly Clinic) indicators. 13 states have implemented all the three QAP indicators as shown in Figure 2. The 2005 performance is as in the Table 17.

FIGURE 2
Percentage of Health Clinics Implementing QAP Indicators, 2005, Malaysia



Source : Family Health Development Division, MOH

TABLE 17
QAP Achievement by State for year 2005, Malaysia

State	Asthma		Diabetes		Client Friendly	
	% of Health Clinic	Median	% of Health Clinic	Median	% of Health Clinic	Median
Perlis	100.0	**9.1**	100.0	**10.0**	100.0	**83.0**
Kedah	36.8	**13.3**	59.6	**13.1**	84.2	**74.0**
Pulau Pinang	46.7	**8.5**	50.0	**9.0**	63.9	**79.2**
Perak	43.8	**15.0**	30.0	**6.7**	52.5	**33.0**
Selangor	31.0	**14.0**	72.4	**17.3**	93.2	**74.0**
F.T KL & Putrajaya	100.0	**33.3**	100.0	**15.0**	53.3	**52.0**
Negeri Sembilan	57.9	**24.2**	78.9	**11.2**	89.5	**75.3**
Melaka	25.9	**3.3**	29.6	**21.3**	33.3	**45.0**
Johor	46.6	**16.1**	47.7	**10.0**	60.2	**47.5**
Pahang	44.3	**12.5**	44.3	**20.0**	52.2	**76.0**
Terengganu	81.0	**15.5**	85.7	**18.1**	75.0	**61.0**
Kelantan	69.6	**13.3**	73.2	**6.7**	76.7	**70.2**
Sarawak	2.5	**0.0**	3.6	**53.2**	28.4	**76.5**
Sabah	0.0	-	0.0	-	0.0	**-**
F.T Labuan	0.0	-	0.0	-	0.0	**-**
Total Qualified Clinic	**842**		**842**		**868**	
Total Clinics Involved	**287**		**330**		**455**	
Percentage	**34.1%**		**39.2%**		**52.4%**	
Median		**14.0**		**12.4**		**71.0**

Source : Family Health Development Division, MOH

Teleprimarycare

Teleprimarycare is a method of delivering health care services to patient and the people using information technology and communication facilities.

The main objectives of the project are to improve accessibility to health care, increase specialist reach and coverage, reduce professional isolation and provide constant and continuous health care.

The development of TPC started in January 2003 and involved 46 clinics, 2 hospitals, 7 health / divisional offices linking them via a network and directly to the Ministry of Health headquarters. Business requirement studies and system design commenced in early 2003 until 2004. Beta testing was initiated in 2004 progressing to provisional acceptance test (11-15 April 2005). The final acceptance test is planned to be in January 2006.

The TPC project was launched in Johor by the *Johor Menteri Besar* on 7th March 2005 followed by Sarawak on 23rd April 2005. The occasion in Sarawak was launched by the Sarawak Chief Minister. This project was also exhibited during the ICT/IAP/MSC International Advisory Panel (IAP) exhibition in Penang from 7-10 September 2005.

Since the initial usage in January 2005 in Johor and March 2005 in Sarawak and until December 2005, a total of 255,246 patients were registered in the TPC system.

Pathology Services

The number of tests done in Pathology laboratories in the health clinics has significantly increased from 14,765,555 in the year 2003 to 19,483,842 in 2005. The most frequently requested and analysed tests are Biochemistry (66%) followed by Hematology (21%) and Microbiology (13%).

The pathology services guideline and Standard Operating Procedure for the Medical Laboratory Technologist (MLT) in health clinics were drafted in 2005. The State MLT coordinators were appointed to help in reviewing and improving the system of monitoring the Pathology services and human resource development in the health clinics labs. The focus is on the issues of implementation of QAP, clinical audits and more MLT posts in health clinics.

In 2005, qualtiy activities were strengthened and improved especially in the analytical processes. External Quality Control or Proficiency Testing (PT) for routine Biochemistry tests was introduced and participated by 35 clinics. The National Public Health Laboratory *(Makmal Kesihatan Awam Kebangsaan)* is the coordinator for this activity. The implementation for the QAP indicators was more extensive and the performance for two cycles is shown in Table 18.

In future, Pathology services will focus on improving the level of instrumentation and safety of the labs, training opportunities and better professional development and enhancing the quality improvement activities.

TABLE 18
QAP Pathology Indicator Performance in Primary Health Labs, 2004/2005, Malaysia

Item	Performance 2004	Performance 2005
Total Number of Labs Reported (%)	165 (19.21)	183 (21.30)
Number of Labs (%) Monitoring the Tests Done		
a) Full Blood Count (FBC) (Automation)	86	96
b) Full Blood Count (FBC) (Manual)	29	45
c) Urine Analysis (Urine FEME)	75	103
Number (%) Heath Clinics Achieved 90% TTAT:		
a) FBC (Automasi) < 60 minute	69 (80.2)	86 (89.6)
b) FBC (Manual) < 60 minute	16 (55.1)	33 (73.3)
c) Urin FEME < 40 minute	63 (84.0)	92 (89.3)

TTAT = Total turn around time of tests TAT = Lab turn around time
Source : Family Health Development Division, MOH

Pharmacy Services

There was not much change on the number of prescription handled at the pharmacy counters as compared to the previous year (Table 19). Although the number of prescription in various states have decreased and the number of items per prescription remained the same, the drug expenditure continued to increase. The average number of item per prescription is 2.96 (between 2.38-3.43 for each state). Based on this data, average cost of drugs per prescription is RM 7.77, an increase of 32.6% compared to the average cost in 2003.

In controlling the drugs use, the guidelines on usage of drugs for the clinics and pamphlets titled 'Inhaler' were published. The List A drugs that can be prescribed by the specialist in health clinics was reviewed to include 77 types of drugs.

Implementation of the direct purchase of drugs via Clinic Purchasing System (CPS) has include all states in Peninsular Malaysia. The CPS implementation in Sabah and Sarawak will start in 2006.

TABLE 19
Total Prescription and Expenditure for Primary Health Facitlites, 2004, Malaysia

	Prescription		Expenditure (RM)		
	Total prescription dispensed	Total Items dispensed	Drugs	Non Drugs	Total
Malaysia*	**14,860,051**	**43,948,161**	**115,504,864**	**12,430,351**	**126,844,055**

* excluding Perak, F.T Kuala Lumpur dan Terengganu.
Source : Pharmaceutical Services Division, MOH

Quality Assurance Programme for Pharmacy Services in health clinics has moved on to the second year. The performance for the year 2004 and 2005 is shown in Table 20.

Future focus is on improving the skills of the pharmacy staffs through continuous professional development and strenghthen the counselling activities and distribution of information to all health clinics.

TABLE 20

QAP Pharmacy Indicator Performance in Primary Health Clinics, 2004-2005,Malaysia

Item	Performance 2004	Performance 2005
Number of Clinics (%) Implement the Indicator Study		
a) Prescription that was intervened	189 (22.00)	331 (38.3)
b) Wrongly filled prescription	163 (18.98)	211 (24.4)
Number of Health Clinics (%) Achieving Standards:		
a) Prescription that was intervened	166 (87.83)	298 (90.0)
b) Wrongly filled prescription	145 (88.96)	168 (79.6)

Source : Pharmaceutical Services Division, MOH

Diagnostic Imaging Services

The number of health clinics with diagnostic imaging units continue to increase to about 157 compared to 144 in the previous year. The QAP implementation was much more extensive. The number of clinics reported increased to 75 (53.0 % of total units) (Table 22). Average percentage of film received, was done by all clinics unless their x-ray unit was faulty. The percentage of film received below (95%) is due to technical and equipment factors.

The annual technical meeting organised at the national level was held to improve the professionalism of the staffs. Various states have organised their own technical meetings too. Clinical audits were done by consultant radiologists in various states while the health clinics radiographers were given the opportunities to participate in attachment training in designated hospitals.

In future, the image of the staffs will be improved through professional development activities, clinical audits and quality assurance programme.

TABLE 21
QAP Radiology Services Indicator Performance in Primary Health Care, 2003-2005, Malaysia

Indicator	Performance		
	2003	2004	2005
Percentage of Radiographs Received: a) Number of Health Clinics Reported b) Median c) Number(%) of Health Clinics Achieved Below Standard	17 97.6 (52.6 – 92.8) 3 (17.65)	72 97.9 (72.0 – 100) 8 (11.11)	75 97.6 (82.0 – 99.7) 9 (12.00)
Percentage of Appropriate X-ray Examinations Directed: a) Number of Health Clinics Reported b) Median	2 (73.3 – 96.0)	8 70.0 (40.0 – 100)	16 91.6 (57.0 – 100)
Percentage of Accurate X-ray Reported: a) Number of Health Clinics Reported b) Median	2 (46.7 – 96.6)	8 80.0 (40.0 – 97.0)	13 90.0 (25.0 – 100)

Source : Family Health Development Division, MOH

Human Resource

The number of the different categories of posts and staffs working in primary health care facilities in the year 2005 has increased as compared to the previous year. However, this increase has not been able to accomodate the many and complex activities at that level. Table 22 indicated the number of vacant promotional posts at all levels of categories.

In 2005, the generic Desk Files *(Fail Meja)* for PHC support staffs were prepared. Technical and coordinators meetings were held for each categories.

TABLE 22

Number of Posts, Filled and Vacant In Primary Health Care Services, 2004-2005, Malaysia

Category	Grade	Number of posts		Filled		Vacancy (%)	
		2004	2005	2004	2005	2004	2005
Family Medicine Specialist	U54	0	**1**	0	**0**	0	**1**
	U52	0	**43**	0	**0**	0	**43**
	U48	114	**95**	106	**116**	8	**-21**
	U44	0	**133**	0	**0**	0	**133**
	U41*	-	**-**	18	**18**	-	**-**
	Total	114	**272**	124	**134**	8 (7.0)	**156 (57.4)**
Pharmacist	U52	0	**0**	0	**0**	0	**0**
	U48	14	**14**	13	**14**	1	**0**
	U44	0	**10**	0	**0**	0	**10**
	U41	141	**138**	71	**92**	70	**46**
	Total	155	**162**	84	**106**	71 (45.8)	**56 (34.6)**
Nurse	U40	1	**1**	1	**0**	0	**1**
	U38	7	**1**	5	**1**	2	**0**
	U36	82	**83**	64	**72**	18	**11**
	U32	361	**370**	289	**347**	92	**23**
	U29	3,852	**4,458**	3,700	**3,843**	152	**615**
	Total	4,303	**4,913**	4,059	**4,263**	264 (6.1)	**650 (13.2)**
Medical Assistant	U40	1	**1**	0	**0**	1	**1**
	U38	1	**1**	0	**1**	1	**0**
	U36	23	**23**	19	**21**	4	**2**
	U32	221	**285**	202	**269**	19	**16**
	U29	1,899	**2,037**	1,710	**1,920**	189	**117**
	Total	2,145	**2,347**	1,931	**2,211**	214 (10.0)	**136 (5.8)**
Dispenser	U32	71	**102**	53	**80**	102	**22**
	U29	1,185	**1,249**	1,034	**1,107**	151	**142**
	Total	1,256	**1,351**	1,087	**1,187**	252 (20.1)	**164 (12.1)**
Medical Laboratory Technologist	U32	49	**49**	34	**34**	15	**15**
	U29	892	**948**	753	**826**	139	**122**
	Total	941	**997**	787	**860**	154 (16.4)	**137 (13.7)**
Community Nurse	U26	0	**31**	0	**0**	0	**31**
	U24	1,343	**1,521**	1,014	**1,050**	329	**471**
	U19	5,525	**7,227**	5,306	**6,820**	219	**407**
	Total	6,868	**8,779**	6,320	**7,870**	548 (8.0)	**909 (10.4)**
Assistant Nurse	U14	172	**199**	156	**160**	17	**39**
	U11	1,506	**1,585**	926	**934**	580	**651**
	Total	1,678	**1,784**	1,082	**1,094**	597 (35.6)	**690 (38.7)**
Midwife	U14	128	**139**	110	**108**	18	**31**
	U11	451	**635**	338	**409**	113	**226**
	Total	579	**774**	448	**517**	131 (22.6)	**257 (33.2)**
Junior Laboratory Technician	U14	11	**14**	9	**9**	2	**5**
	U11	287	**292**	217	**204**	70	**88**
	Total	298	**306**	226	**213**	72 (24.2)	**93 (30.4)**

Source : Family Health Development Division, MOH

Training done at the national level are as below:

Mesyuarat Teknikal Pegawai Farmasi Kesihatan	26-28 April 2005	41 Pharmacists
Latihan Penjagaan Kesihatan Primer (anjuran bersama Institut Kesihatan Umum)	25-30 July 2005	44 Medical Officers and Medical Assistants
Kursus Orientasi U36 untuk Jururawat, Pembantu Perubatan dan Juruteknologi Makmal Perubatan	9-12 August 2005	34 participants of various categories
Mesyuarat Teknikal Kumpulan Sokongan Penjagaan Kesihatan Primer	26-29 September 2005	120 participants of various categories
Kursus Orientasi Jururawat U32	13-16 November 2006	117 participants
Kursus Orientasi Anggota Sokongan U32	22-24 November 2005	76 participants of various categories
Kursus Kepastian Kualiti Patologi	24-26 November 2005	62 MLT

Source : Family Health Development Division, MOH

Family Health Specialist (FMS)

Family Health specialization is currently expanding and giving more opportunities for better specialists services to the community at primary health care level. In 2005, there are 134 Family Medicine Specialist working in health clinics as compared to 124 in the previous year. Out of these 11 were gazetted as specialists totalling 100 or 74.6% of them registered. The area of interest in specialization has expanded too. By the end of 2005, two specialists were trained in geriatrics, one in Mental Health and one in Adolescent Health. Two specialists is currently attending the fellowship in Cardiovascular Disease. For 2006, the other prioritised areas are Child Health and Communicable Diseases.

Public Health Nursing

Public Health Nursing is the backbone of primary health care. By end of 2005, 1,119 or 26.2% of nurses working in public health programmes have obtained specialization in public health nursing while 729 or 17.1% have post-basic midwifery certificates.

In 2005, the focus were on reviewing the list of drugs for rural clinics, coordinating the implementation of basic and post-basic nursing training by both the public and private colleges. The preparation for the implementation of Home Care Nursing was continued and the operational and training manual reviewed.

For 2006 the focus will be on strengthening the operational of Mother and Child Health at the primary health care level, implementation of Home Care Nursing and improve the professionalism and corporate culture of the staffs.

Public Health Medical Assistants

Public Health Medical Assistants continue to play an important role in providing primary health care services to the community especially in the rural areas. In 2005, Medical Assistants have examined 16.8 million patients in the outpatient departments during office hours, 0.5 million patients out of the normal working hours and did 2.1 million clinical procedures in health clinics throughout the country. A total of 476 public health Medical Assistants have post-basic trainings in various disciplines especially Primary Health Care and Emergency Treatment followed by Personnel Management and Orthopedic Care.

In 2005, the implementation of clinical audits was expanded and 64.5% health clinics were at least visited once a year by the state chief medical assistant. All states have organised their own technical meetings too.

In 2006, the focus is to improve and strengthen the professionalism by improving the clinical audits, reviewing the professional development plan and continue on the profesional development.

Physical Facilities

Throughout the Eight Malaysia Plan (RMK-8), a total of 77 health clinics and 210 rural clinics were built. Among the first health clinics to operate in 2005 are KK Taman Selasih in Kedah, KK Kuala Gula and Slim River (Perak), KK Johor Bahru and Bukit Serampang (Johor), KK Jengka 22 and Purun (Pahang), KK Kuala Kerai (Kelantan), KK Putatan (Sabah) and KK Pusa, Song, Lanang and Pujut/Tudun (Sarawak).

Counter Service Quality Award

The Counter Service Quality Award for the fifth series was done in 2005. This year the competition involved the health clinics and specialist clinics in the hospitals. Evaluation was done via observations by panel judges and interviews conducted with the staffs and clients of all the facilities. The emphasis was on quality aspects and client's satisfaction. Among the recipient of the year 2005 awards for first position are KK Seremban, Negeri Seremban and Duchess of Kent, Sandakan, Sabah. KK Bandar Putra, Segamat, Johor and Hospital Tengku Fauziah, Kangar, Perlis grabbed the second award while KK Seberang Jaya, Pulau Pinang and Hospital Tengku Ampuan Afzan, Kuantan, Pahang settled for third place.

INTRODUCTION

Disease Control Division (DCD) is one of the divisions under Public Health Department, Ministry of Health Malaysia, is responsible for the prevention and control of diseases so that they will not pose a threat to public health. The division and its programme have expanded following the widening scope and the changing disease patterns resulting from rapid urbanisation, economic and industrial development, advances in technologies and modernisation, globalisation, inevitable lifestyles and behavioural change as well as the rising incidence of non-communicable. At present, there are seven sections under the division, each headed by a Deputy Director.

ACTIVITIES AND ACHIEVEMENTS

VACCINE PREVENTABLE DISEASE

The introduction of the National Vaccination Programmes has resulted in a significant decrease in the incidence of specific vaccine-preventable diseases. Vaccine-preventable diseases includes those grouped under the Expanded Programme on Immunisation (EPI) like diphtheria, pertussis or whooping cough, neonatal tetanus, acute poliomyelitis, measles, hepatitis B and also non-EPI diseases such as adult tetanus, rabies, meningococcal meningitis, influenza, Japanese Encephalitis, Yellow Fever, typhoid and other related diseases. Table 1 shows the incidence of preventable disease reported in Malaysia from year 1989 to 2005.

• Whooping Cough

The increase in the incidence rate of the disease from 0.01/100,000 population in 1997 to 0.03/100,000 population in 2005 is due to improved reporting by certain States. This can be further improved with the availability of better diagnostic techniques and technologies. For the past 6 years (1999-2004) the number of cases reported has remained at more than 15 cases per year. However it increased more than two-folds in 2000 to 42 cases but further declined in the intermediate years before increasing to 40 cases in 2004 and reducing to a current 8 cases last year. Out of the reported 8 cases, 4 were from Kelantan, 2 from Kedah and a single case each from Sarawak and Pahang. No deaths attributed to whooping has been reported since 1988. There is a increase in the number of reported cases in older persons. This increasing trend of infection appearing in older persons is similarly reported in other countries. There is a need to alert health care providers of this change in disease epidemiology.

• Acute Poliomyelitis

There has been no reported cases of the disease since the notification of 3 imported polio cases in 1992 due to wild poliovirus infection. Acute Flaccid Paralysis (AFP) Surveillance under the National Polio Eradication Programme is ongoing to detect any case of polio especially those of imported origin. The national target for AFP cases have been achieved in during the period 1998-2000.

TABLE 1

Incidence of 6 Vaccine Preventable Diseases Reported in Malaysia, 1989 – 2005

	DIPHTHERIA		WHOOPING COUGH		NEONATAL TETANUS		MEASLES		POLIO		HEPATITIS B	
YEAR	Case	IR	Case	IR	Case	IR	Case	IR	Case	IR	Case	IR
1989	35 (6)	0.20	25	0.14	21 (4)	0.12	1,027 (2)	5.87	0	0.00	938 (1)	5.36
1990	9 (1)	0.05	24	0.13	11 (3)	0.06	563	3.13	0	0.00	942	5.24
1991	12 (2)	0.06	20	0.11	13	0.07	275	1.51	0	0.00	724	3.98
1992	4 (1)	0.02	21	0.12	28 (8)	0.15	363	2.01	3	0.02	723	4.00
1993	4	0.02	18	0.09	20	0.10	517 (3)	2.66	0	0.00	576	2.97
1994	0	0.00	12	0.06	9	0.05	346 (1)	1.77	0	0.00	335	1.71
1995	1	0.01	8	0.04	27 (4)	0.13	654 (6)	3.22	0	0.00	551	2.71
1996	0	0.00	7	0.03	23 (3)	0.11	460 (4)	2.17	0	0.00	627	2.96
1997	2 (1)	0.01	3	0.01	15 (1)	0.07	565	2.61	0	0.00	307	1.42
1998	5 (1)	0.02	6	0.03	13 (4)	0.06	483	2.18	0	0.00	5,010 (3)	22.59
1999	6 (1)	0.03	17	0.07	10 (2)	0.04	2,068(10)	11.48	0	0.00	5,295 (1)	23.31
2000	1 (1)	0.01	42	0.19	20	0.09	6,187(7)	27.87	0	0.00	2,863 (2)	12.89
2001	4 (4)	0.02	26	0.11	8	0.03	2,207(4)	9.27	0	0.00	2,926 (3)	12.30
2002	7	0.03	27	0.11	11	0.04	899	3.67	0	0.00	2,706 (1)	11.03
2003	11 (1)	0.04	27	0.11	5	0.02	710 (1)	2.83	0	0.00	2,767 (2)	11.05
2004	4 (1)	0.01	42	0.16	14	0.05	5,731	22.40	0	0.00	1,996 (2)	7.80
2005	3	0.01	8	0.03	6	0.02	1,407	5.39	0	0.00	1,486	5.69

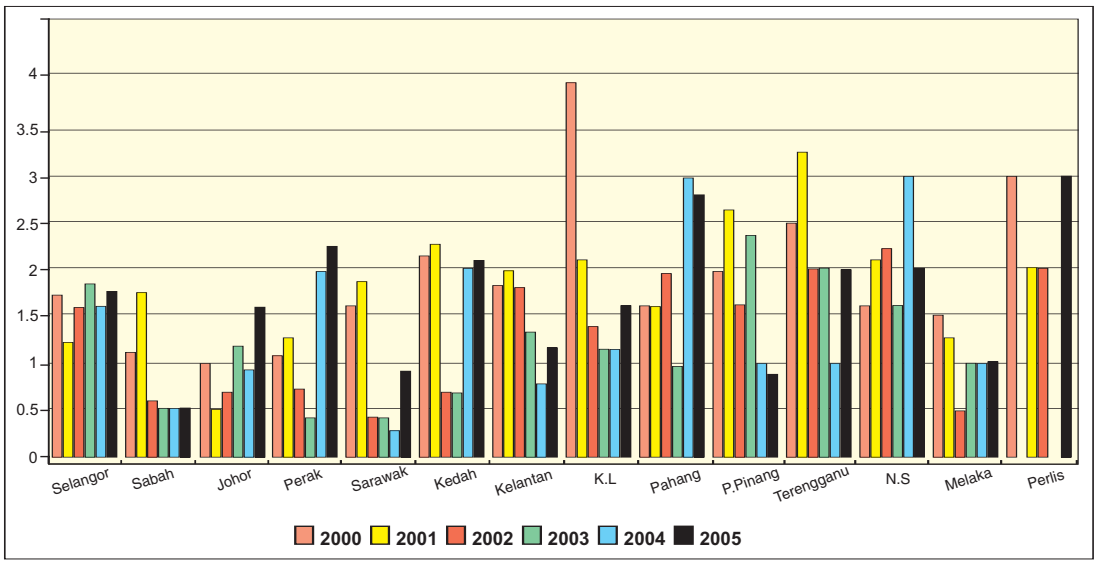
Note: IR - Incidence Rate per 100,000 population

( ) - death case

Source : CDCIS, Disease Control Division, MOH

FIGURE 1

Non-Polio Acute Flaccid Paralysis Case Rate Reported by States, 2000-2005

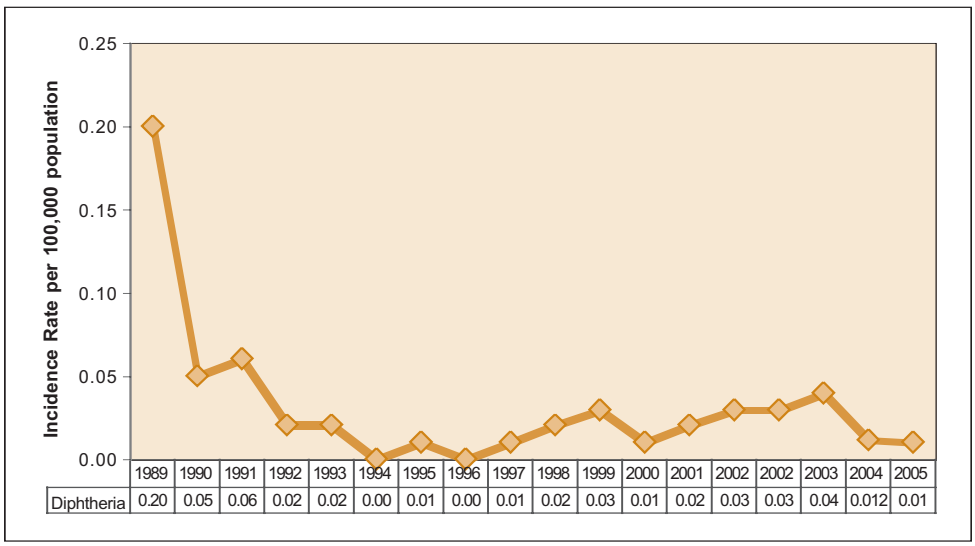


Source : Disease Control Division, MOH

• Diphtheria

There were 3 cases of confirmed diphtheria reported in 2005. The case investigations showed that the outbreak was well localised and promptly contained. Immediate active measures were taken to detect and manage further symptomatic and asymptomatic cases and strengthening the effective vaccination of high risk children in the affected and neighbouring localities. No secondary cases were detected. An analysis of the reported incidence rate from 1989 – 2005 showed that only a single case was reported during 3 year period from 1994 to 1996 followed by an upsurge of 43 cases with 10 fatalities in the 1997 – 2005 period with a peak of 11 cases in 2003. To address this phenomenon of recent re-emergence of this disease, case surveillance has been further strengthened in order to enable early detection of any case especially in high risk groups. Measures are also been taken to improve the vaccination coverage of identified high risk children and low vaccination coverage localities. The resurgence of this disease since 1997 with increasing fatal cases has been of concern and various locality and situation specific strategies have been formulated and implemented.

FIGURE 2
National Reported Incidence Rate of Diphtheria, Malaysia, 1989 - 2005



	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2002	2003	2004	2005
Diphtheria	0.20	0.05	0.06	0.02	0.02	0.00	0.01	0.00	0.01	0.02	0.03	0.01	0.02	0.03	0.03	0.04	0.012	0.01

Source : Disease Control Division, MOH

• Neonatal Tetanus

As in the previous years this disease has remained a localised problem occurring mainly in the state of Sabah. In 2005 a total of 6 cases were reported, out of which 4 are from Sabah and 2 from Sarawak. The annual incidence rate of below 0.1/100,000 population has been observed since 1997 which has further decreased to below 0.05/100,000 population since 2001 (Table 1). The cases notified occur among the foreigners, who do not access health care facilities due to sociocultural and other reason. There were no deaths reported since 2000.

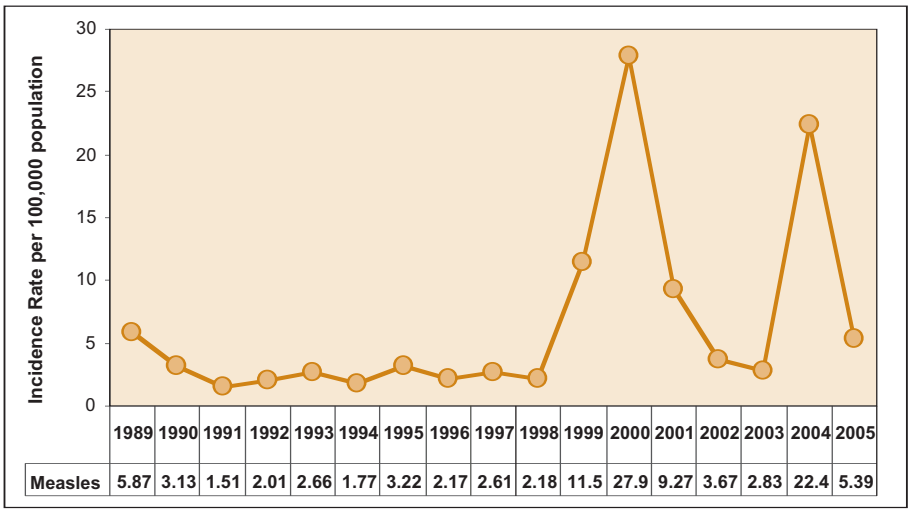
• **Adult Tetanus**

Over the years the incidence rate of reported adult tetanus cases has shown a decline with 0.21/100,000 reported in 1988 to 0.10/100,000 recorded last year. Out of the 27 cases reported in 2005, the State of Sabah accounted for 15 cases (55%), followed by the State of Johor (4 cases) and 2 cases each from the States of Sarawak and Kelantan. Johor State also reported a solitary fatal case. Over the last 10 years (1996-2005), fifty-one percent (51%) of the reported cases (84 cases out of the reported 165 cases) were from the State of Sabah. In addition, the same State accounted for 3 of the 4 fatal cases reported over the same period.

• **Measles**

The incidence rate of reported measles cases has shown a decline with 5.39/100,000 population reported in 2005 (1,407 number of cases) as compared to 22.40/100,000 population (5,731 number of cases) reported in 2004. The National Measles Vaccination Campaign targeting persons aged 7 to 15 years old school age group was conducted successfully in 2003. This was followed by Missed Opportunity which involved vaccinating students in Form 5 (17 year old persons). This is part of the ongoing National Measles Elimination Initiative activities with the proposed mission of achieving national elimination status by 2010.

FIGURE 3
The National Incidence Rate of Measles (1989 – 2005)



	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Measles	5.87	3.13	1.51	2.01	2.66	1.77	3.22	2.17	2.61	2.18	11.5	27.9	9.27	3.67	2.83	22.4	5.39

Source : Disease Control Division, MOH

• Hepatitis B

There were 1,486 cases of hepatitis B reported in 2005. This includes both persons with acute and chronic infections. The number of persons acutely exposed within a certain year has still not being ascertained. It is observed that over the period from 1990 till 1997, the number of cases reported annually were below 1,000. Since 1998 till 2003, there appears to be a spike in the number of cases reported annually to more than 2,500 cases. This has been attributed to the inclusion of Hepatitis B cases captured under the Foreign Workers Health Monitoring Programme (FOMEMA). More recently since 2004 there has been a drop in reported cases to below 2,000, i.e. 1,996 in 2004 and 1,486 in 2005.

The National Hepatitis B Vaccination Programme commenced in 1989 targeting all newborns and specific identified high risk adults viz, the high risk health care personnel within the Ministry of Health, eligible intravenous drug abusers and eligible blood donors. Under the expansion of the National Hepatitis B Vaccination Programme, (Dasar Baru 2006) persons who have not been protected with the said vaccination when it commenced in 1989 will be included to receive the primary series of the vaccination beginning with the age group who are currently in Lower and Upper Form Six.

FOOD AND WATER BORNE DISEASES

In Malaysia, food and waterborne diseases are monitored through the notification system under the Prevention and Control of Infectious Diseases Act 1988 (Act 342) include cholera, typhoid, food poisoning, hepatitis A and dysentery. The incidence of these diseases has shown a declining trend. Over the past five years from 2001 to 2005, the average incidence of cholera, typhoid, hepatitis A and dysentery was less than 5 cases per 100,000 populations. The incidence rate of food poisoning in 2005 was 18 per 100,000 populations (Table 2).

In comparasion to the previous year, there were significant increases in the incidences of typhoid and cholera. The increase of typhoid cases had been identified in Kelantan from Mac to May 2005 especially in Kota Bharu, Tumpat and Bachok districts. In response to this, a special budget of RM6.3 million for the year 2006 was approved to improve water supply, environmental sanitation, food safety activities and health promotion in Kelantan. A typhoid registration system namely TyReg had also been developed to facilitate surveillance, investigation, treatment and follow up of typhoid cases. The system has been integrated with Communicable Diseases Information System (CDCIS) and will be piloted in several states in the year 2006. The Food and Waterborne Diseases Unit also participated in the Second Sixth International Conference on Typhoid and other Salmonellosis in Guilin City, China from 12 to 14 November 2005.

Several cholera outbreaks had also been reported in the middle of the year 2005 in Sabah especially in Semporna, Kota Kinabalu and Tawau. The occurrence of food and waterborne diseases in other places was found to be sporadic with occasional outbreaks that were confined to a few areas only. Few cholera outbreaks had occurred in some areas where hygienic practices are very poor and water supply and sanitation are still improper. Number of episodes of food poisoning had also occurred in institutions especially in school canteen and school hostel where food were served to many people in one time. Occurrence of other food and waterborne diseases such as hepatitis A, typhoid or dysentry were occasional and no outbreak had been reported in the year 2005. The incidence rate food and waterborne diseases is shown in Figure 4 and Table 2.

TABLE 2

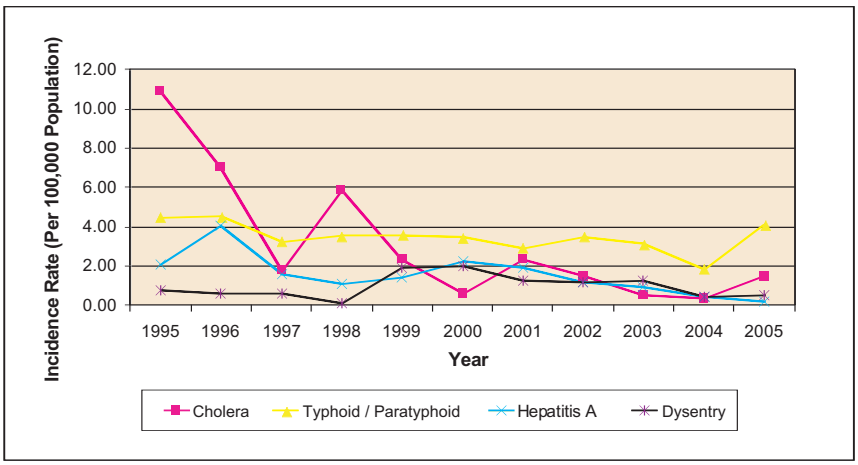
Number and Incidence Rate of Food and Waterborne Diseases in Malaysia, 2001 – 2005.

	2001		2002		2003		2004		2005	
	C	IR	C	IR	C	IR	C	IR	C	IR
Food Poisoning	7,137	29.99	7,023	28.63	6,624	26.45	5,898	23.06	4,641	17.76
Cholera	557	2.34	365	1.49	135	0.54	89	0.35	386	1.48
Typhoid / Paratyphoid	695	2.92	853	3.48	785	0.89	478	1.87	1,072	4.10
Hepatitis A	453	1.90	295	1.20	222	0.89	108	0.42	44	0.17
Dysentry	348	1.24	292	1.19	310	1.24	111	0.43	141	0.54

C = Case
IR = Incidence Rate (per 100,000 population)
Source : CDCIS

FIGURE 4

Incidence Rate for Cholera, Typhoid/Paratyphoid, Hepatitis A and Dysentery in Malaysia, 1995 – 2005



Source : Disease Control Division, MOH

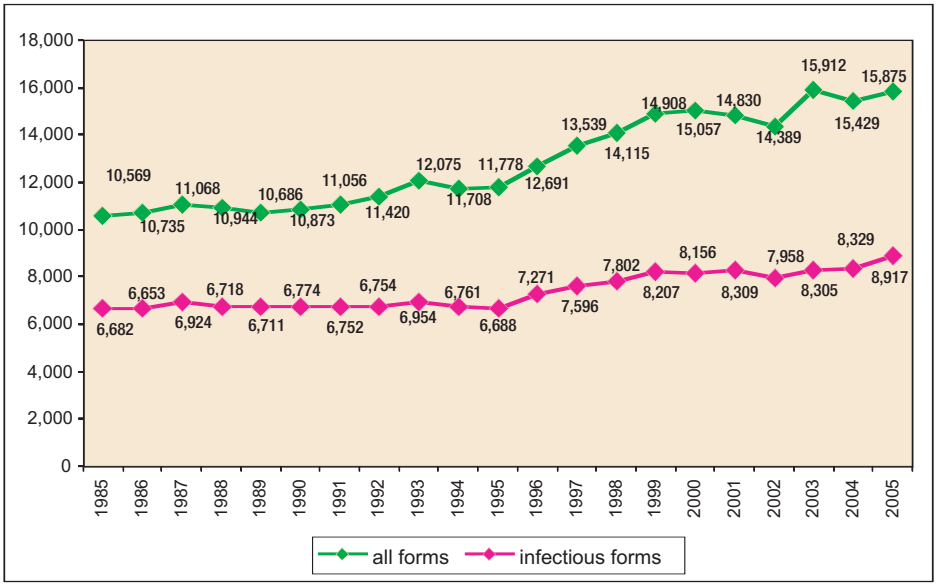
TUBERCULOSIS

Tuberculosis (TB) cases in Malaysia has shown an increasing trend and has become a reemerging communicable disease of importance (Figure 5). Among the reasons for the rising numbers of TB cases are those associated with HIV infections, the declining awareness of TB threat and migration of foreign workers especially from TB high burden countries.

In 2005, a total number of 15, 875 TB cases with incidence rate of 60.8 per 100,000 populations were reported as compared to 15,429 cases with incidence rate of 60.3 per 100,000 populations in 2004. Out of these 15,875 cases reported, 8,917 cases (56.2%) were positive smear TB. Majority of TB cases i.e 89.0% (14,133) were local while the remaining were foreigners. The numbers of TB/HIV cases were 1,583 (10 %). HIV screening was carried out among TB patients (unknown HIV status) as part of the prevention and control programme.

Directly Observed Treatment (DOT) is one of DOTS strategies recommended by WHO. As of December 2005, the implementation of DOT in Malaysia had reached 95.7%, reaching over the targeted rate of 95%. The Sputum Conversion Rate (SCR) was carried out to detect the rate of positive smear TB patient who converted into negative smear after 2 months of treatment. As in 2005, the achievement of Sputum Conversion Rate (SCR) was satisfactory where 86.2% (7,148) positive smear TB patients had converted into negative smear (sputum) after 2 months of treatment.

FIGURE 5
Number of Tuberculosis Cases Reported in Malaysia, 1985 - 2005



Source : Disease Control Division, MOH

INTERNATIONAL HEALTH / QURANTINE DISEASES

Medical Examination for Foreign Workers

Medical examination for foreign workers has been carried out by FOMEMA since 1997 to ensure these workers are fit to work in Malaysia. Foreign workers who are fit will be issued working permit. There was a declining trend of unfit foreign workers in 1998 till 2001. The trend however showed an increasing pattern from 2002 to 2005. In 2005, a total number of 38,170 (3.3%) foreign workers were found to be unfit, thus failing them to renew their work permit (Table 3 and 4). The increased detection rate of unfit foreign worker in 2005 may be due to the introduction of medical examination of foreign worker one months after their arrival in Malaysia

TABLE 3
Total Number and Percentage Foreign Workers Found Unfit
In Sabah and Peninsular Malaysia, 1998 – 2005

Year	Total Examined	Results of Examination		
		Fit	Unfit	% unfit
1998	565,737	541,322	**24,415**	**4.39**
1999	545,222	531292	**13,930**	**2.55**
2000	525,681	515,143	**10,538**	**2.0**
2001	500,133	490,869	**9264**	**1.85**
2002	402,831	394,005	**8826**	**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**

Source: FOMEMA Sdn. Bhd.

TABLE 4
Morbidity Amongst Foreign Workers by Disease Types 2000-2005

Diseases Screened		Number and Percentage of Cases Found Unfit					
		2000	2001	2002	2003	2004	2005
HIV	Number	98	91	122	286	337	561
	Percentage	0.93	0.982	1.382	1.541	1.34	1.47
TB	Number	1,197	1,460	1,278	2,313	3,079	5,982
	Percentage	11.36	15.76	14.48	12.46	12.28	15.67
Malaria	Number	6	1	0	9	12	33
	Percentage	0.057	0.011	0	0.048	0.05	0.09
Leprosy	Number	3	0	1	3	5	8
	Percentage	0.028	0	0.011	0.016	0.02	0.02
Syphilis	Number	1,519	756	657	1,620	2,110	3,206
	Percentage	14.41	8.161	7.444	8.728	8.41	8.39
Hep. B	Number	5,476	4,107	4,505	9,686	12,548	16,328
	Percentage	51.96	44.33	51.04	52.18	50.05	42.77
Cancer	Number	7	5	6	4	7	15
	Percentage	0.066	0.054	0.068	0.022	0.03	0.04
Epilepsy	Number	4	0	1	7	2	9
	Percentage	0.038	0	0.011	0.038	0.01	0.02
Psychiatric Illness	Number	6	4	19	30	16	34
	Percentage	0.057	0.043	0.215	0.162	0.06	0.09
Pregnancy	Number	611	456	495	659	977	1,986
	Percentage	5.798	4.922	5.608	3.55	3.89	5.20
Urine Opiates	Number	125	103	71	369	558	693
	Percentage	1.186	1.112	0.804	1.988	2.22	1.81
Urine Cannabis	Number	153	137	69	165	103	153
	Percentage	1.452	1.479	0.782	0.889	0.41	0.4
Others	Number	1,340	2,144	1,602	3,411	5,315	9,162
	Percentage	12.72	23.14	18.15	18.38	21.20	24.00
Total		**10,538**	**9,264**	**8,826**	**18,562**	**25,069**	**38,170**

Source data: FOMEMA Sdn. Bhd.

• Medical Examination for Pilgrim

Over the past years, respiratory tract and lung diseases were the main medical problem among muslims who performed haj, followed by muscular skeletal diseases, skin diseases and gastrointestinal diseases (Table 5).

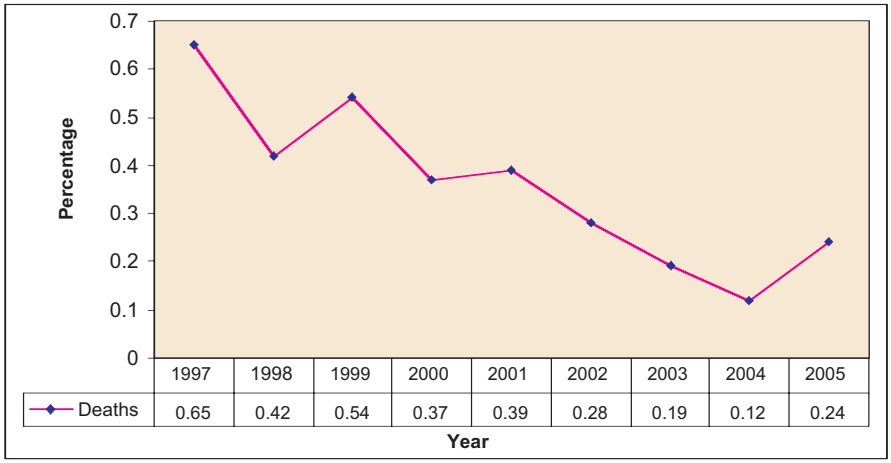
TABLE 5
Number of Pilgrims Attending Treatment During Pilgrimage by Disease Classifications, 2000 – 2005

No	Cases Treated	Year					
		2000	2001	2002	2003	2004	2005
1.	Communicable Diseases	5	7	0	0	0	0
2.	Cardiovascular Diseases	3,846	3,254	3,742	4,552	2,650	2,544
3.	Chest Diseases	73,349	86,453	85,660 (14,056)*	93,254 (16,106)*	47,164 (3,777)	71,064 (21,368)
4.	Gastrointestinal Diseases	4,098	4,690	5,364	5,451	2,273	4,325
5.	Genitourinary Diseases	630	673	840	646	335	686
6.	Gynaecology and Obstetrics	405	596	1161	845	386	589
7.	Skin Diseases	4,664	5,979	5,053	8,107	3,211	9,507
8.	Musculoskeletal Diseases	4,797	6,117	5,589	8,274	3,704	5,850
9.	Mental and Psychiatric Diseases	128	174	172	262	176	98
10.	Metabolic Disorder	0	1,199	1,539	1,606	1,223	1,420
11.	Eye Diseases	2,849	2,906	2,862	2,602	1,313	925
12.	ENT Diseases	2,209	2,130	5,004	1,754	1,024	1,120
13.	Mouth and Dental Disorder	2,352	1,519	3,311	2,559	2,301	1,360
14.	Wound, Fractures and burns	439	343	1,114	418	321	204
15.	Minor Surgery	10	2	36	13	32	0
16.	Heat Exhaustion	0	45	42	81	54	6
17.	Heat Stroke	0	0	26	0	0	0
18.	Others	2,587	1,639	2,109	1,141	758	880
	Total Number of Cases Treated	**102,368**	**117,726**	**123,651**	**131,565**	**66,925**	**100,578**

Source : Pilgrims Fund Board, Malaysia 2005

The death case among these pilgrims shown an increasing trend. In 2005, 0.24% deaths were reported compared to 0.12% in 2004. All pilgrims were vaccinated with the meningococcal meningitis quadrivalent. There were no reported death due to meningococcal meningitis infection reported since 2003.

FIGURE 6
Percentage of Death Reported Among Pilgrims, Malaysia 1997 – 2005



Source : Pilgrims Fund Board, Malaysia 2005

VECTOR BORNE DISEASE CONTROL PROGRAMME

The programme has been successful in preventing and controlling the importation of plague and yellow fever whilst reducing the incidence of the other more vector borne diseases like malaria, filariasis, scrub typhus and Japanese Encephalitis. Dengue, however still poses as a public health problem. In 2005, the incidence rate of Japanese Encephalitis and scrub typhus are 0.11 per 100,000 populations and 0.08 per 100,000 populations.

TABLE 6
Number of Cases of Vector Borne Diseases, Malaysia 1999 – 2005

Vector Borne Diseases	Number of Cases and Deaths					
	2000	2001	2002	2003	2004	2005
1. Malaria	12,705 (34)	12,780 (46)	11,019 (39)	6338 (21)	6154 (35)	5,569 (33)
2. Dengue (DF/DHF)	7,103 (45)	16,368 (50)	32,767 (99)	31,545 (72)	33,895 (102)	39,654 (107)
3. Filariasis	505	384	205	290	265	189
4. Japanese Encephalitis	69 (9)	49 (1)	37 (2)	47 (1)	30 (4)	32 (6)
5. Scrub Typhus	38 (0)	86 (0)	17 (0)	3 (0)	22 (0)	20 (0)
6. Yellow Fever	0	0	0	0	0	0
7. Plague	0	0	0	0	0	0

Source : Disease Control Division, MOH

• Dengue

Dengue Fever and Dengue Haemorrhagic Fever are still a major public health problem in Malaysia. The incidence rate for the year 2005 was 150.6 for every 100,000 population, increasing compared to the previous years. The case fatality rate was also high (Figure 7). Total notified clinical cases were 39,654 and out of which, 16,861 were confirmed cases (42.5%). There were a total of 107 dengue deaths notified in 2005 (DF/DHF combined case fatality rate 0.27; DHF case fatality rate 5.3). Majority of the cases and deaths were notified from areas under the control of local authorities. Selangor was the highest; notified of 5,747 confirmed cases (54.4%) with 32 deaths, followed by Johor with 2,235 confirmed cases (21.2%) and 6 deaths, Perak with 1,397 confirmed cases (13.2%) and 9 deaths; and Kuala Lumpur Federal Territory with 1,177 confirmed cases (11.2%) and 18 deaths.

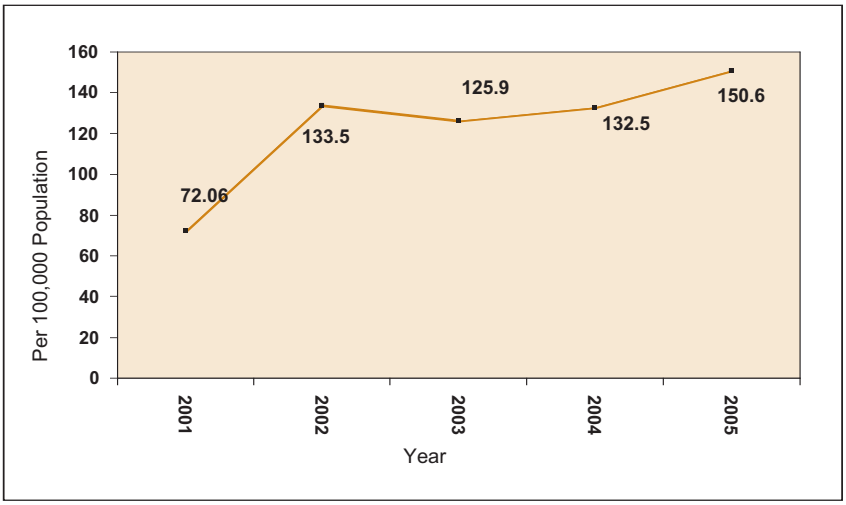
A total of 251 samples were sent to Institute for Medical Research (IMR) and University Malaya Medical Center (UMMC) for virus serotyping. The circulating virus detected by serotyping was DEN 1 (147), DEN 3 (43), DEN 2 (21), DEN 4 (3) and another 37 were untypable.

Aedes surveillance activity report shows that the percentage of aedes breeding were still high in main areas such as construction sites (13.8%), offices complex (9.4%), vacant lands / vacant lots (4.7%), schools (4.6%) and factories (4.2%). Other sites such as dumping sites, cemeteries, and abandoned houses / projects were also found positive aedes breeding.

In week 38 of the year 2005, there was a sudden increase in the number of reported weekly cases and an alert was given by the Honorable Health Minister to public to increase their awareness and to participate in control and prevention activities (to reduce mosquito breeding site).

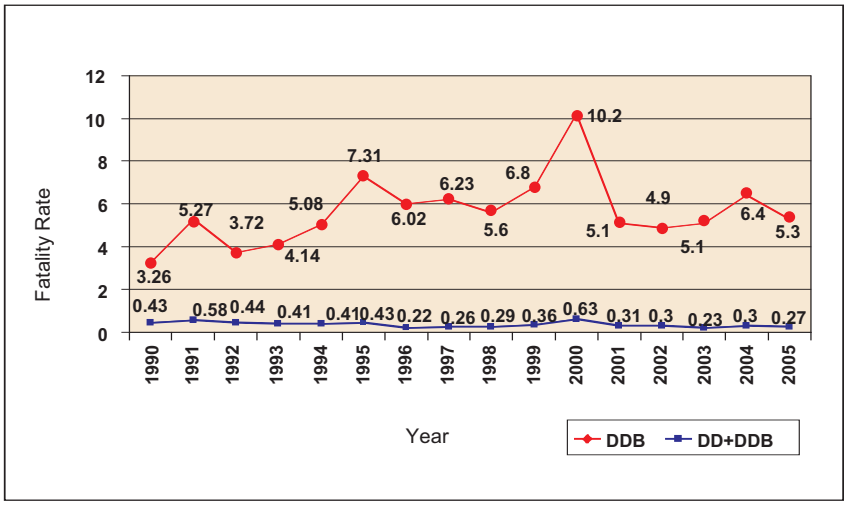
The control and preventive measures will be continued especially at the areas with potential for aedes breeding. Health education activities will also be increased to encourage communities to participate in activities for source reduction.

FIGURE 7
Dengue Incidence Rate in Malaysia (2000 -2005)



Source : Disease Control Division, MOH

FIGURE 8
Dengue Haemorrhagic Fever Fatality Rate in Malaysia (1991 - 2005)



Source : Disease Control Division, MOH

Malaria

The number of reported cases in Malaysia has declined to 5,569 cases in 2005 from 6,154 cases in 2004. The incidence rate improved to 2.13 per 10,000 population in 2005 from 2.41 in 2004. In 2005, the distribution of cases by region was : Sabah 3,267 (58.7%), Sarawak 1,545 (27.7%) and Peninsular Malaysia 757 (13.6%). The cases among Orang Asli reduced to 172 in 2005 from 434 in 2004. The cases among foreigners in 2005 numbered 2,106 (37.8%) compared to 2,009 (32.6%) in 2004. *Plasmodium Vivax* was the predominant parasite species with 2,729 cases (49.0%) followed by *plasmodium Falciparum* 2,222 cases (39.9%), *Plasmodium Malariae* 405 cases (7.3%), *Plasmodium Ovale* 1 case and mixed infection 212 (3.8%). A total number of 4,250 cases (76.3%) were detected through passive case detection while 209 cases (3.8%) were detected through active case detection and 91 cases were dectected through other activities. The distribution of deaths by region is: Sabah 19 (57.6%), Sarawak 6 (18.2%) and Peninsular Malaysia 8 (24.2%).

Filariasis

The number of reported cases in Malaysia has declined to 189 cases in 2005 from 266 cases in 2004. The prevalence rate improved to 0.72 per 100,000 population in 2005 from 1.03 in 2004. In 2005, the distribution of cases by region was : Sabah 8 (4.2%), Sarawak 9 (4.8%) and Peninsular Malaysia 172 (91.0%). The cases among foreigners in 2005 numbered 137 (72.5%) compared to 132 (50.9%) in 2004. *Wuchereria bancrofti* was the dominant parasite species with 131 cases (64.3%) and *Brugia Malayi* with 58 cases (30.7%). This distribution is was due to the contribution by foreigners.

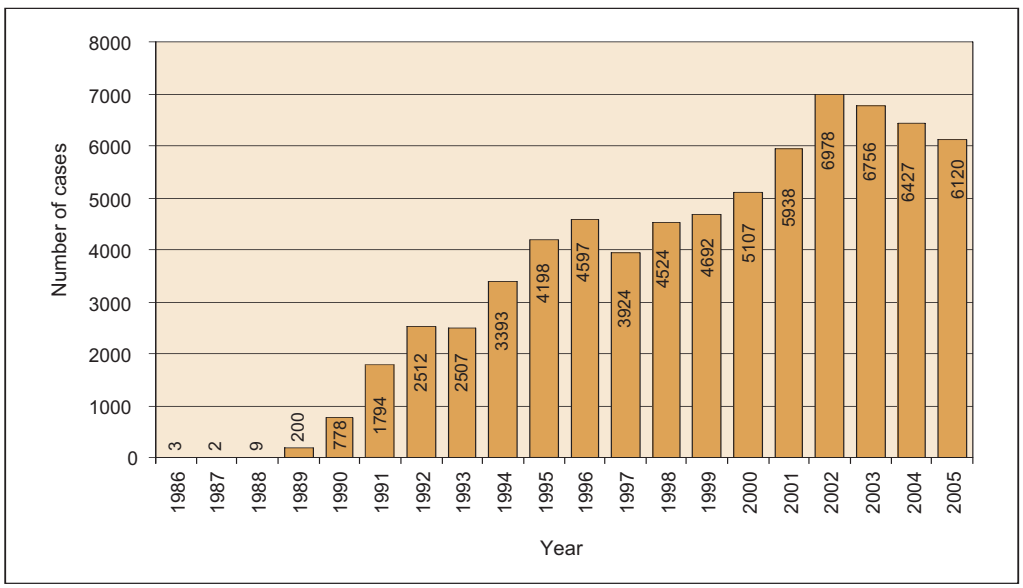
The Natio ogramme for Elimination of Lymphatic Filariasis has completed its second cycle of MDA (Mass Drug Administration) in 2005, achieving 88% coverage of eligible endemic population compared to 84% for the first cycle in 2004 (the target is 80% or more). The MDA will be continued for three more cycles. Malaysia is expected to achieve elimination status for lymphatic filariasis by 2013.

AIDS / STD PREVENTION AND CONTROL PROGRAMME

Since the first case in 1986 until the end of 2005, a total of 70,559 cases have been reported to be infected with HIV/AID, of whom 10,663 were notified as AIDS. A total number of 8,844 deaths were reported.

Over the past 5 years, the number of reported HIV infection cases has shown a decline with 6,120 HIV infection cases reported in 2005 as compared to 6,427 cases in 2004. Majority (93%) of the reported HIV/AIDS cases were male. However, female cases have risen from 1.2 % in 1990 to 12.0% in the year 2005. Although generally HIV transmission in Malaysia is mainly driven by infection through sharing needles among injecting drugs users (IDUs) (74.0%), infection through sexual route has increased from 10.0% in 1990 to 25.5% in 2005. In term of ethnicity, Malays are the highest numbers being infected 73.0% followed by Chinese 15.0% and Indians 8.0%. It is estimated that by the year 2015, as many as 300,000 Malaysian would be infected by HIV/AIDS.

FIGURE 9
Number of Reported HIV Infection, Malaysia 1986 – 2005



Source : Disease Control Division, MOH

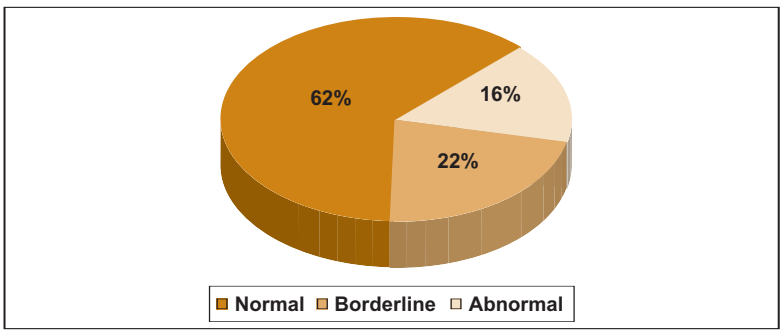
NONCOMMUNICABLE DISEASE CONTROL PROGRAMMES

Diabetes Prevention and Control Programme

The Information and Documentation System Unit, Ministry of Health reported that admissions of diabetic cases to government hospital showed an increasing trend with 27,179 cases were admitted in 2000, 30,281 cases in 2001, 33,187 cases in 2002, 35,460 cases in 2003 and 39,354 in 2004. 402 deaths due to diabetes were reported in 2004 as compared to 323 deaths in 2000, 380 deaths in 2001, 323 deaths in 2002 and 346 deaths in 2003.

Diabetes screening programme has been established at health clinic as one of the prevention and control activities. Diabetes screening is carried out at hospital and health clinic for early detection of diabetes especially among those with high risk such as family history of diabetes, age over 35 years old, obese and those with other diseases such as hypertension and heart condition. As of December 2005, a total 285,482 cases were screened, out of which, 62% were normal (177,910 cases), 22% were borderline (62,382 cases) while 16% were abnormal (45,190) (Figure 10).

FIGURE 10
Diabetes Screening, Malaysia 2005



Source : Disease Control Division, MOH

Screening for diabetes complications is also being carried out. Every diabetic patient will undergo the screening for early detection and prevention of complication as it is mandatory in the management of diabetes mellitus. Several tests were done to detect complications which include microalbumin test, monofilament test and fundus camera.

Urine microalbumin is an important test to detect renal involvement at a very early stage. A total of 36,612 microalbumin tests were carried out in the year 2005. Out of these, 67% is normal (24,670 cases) while 33% were abnormal (microalbumin detected).

Monitoring for control of diabetic patients is part of the diabetes prevention and control programme. It is done using HbA1c test which will reflect the patient's diabetes control status for the past three months. In 2005, out of 63,903 tests done, 43,136 (68%) of diabetic patients have HbA1c > 6.5% which showed poorly controlled diabetes despite treatment given.

Cardiovascular Prevention and Control Programme

The number of discharges and deaths due circulatory system in Government hospitals shown an increasing trend (Table 7)

TABLE 7
Number of Discharges and Deaths Due to Circulatory System in Government Hospitals, Malaysia 1990 – 2004

Type of CVD / Year		1990	1992	1994	1996	1998	2000	2001	2002	2003	2004
Hypertensive Disease	Discharges	26,876	28,904	28,226	29,780	32,866	28,669	33,784	35,437	36,424	38,449
	Deaths	201	192	166	162	229	159	243	155	177	180
Ischaemic Heart Disease	Discharges	22,164	22,845	27,618	33,070	33,623	33,044	35,310	37,020	37,284	39,427
	Deaths	2,131	1,959	1,936	2,189	2,369	1,971	2,541	2,556	2,697	2,948
Cerebro Vascular Disease	Discharges	7,959	9,033	10,132	12,365	13,868	14,047	14,107	15,194	15,674	16,805
	Deaths	2,257	2,416	2,490	2,610	2,811	2,822	2,822	2,936	3,007	3,209

Source : Information and Document System Unit, MOH

Screening programme for Cardiovascular Diseases (CVD) risk factors

As of December 2005, a total number of 618 health clinics all over Malaysia have carried out screening programme for CVD risk factors with 88,376 attendances.

Non Communicable Disease (NCD) clinic in Putrajaya has been implemented in April 2005 and conducted by nine Public Health Physicians, targeting on individu with NCD risk factors. The objectives of the clinic are;

a) Early NCD risk factor through a comprehensive screening package
b) Early customized and personalized NCD risk factor intervention
c) Total Risk Management approach

As of December 2005, a total of 60 clinic sessions, 28 physical fitness exercises and 9 diet exercises have been carried out. A total number of 34 clients attended the clinic whom presented at least with one NCD risk factor (Table 8). Majority of the clients (85.3%) were obes / overweight (Table 9)

TABLE 8
Client Distribution According to NCD Risk Factor

NCD Risk Factor	Male (n = 17)	Female (n = 17)	Total Number (n = 34)
No Risk Factor	0	0	0
At least one risk factor	17	17	34
1 Risk Factor	4	3	7
2 Risk Factors	6	6	12
3 Risk Factors	6	4	10
4 Risk Factors	1	2	3
5 Risk Factors	0	1	1

Source : Disease Control Division, MOH

TABLE 9
Client Distribution According to NCD Risk Factor Identified

NCD Risk Factor	Male (n = 17)		Female (n = 17)		Total Number (n = 34)	
	No.	%	No.	%	No.	%
1. Obesity / overweight	12	70.6	17	100	29	85.3
2. Central obesity	9	52.9	7	41.2	16	47.1
3. Smoking	4	23.5	0	0.0	4	11.8
4. Physical inactive	15	88.2	12	70.5	27	79.4

Source : Disease Control Division, MOH

Violence and Injury Prevention Programme of the Ministry of Health (VIP)

The Injury Prevention Program was established in 1996 with the objective to prevent and minimize the impact of injury.

Since its establishment, several activities were carried out and starting from March 2004, the scope of the program was expanded to include violence prevention activities. Since then the unit is known as the Violence and Injury Prevention Unit (VIP). Achievements of VIP in 2005 were;

1. The First National Injury Report on Admission and Death in Malaysian Government Hospital 1999 - 2002 was published and has been distributed to universities and other relevant departments and ministries.

2. Launching of Domestic Violence Database. A system to capture information related domestic violence. One Stop Crisis Centers (OSCC) will be the source of data. This system will be placed in few selected OSCCs in 2006 as a pilot project.
3. Production of National Report on Violence and Health: A Situational Analysis Study. A joint venture project between VIP of MOH Malaysia and WHO, Kobe, Japan.
4. Violence Prevention and Management training for NCD Epidemiological officers and health personnel were conducted at Quality Hotel in April 2005.
5. CPR and First Aid training for NCD staff was conducted in Mei 2005 at NCD office, Putrajaya.
6. A survey for the CPR and First Aid knowledge and skill among health personnel was performed in September and October 2005.
7. CPR and First Aid videos were produced in collaboration project with Emergency Department, Ipoh Hospital.
8. OSCC video was also produced in November. This video is to be used as education aid during Violence Sensitization training.

ENVIRONMENTAL HEALTH PROGRAMME

Community exposure to environmental hazards is one of the most important factors for disease causation. The rapid expansion of human populations, rapid industrialization, and a poor urban planning are major factors in the rise of human diseases.

Environmental Health Unit is committed in achieving the objective to protect the people from exposure to unnecessary environmental hazards and its risk.

Achievement 2005;

1. Environmental Health Impact Assessment (EHIA) is one of important tool in taking care of current and future health of population. In the year 2005, EHU participated in reviewing and providing health inputs of 12 proposed development projects which require Detailed Environmental Impact Assessment (DEIA) approval.
2. Conducted 2 in-service training on Environmental Health Impact Assessment for Eastcost Zone (Kelantan, Terengganu, Pahang) and state of Sabah.
3. EH Unit participated in teaching of environmental health (supervised 4 MPH students from local universities).
4. Produced a guide to Essential Environmental Health Functions for Ministry of Health officer (collaboration with WHO)
5. Provided the Malaysia Environmental Health Database for WHO Regional Office, Manila.
6. Developed specific risk assessment tool for assessing the risk from solid waste disposal site.
7. Conducted 2 risk assessments of solid waste disposal sites.
8. EHU had produced and distributed the Health Fact in form of posters and pamphlets about haze related illnesses.

9. Developed the evaluation format healthy school.
10. Developed the evaluation format healthy Market.
11. Developed the evaluation format healthy Hospital.
12. Developed the evaluation format healthy village.
13. Developed the evaluation format healthy food court.
14. Drafted the healthy setting guideline for workplace.
15. Drafted the healthy setting guideline for food court.
16. Drafted the healthy setting guideline for recreational park.
17. Drafted the Investigation and Surveillance protocol on Legionella Control.
18. Organized second National Healthy Setting Conference, in collaboration with Perak State Health Department.
19. Collaboration with JKWP in coordinating the International events (NAM, IDB, OIC).
20. Launched and conducted a nationwide inspection on risk assessment of hotels.
21. Launched and conducted a nationwide inspection on risk assessment of schools.
22. Initiated an activity of prison inspection.
23. Initiated the pilot project of food court inspection in Petaling district.

OCCUPATIONAL HEALTH PROGRAMME

Following the gazettement of Occupational Safety and Health Act in 1994, occupational health in Malaysia has evolved in many aspect. Many regulations and code of practice have been established. In the year 2004, a new regulation called Occupational Safety and Health (Notification of Accident, Dangerous Occurrence, Poisoning and Diseases) 2004 was introduced. The aim is to emphasize and increase the notification of accidents, dangerous occurrence, occupational poisoning and diseases by employers and medical practitioners. 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.

Among activities and achievement of Occupational Health Programme in 2005 are,

a. Upating and development of manual and guidelines on occupational safety and health.
b. Occupational health clinic services
c. Notification and surveillance on occupational related diseases, injury and poisoning
d. Safety and health promotion at workplace
e. Quality Assurance – incidence rate of needlestick injuries
f. Safety and health audit at health facilities under the Ministry of Health
g. Research
h. Technical input inrelated to occupational health.

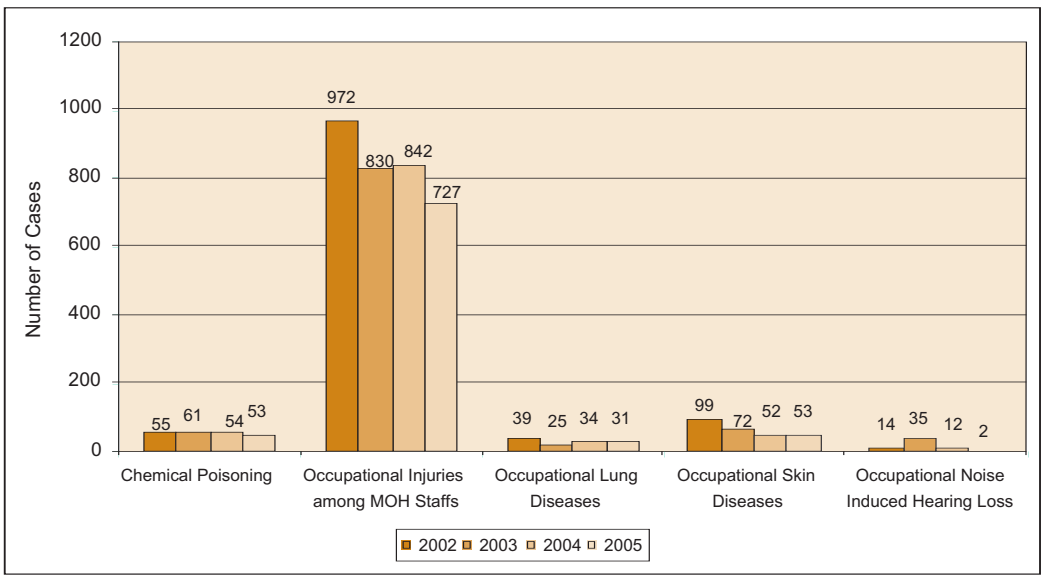
Health promotion and education regarding occupational health

In 2005, the unit has carried out many activities on promoting safety and health at workplace. Among them are, the launching of Guideline of Injury Prevention at Workplace, production of poster and phamplet. The unit is also involved in seminars organised by SOEM, NIOSH and DOSH as well as organising exhibition to increase public awareness on occupational health.

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 in the year 2002. Since it establishment till end of 2005, the most reported cases was injuries among Ministry of Health staffs, mainly needlestick injury. Occupational poisoning was the 2nd most reported cases, followed by occupational skin diseases, occupational lung diseases and occupational noise induced hearing loss. The acheivement for 2005 is as noted in Figure 11.

FIGURE 11
Surveillance of Occupational Diseases, Poisoning and Injuries, Malaysia 2002-2005



Source : Disease Control Division, MOH

Occupational health clinic services

In 2005, a unit was formed under the Occupational and Environmental Health Section to coordinate the occupational health clinic service programme. In April 2005, a workshop was conducted to develop registry book, formats, referral procedure and activities for the clinic. In July 2005, the occupational health clinic services was then carried out with all format and monthly return be sent to Occupational Health Clinic Services Unit at Disease Control Division.

Currently, nine states are running this services in 2005 with the highest attendance is in Terengganu (27.5%), followed by Kelantan (20.7%) and Selangor (16.6%). Hospital Kuala Terengganu recorded the highest attendance (214 cases), followed by Kota Bahru Occupational Health Clinic (191 cases) and Kajang (153 cases). In Terengganu, this services are being carried out in hospitals where as the rest are in the health clinic.

Majority (33.8%) of cases seen were occupational lung diseases, followed by dermatitis (27.7%), organic solvent poisoning (14.4%) and noise induced hearing loss (12.0%) (Table 10)

TABLE 10
Number of Occupational Diseases Cases Seen in Occupational Health Clinic Service, 2005

Occupational Diseases	Number of Cases	%
Occupational Lung Diseases	29	33.8
Occupational Skin Diseases	25	27.7
Organic solvent Poisoning	12	14.4
Occupational noise induced hearing loss	10	12.0
Disability	4	4.8
Ergonomic	3	3.6
Industrial Injury	2	2.4
Occupational Stress	1	1.2
Total	**86**	**100.0**

Source : Disease Control Division, MOH

WAY FORWARD

Trend of diseases has changes following changes in lifestyle, increased socioeconomic, globalization, and modernization. Non communicable diseases become the public threat now days and the future. The Disease Control Division will give a great focus into it in view of its impacts on socioeconomic. Furthermore the disease is related to lifestyle which can be tackled and avoided.

Although our focus will be on the non communicable diseases, but the prevention and control of communicable diseases must be strengthened so that it will not reemerge as a public heatlh threat. Challenges in the world today, warrant us to be well prepared to face whatever it is, from the emerging of new communicable diseases, outbreak, disaster to even bioterrorism.

Thus, surveillance of diseases (communicable and non communicable diseases including occupational and environmental related diseases) must be further strengthened. Staff must be further upgraded and trained in their knowledge and skill so that they are well prepared. Public will be further empowered with knowledge and current issues so that they will be able to maintain and upgrade their health status. Several areas of collaboration and cooperation between public and private sectors need to be further strengthened to achieve the greatest success.

CONCLUSION / SUMMARY

Throughout the year 2005, planning, implementation, monitoring and evaluation of the diseases prevention and control programmes and activities were conducted as planned. Even though the achievements shown are remarkable, however there are still areas which can be further improved and strengthened in the future ahead for a better and greater success.

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.

ENFORCEMENT SECTION (DOMESTIC)

Activities

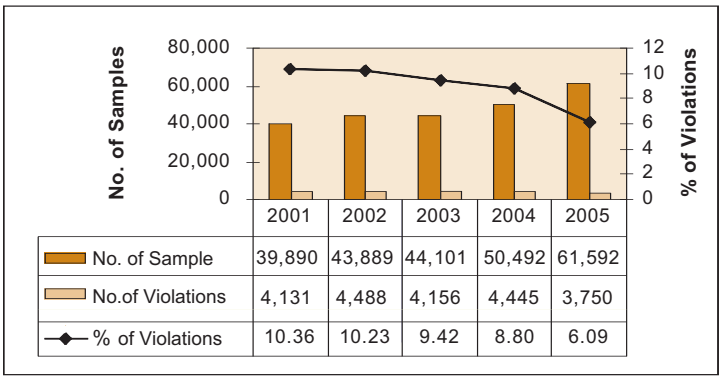
i. Food Sampling

The sampling target for the year 2005 was 40,000 .The parameters of analysis of these samples were divided into microbiology (40%), chemical (55%) and physical (5%).

A total of 61,592 food samples were taken for analysis in 2005, from which 3,750 (6.09%) contravened the Food Act 1983 and Food Regulations 1985 (Figure 1).

The number of offenders fined were 733 cases while fines amounting to RM 1,115,060 were collected. There were 11 cases of imprisonment for the offenders, 112 cases “acquitted not amounting to discharge” and 22 cases were “discharged and acquitted”.

FIGURE 1
Food Sampling 2001 - 2005



	2001	2002	2003	2004	2005
No. of Sample	39,890	43,889	44,101	50,492	61,592
No.of Violations	4,131	4,488	4,156	4,445	3,750
% of Violations	10.36	10.23	9.42	8.80	6.09

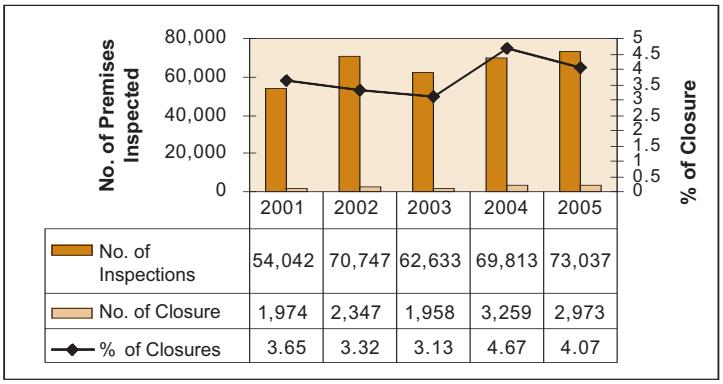
Source : Information and Documentation System Unit, MOH

ii. Inspection and Closure of Food Premises

In 2005, a total of 73,037 premises were inspected and 2,973 in sanitary premises were closed under provisions provided in Section 11 of the Food Act 1983 (Figure 2).

FIGURE 2

Food Premises Inspection and Closure 2001 - 2005



	2001	2002	2003	2004	2005
No. of Inspections	54,042	70,747	62,633	69,813	73,037
No. of Closure	1,974	2,347	1,958	3,259	2,973
% of Closures	3.65	3.32	3.13	4.67	4.07

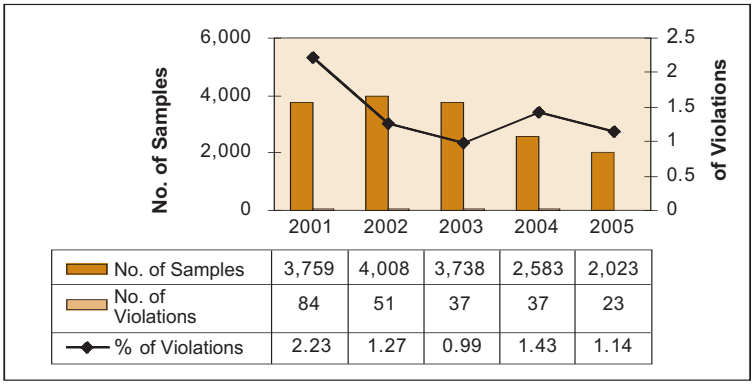
Source : Information and Documentation System Unit, MOH

iii. Pesticide Residue

In the year 2005, a total of 2,023 samples of vegetables and fruits were taken for pesticide residue analysis (Figure 3). Out of these 2,023 samples, 1,632 were vegetables and 391 samples were fruits. Results of the analysis indicated only 23 samples (1.14 %) of vegetables and fruits were found to be above the Maximum Residue Limits (MRLs) of Schedule 16 (Pesticide Residue), Regulation 41, of the Food Regulations 1985.

FIGURE 3

Sampling of Vegetables and Fruits for Pesticide Residue 2001 - 2005



	2001	2002	2003	2004	2005
No. of Samples	3,759	4,008	3,738	2,583	2,023
No. of Violations	84	51	37	37	23
% of Violations	2.23	1.27	0.99	1.43	1.14

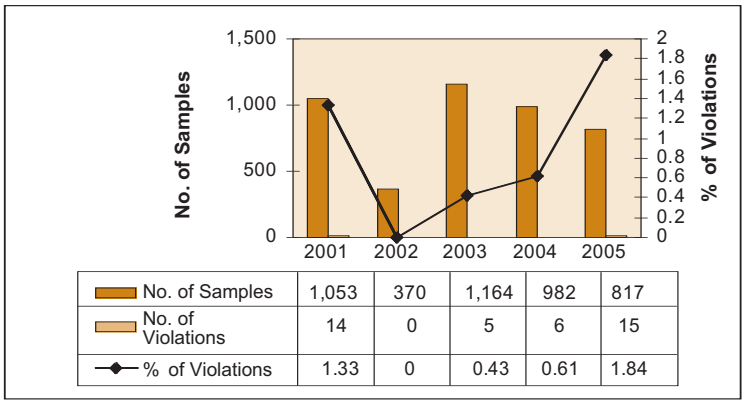
Source : Information and Documentation System Unit, MOH

iv. Veterinary Drug Residue

Nitrofuran

A total of 817 samples of chicken were taken for analysis with 15 (1.84%) contraventions (Figure 4) while 13 samples of eggs were taken and none were found to contravene the Food Regulations 1985.

FIGURE 4
Sample for Nitrofuron in Chicken 2001 - 2005



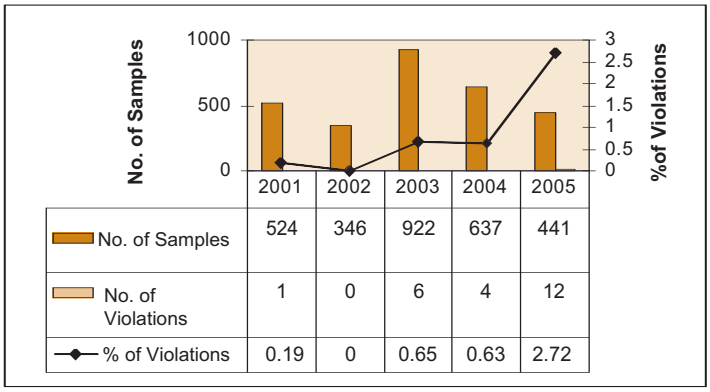
	2001	2002	2003	2004	2005
No. of Samples	1,053	370	1,164	982	817
No. of Violations	14	0	5	6	15
% of Violations	1.33	0	0.43	0.61	1.84

Source : Information and Documentation System Unit, MOH

Chloramphenicol

A total of 441 samples of chicken were taken with 12 (2.72%) violations (Figure 5) and 155 samples of fish taken with no violations (Figure 6).

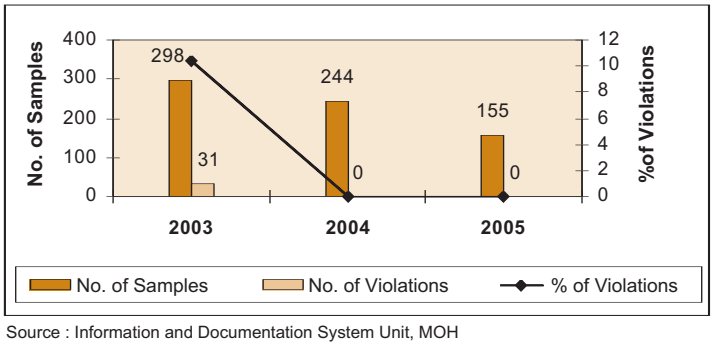
FIGURE 5
Sampling for Chloramphenicol in Chickens 2001 - 2005



	2001	2002	2003	2004	2005
No. of Samples	524	346	922	637	441
No. of Violations	1	0	6	4	12
% of Violations	0.19	0	0.65	0.63	2.72

Source : Information and Documentation System Unit, MOH

FIGURE 6
Sampling for Chloramphenicol in Fish 2001 - 2005

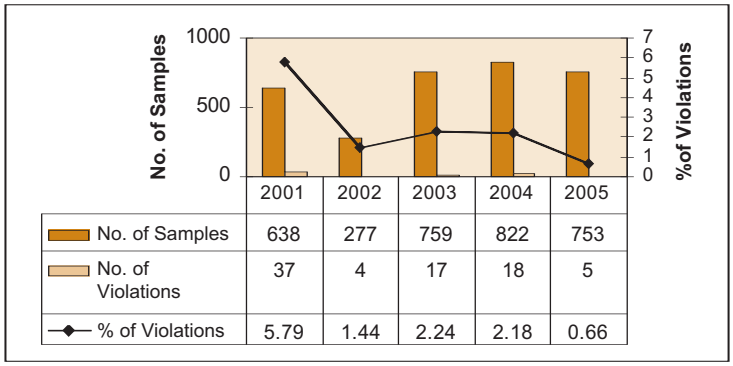


Source : Information and Documentation System Unit, MOH

Beta-Agonist

In 2005, a total of 753 samples were taken for analysis of beta-agonist (Figure 7). This includes pork (312 samples), beef (346 samples), mutton (79 samples) and duck meat (16 samples). There were only 5 (0.66%) violations (from 5 samples of mutton).

FIGURE 7
Monitoring of Beta - agonist 2001 - 2005



	2001	2002	2003	2004	2005
No. of Samples	638	277	759	822	753
No. of Violations	37	4	17	18	5
% of Violations	5.79	1.44	2.24	2.18	0.66

Source : Information and Documentation System Unit, MOH

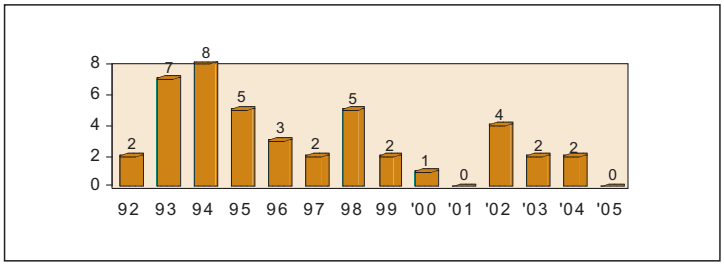
v. Licensing

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 was enforced until December 2005, 43 sources of natural mineral water have been licensed with a collection of RM258,000.00

From the 43 sources of natural mineral water licensed (Figure 8), 30 are from local sources and 13 are from foreign sources.

FIGURE 8
No. of Licences for Natural Mineral Water from Year 1992 - 2005



Source : Information and Documentation System Unit, MOH

Packaged Drinking Water

A total of 128 sources of packaged drinking water were approved until 2005.

Non-Nutritive Sweetener

In the year 2005, 22 licences for saccharin were issued. Fees collected from the issuance of licences was RM 4,100.00.

vi. Operations Carried Out

A few operations were carried out throughout the year 2005, (Table 1).

TABLE 1

Operations carried out in 2005

February	May	July	August	September	October	Oct_Dec
Ops Ji	Ops Boric Acid	Ops Patuh II	Ops Belacan	Ops Ramadhan	Ops Patuh III	Ops Daging Tipu

Source : Information and Documentation System Unit, MOH

IMPORT SECTION

Import Control Section

The monitoring of the safety of food imported into the country is an important activity of the Food Safety and Quality Programme under the Ministry of Health. The launch of FOSIM (Food Safety Information System) since August 2003 has greatly enhanced the monitoring and safety of imported food at entry points. This system has been implemented at all entry points which have on-line facilities with customs information system (SMK) and will be expanded to all states once the Customs Information Systems is fully functional. Food crisis such as Avian Flu and Mad Cow Disease (BSE) can be better managed using this system. This system will enable enforcement at entry points to be managed in a more efficient and harmonized manner.

Food surveillance on imported food at entry point are carried out based on 6 levels of inspection. The levels of inspection are as stated below :

a) Level 1 (Auto Clearance) where the system permits the food to be automatically released .
b) Level 2 (Document Inspection) where the Enforcement Officer at the entry point has to inspect the 'K1-declaration' document in the system and give approval prior to release of the food.
c) Level 3 and 4 (Surveillance Inspection) where mandatory inspection and sampling is conducted. Food is released after sampling for monitoring purposes.
d) Level 5 (Hold, Test & Release) where mandatory inspection and sampling is conducted. The consignment is detained after sampling and only released ifanalytical results do not contravene the law.
e) Level 6 (Auto Rejection) where the system automatically rejects the import of the food product.

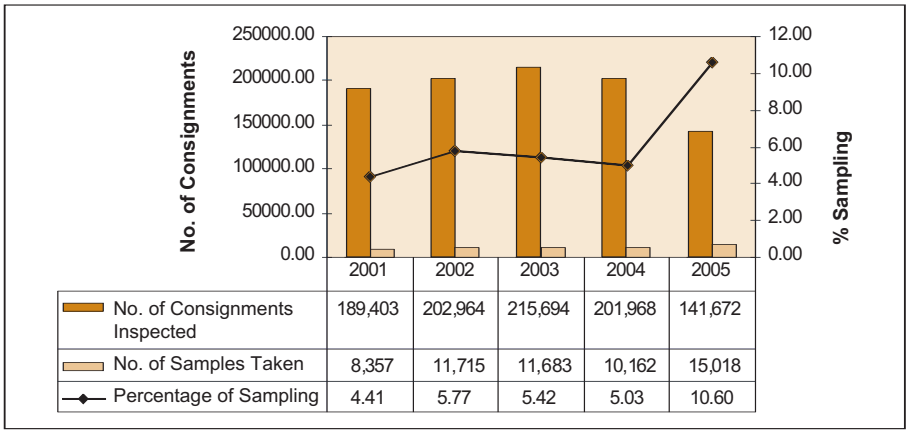
The physical inspection of imported food consignments at entry points was based on the following:

- Documents Inspection – 100% of total imports
- Land Routes – 70% of total imports

- Sea Routes – 40% of total imports
- Air Routes – 35% of total imports
- Sampling based on 10% of total physical inspections

In 2005, 141,672 consignments were inspected and 15,018 samples were taken for analysis. From these samples, 525 (3.5%) samples contravened the Food Regulations 1985 (Figure 9). All these activities will be monitored by FOSIM.

FIGURE 9
Import Control Activities, 2001 - 2005



	2001	2002	2003	2004	2005
No. of Consignments Inspected	189,403	202,964	215,694	201,968	141,672
No. of Samples Taken	8,357	11,715	11,683	10,162	15,018
Percentage of Sampling	4.41	5.77	5.42	5.03	10.60

Source : Information and Documentation System Unit, MOH

LABORATORY SECTION

Activities

i. PLANNING AND MANAGEMENT

In order to enhance the capability of food laboratories and improve the efficiency of laboratory services, the following plans and activities were implemented throughout 2005 :

Obtain allocation to improve the capability of laboratory :

- Application for 2006/2007 New Policy.
  - RM 410,000 under OA 20000 and RM 1.7 million under OA 30000 to strengthen laboratory services at entry point for hold-release inspection.
  - RM 100,000 under OA 20000 and RM 1.3 million under OA 30000 allocated to develop new analytical capability for nutrient analysis to verify nutrients declaration / claims.
  - RM100,000 under OA 20000 dan RM2.0 million under OA30000 have been allocated to strengthen Quality Assurance Programme in Public Health Laboratories.
- In line with the government policy to enhance food export, an application for allocations under the 2006 Special Budget was made :
  - An allocation of RM 22.5 million to strenghen food analytical service in Ministry of Health.

Optimize the use of available expertise and food analysis laboratory facilities within or outside of the Ministry of Health.

- Proposal to "Restructure Food Laboratory, Ministry of Health" was drafted to be considered for approval.
- With the cooperation of Food Analysis Committee chaired by the Chemistry Department, Malaysia, a network of reference laboratories based on priority areas in food analysis was established. The following laboratories have been appointed as national reference laboratory:-

TABLE 2
Reference Laboratory and Priority Food Analysis Areas

Areas of Food Analysis	National Reference Laboratory
Microbiology	Department of Chemistry Malaysia, Petaling Jaya
Heavy metals	Department of Chemistry Malaysia, Petaling Jaya
Genetically Modified Organism	Department of Chemistry Malaysia, Petaling Jaya
Mycotoxin	National Public Health Laboratory
Pesticides Residue	Department of Agricultural
Veterinary Drug Residue	Veterinary Public Health Laboratory

Coordinate method development with laboratories to meet the needs of food safety activities.

- Analysis of Malachite Green Analysis in fish and fish products.
- Analysis of Sudan Colouring Analysis in spices include curry powder etc.
- Analysis of Enterobacter sakazaki Analysis in infant milk powder.
- Analysis of Ractopamine Analysis in meat.

Coordinate cooperation or collaboration with national and international agencies to improve development of capacity building.

- Cooperation with Japanese International Cooperation Agency (JICA) to strengthen the implementation quality assurance at National Public Health Laboratory through project on "Strengthening of Food Safety Programme in Malaysia".
- "EC-ASEAN Economic Cooperation on Standards, Quality and Conformity Assessment" which a component under the Food Sub-Programme for "Strengthening Food Testing Laboratories Capacities". This program includes the appointment of ASEAN Reference Laboratory and training in the related fields for ASEAN members.
- Monitor the implementation of food analysis contract among FSQD and Doping Control Centre especially in dioxin analysis for research purpose.

Improvement and implementation of quality system in food laboratories according to requirement of ISO/IEC 17025 to ensure reliability of laboratories results and performance.

- 5 food laboratories were accredited with ISO/IEC 17025 from Department of Standard Malaysia while 9 other food laboratories have undergone Adequacy Audit and are expected to get their accreditation in 2006.

- All analytical methods and laboratory procedures were evaluated and documented as harmonized Standard Operating Procedure (SOP).

ii. Monitoring of Laboratory

Reports

Monthly reports from laboratories were analysed to assess their achievement and performances. In 2005, 43,111 samples were analysed compared to 35,802 samples in 2004. Out of this 21,436 samples were analysed for microbiology (49%), 21,404 samples were analysed for chemistry (50%) and 271 samples were analysed for physical (1%).

Audit

To ensure the effective implementation of the quality system in all laboratories, all laboratories were audited by two qualified auditors, one from the FSQD and one from the Quality Assurance Division of the NPHL.

Proficiency Testing

Laboratories participate in national and international proficiency test to evaluate the competency of technical staff in conducting food analysis.

Meetings

As a forum to plan and discuss problems and issues related to laboratories, 4 meetings were held throughout 2005.

iii. Technical Support

Training and Courses

To continuously improve the competency of analysts in FSQL and PHL Food Section, and in line with development in science and technology, training and courses were conducted inside and outside the country.

Reference Sources

To assist laboratories to easily obtain information on the latest developments, references materials were distributed for laboratory use.

iv. Information Management

Master Registry

A master registry of the laboratories in Malaysia and their capabilities was established and will be continuously updated. In addition, standard and instrumentation inventory in all FSQL was also updated for planning.

Lab Info

Lab info “stand alone” software is used by all Food Laboratories to manage domestic foods samples.

FoSIM

Food Safety Information System (FoSIM), an online web based system which contains a laboratory module, is currently being updated for use in imported food samples.

Database on Staff Training

Database on training attended by technical staff are continuously being updated to facilitate monitoring and planning of staff training needs.

INDUSTRY SECTION

Activities

i. EU Registration Number

Up to 2005, 89 companies have registered with the EU through FSQD. As the competent authority, the MOH has also been preparing the annual report on the monitoring programme for drug residues in fish and fish-based products, as required by the EU.

ii. Export Control

Due to the expansion of the export of food products in Malaysia, export control is one of the main activities under this department.

In 2005, two (2) CA of importing countries , i.e. the Food and Veterinary Office (FVO) , EU and United States Food Drug Agency (USFDA), US carried out inspection visits in Malaysia.
The FVO visit took place from 1 to 11 March 2005, and this was the second inspection since 1995. The purpose of the visit was to evaluate whether the control system for the production of fishery products implemented by CA could deliver the guarantees prescribed by EU requirement for fishery products intended for export to EU. Inspection visits were carried out at the various central agencies involved in the production of fish and fish products including headquarters, states, districts and the industries.

The USFDA inspection visit for fish and fish products was carried out from 25 July to 12 August 2005. The purpose of the visit was to determine whether Malaysian seafood processing plants that export seafood to the United States (U.S.) comply with the seafood Hazard Analysis Critical Control Point (HACCP) regulation in US. Another purpose was to investigate the reasons for product rejection at identified companies. This inspection visit is done twice or thrice a year where in different products are identified for each visits, and is conducted directly at the identified factories.

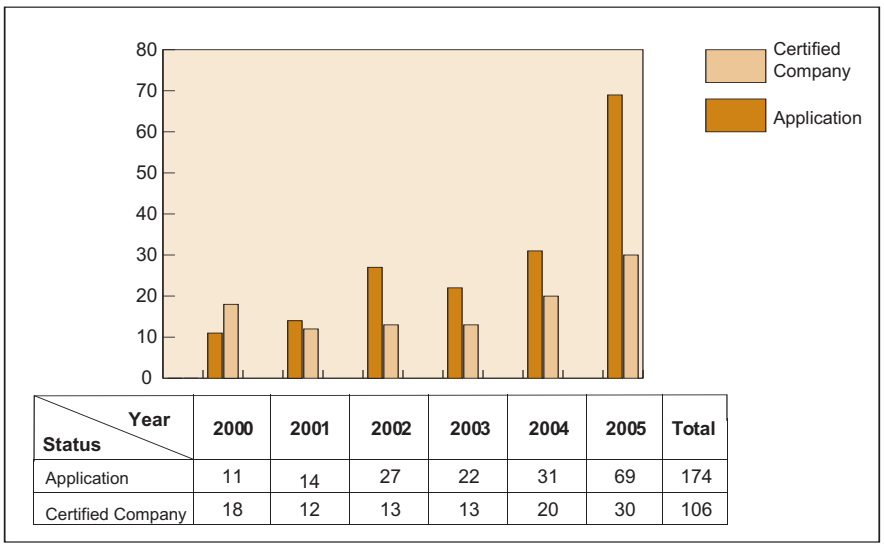
The section are also cooperates with other agencies in carrying out premise inspection for certification and auditing purposes such as HACCP auditing of the exporter`s abattoir in India with JAKIM and the Veterinary Department . The auditing is to ensure meat imported from India is safe and complies with 'Halal' requirements.

TABLE 3
Issuance of Certificate for Export Purpose, 2001- 2005

Type of Certificate \ Year	2001	2002	2003	2004	2005
Health Certificate	6,950	7,525	12,255	14,938	16,907
Free Sale Certificate	42	252	481	1,326	1,078
Non-Genetically Modified Certificate (non-starlink Corn)	20	21	33	142	50

Source : Food Safety and Quality Division, MOH

FIGURE 10
HACCP Certification by Year



Status \ Year	2000	2001	2002	2003	2004	2005	Total
Application	11	14	27	22	31	69	174
Certified Company	18	12	13	13	20	30	106

Source : Food Safety and Quality Division, MOH

iii. Export Certificate

The section has issued various certificates for export purposes such as Health Certificates, Free Sales Certificates, Non Genetically Modified Food (For Non Starlink Corn) . Other certificates have also been issued based on the needs of importing countries. The increase in the number of certificates issued as shown in the table below reflect the rapid expansion of the export trade.

iv. HACCP Certification Scheme

The graphs below shows the number of HACCP certified companies according to the year (Figure10)

In 2005, a total of RM132,205.00 was collected through HACCP Certification Scheme where RM118,855.00 came from new applications, RM7,300.00 from renewal and another RM6,050.00 from additional audit days.

In 2005, eleven (11) HACCP Certification Meetings were held wherein a hundred and five (105) audit reports were scrutinized and discussed. Two (2) HACCP Surveillance Auditors Meeting was held in April and November to discuss improvements to the surveillance audit process under the National HACCP Certification Scheme.

v. Food Handlers Training and Food Handlers Training Institutes (ILPM)

In 2005, a total of 30,671 food handlers were trained by 72 accredited food handlers training institutes which were still active from 130 institutes. To qualify as a trainer trained by KKM, they had to sit for a Screening Examination and attend the Trainers Compulsory Course. 57 candidates had successfully passed the exam and attended the Trainers Compulsory Course which had been held twice that year (28-30 March 2005, Kolej Kejururawatan Kota Kinabalu, Sabah and 13-15 December 2005 , Institut Kesihatan Umum, Bangsar, Kuala Lumpur). Until 2005, 413 trainers had been certified as qualified trainers.

vi. Involvement in Developing Policy and Guidelines for School Canteens

Each year, this section is involved in developing a framework of joint venture activities between Ministry of Health and Ministry of Education under 'Program Bersepadu Sekolah Sihat' (PBSS), participating in the development of school canteen guidelines and questionnaire for School Health Quiz at national level.

vii. Coordination of Exhibitions

We also coordinate participation in exhibitions upon invitation by various agencies. The Exhibition Secretariat was established to develop exhibition necessities such as pamphlets, posters, and tools . In 2005, 4 exhibitions were held.

CODEX AND INTERNATIONAL SECTION

Activities

i. International Level

In 2005, Malaysia succesfully hosted the 'Meeting of the 33rd Session of the Codex Committee on Food Labelling' which was held in Kota Kinabalu, Sabah from 09 – 13 May 2005. This meeting was attended by 243 delegations from 64 member countries, a member organization and 20 international organizations.

Apart from this, 41 officers from various agencies represented Malaysia as Delegates and attended 15 Codex meetings at the international level according to their relevant fields of expertise to ensure that the interest of our country was sufficiently addressed.

ii. ASEAN

At the ASEAN level , Malaysia organized a meeting under the EC-ASEAN Standards, Quality and Conformity Assessment Cooperation. The 'First Meeting of Experts on the Development of ASEAN Common Food Control Requirement' from 16 – 17 May 2005 in Kuala Lumpur . Under the same programme, the Chemistry Department was appointed as the ASEAN Reference Laboratory for Genetically Modified Organisms (GMOs) and given the responsibility of coordinating analytical methodology for GMOs for the ASEAN region .

At the Fourth Meeting of the ASEAN Expert Group on Food Safety (AEGFS), Malaysia was appointed as the Regional Focal Point , under the ASEAN – Australia Development Cooperation Programme (AADCP) to implement a project entitled 'Strengthening ASEAN Risk Assessment Capability to Support Food Safety Measure'. A meeting to discuss this project was held from 24 – 25 November 2005 in Kuala Lumpur.

The Fourth Meeting of AEGFS also agreed that Malaysia be identified as the coordinator of the 'Food Monitoring and Surveillance Programme under ASEAN Food Safety Improvement Plan (AFSIP)'. As the coordinator, Malaysia organized ' Training Course on HACCP Verification and Auditing' with the cooperation of WHO and MARDI, that was held from 28 November – 02 December 2005 in Kuala Lumpur.

LEGISLATION (STANDARD DEVELOPMENT)

Activities

i. Amendments to the Food Regulations 1985 in 2005

Amendment to the Food Regulations 1985 was made through the gazette P.U. (A) 358 dated 29 September 2005. In the gazette, the main amendment is the amendment to the Fifteenth Schedule to allow ractopamine. Ractopamine is a type of beta-agonist which is banned in animals. Ractopamine is needed to produce lean meat especially in pigs. The amendments are made in line with Codex standard where the maximum permitted proportions is as specified in Table 4. Besides this, the amendment included the correction made to the amendment to Sixteenth Schedule regarding the maximum residue limit for pesticide residue.

TABLE 4
Amendments to Schedule Fifteen

Food	Maximum Residue Level (MRL) in food (g / kg)
Muscle (pig)	10
Fat (pig)	10
Liver (pig)	40
Kidney (pig)	90

Source : Food Safety and Quality Control Division, MOH

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

The draft gazette to the amendment of the Food Regulations 1985 was prepared and forwarded to the Legal Adviser for vetting.

iii. Seminar and Training

In 2005, the section had delivered 7 talks and presented papers at seminars attended by industries and enforcement officers. The papers presented were regarding development and implementation of the Food Regulations 1985.

LEGISLATION SECTION (LABELLING)

Activities

i. Labelling and Labelling Advisory Services

This section provides Labelling Advisory Services for industries that need the service. The industries or importers which seek advisory services on labeling will be charged in amount of RM 1000.00. Food label should be amended based on the comments given to ensure it complies with the Food Act 1983 and Food Regulations 1985. 842 labels had been assessed by the Labelling Working Committee.

ii. Nutrition Labelling and Claims Regulations

15 applications from the industries to amend the regulations on nutrition labeling especially related to nutrient content claims and nutrient function claims have been discussed. 4 provisions have been drafted for amendments.

New nutrient function claim has been approved under Regulation 18E, ie:

- Soy protein helps reduce cholesterol

A series of briefings and road shows for the enforcement officers and the food industries were also conducted. A total of 17 briefings were conducted throughout the year.

A guideline for nutrient tolerance level has been prepared and circulated to state health office, labs, industries and Chemistry Department.

iii. Food Drug Interface Products Classification

A total of 815 applications for products classification have been received, where a part of it have been discussed in the Food Drug Interface Products Classification Committee meetings.

RESEARCH AND MONITORING SECTION

Activities

i. Research Surveillance Activities

A total of 10 monitoring projects were carried out by states and NPHL (National Public Health Laboratories). These project included surveillance of additives and contaminants in a variety of foods and a pilot project i.e. Total Dietary Intake for heavy metal contamination.

Each state and laboratory was also given the budget to carry out monitoring activities according to local issues identified at state level. About 19 specific monitoring projects were ongoing starting from October 2005.This section also procured the analytical services from other agencies for the research.

ii. Food Safety Risk Analysis

TABLE 5
Risk Analysis Activities for 2005

Activity	Achievement
National project- Risk Assessment	*"Microbiological Risk Assessment of Vibrio parahaemolyticus in Tiger Prawn"* project. Continued from year 2004 This project was finished at the end of 2005 and will presented during the 5th MKMPK in Mac 2006.
Risk Management of Food Safety Workshop (13-15 April at Concorde Inn KLIA)	Microbiological Risk Assessment (MRA) workshop was carried out through collaboration with Dr. Kasuga from JICA. All participants were exposed to the usage of the software @ risk
Technical Working Group Risk Assessment (TWG)	TWG was developed at FSQD level. This TWG was divided into Microbiological and Chemical Contamination A Risk Manager, risk assessor and risk communicator was appointed in the TWG
Seminar on Food Safety	This seminar was organized at the Institut Pengurusan Bangsar on 12th Februari 2005. Presentations of Food Safety Issues were presented from MOH and JICA.

Source : Food Safety and Quality Control Division, MOH

iii. National Food Safety and Nutrition Council (MKMPK)

TABLE 6
MKMPK Activities for 2005

Activity	Achievement
Mesyuarat J/K Induk Keselamatan Makanan	A meeting was held to discuss the follow-up action from the previous and coming meeting of MKMPK
4th meeting of MKMPK	A meeting was carried out on 22nd February 2005 at Hotel Palm Garden, IOI Resort, Putrajaya

Source : Food Safety and Quality Control Division, MOH

iv. Total Contaminants in Malaysian Diet Project

TABLE 7
Total Contaminants in Malaysian Diet Project 2005

Activity	Achievement
National Total Dietary Intake Study	The pilot project was carried out in the Central Zone: Perak, Selangor and Wilayah Persekutuan Kuala Lumpur. Heavy metal analysis for 11 food group was done.

Source : Food Safety and Quality Control Division, MOH

v. Ninth Malaysian Plan

TABLE 8
Planning for RMK 9

Activity	Achievement
(RM-9)Year 2006-2010	Managed the preparatory meeting at division level and was involved in editorial of Book 2 RMK-9 for the division

Source : Food Safety and Quality Control Division, MOH

vi. Other Activities

Web-based Data

Developed Web-based data i.e.National Food Contamination Monitoring and Assessment System - NFAS

Statistical Course

A course on 'Statistics and Study Design' was organised at UPM on May 2005. There were 10 participants. The participants came from states, FSQD laboratory and FSQD. The purpose of this course was to increase the knowledge of study design in surveillance activities.

INTRODUCTION

The Health Education Division is one of the divisions under the Department of Public Health, Ministry of Health Malaysia. Established in 1968, it first started operating as the Health Education Unit at the Headquarters, Ministry of Health Malaysia. Its initial role was centred around training, printing of printed media on health and organising health education activities within the community focusing on communicable disease prevention and personal hygiene.

Presently, the Health Education Division's main function has grown from production to managing health education and promotion programmes as well as training, research and ICT programmes. New non-traditional programmes has been established in line with current health needs and demands.

Health promotion programmes include the prevention of communicable diseases and non-communicable diseases, healthy lifestyle, and the prevention of health problems. Among the programmes are the Healthy Lifestyle Campaign, the Organ Donation Awareness Promotion Campaign, Health Camps, the Doktor Muda Programme, the PROSTAR Programme, the Commemoration of Health Days and Patient Education Resource Centre activities.

ACTIVITIES AND ACHIEVEMENTS

Healthy Lifestyle Campaign

Beginning 2003, the Healthy Lifestyle Campaign carries the theme "Be Healthy for Life". Four major elements which were emphasised upon in the campaign are healthy eating, exercise and physical activities, no smoking, and stress management. These four basic healthy lifestyle elements can reduce the risk of multi- factorial diseases.

A number of activities were carried out during the 2005 Healthy Lifestyle Campaign, namely:

- **The Jom Kayuh Cycling Expedition Programme and the Be Healthy for Life Carnival**

The Jom Kayuh Programme pre-launching ceremony was officiated by the Health Minister, Yang Berhormat Dato' Chua Soi Lek on 26 April 2005 at Block E7 Lobby, Putrajaya Government Complex, while the Jom Kayuh Programme launched by the Deputy Minister of Health, Yang Berhormat Dato Dr. Abd. Latiff Ahmad on 14 May 2005, in Alamanda, Putrajaya.

The Jom Kayuh Pre-Launching ceremony by Dato' Chua Soi Lek at Putrajaya

The launch of the National Level Healthy Lifestyle Campaign was officiated by the Yang Berhormat Menteri Besar Negeri Sembilan, on behalf the Prime Minister of Malaysia on 11 June 2005 at Dataran Seri Kemang, Port Dickson, Negeri Sembilan. This programme was held for a month, whereby the participants of the cycling expedition took turns to cycle to cover the whole country while promoting the four elements of the Healthy Lifestyle Campaign.

During the launching of the Healthy Lifestyle Campaign 2005 at the National Level, at Dataran Seri Kemang, the following activities were carried out:

- Public Forum by three panellists
- Group aerobic exercises by the public
- Health examinations, such as tests of blood pressure, cholesterol level, blood glucose level, BMI, personality and others.
- Health exhibitions, such as exercises, healthy eating, no smoking, the cultivation of healthy minds, diabetes, high blood pressure and others.
- Health exhibitions by various agencies such as the *Persatuan Diabetes Malaysia*, exercise equipments and others.
- Cooking demonstrations by celebrity chefs.
- Silat, silambam, and wu shu demonstrations by the Negeri Sembilan Silat Organisation, and *Tempur Tanpa Senjata* by the Army.
- Health Quizzes
- Healthy Games Competition, such as checkers, carom, congkak, and street soccer.
- Enrolment of the National level Jom Kayuh participants.
- Health Jogathon for health personnel.

The campaign celebration and launching were also held in other states where the activities were similar to those at the National Level.

- **Jump Rope and Fitballrobic Competitions.**

Jump rope and fitballrobic National level tournament in Alor Setar, Kedah

To achieve the Healthy Lifestyle Campaign objectives which emphasised on exercise and physical fitness elements, Jump Rope and Fitballrobic competitions were held in Alor Setar, Kedah from 27 to 28 September 2005, officiated by the Yang Berbahagia Dato' Dr. Shafie bin Ooyub, Deputy Director-General of Health (Public Health), representing the Deputy Minister of Health Malaysia. This activity was held at the Sultan Abdul Halim Stadium, Alor Setar. 12 states participated in the competition as well as 2 from the federal territories of Labuan and Kuala Lumpur. The Ministry of Health also sent representatives. The total number of participants and supporters were estimated to be more than 700. Apart from that, exhibitions and health quizzes were also held to enhance the knowledge of the public.

• The Doktor Muda Programme

The Doktor Muda Programme is seen by participating primary schools a programme that encourage good health habits among their students. The objective of this programme was to allow primary school students, especially in Year 4, 5, and 6 to become healthy lifestyle leaders and role models among their peers, fellow students, and their parents.

In 2005, 585 students carried out this programme, with the participation of 14,714 year 4, 5, and 6 students. The increase in the number of schools that participated in this programme is shown in Table 1.

TABLE 1
The Number of School that Participated in the Doctor Muda Programme by State 2000 to 2005

State	2000	2001	2002	2003	2004	2005
Pahang	68	100	116	118	120	161
Kelantan	69	82	97	127	120	147
Kedah	-	-	4	15	30	72
Terengganu	4	20	23	52	52	71
Melaka	7	12	17	22	22	30
Perak	-	-	-	-	-	26
Selangor	3	3	3	3	3	23
Negeri Sembilan	-	-	-	-	-	17
Sarawak	-	-	-	-	-	11
Pulau Pinang	-	-	-	-	-	12
Perlis	-	-	-	-	-	10
Sabah	-	-	-	-	-	3
Johor	-	-	-	-	-	2
Total	**151**	**217**	**260**	**337**	**347**	**585**

Source : Health Education Division, MOH

There was a 68.6% increase in the number of schools participating in this programme in 2005 compared to 2004 following the First Doktor Muda Convention held in Universiti Sains Malaysia, Kubang Kerian, Kelantan on 16 August 2004. This programme has proven to produce students who are physically and mentally active and healthy, as well as capable of taking responsibility not only for their own health but also for their peers and communities.

- **Community Health Promotion Centres**

The Community Health Promotion Centres serves as the foundation to support and strengthen the implementation of the Healthy Lifestyle Campaign. The pilot centre, the Seberang Jaya Community Health Clinic in Penang, was started in May 2004. The four elements of healthy lifestyle namely healthy eating, exercise and physical fitness, no smoking and healthy minds were emphasised upon.

The Community Health Promotion Centres are health facilities that provide comprehensive, intensive, and structured health promotion services to facilitate skill development as well as promoting behaviour change towards healthy lifestyle in the communities. It is also hoped that these Centres can inculcate the culture of healthy living within the communities and encourage community participation in the use of health services provided as well as building a chain of individuals within the community to act as health agents, thus supporting health promotion efforts.

The centres provide health screening services that includes measurements of Body Mass Index, body fat composition, blood pressure tests, blood glucose level tests, cholesterol level tests, waist-hip ratio and self breast examination. Meanwhile, the Healthy Lifestyle Skill Package offered are healthy eating, exercise and physical fitness, stop smoking and healthy minds. This Package involves talks, discussions, advisory services, individual counselling and demonstrations.

Based on the Seberang Jaya Community Health Promotion Centre activities, which operated on a regular basis from August 2004 to 31 December 2004, as many as 2,900 clients sought services from this centre. These clients were either referred by the Out Patient Department or came directly on their own. The number of clients who came to the Community Health Promotion Centre was as in Table 2, 3, and 4.

TABLE 2
Attendance of Clients by Year

Year	New Registration		Repeat	Total
	Direct	Referred		
2004 (August – December)	20 (10.0%)	149 (73.0%)	35 (17.0%)	204
2005 (January – December)	1,244 (45.5%)	603 (22.0%)	889 (32.5%)	2,736
Total	**1,264**	**752**	**924**	**2,940**

Source : Health Education Division, MOH

TABLE 3
Average Clients' Attendance for Every Education Class Sessions

Education Class	Attendance
Diabetes Classes (2 sessions)	25
Exercises and Fitness	22
Body Weight Control	20

Source : Health Education Division, MOH

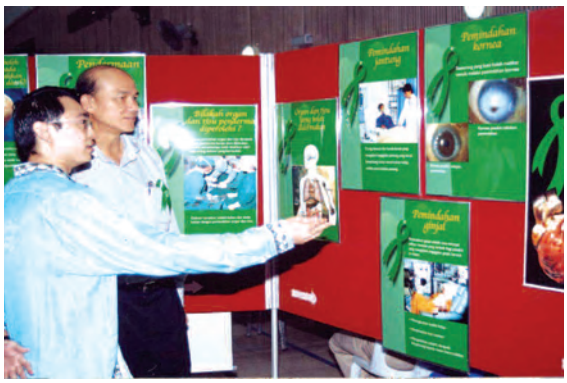
TABLE 4
Average Clients' Attendance for Each Session Exercise and Physical Activities

Type of Physical Activities	Attendance
Aerobic Exercises	100
Jump Rope	15
Attendance (Each Session)	15
Daily Gym Usage	30
Jogging and Walking Clinic	25

Source : Health Education Division, MOH

• Organ Donation Awareness Promotion Programme

To enhance the Organ Donation Awareness Promotion Programme Campaign, several activities were carried out, including the Organ Donation Awareness Campaign in Jerantut, Pahang, officiated by Tan Sri Dato' Lee Lam Thye on 9 July 2005. A similar Awareness Campaign was held in Negeri Sembilan on 3 October 2005 at the Rakan Muda Complex, Kuala Pilah, officiated by the Negeri Sembilan's Health Exco. Other activities were also held, such as the Launching Ceremony of the Organ Donation Registration Book held on 20 December 2005 in Selayang Hospital, the Organ Donation Awareness Seminar on 27 September 2005 at the Dewan Majlis Daerah Jempol, the Sub-committee for Public Education on Organ Donation Meeting, the printing of the Organ Donation Card, as well as some other activities.



Organ Donation Campaign was launched by
Tan Sri Dato' Lee Lam Thye at Jerantut, Pahang

• **Healthy Without AIDS for Teens Programme, (PROSTAR)**

Throughout 2005, several PROSTAR related activities were carried out at state and national levels. Among these activities were the Teens and Reproductive Health Workshop held in collaboration with LPPKN in November 2005; the National Level PROSTAR Coordinator's Meeting; the updating of the PROSTAR website, PROSTARnet (new edition); MOC between the Ministry of Health and UNICEF; the PROSTAR evaluation survey and the 8th National Level Convention, held at KWSP Asset, in Bangi, Selangor on 11 to 14 August 2005. This Convention was officiated by the Deputy Health Minister, Yang Berhormat Dato' Dr. Abdul Latiff Ahmad.

To ensure success of the activities, monitoring using the AIDSED format/returns every 3 months and through the computerised PROSTAR information (PROSTARNet) with weekly updates were carried out. Apart from that, behavioural impact studies are carried out every 5 years.

Dato' Dr. Abdul Latiff bin Ahmad launched the PROSTAR 8th National Level Convention at ESSET KWSP

• **Patient Education Programme**

The objective of the programme is to increase and maintain the health status of patients through effective disease management. The Patients' Education Resource Centres began operation in 1985 in hospitals as one-stop centres to support the patient education classes. These centres are responsible for carrying out health education activities focusing on management of patient care, diseases, family and community. These centres are based on three patient education protocols - high blood pressure, diabetes, and asthma. In 1995 two new protocols were introduced, namely those pertaining to renal and heart diseases.

Throughout 2005, several patient education class activities were held, which included all state hospitals and district hospitals with Health Education Officers. According to the reports received, there were several major patient education classes involving a fairly large number of patients. Among these major health education classes were diabetic education classes with 4,493 patients, cardiovascular education classes with 2,982 patients, TB education classes with 1,844 patients, hypertension education classes with 1,471 patients, renal education classes with 1,003 patients, asthma education classes with 940 patients, high blood pressure education classes with 243 patients and insulin education classes with 186 patients.

• **TAK NAK Media Campaign**

The TAK NAK Media Campaign was continued in 2005, based on the campaign officiated by Yang Amat Berhormat the Prime Minister of Malaysia on 9 February 2004 at the Putrajaya International Convention Centre. The objective of this campaign is to encourage smokers to stop smoking and to curb youths from starting the habit. A few campaign coordination activities were held this year for the 2006 campaign officiation. These included the Tak Nak Anti-Smoking Action Plan Preparation, the Tak Nak Study Report Writing Meeting and the Anti-Smoking Campaign in Sunway University College.

The Yang Amat Berhormat Perdana Menteri, Dato' Seri Abdullah Ahmad Badawi launched the national level Anti-Smoking Campaign.

• Health Camps

The Health Camp Programme was to promote the awareness of good health management among the communities, so as to enable the communities to practice healthy lifestyle in their everyday life to improve their personal and family health, towards the building of a prosperous country and ultimately achieve the vision of health for all.

The period for the implementation of the Health Camp Programme depended on the availability and suitability of resources. Among the activities carried out were health talks, health examinations, forums, quizzes, distribution of health education materials, video screening and exhibitions. The building of healthy lifestyle skills such as stress management, quit smoking, healthy eating and the right exercise methods were also included.

In 2005, a total of 540 Health Camp Programmes were held throughout the country, involving 159,993 participants. Kedah recorded the highest number of activities with 147 Health Camps involving 50,000 participants followed by Selangor with 310 camps and 68,782 participants, Perak with 39 camps and 13211 participants and Terengganu with 37 camps and 21,000 participants.

• Mass Media and ICT Programme

Every year the Division, with the cooperation of radio stations and government and private televisions, delivers information to the public through various means such as health trailers, documentaries, radio advertisements, tips, spontaneous announcements through television slides and crawlers and also interviews. In 2005, a total of 81 media programme slots were aired involving 18 slots for the Disease Control Programme, 19 slots for the Family Health Development Programme, 5 slots for the Dental Health Programme, 3 slots for Pharmacy Services, 8 slots for the Wilayah Health Department, 5 slots for Kuala Lumpur Hospital and several slots for other health programmes.

At state levels, the media of choice were state radio stations. Smart partnerships were demonstrated between State Broadcasting Departments and the respective State Health Departments through the provision of regular specific slots for interviews or discussions regarding health issues.

Meanwhile, the Infosihat Division Webpage was started in June 2003. Until 2005, a total of 1,317 webpages were developed comprising of 2,675 subjects including printed materials (posters, exhibition posters, leaflets, booklets, guidelines, and exhibition materials) and 924 articles on diseases. This website focuses on all aspects of the Healthy Lifestyle Campaign, disease information, healthy lifestyle practices, special projects, commemoration of specific health days and health tips. It also highlights current health issues, circulars, reference materials, and current news.

• Commemoration of Specific Health Days

These specific health days are celebrated at national and state levels as one of the efforts to promote the objectives of those days and to inform the public so as to practice good health care and to achieve a harmonious life. Among the specific health days celebrated at national level were:

- ***World TB Day 2005***

- ***World Health Day 2005***

- ***National Tobacco Free Week 2005***

- ***World Breastfeeding Week 2005***

- ***World Heart Day 2005***

- ***World Mental Health Day 2005***

- ***World Diabetes Day 2005***

- ***World AIDS Day 2005***

Production of Health Education Printed Materials

In 2005, 13 types of printed materials regarding HIV/AIDS were produced, 8 types of materials on family health development, 14 on mental health, 5 on Thalassemia, 3 on breastfeeding, 1 on diet programme, and two on the handicapped. Meanwhile, the states also produced printed materials based on current needs.

Health Education conducted by 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 and substance abuse as well as health campaigns.

The health education methods and approaches adopted included health talks, dialogues, group discussions, individual advice, demonstrations, exhibitions, video screenings, health education activities through radio, Health Education Mobile Unit (UBPK) spontaneous announcements, public forums, and gotong-royong.

The health education target groups in the country include clients of health clinics and the public. The clients include patients, ante-natal and post-natal mothers, adolescents, adults and parents, the elderly and the handicapped. The public includes students, factory workers, public sector employees, estate or farm residents, the aborigines, adolescents, parents or guardians, the elderly and food operators.

Summary

Throughout 2005, the Health Education Division of the Ministry of Health had conducted health promotion programmes involving the participation of various government agencies, private sectors, non-government organisations, local community leaders and individuals. These programmes also provide the necessary environment to support community involvement and participation to achieve a satisfactory level of health as well as to orientate the existing health resources and facilities. This will empower the people to pursue and acquire health to attain a holistic health - physical, mental and overall well-being. In conclusion, the Health Education Division had conducted its health promotion programmes in accordance with the Ottawa Charter.

4

MEDICAL CARE PROGRAMME

Annual Report
Ministry Of Health Malaysia
2005

INTRODUCTION

In general, the activities that are carried out under this division comprise of legislation and regulating aspects. These activities include formulation and review of laws relating to medical and healthcare, facilities, services, practices as well as healthcare professionals who are responsible for implementing, monitoring as well as enforcing the said legislations.

There are four entities under this division and each having its own specific roles and responsibilities. These entities are namely: Medical Legislation, Licensing and Registration, Medico-Legal and the Regulatory Bodies Councils and Boards. Medical Legislation reviews and formulates policies and standards to be translated into healthcare-related laws, Apart from this, other activities involving the globalization and liberalization aspects, which affect healthcare in this country, are being studied.

Where as, Registration and Licensing activities concentrate on regulating private hospitals and monitoring the other private healthcare facilities and services. Simultaneously, great efforts have been put into the preparation for the implementation of the Private Healthcare Facilities and Services Act 1998. Under this Act, the enforcement activities will be done in accordance to the provisions that have been set.

The main role of the Medico-Legal Unit is addressing issues related to the medical practice including negligence and litigation cases. The main focus is on cases which occur in government healthcare facilities. The Malaysian Medical Council, Malaysian Optic Council, Medical Assistant Board and Malaysian Nurses Board regulate professionals and para professionals in terms of the practice, ethics as well as healthcare providers.

PRIVATE MEDICAL PRACTICE CONTROL SECTION

Private Medical Practice Control Section (CKAPS) as part of the Medical Practice Division, was established in February 2003 and is responsible for monitoring, controlling and regulating the private healthcare facilities and services in this country. In addition to such section, similar establishments were formed in all states, known as the Private Medical Practice Control Unit (UKAPS).

Prior to 2003, this section was known as Licensing Unit. This unit was responsible for the licensing of private hospitals, private nursing homes and private maternity homes, based on the Private Hospitals Act 1971 and its Regulations.

ACTIVITIES AND ACHIEVEMENTS

In 2005, CKAPS carried out a nationwide assessment of private healthcare facilities and services in Malaysia. The assessment was made to monitor these facilities and services and to ensure that they abide by the rules and regulations stated in the Private Hospital Act 1971 and its Regulations.

As of December 2005 a total of 105 private maternity homes (PMH), 107 private hospitals (PH) and 10 private nursing homes (PNH) have been licensed by the Ministry of Health Malaysia (Table 1). An estimated of 6,000 private medical clinics and 1,000 private dental clinics have to be registered when the Private Healthcare Facilities and Services Act 1998 is enforced. This Act is due for enforcement when the Regulations are gazetted.

A survey carried out by UKAPS indicated that 95 haemodialysis centres belongs to non-government organizations (NGO) and another 115 haemodialysis centre belongs to the private operators. Visits to all these haemodialysis centres were made to gather information regarding the management and services provided by them. Advices on the necessity to conform to the required standards based on the Guidelines on the Treatment of Heamodialysis were given to these private and NGO haemodialysis centres. It was carried out to facilitate the future licensing process of these haemodialysis centres that will be required to be licensed under the said Act.

TABLE 1
Assessment of Private Healthcare Facilities and Services, 2005

States	Licensed Premises			Private Clinics		Haemodialysis Centres	
	PMH	PH	PNH	MED	DENTAL	NGO	PVT
Johor	19	8	4	696	156	18	16
Melaka	1	4	-	140	32	3	6
Negeri Sembilan	1	4	-	194	43	4	2
Selangor	24	22	1	1,496	-	18	22
F.T.K.L	19	23	2	888	-	9	19
Perak	8	8	-	620	49	12	12
Kedah	8	5	1	354	51	4	12
P. Pinang	7	15	2	424	96	14	12
Perlis	1	-	-	31	4	1	-
Kelantan	-	3	-	162	48	1	3
Terengganu	3	-	-	136	29	1	3
Pahang	6	4	-	79	17	3	3
Sarawak	2	7	-	268	51	3	4
Sabah	6	4	-	327	-	4	1
F.T Labuan	-	-	-	11	3	-	-
Total	105	107	10	5,826	579	95	115
	222			**6,405**		**210**	

Source : Private Medical Practice Control Section
PMH – Private Maternity Home
PH – Private Hospital
PNH – Private Nursing Home

A Private Healthcare Facilities and Services Licensing and Registration Evaluation Committee, which is chaired by the Deputy Director General of Health (Medical) and a Private Healthcare Facility Floor Plan Evaluation Subcommittee were established in July to oversee the process of the private hospital licenses. The functions of these committees are to evaluate and recommend the licensing of private hospitals applications to the Director General of Health.

MEDICAL LEGISLATION AND GLOBALISATION UNIT

The Medical Legislation Unit is responsible of the promulgation of new medically related Acts and amendments of existing Acts under the Medical Program. Globalisation Unit is the subunit which is responsible for coordinating activities of globalisation and liberalisation of health services as well as studying and recognising their impact on the country's economy. The Unit represents health services sector in meetings related to globalisation and liberalisation held in the country or internationally as negotiators. The amendment of related Acts is studied for the purpose of liberalisation of health services sectors.

ACTIVITIES AND ACHIEVEMENTS

Amendment to the Medical Act 1971

The first draft of the proposed amendment to the Medical Act 1971 has been forwarded by the Malaysian Medical Council to the Unit on 28th February 2005. The amendment was later completed on 5th August 2005 and the draft is being finalised.

Amendment to the Second Schedule of the Medical Act 1971

Following the decision of the Cabinet on 29th June 2005 to review the status of medical degrees from 333 foreign institutions recognised by the Malaysian Medical Council, the Unit has coordinated meetings and activities and later finalised the amendments to the Second Schedule of the Medical Act 1971.

Pathology Laboratory Bill

Following meetings of the Working Committee on Pathology Laboratory Bill that were held in 2004, the final draft of the Pathology Laboratory Bill was then completed in early 2005 and sent to the Attorney General's Chambers.

Amendment of the Human Tissue Act 1974

The amendment to the Human Tissue Act 1974 was completed and the Bahasa Malaysia translation will be done by the National Institute of Translation in early 2006.

Human Reproductive Cloning Bill

The Human Reproductive Cloning Bill was discussed by the Working Committee on Human Reproductive Cloning Bill. The first draft was completed and will be discussed further with the National Standing Committee on Human Reproductive Cloning.

Cosmetic Practice Bill

The Committee to discuss the Cosmetic Practice Bill has been set up in 2005. Research on cosmetic practices that are going to be regulated has been on-going throughout the year 2005. The first draft of the Cosmetic Practice Bill has been completed at the end of the year. The concept of cosmetic practice, the promulgation of Cosmetic Practice Bill and the establishment of a Cosmetic Practice Unit in Ministry of Health has been finalised. The preparation on the final draft of the Cosmetic Practice Bill and the related Standards is in progress and scheduled for completion in 2006.

Assisted Reproductive Technique Bill

This Act is still at the early stage of discussion. The Unit is currently concentrating on several issues pertaining to prohibitive procedures of the Assisted Reproductive Techniques.

Allied Health Professionals, Facilities and Services Bill

The Bill is still at the discussion stage with the committee members.

Free Trade Agreement (FTA)

Representative from the Medical Legislation and Globalisation Unit has become the negotiator on behalf of the Malaysian Health Services Sectors in FTA in 2005.

i. Malaysia - Japan Economic Partnership Agreement (JMEPA)

Discussions have been going on for the past two years. The Medical Practice Division has been the coordinator of a meeting to prepare the statement and offers from the Health Services Sectors stakeholders to be included in the 'Memorandum from the Minister of International Trade and Industry : Japan-Malaysia Economic Partnership Agreement' in November 2005.The Agreement was then signed by both countries at the end of 2005.

ii. Malaysia – New Zealand Free Trade Agreement

Discussions have started in May 2005 and the representative from the Medical Legislation and Globalisation Unit has been involved from the third Trade National Committee (TNC) in September 2005 and until the first quarter of 2006, the discussion is still on-going.

Other FTAs that will involve the representative from the Medical Legislation and Globalisation Unit in the year 2006 are as below:
a. Malaysia – Australia (March 2006)
b. Malaysia – Pakistan (Feb 2006)
c. Malaysia – United States of America (June 2006)
d. Malaysia – Chile (feasibility study in early 2006)

World Trade Organisation (WTO)

The Medical Legislation and Globalisation Unit on behalf of the Ministry of Health Malaysia has been responsible for conducting revision of the healthcare services offered to WTO countries in the year 2004. Next revision is scheduled in 2006.

Coordinating Committee on Services (CCS)

Representative from the Medical Legislation and Globalisation Unit is the negotiator for health services sector in CCS ASEAN. In 2005, the Group has discussed on the Mutual Recognition Agreement (MRA) on Nursing Services which will be concluded in early 2006. The MRA for Medical Practitioners has commenced in 2005 and will continue in 2006. Review of commitments under ASEAN Framework Agreement on Services will also be conducted in 2006.

MEDICO-LEGAL UNIT

The medico-legal unit functions as a liaison between the federal counsel, doctors and paramedic involved in cases suspected of clinical negligence and requiring defence on behalf of the government. This unit is under the Medical Programme and coordinates civil cases of clinical negligence. In addition, this unit also has the authority to advice institutions under the Ministry of Health in the event of it face Medico-Legal litigations.

ACTIVITIES

Clinical Negligence Related Complaints

Complaints received are classified as clinical and non-clinical complaints. Clinical complaints are those with clinical negligence implications which will be addressed by the medico-legal unit. Non-clinical complaints, however, will be referred to the Quality Unit, Medical Development Division.

Board of Inquiries

For all cases that may have medico-legal implications, the Director of Medical and Health Services at the State is required to establish a board of inquiry which will be responsible for investigating and reporting such cases. Litigation cases are to be discussed with the Federal Counsel. For 2005, the total number of litigation cases were 42, and of which 9 have been settled. The compensation involved for these cases was RM 328,773.00.

AWARENESS LECTURES

Medico-legal unit initiates and gives awareness lectures to doctors and paramedics on matters pertaining to clinical negligence. Lectures were given to doctors and paramedics at various places, which include the National Institute for Judicial and Legal Officers (ILKAP), hospitals and at local universities for the Public Health post-graduate courses. There were a total of 30 such lectures and coursese conducted throughout the year.

NURSING BOARD MALAYSIA

The Nursing Board of Malaysia (NBM) under the Ministry Of Health Malaysia has been in operation for 56 years. The Board consists of 21 members while the Midwifery Board has 16 members. The Board members are appointed by the Minister of Health Malaysia. The Board is overall responsible for the governance of the Nurses' Board Malaysia including strategic direction, establishing goals for management and monitoring the achievement of those goals to optimise performance.

Nursing Board Malaysia and Midwifery Board Malaysia Registration

Graduates from the Nursing and Midwifery programmes, Assistant Nurses and Community Health Nurses intending to practice nursing in Malaysia are required to register with the Nursing Board Malaysia and Midwifery Board Malaysia in accordance with the Nurses Act 1950 and Midwives Act 1966. Only Malaysian and spouse of Malaysians can register with the Board. The Nursing Board Malaysia and Midwifery Board Malaysia is the regulatory authority to register nurses for life and to issue annual practising certificate if deems fit.

Categories of Nurses Registered with Nursing Board of Malaysia (NBM)

There are five category of nurses registered under Section 4(2) of the Nurses Act 1950.

a) Registered Nurses
b) Assistant Nurses
c) Mental Health Nurse
d) Public Health Nurse
e) Community Nurse.

Annual Practicing Certificate (APC)

Every registered nurse who is fully registered must have a valid APC to practice nursing in Malaysia.

Temporary Practicing Certificate (TPC)

TPC only apply for registered foreign nurses who work in Malaysia.

Registration of Midwives with Midwifery Board Malaysia

Currently the Midwifery Board Malaysia only admits Midwives Division I & III.

For registration in Part I of the register the Registered Nurse must have undergone a 12 months midwifery training including domiciliary training successfully.

For registration in Part III of the register Community Nurse must have undergone not less than 18 months of training including domiciliary training successfully.

ACHIEVEMENTS

i. In 2005 alone, 50,663 nurses have been issued with Annual Practicing Certificate (APC) as compared to 42,298 in 2004 thereby an increase of 8,365 as against a total of 36,739 nurses in MOH and 13,924 in the private sector.

ii. 483 foreign nurses in the country received their Temporary Practicing Certificate (TPC)

iii. 5,281 Assistant Nurses were issued APC as compared to 4,501 in 2004

iv. 7,737 Community Nurses were registered in 2005 as compared to 4,701 in 2004

v. 1,033 nurses requested for retention of names in the registry as compared to 1,567 in 2004. The attrition rate for nurses increased to 420 in year 2005 as compared to 400 in 2004.

vi. Approved 4 degree and 7 diploma (total 11) programmes in the year 2005 compared to only 5 in the previous year.

vii. Examination results announced within 1 month of the Education and Examination Committee meeting, compared to 6 months before 2005.

viii. Expedite registration within 3 months of the announcement of the examination result.

ix. 100% investigation of complaints with action.

x. Development of Nursing Professionalism through management of Courses, Seminar and Conference from 2 in the year 2004 to 5 in Year 2005.

FUTURE PLANNING

To establish the “online Continuous Professional Development” (eCPD) system with the objective of gathering “credit points” for every nurses for the issuance of the Annual Practicing Certificate. It is proposed to be implemented as a pilot project, and this eCPD to be incorporated as part of the requirement of the legislation under the Nursing Board.

MEDICAL ASSISTANTS BOARD (REGISTRATION)

The Medical Assistant Board ensures all Medical Assistants nationwide are registered and have a valid annual registration certificate required by law, of which they can provide high standard of quality services.

STATISTICS

Registration of Medical Assistants

As of 31st December 2005, 8,805 Medical Assistants were registered with the Medical Assistant Board including 518 (99.2%) new registrations in the Ministry of Health, and 4 (0.8%) in the private sector.

Renewal of Registration

6,807 applications were received and processed in 2005.

Revenue

A total of RM 44,210 was collected from various fees.

ACTIVITIES

Board Meeting

Board Meetings are held at least twice a year. Both the 42nd and 43rd Board Meeting took place on 03rd Mac and 20th October 2005, respectively.

In-service Training

Orientation and leadership courses for newly promoted U32/U36 Medical Assistants were held as follows:

TABLE 2
Orientation and Leadership Courses for Newly Promoted U32 / U36 Medical Assistants Year 2005

No.	Date	Place
1/2005	21 - 25.06.2005	Insitute of Health Management, Kuala Lumpur
2/2005	13 - 16.09.2005	Allson Klana Resort, Nilai, Negeri Sembilan
3/2005	28 - 1.12.2005	Hotel Dynasty Miri Sarawak

Source : Medical Practice Division, MOH

Refresher courses for Medical Assistant with services above 15 years were also held as follows:

TABLE 3
Refresher Course for Medical Assistant for Year 2005

No.	Date	Place
1/2005	23 - 25.5.2005	Hotel Paramount, Sibu, Sarawak
2/2005	18 - 20.6.2005	Beringgis Beach Resort, Papar, Sabah
3/2005	28 - 30.8.2005	Insitute of Health Management, Kuala Lumpur

Source : Medical Practice Division, MOH

FUTURE PLANNING

1. In-service Training
   a) Refresher Courses for Medical Assistants U29 (service more than 15 years)
   b) Leadership Courses for newly appointed U32

2. Meeting
   a) 44th and 45th Medical Assistants Board Meeting
   b) Technical Meeting for National Medical Assistants Supervisor 2006

3. Standard Operating Procedure (SOP) Book for Medical Assistants
   More disciplines will be ready next year

MALAYSIAN OPTICAL COUNCIL

Malaysian Optical Council (MOC), which was established in 1991 is in charge of the registration of opticians and optometrists as well as responsible of regulating the practice of optometry in this country, as indicated under the Optical Act 1991 and Optical Regulations 1994.

By the end of 2005, 529 optometrists and 2,131 opticians have been registered with MOC to make the total number to 2,660 registered optometry practitioners, as shown in Table 4.

TABLE 4
Annual Practice Certification of Opticians and Optometrist, 2005

OPTICIANS		**TOTAL**
SECTION 18 (1)	439	2,131
SECTION 18 (2)(a)	1,684	
SECTION 18 (2)(b)	-	
SECTION 18 (3)	8	
OPTOMETRISTS		
SECTION 19 (1)	529	529
SECTION 19 (2)	-	
GRAND TOTAL		**2,660**

Source : Medical Practice Division, MOH

MOC has issued 2,077 Annual Practicing Certificates (APC) in 2005.

MOC has also issued 531 contact lens permits that enable opticians to prescribe and dispense contact lenses.

Activities that have been planned by the Malaysian Optical Council (MOC) include:

a) The introduction of the Photo Name Certificate to all registered optometry practitioners (optometrist and optician) in private sector.

b) The formation and establishment of the National Audit Optometry to carry out Audit Optometry to the optometrists in the public hospitals (as a pilot project) and to the private optometry practitioners in the future

c) The establishment of Technical Accreditation Committee in Optometry and Opticianary Programme as instructed by the Minister of Health to review the curriculum of optometry and opticianary programme that has been recognized by the Council under the current law.

HEALTH TOURISM SECTION

The health tourism portfolio had been initiated in 1999 and has since then prospers to become among the new industries that good potential to generate foreign income for the nation. In conjunction with the new development of health tourism industry, the proposal to form a Health Tourism Section was officially was officially approved in 2003 by the Public Services Department and was placed under the Medical Practice Division.

ACTIVITIES

The Health Tourism Section acts as the Secretariat to the National Committee for the Promotion of Health Tourism, chaired by the Director General of Health. This section is responsible for coordinating the efforts of various Government and private agencies toward the formulation and implementation of programme to develop the Health Tourism industry.

One of our responsibilities is collecting the data on the revenue generated by influx of foreign patients seeking treatment in Malaysia. This section also provides assistance to government or private agencies which are to participate in Health Tourism; which includes the preparation of tax incentives proposals, reviews of immigration requirements relating to entrance and exit of health tourists and other aspects pertinent to the implementation and the development of Health Tourism.

More recently, the section has extended its promotion of health tourism by developing health tourism programmes to include Government hospitals by setting up 'Centres of Excellence' for eye and endocrine surgery namely in Selayang Hospital and Putrajaya Hospital respectively. Hospital Langkawi has also been developed and upgraded to become a Health Screening Hub for foreign tourist in the northern part of Malaysia.

In the near future, this section also aim at expanding the scope of Health Tourism by promoting a 'wellness sector' with the participation of the spa and beauty operators and the traditional or complimentary medicine industry.

ACHIEVEMENTS

TABLE 5
Data on Foreign Patient and Arrival and Revenue Generated

Year	2003	2004	2005
No. of Health Tourist	102,946	174,189	232,161
Revenue (RM)	58,900,000	104,980,000	150,923,112

Source : Association of Private Hospitals Malaysia (APHM)

Table 5 reveals the number of Health Tourists seeking treatment in Malaysia in the private hospitals participating in Health Tourism activities. These hospitals voluntarily provide these data that showed remarkable increment by 69.2% in 2004 and 33.3% in 2005. The revenue generated also shows an increasing trend (78.2% 2004 and 43.8% in 2005 respectively). Furthermore, the figures clearly stipulated that the health tourism industry has surpassed the targeted income of RM 2.2 billion in 2010 as projected by the Arthur Andersen in its study on Health Tourism in 2002 as a potential source of income for Malaysia.

Data collection will be made compulsory with the implementation the Private Healthcare Facilities and Services Act 1998 which will enable the Health Tourism Section to gather accurate data reflecting the true scenario of Health Tourism industry in Malaysia (Table 6).

TABLE 6
Number of Tourism Friendly Private Hospitals

No. Tourism Friendly Private Hospitals	No. of Hospitals Submitting Data	
	Submit	Do Not Submit
35	33	2

Source : Health Tourism Section, MOH

The Health Tourism sector has already shown fine progress to become one of the nation's leading industries in generating foreign income. This is achieved by collaboration and coordination with leading players in the health tourism industry and can further be realized and enhanced with the participation of the spa and beauty operators and the traditional/complimentary medicine practitioners in the near future to attract more foreign patients to this country by providing a wider range of comprehensive healthcare facilities and services.

Since September 2005, the marketing and promotional aspects of health tourism under the Ministry of Health have been handed over to the Corporate and Health Industry Division, while the governance aspect still remains with the Medical Practice Division.

MALAYSIAN MEDICAL COUNCIL

The Malaysian Medical Council (MMC) is responsible for the registration of Medical Practitioners as well as regulating the practice of medicine in this country to ensure that patients are entitled to good standards of practice and care from their doctors.

2005 had been a very active year for the Council. Vital decisions were made including the deregistration of the Crimea State Medical University, the approval of the Standing Orders on the Conduct of Inquiries, amendments to the Code of Professional Conduct, the publication of three Bulletins and the conduct of the Special Medical Qualifying Examination for candidates from unrecognised institutions and the approval of several Ethical Guidelines for Practitioners.

Registration

The number of eligible graduates applying for Provisional Registration for housemanship in 2005 has also increased. Once registered, they have to undergo a period of internship for a year before being granted full registration.

The Council approves full registration to medical practitioners under two different circumstances, namely section 14 and section 14(3). Under section 14(3), practitioners are registered to practice medicine subject to restrictions and conditions as may be stipulated by the Minister, after consulting the Evaluation Committee appointed by the Council. For those registered under section 14, no such restrictions and conditions are imposed.

The number of registration approved by the Council for the years 2000 through 2005 were as follows:

TABLE 7
Types of Registration for 2000-2005

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

Source : Malaysian Medical Council

Pursuant to Section 20 of Medical Act, fully registered medical practitioners who wish to practice medicine in a particular year are required to apply for Annual Practicing Certificate. It is noted that there has been a steady increase in the number of Annual Practising Certificates issued. The number of APC issued to the medical practitioners as of 31 December of the particular year is as shown in Table 9.

TABLE 8
Categories of Full Registration for 2000 - 2005

Full Registration	2000	2001	2002	2003	2004	2005
A. Registered According to Section 14 :						
a. Malaysian - Completing Housemanship Locally	819	996	1,002	568	858	1,060
b. Malaysian - Completing Housemanship Overseas	74	64	86	85	110	77
Total	**893**	**1,060**	**1,088**	**653**	**968**	**1,137**
B. Registered According to Section 14(3) :						
a. Foreighners - Completing Housemanship Locally	10	13	9	15	16	-
b. Foreighners - Completing Housemanship Overseas	123	150	67	113	251	296
Total	**133**	**163**	**76**	**128**	**267**	**296**
Grand Total Certificates Issued	**1,026**	**1,223**	**1,164**	**781**	**1,235**	**1,433**

Source : Malaysian Medical Council

TABLE 9
The number of Annual Practicing Certificates Issued according to State and Sector for 2001 to 2005

According to States	2000		2001		2002		2003		2004		2005	
	Pb	Pr	Pb	Pr	Pb	Pr	Pb	Pr	Pb	Pr	Pb	Pr
Federal 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
Johor	352	777	367	807	407	846	456	862	461	874	477	891
Kedah	255	382	282	398	326	411	316	410	338	447	349	457
Kelantan	531	170	582	172	623	176	574	186	584	186	595	194
Melaka	173	252	186	268	185	283	173	293	239	333	247	344
N. Sembilan	194	265	219	271	227	280	259	290	290	320	306	334
Pahang	201	235	243	252	272	274	286	289	305	311	316	319
Pulau Pinang	282	728	294	773	311	796	320	781	346	841	357	853
Perak	411	711	427	741	418	777	507	764	514	892	527	919
Perlis	49	33	44	31	56	32	50	37	78	36	83	44
Selangor	677	1,606	651	1,685	615	1,830	685	1,891	721	2,044	735	2,097
Terengganu	141	123	156	127	174	135	210	140	201	144	219	153
Sabah	202	277	239	292	284	309	200	288	268	329	279	337
Sarawak	205	276	220	286	262	311	308	343	327	362	332	377
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**
Grand Total	**12,428**		**13,007**		**13,869**		**14,424**		**15,386**		**15,797**	

Key : Pb = Public; Pr = Private; Federal Territory = Kuala Lumpur, Putrajaya, Langkawi and Labuan
Source : Malaysian Medical Council

Section 16 of the Medical Act 1971 provides for the issuance of Temporary Practising Certificates to practitioners registered outside Malaysia who intend to practise medicine in Malaysia either for the purpose of undergoing post-graduate courses at local institutions, training of local practitioners during workshops/conferences or for research/attachment. The certificate is renewable quarterly. The number of the Temporary Practising Certificate issued by the Council also increased from year to year. The number of practitioners given accorded such registration also has increased exactly ten-fold over a period of ten years from 52 in 2000 to 520 in 2005.

Medical Qualifying Examination

As indicated in the Medical Act 1971, only individuals with recognized basic medical degrees listed in the Second Schedule are eligible for registration to practise medicine in Malaysia while graduates from unrecognised colleges have to pass the Medical Qualifying Examination (which is held in three local universities; Universiti Kebangsaan Malaysia, University of Malaya and Universiti Sains Malaysia) or other examining bodies in March and October of every year before their registrations are accepted.

Apart from the Medical Qualifying Examination, the Cabinet has directed the Ministry of Health to coordinate an intensive 6-month training programme and a special one-off medical qualifying examination which involves the Malaysian Medical Council and the three other examining bodies to help medical graduates from unrecognised institutions. The outcomes of the special one-off examination are shown in Table 10.

TABLE 10
Outcomes of the Special One-Off Examination

Description	Outcome
a. No. of Candidates Applied for the Training	76
b. No. of Candidates Registered for the Training	71
c. Actual no. of Candidates Sat for the Examination	69
d. Number of Candidates Passed	14
e. Number of Failures	55
f. Percentage Passed	20.29

Source : Malaysian Medical Council

Recognition of Medical Training Institutions:

As of December 2005, several local undergraduate medical schools were approved and accredited by the Council (Table 11).

TABLE 11
Approved and Accredited Local Medical School as of December 2005

Accredited Institutions	Approved Institutions
Private	**Private (year established)**
1. University of 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	
5. Universiti Malaysia Sarawak	
6. Universiti Islam Antarabangsa	
Private	**Private (year established)**
7. International Medical University	4. Asian Institute of Medicine, Science and Technology (2003)
8. Penang Medical College	5. Allianze College of Medical Sciences (2003)
9. Melaka-Manipal Medical College	6. University College Sedaya International (2003)
10. Perak Medical College	7. Monash University Sunway Campus (2004)
	8. Cyberjaya University College of Medical Science (2005)

Source : Malaysian Medical Council

Disciplinary Matter

A disciplinary inquiry involves an 2 step procedures. The first is an investigation by a Preliminary Investigation Committee (PIC) on a complaint or information against a practitioner forwarded by the President of the Council.

The second step is an inquiry by the Council on matters forwarded by the PIC. The outcome of the Council inquiry for the year 2003 – 2005 were shown in Table 12.

TABLE 12
Outcome of the Council Inquiry for 2003 - 2005

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

Source : Malaysian Medical Council

INTRODUCTION

The Core functions of The Medical Development Division are :

- Policy, Planning and Development of Medical Services
- Professional Development
- Standard Setting and Quality Assurance in Medical Services
- Health Technology Assessment

It aims to provide comprehensive, equitable, accessible, effective and client focused service, utilizing appropriate technology to compliment the Public Health care system, thus enhancing the quality of health care to the population.

The functions are carried out by 4 sub - divisions;

i. Medical and Specialty Development
ii. Medical and Allied Health Professional Development
iii. Health Quality Care
iv. Health Technology Assessment

MEDICAL SERVICES MANAGEMENT

The management of medical services focuses on overall hospital management aspects as well as inter-agency collaboration. Hospital management encompasses management and monitoring of hospital facilities, organization and service systems, treatment facilities and medical information.

There were 127 Ministry of Health hospitals and medical institutions operational in the year 2005. 46 of these hospitals offered specialist services in various disciplines (Table 1). New hospitals that were operational in 2005 were Temerloh Hospital which replaced Mentakab Hospital, Jasin Hospital and Jempol Hospital.

The total number of beds increased from 28,947 in 2004 to 29,379 in 2005 for hospitals but decreased from 5,448 in 2004 to 4,740 in 2005 for medical institutions. The decrease was due to the decentralization of management of some chronic mental patients to the primary health care system. The average rate of beds occupied increased from 64.90 in 2004 to 66.93 in 2005.

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.

TABLE 1
MOH Hospitals and Medical Institutions 2005

State	Medical Institution	Hospitals with Specialists	Hospitals without Specialists	Total
Perlis	-	1	-	1
Kedah	-	4	5	9
Penang	-	2	4	6
Perak	1	5	9	15
Selangor	0	5	3	8
Federal Territory	1	2	0	3
FT Labuan	-	1	0	1
Negeri Sembilan	-	2	3	5
Melaka	-	1	2	3
Johor	1	5	5	11
Pahang	-	3	7	10
Terengganu	-	2	4	6
Kelantan	-	2	7	9
Sabah	1	6	12	19
Sarawak	2	5	14	21
Total	**6**	**46**	**75**	**127**

Source: Information and Documentation System Unit, MOH

TABLE 2
MOH Hospital Inpatient Bed and Bed Occupancy Rate, 2005

Location of Hospitals and Institutions	Bed Complement	Bed Occupancy Rate	Total Number of Admission
Peninsular Malaysia	23, 032	67.40	1, 506, 240
Sabah	3, 192	57.14	176, 715
Sarawak	3, 155	51.98	159, 733
Special Medical Institution	4, 740	81.18	9, 713
Malaysia (Hosp. and Institutions)	**34, 119**	**66.93**	**1, 852, 401**

Source : Information and Documentation System Unit, MOH

Medical Treatment Service

The majority of the MOH's services are provided free of charge. Some class of patients are charged fees, for example patients who have elected to be treated as private patients and compensable patients (i.e. patients for whom a third party is covering the costs, such as patients covered by workers' compensation or third party motor vehicle insurance). Where fees are charged, the prices are based on the schedule of fees determined under the Fee Act to cover patients for whom fees apply.

Intersectoral Collaboration and Partnership

More activities of hospital volunteer programs were carried out in the MOH hospitals in 2005 by individuals or NGOs. The MOH continued providing grants to NGO's that had proved their activities to be effective in certain rehabilitative programs such as stroke and palliative care. Some NGOs also assisted the MOH to provide services such as haemodialysis for patients with renal failure.

Outsourcing of Medical Services

Outsorcing of services was continued in 2005 in order to further increase access to specialized care to while cutting down the waiting time. Services that were outsourced were as in Table 3.

MEDICAL AND SPECIALIST SERVICES

TABLE 3
Types of Services and Hospitals Involved with the Outsourcing of Services in 2005

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

Source: Medical Development Division, MOH

These services constitute emergency services, medical services, surgical services, pediatric services, obstetric & gynaecology services, diagnostic imaging services, pathology services and support services.

Emergency Care Services

Emergency Services

Emergency Services are one of the most important services in the country. The number of patients requiring emergency care in 2005 increased by 9.3% compared to 2004. The table below gives the breakdown of the number of cases seen at the Emergency Department for Peninsular Malaysia, Sabah and Sarawak.

TABLE 4
Outpatient Attendances for Emergency Department at the MOH Hospitals for year 2005

Location	2004	2005
Peninsular Malaysia	3, 257, 105	3, 539, 991
Sabah	441, 605	510, 035
Sarawak	372, 392	400, 069
Total	**4, 071, 102**	**4, 450, 095**

Source: Information and Documentation System Unit, MOH

Pre Hospital Care and Disaster Management

Since the Tsunami disaster in December 2004, Disaster Management and Prehospital Care has been an important component in the development of the Emergency Care services. The drafting of the pre hospital care policy for the MOH hospitals was initiated and the draft policy for approval is scheduled planned in 2006.

Emergency Physicians

Currently there are 22 gazetted Emergency Physicians in the country.

MEDICAL SERVICES

Medical services are the medical based specialist services available at hospitals and these are General Medicine, Dermatology, Tuberculosis and Respiratory Diseases, Leprosy, Psychiatry, Nephrology, Neurology, Radiotherapy and Oncology and Cardiology.

Outpatient Care Services

In 2005, MOH reviewed policy on provision of general outpatient care in hospitals whereby outpatient services provided in the hospitals was put under the administration of hospital service.

Medical Specialist Clinics

On the whole, the total number of patients treated at specialist clinics of the various medical disciplines increased by 7.16 % in the year 2005 as compared to the year 2004. This constitutes 36.7 % of the total specialist clinic attendance for the year 2005. Attendances at all the clinics showed an increase with the exception of neurology. Table 5 shows the total number of patients who received outpatient treatment at the specialist clinics of the various medical disciplines in the year 2004 and 2005.

Medical Inpatient Services.

Table 6 shows the total number of patients from the various medical disciplines who were treated as inpatients. 22.6 % of the total government hospital admissions were from the medical based specialties. In general, these medical specialist admissions increased by 0.8 % from 470,212 in the year 2004 to 473,991 in 2005.

Inpatients increased for most of the medical specialties with the exception of psychiatry and nephrology which showed a decrease of 3.8% and 4.4 % respectively. An increase in inpatients was most pronounced for the discipline of neurology. The bed occupancy rate (BOR) for the various disciplines ranged from 30.9% (dermatology) to 99.4% (neurology).

TABLE 5
Number of Patients at the Specialist Clinics by Discipline, 2004-2005

Discipline	No. of Patients at Specialist Clinics		% +/- difference between 2004/2005
	2004	2005	
General Medicine	668,988	691,164	+ 3.3
Dermatology	213,933	235,351	+ 10.0
Tuberculosis and Respiratory Diseases	217,450	237,027	+ 9.0
Psychiatry	286,043	299,127	+ 4.6
Nephrology	95,243	124,329	+ 30.5
Neurology	31,582	28,333	- 10.3
Radiotherapy/ Oncology	41,020	44,860	+ 9.4
Cardiology	48,364	57,187	+ 18.2

Source: Information and Documentation System Unit, MOH

TABLE 6
Number of Admissions and the Bed Occupancy Rate (BOR) by Discipline, 2004-2005

Discipline	Total Admissions		% +/- difference between 2004/2005	Bed Occupancy Rate (BOR)	
	2004	2005		2004	2005
General Medicine	416,466	417,957	+ 0.4	74.77	77.97
Dermatology	807	880	+ 9.1	28.81	30.90
Tuberculosis and Respiratory Diseases	5,636	5,918	+ 5.0	31.21	38.03
Leprosy	95	132	+ 39.0	75.70	77.47
Psychiatry	22,821	21,965	- 3.8	76.68	82.63
Nephrology	9,111	8,711	- 4.4	70.73	73.72
Neurology	1,921	3,098	+61.3	77.98	99.45
Radiotherapy / Oncology	8,230	9,110	+10.7	75.78	80.89
Cardiology	5,125	6,222	+21.4	74.53	68.27

Source: Information and Documentation System Unit, MOH

PAEDIATRIC AND OBSTETRIC AND GYNAECOLOGY SERVICES

Among the services that was further strengthened in 2005 includes, neonatal services, the retrieval system, neurorehabilitation services and the special milk formula. These services were developed at selected MOH hospitals throughout Malaysia.

In 2005, the Pediatric service were further improved namely by ;

i. Standardized Paediatric Protocols for the management of common illnesses encountered in the paediatric wards.
ii. Courses on laboratory genetic services and ethical guidelines on genetic services.
iii. In the management of thalassemia, desferral, reagents, laboratory equipment and computers were purchased with an RM 12.6 million allocation.
iv. The National Thalassemia Registry was established.

As for O&G services, there were a significant number of achievements in 2005 namely :

i. Allocation was approved for the FIGO International Congress to be hosted for the first time in Malaysia in November 2006. Funds have also been obtained through the Economic Planning Unit for the sponsoring of 50 foreign doctors from various under-developed countries for a fellowship programme held concurrently with the congress.
ii. Establishment of a regional centre for gynae-oncology services for patients from the northern region.
iii. Uro-gynaecology service in Hospital Ipoh.
iv. Guidelines on a safety monitoring system for babies was implemented in all maternity and paediatric wards effective September 2005.
v. Charges for Assisted Reproductive Techniques in Reproductive Medicine approved by Treasury in November 2005.
vi. The membership for the Standing Committee for ART has been reviewed and several members from the universities and the private sector have been included.

Inpatient admissions for obstetric and gynaecology wards increased by 0.5%, that is to 566,748 in 2005 from 563,679 in 2004. Johor had the highest admissions to Gynaecology wards with 15,294 admissions, and obstetric wards with 59,950 admissions. Melaka state had the highest BOR of 76.16 %.

Table 7 shows the inpatient admission and BOR status of the MOH hospitals' pediatric wards by states for 2005. Perak had the highest total admissions of 26, 076 followed by Selangor with 26,057 admissions.

TABLE 7

Inpatient, Bed Occupancy Rate, Mean Length of Stay, by State for the year 2005 (Paediatrics).

State	Bed Complement	BOR	Total Number of Admission	Average Length of Stay
Perlis	48	93.81	4,571	3.58
Kedah	318	78.57	25,933	3.49
Pulau Pinang	238	66.30	18,028	3.17
Perak	380	50.43	26,076	2.65
Selangor	309	80.17	26,057	3.51
Federal Territory	436	83.79	31,141	4.17
Negeri Sembilan	180	66.35	13,940	3.13
Melaka	91	99.21	8,040	4.08
Johor	331	53.69	23,800	2.70
Pahang	171	73.34	15,416	2.96
Terengganu	153	58.04	10,807	2.99
Kelantan	264	62.43	14,355	4.20
Sabah	300	79.96	24,141	3.60
Sarawak	499	51.08	25,372	3.57
Total	**3,718**	**67.74**	**267,677**	**3.40**

Source : Information and Documentation System Unit, MOH

SURGICAL SERVICES

The Surgical services comprise of general surgery, orthopaedics, ophthalmology, urology, neurosurgery, plastic surgery and Otorhinolaringology (ORL). The various subspecialties under surgical services include gastrointestinal, vascular, hepatopancreaticobiliary, breast & endocrine, cardiothoracic, colorectal and pediatric surgery.

For hospitals without specialists the service is provided through networking and outreach programmes. In 2005, networking for vascular services was started for Kota Bahru and Alor Star Hospitals from Kuala Lumpur Hospital. The number of beds for surgical specialties increased from 7,556 (2004) to 7,624 (2005). The increase in beds is especially seen in cardiothoracic, neurosurgery and orthopedic disciplines.

Surgical Specialist Clinic Services

All the surgical dub specialty disciplines provide out patient and inpatient care. Table 8 shows the number of patients attending the Surgical Outpatient Specialist Clinics. Overall there has been an increase of 5.30% in the number of patients attending these clinics in 2005 as compared to year 2004. The increase in attendances was highest in neurosurgery (23.41%) followed by the plastic and orthopedic clinics.

TABLE 8
Surgical Specialist Clinic Services in MOH Hospitals

Disciplines	No. of Outpatients		% Increase or Decrease
	2004	2005	
General Surgery	438,231	445,172	1.58
Orthopedic	521,322	558,282	7.09
Opthalmology	478,659	508,518	6.24
Otorhinolaringology	270,744	289,296	6.85
Urology	76,771	78,398	2.12
Neurosurgery	17,645	21,776	23.41
Cardiothoracic	13,061	13,812	5.75
Plastic Surgery	24,736	27,512	11.22
Hand&Microsurgery	8,196	4,569	- 44.25
Hepatopancreaticobiliary	NA	NA	-
Total	**1,849,365**	**1,947,335**	**5.30**

Source : Information and Documentation System Unit, MOH

In-Patient Surgical Services

In-patient surgical services cater for patients admitted for operations and perioperative stay in the wards including those with surgical related cancers requiring chemotherapy. There has been an overall increase in the number of patients admitted to surgical wards in 2005 as compared with 2004. The surgical related disciplines contributed to 21.0% of the total admissions to MOH hospitals and orthopedic admissions accounted for 28.42% of the total surgical admissions. There was also a significant increase in the admissions for ophthalmology and urology disciplines.

The highest BOR (85.98%) was for the Neurosurgical discipline. This could be due to the fact that there are only 6 hospitals providing neurosurgical services. The cardiothoracic services are provided in Penang Hospital, Sultanah Aminah Hospital and Sarawak General Hospital. All patients needing cardiothoracic intervention are referred to these three centres apart from those services given by National Heart Institute which caters for patients in the central zone.

Number of Operations

Table 9 shows the number of operations carried out in the year 2005, both elective and emergency. The number of emergency operations for general surgery, orthopedics and neurosurgery supercede the number of elective operations and the majority of these are trauma related. Some of the elective operations become emergency operations when the patients' condition worsen and warrant an emergency operation. On the whole, emergency operations account for about 60% of the total operations. For urology services, there were 48 operations done by robotic arm for the year 2005. Most of the robotic surgeries were done for laparoscopic radical prostatectomies for cancer of the prostate. The other uses of the robotic arm are for nephrectomies, ureterolithotomies, pyeloplasties, pyelolithotomies, reconstruction operations and its uses are expanding as the surgeons develop more expertise in this area.

TABLE 9
Number of Elective and Emergency Operations

Discipline	Number of Elective Operations		Number of Emergency Operations	
	2004	2005	2004	2005
General Surgery	70,486	90,398	127,199	131,061
Orthopaedic	51,606	53,438	173,565	179,588
Opthalmology	29,829	31,820	6,887	8,435
Otorhinolaryngology	23,480	26,919	9,342	11,657
Urology	17,480	17,640	3,875	3,953
Neurosurgery	1,358	1,325	4,868	4,648
Cardiothoracic	1,393	1,212	324	438
Plastic Surgery	3,448	4,647	1,245	1,539
Hand & Microsurgery	NA	NA	NA	NA
Hepatobiliary	NA	NA	NA	NA
Total	**199,080**	**227,399**	**327,305**	**341,319**

Source : Information and Documentation System Unit, MOH

Anaesthesiology Services

Anaesthesiology services comprise anaesthetic services and intensive care services. The anaesthetic service provides peri-operative care for patients undergoing surgery whereas the intensive care services manage the critically ill patients, both surgical and medical as well as pediatric patients. Currently 44 hospitals have resident anaesthetic specialists. In East Malaysia, due to the shortage of anaesthetic specialists, 27 district hospitals still depend on medical assistants to provide anaesthetic services for uncomplicated cases. In 6 hospitals the anaesthetic service is provided by visiting anaesthetists. Table 10, reflects the work load of the anaesthesiology services in the year 2005.

TABLE 10
Workload of Anaesthetic Services In Ministry Of Health Hospitals 2005

Services	Elective Surgery	Emergency Surgery	Total
Number of anaesthetics administered in MOH Hospitals	122,860	143,800	266,660
Number of patients who received various pain control analgesia			22,459
- Patient controlled analgesia		7,005	
- Epidural Anaesthesia		6,510	
- Others		8,944	
Number of general ICU admissions			13,027

Source : 2005 Anaesthesia Census and Survey Findings, MOH

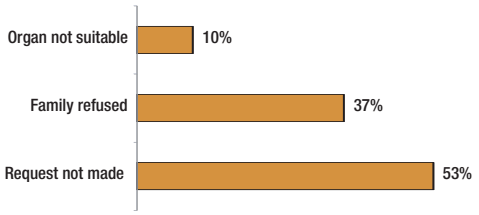
In order to facilitate the Networking of General ICUs that was started in 2004, an web-based software programme called 'bed watcher' was introduced and staff are undergoing training for this purpose in 6 hospitals in the Klang Valley. Another new development in anaesthesiology service is the introduction of new consent form for patients undergoing anaesthesia which has been in use from July 2005 in all the state hospitals. To address the issue of shortage of Intensive Care Beds in Malaysia special allocations have been given to several hospitals for upgrading of ICU facilities. These projects are ongoing in Seremban Hospital, Bukit Mertajam Hospital, Klang Hospital, Kuala Terengganu Hospital and Kuantan Hospital. All these projects are at various stages of completion in 2005.

TRANSPLANT SERVICES

In Malaysia, transplantation started as early as the 1970's with corneal transplantation, and the first transplantation, of a solid organ (kidney) was performed in Kuala Lumpur Hospital in 1975. Currently, the Ministry of Health has a National Transplant Procurement Unit (TPMU) and 16 Transplant Organ Procurement (TOP) Teams from selected hospitals nationwide as the coordinating body for every donation in the country.

There are 4 transplant resource centers located in Kuala Lumpur Hospital, Ipoh Hospital, Penang Hospital and Sultanah Aminah Hospital JB which serve to improve the level of awareness among the public by organizing campaigns mainly through road shows, radio and TV talk shows, lectures and by facilitating the public to register themselves as donor pledgers. Response from the public still needs to be improved, whereby in 2005 MOH had only 13 donors, which was not much differenct from 7 donors in 1998. Two unrelated living organ donations were approved by the Unrelated Transplant Approval Committee (UTAC) in 2005.

FIGURE 1
Reasons for Non-donors among Referred Cases
(1 Jan 2003 – 31 December 2005)



Request not made ; *Based on judgment/assessment by procurement staff considering factors like family unable to accept brain death diagnosis, severe psychological impact of family members, arguments among family members or other medical reasons like multi-organ failure and sepsis.*

Family refused ; *Common reasons include family not knowing the wishes of the deceased, unable to accept death, against religious beliefs and fear of mutilation of bodies .*

Source: National Transplant Resource Center, Kuala Lumpur Hospital

There were overall 7,494 new organ donor pledgers and most of them are from the Chinese ethnic group (2, 499) followed by Indians (2,101), Malays (1, 658) and others (224). Reasons for non-donors among referred cases include; religious beliefs, family arguments, inability to accept brain death diagnosis by family members, fear of mutilation of bodies and the family not knowing the deceased wishes, as well as medical reasons like multi organ failure and severe sepsis (Figure 1). This indicates that effort to increase level of awareness in Malaysian community be the main focus in future development of transplant services in Malaysia.

Apart from that, the year 2005 has witnessed achievements which include the nation's first lung transplantation performed in the National Heart Institute in collaboration with the Institute of Respiratory Medicine, Kuala Lumpur Hospital. The First Report of the National Transplant Registry was also launched this year which highlighted amongst others; kidney grafts and patient survival rates (Table 11) that are comparable with figures of the United States Renal Data System (USRDS).

TABLE 11
Survival Rate for Kidney Transplantation in Malaysia

Survival Rate	1-Year	5-Years
Graft	97%	88%
Patient	95%	89%

Source: Malaysia's 1st Report of National Transplant Registry 2004

DIAGNOSTIC SERVICES

Pathology

Pathology services provide tests for screening, diagnosis confirmation and monitoring of treatment of out patients and in patients. The service covers the discipline of Chemical Pathology, Medical Microbiology, Haematology, Histopathology and Cytology. The workload for 2005 showed an increase of 15.74% as compared to the year 2004 (Table 12) due to the increase in the number of requests for laboratory tests in all the hospitals as well as the addition of new tests especially in the state hospitals and Hospital Kuala Lumpur. NATA (National Association of Testing Authorities, Australia) accreditation was carried out on in phases in the 17 MOH hospital laboratories. Hospital Kuala Lumpur was one of the hospitals which received the ISO/1EC 17025 accreditation from NATA in 2005.

For 2005, three Pathologist attended subspeciality courses i.e Paediatric Haematology Mycobacteriology, Virology and Cytopathology. At the national level, a four day course in Cytogenetic and Molecular Genetics was held for the Pathologists, Scientific Officers and Medical Laboratory Technologists. A meeting to upgrade and consolidate the histopathology services was also held in December 2005. Among issues that were highlighted were the need for sufficient operational budget for all laboratories and increase in Dasar Baru allocation for new tests and services needed by the clinical services.

TABLE 12
Total Number of Workload / Investigation
for Pathology Services in MOH Hospitals, 2000 - 2005

Year	Pathology Investigation
2005	97,981,039
2004	84,654,480
2003	74,397,822
2002	63,923,857
2001	51,110,500
2000	48,553,605

Source: Medical Development Division, MOH

Blood Transfusion Service

Blood Transfusion service is provided in 118 MOH hospitals and in certain private medical centres. The main objective of this service is to ensure the continuous and safe supply of blood and blood products. The National Blood Centre was awarded NATA (National Association of Testing Authorities, Australia) accreditation in October 2005. As part of the efforts to upgrade and improve the quality and safety of the blood transfusion service, blood screening centres were centralised gradually and the establishment of Regional Blood Centres in the near future will further enhance the networking and consolidation of these centres throughout the country.

Among the courses held in 2005 was the 2nd National Transfusion Medicine Conference and Platelet Antibody Workshop. Education to encourage voluntary blood donation and practice of healthy lifestyle in order to have safe donated blood is ongoing. Promotional activities to inculcate blood donation as a lifestyle in Malaysia is also actively carried out. Transfusion Practice Guidelines for Clinicians and Laboratory Personnel was reedited and circulated in 2005. This was one of the measures aimed to promote good medical practice in blood transfusion. Table 13 shows the achievement of this activity in 2005.

TABLE 13
Blood Transfusion Program's Achievement by MOH Hospitals, 2005

Activity	2004	2005
Total Blood Procurement	447,690	472,234
Blood Receipient	222,807	220,673
Replacement Donor	3,991	4,077
Mobile Unit	5,876	7,249

Source : Medical Development Division, MOH

Forensic Medicine

Forensic Medicine Service includes forensic pathology, clinical forensic medicine and medico-legal practice. The Forensic Medicine Service was separated from the Pathology Department on 1st April 2004 with the formation of the *"Institut Perubatan Forensik Negara"*. Administratively this service is divided into six regional forensic centres for the whole country and each regional centre has two forensic satellite centres under its purview.

Two of the Forensic Medicine Specialists have been involved with the National Mental Health Suicidal Registry to study the patterns of suicide trends since September 2005. A paper on Clinical Forensic Services in Malaysia was presented at the 17th International Association Science Conference held in Hong Kong in 2005. New services planned for the near future are Forensic Toxicology, Forensic Anthropology, Forensic Neuropathology, Forensic Histopathology and Paediatric Forensic Pathology. Workload for 2005 is summarized in Table 14.

TABLE 14
Forensic Medicine Workload in MOH Hospitals, 2005

Regional Centre (Hospital)	Satellite Centre (Hospital)	Natural Death (In-Patient)	Medico - Legal Autopsy	Percentage
Pulau Pinang		2,046	394	19.25%
	Alor Setar	1,689	276	16.34%
	Ipoh	2,771	521	18.80%
Kuala Lumpur		2,973	646	21.73%
	Klang	1,530	720	47.05%
	Seremban	1,679	402	23.94%
Johor Baru		3,311	526	15.89%
	Melaka	1,954	397	20.32%
Kuantan		1,079	338	31.32%
	K. Trengganu	1,417	175	12.35%
	Kota Bharu	1,848	152	8.22%
Kota Kinabalu		1,623	187	11.52%
Kuching		1,020	110	10.78%
Total		**24,940**	**4,844**	**19.42%**

Source :Medical Development Division, MOH

DIAGNOSTIC IMAGING (RADIOLOGY)

Currently, all state hospitals and a few district hospitals provide specialist radiology services and have modalities such as Mammography, Ultrasound Doppler, CT, Magnetic Resonant Imaging (MRI) and Angiogram besides General Radiography. Mammography is provided by all state hospitals and certain smaller hospitals such as Muar, Temerloh, and Taiping. Computerized Tomography is available at all state hospitals and the smaller hospitals like Muar, Temerloh, Sibu, Taiping, Sandakan, Bintulu, Tawau, Likas and Miri. Hospital Kuala Lumpur and Penang have 16 slice CT Scanners and a few hospitals such as Seberang Jaya, Kuching and Selayang have 64 slice CT Scanners. Other than Hospital Klang and Hospital Kangar, MRI machines are available in all state hospitals. Hospital Sibu is in the process of purchasing the equipment.

Development from Analog Radiography to Computerised and Digital Radiography has lead to an urgent need for highly trained manpower. Subspecialty development in Radiology still lags behind the other disciplines due to the attrition of those trained to the private sector and inadequate number of general radiologists. The workload of the radiology service is shown in Table 15.

TABLE 15
Total Investigation Done in MOH Hospitals (by Modality)

Imaging Modalities	2002	2003	2004	2005
General Radiography	2,158,694	2,276,705	2,478,354	2,680,627
Specialised Radiography	26,529	35,663	28,586	30,440
Computed Tomography (CT Scan)	80,243	89,541	101,830	114,267
MRI Imaging (MRI)	8,690	11,845	16,037	16,432
Ultrasonography	152,400	159,553	203,469	239,442
Additional Investigation	23,837	26,270	28,165	36,095

Source : Information and Documentation System Unit, MOH

Nuclear Medicine

Nuclear Medicine is a procedure where radioactive material is injected into patients according to the type of scan carried out and is used in the diagnosis, treatment and intervention (for elective and emergency cases). It is also used in the treatment of cancer patients. A Nuclear Medicine Unit was set up in HKL in 1964. Similar units were set-up in Hospital Umum Sarawak, Hospital Pulau Pinang and Hospital Sultanah Aminah Johor Bahru. This service will also be established in Hospital Putrajaya and Hospital Sultan Ismail, Pandan, Johor Bahru. Table 16 shows the achievements in the year 2005.

TABLE 16
Total Nuclear Medicine Scan / Treatment 2004 and 2005

Hospitals	Total Scan	
	2004	2005
Hospital Kuala Lumpur	4,365	4,493
Hospital Umum Sarawak, Kuching	877	849
Hospital Pulau Pinang	1,893	2,082
Hospital Sultanah Aminah, Johor Bahru	971	1,241
Total	**8,106**	**8,665**

Source : Medical Development Division, MOH

New services introduced in 2005 were PET-CT Scan in Penang Hospital, Yitrium Y-90, Spleen(RBC Denatured), Spleen Imaging(Tc-99m Colloid) and Indium (Octreotide) in Hospital Sultanah Aminah Johor Bahru and the Brain Scan service in Hospital Umum Sarawak. Future planning is PET-CT and Cyclotron Service provision and to increase centres providing Radioiodine service for Thyroid Cancer and increasing the number of Gamma Camera Systems.

REHABILITATION AND ANCILLARY SERVICES

Rehabilitation services in MOH hospitals comprises of Rehabilitation medicine, physiotherapy, occupational therapy, speech therapy and audiology. The activities range from consultation services for assessment, therapeutic and rehabilitative care to Orthotic and Prosthetic services. Patients are normally referred from other departments of the hospital as well as from primary health centers for this service. Currently the services are provided in 19 primary health care facilities as well as all secondary and tertiary hospitals.

To increase the access to rehabilitation services to the public, the MOH had developed smart partnership with the Social and Welfare Department to cover the social, vocational and psychological aspects of the rehabilitation medicine. They provide the *"Pusat Latihan Perindustrian dan Pemulihan Orang Kurang Upaya (PLPP)"* Bangi while the MOH provides the man power.

Rehabilitation Medicine Clinics at HKL, HPJ and PLPP group their services into Core and Generic Services. Core Services include Pediatric Disability (Cerebral Palsy), Amputee, Stroke/Neurology deformity, Foot and hand Deformity and Poliomyelitis. Generic services include driving license for disabled, counseling, registration, education and financial status. There were more patients seen in 2005 for out patient and inpatient Rehabilitation Medicine Services with 2,557 attendances and 399 admissions; compared to 2,241 and 199 in 2004, at HKL, Hospital Putrajaya and PLLP Bangi.

Physiotherapy service is to help patients who are in a disabled state regain or obtain their optimal gross motor function and strength while occupational therapy aims to assist patients to achieve the optimal fine motor ability to cope with daily activities after an accident or illness. Currently there are 96 MOH hospitals providing inpatient and outpatient physiotherapy services with 114,931 patients seen in 2005.

Malaysia is in a severe need for Rehabilitation Medicine Specialists. At present, only 9 out of 17 Rehabilitation Medicine Specialists in Malaysia, are working in the Ministry of Health hospitals. *Malaysia needs between 150 (based upon norm of 1:150,000 - "Perancangan Perkhidmatan Pakar, Bahagian Perkembangan*, KKM") to 300 (based on a norm of 1:85,500 of the RCPSC) Rehabilitation Medicine Physicians.

As for the physiotherapists, there are currently 394 Physiotherapists in the Ministry of Health and 218 in private practice. There are 364 qualified Occupational Therapists working in Malaysia in the public, academic and private sectors. The majority of them are in the government sector (270 in MOH Hospitals, 10 in Health Clinics, 5 in Welfare Centers, 8 with NGO's, 55 in Universities and 16 in the private sector). At present, there are 83 speech therapists in the country (25 in MOH hospitals, 38 in the University and 20 are in private facilities). The distribution of the physiotherapists, occupational therapists and speech therapists in the Ministry of Health by state are as shown in Table 17.

TABLE 17
The Distribution of Physiotherapists, Occupational Therapists and Speech Therapists in the Ministry of Health by State, 2005

States	Total No. of Physiotherapists	Total No. of Occupational Therapists	Total No. of Speech Therapists
Perlis	6	5	1
Kedah	19	12	2
Pulau Pinang	31	19	1
Perak	40	35	3
Selangor	38	32	3
Negeri Sembilan	13	15	1
Melaka	11	7	1
Johor	31	29	4
Pahang	19	13	0
Terengganu	16	7	1
Kelantan	22	11	1
Sabah	52	21	1
Sarawak	50	38	2
Federal Territory	46	26	4
Total	**394**	**270**	**25**

Source : Kuala Lumpur Hospital, 2005

AUDIOLOGY SERVICES

Currently there are 87 audiologists in the country, 32 of whom serve the Ministry of Health. With increasing number of patients requiring the service, more audiologists are required in the public hospitals.

The main activity carried out in 2005 was the Hearing Screening Program. Piloted in Kuala Lumpur Hospital, it was started in August 2004. Among all of the babies that have been screened (668 babies), 162 babies were found to have failed the hearing screening test either in one or in both ears. These babies were given appointments for Diagnostic Audiology Evaluation but only 98 babies returned for follow up. 25 of them were confirmed to have hearing impairment, 12 of them had conductive hearing loss and 13 had sensorineural hearing loss.

DIETETICS AND CATERING SERVICES

Catering Services

This service is responsible for the preparation of food for in patients which includes normal diet and therapeutic diet; food for the on-call doctors; night ration for the night shift staff; enteral feeding as well as infant formulas for babies. There are two systems of serving diet; the bulk system and the centralized plating system. In view of shortage of man power and inadequate kitchen facilities, not all of the hospitals could practice this system.

In 1999 the Ministry of Health decided to outsource this service for new hospitals with beds of more than 250. Since then, the catering services in three hospitals have been outsourced, namely Hospital Selayang, Hospital Putrajaya and Hospital Pulau Pinang. In view of financial constraints, the outsourcing of this service could not be done in all of the public hospitals in the country. The subsequent hospitals where the catering services are to be outsourced are Hospital Serdang, Hospital Ampang, Hospital Sungai Buloh, Hospital Sultan Ismail (Pandan), Johor Bahru and Hospital Likas, Sabah.

Dietetic Service

Over the years there has been an increase in the number of dietitians serving in the Ministry of Health. Today, 109 Dietitians serve Ministry of Health with a ratio of 1 dietitian to 200 in-patients (for General Hospitals). Only the larger district hospitals have dietitians, ranging from 1 to 3 per district hospital. There are some district hospitals that do not have dietitians.

MEDICAL PROFESSIONAL DEVELOPMENT

i) Specialists and Medical Officers

a) Gazettement of Clinical Specialists.

The Gazettement Committee meets at least 3 times a year. However, monthly meetings are being scheduled to facilitate the gazettement process. In 2005, there were 341 specialists gazetted, an increase of 29% as compared to the year 2004.

TABLE 18
Number of Specialists Gazetted in 2004 and 2005

Year	No. Of Specialists
2004	263
2005	341
Total	**604**

Source : Medical Development Division, MOH

In 2005, the largest number of specialists gazetted were in the discipline of Internal Medicine, followed by O&G and Paediatrics, as can be seen in Table 19.

TABLE 19
No. Of Specialists Gazetted Based on Specialty in 2004 & 2005

Specialty	Number of Specialists* 2004	Gazetted 2005
Internal Medicine	37	52
Paediatric	24	41
Psychiatry	10	12
Orthopaedic	24	27
Pathology	8	6
Ophthalmology	16	31
Anaesthesiology	28	36
ENT	14	3
General Surgery	28	37
O & G	28	41
Radiology	25	13
Radiotherapy & Oncology	-	2
Nephrology	-	11
Plastic Surgery	1	-
Urology	-	-
Gastroenterology	2	1
Cardiothoracic Surgery	1	-
Neurology	1	1
Cardiology Paediatric	4	4
Emergency Medicine	6	5
Rheumatology	-	3
Sports Medicine	-	1
Paediatric Surgery	1	1
Dermatology	2	3
Neurosurgery	-	6
Rehabilitation Medicine	-	4
Total	**260**	**341**

Note: * Inclusive contract doctors.
Source: Medical Development Division, MOH

b) Credentialing And Gazettement

A workshop was organized in early 2005 to review the gazettement process. From the workshop, a logbook for the pre-gazettement period was developed. This is to ensure that assessment of doctors during that period is fair and matches the competency expected. At the same time, steps have also been taken to integrate credentialing with gazettement considering the evaluation for both processes is not dissimilar. Therefore from January 2005, all gazetted specialists are automatically credentialed in their core procedures of relevant specialty. In 2005, 313 specialists were credentialed in their core procedures.

c) Fellowship Training Programme

The Fellowship Training Programme is conducted in service as an apprenticeship under consultation in MOH, Universities and overseas.

Duration of training varies from 3-4 years where 2 years are done locally and the final year is done overseas especially in areas not available locally. In 2005, 249 trainees in 20 clinical areas have pursued or are pursuing subspecialty training programmes. It was a 5% increment compared to the year 2004. The scope of disciplines offered has widened with the introduction of General Paediatrics and Child Health in mid 2005.

However, large numbers of trainees are still interested to pursue training in popular areas such as Pediatrics (37), O&G (28), Anaesthesiology (20), Gastroenterology (11), Cardiology (10), Nephrology (8) and Rheumatology (8) as compared to areas such as Plastic Surgery (1), Hand & Microsurgery (0), Geriatrics (0) and Hepatology (1).

d) Continous Medical Education (CME) / Continous Profession Development (CPD)

The Unit continues to coordinate sponsorship for CME activities related to the career development of Specialists, Medical Officers and Allied Health Personnel.In 2005, a total of 124 courses were sponsored involving 3,667 medical personnel, an increased of 33% as compared to number of personnel in 2004 (Table 20).

TABLE 20
CME Activities for 2004 & 2005

Year	No of CME Programmes	No of Participantsa
2004	107	2758
2005	124	3667
Total	**231**	**6425**

Source: Medical Development Division, MOH

e) Specialist Requirements

In 2005, the Ministry of Health recorded 1,944 specialists of various specialties under its employment. This includes a total of 220 specialists employed on contractual basis. Whilst there is 15.4% increase in the number of specialists as compared to the previous year, however it is still inadequate to meet the needs of the country. O&G with 268 specialists and sports medicine with only 2 had the highest and lowest number of specialist at MOH hospitals for the respective disciplines in 2005.

f) Engagement of Private Practitioners on a Sessional Basis

Private practitioners continue to be employed on a sessional basis considering there is a need for provision of specific specialties in 11 MOH hospitals at various states. There were 29 applicants in 2005 as compared to 17 in 2004. They served in various disciplines including Rheumatology, Urology, General Surgery, Psychiatry, Pathology, Anaesthesiology, Dermatology, Internal Medicine, Neurosurgery, Radiology, Nephrology, Orthopaedic, O&G and Hepatobiliary Medicine.

ALLIED HEALTH PROFESIONAL DEVELOPMENT

a) Training for Health Attendants in the MOH

The training of '*Latihan Peningkatan Atenden Kesihatan*' were divided into 3 levels in which level 1 & 2 were conducted at the state level, and the training sessions in level 3 (for attendants working in operating theatre, physiotherapy unit, CSSU and forensic) were conducted centrally by this unit since the year 2002. Two series of training sessions in level 3 were conducted with a total of 157 trained in the year 2005. Up to December 2005, a total of 9,697 (level 1) , 8,165 (level 2) and 772 (level 3) certificates were issued to those who have completed the theory and practical components of the training.

b) Foreign AHPs Employed by the Private Hospitals / Institutions

The Ministry of Health acknowledges the shortage of certain categories of Allied Health Professionals in the health services (government or private). It has therefore identified certain categories of foreign Allied Health Professionals who can be employed by the private hospitals/ institutions. A total of 41 applications from foreign Allied Health Professionals (excluding nurses) have been processed in the year 2005.

c) Proposal Papers in Collaboration with the Human Resource Division MOH

Among the proposals that has been approved by the Public Services Department (PSD) in the year 2005 are the following:

- Integrated scheme of service for the nurses, radiographers and assistant environment officers - with effect from 1st. January 2005.
- Change in classification of scheme of service from 'C' to 'U' category for the dietitians - with effect from 1st. July 2005.
- Incentive allowance for Medical Assistants working in the mortuary - approved by the PSD in 2005 with effect from 1st January 2006.

- Incentive allowance for medical laboratory technicians, junior laboratory assistants and health attendants working at the Medical Respiratory Institute and National Leprosy Centre (dealing with tuberculosis and leprosy specimens) - approved by the PSD in 2005 with effect from 1st January 2006.

d) Engagement of Private Allied Health Professionals on Sessional Basis

The Ministry of Health acknowledges the need of certain categories of Allied Health Professionals to be employed on a sessional basis in the MOH hospitals such as Clinical Psychologists, Orthoptists, etc.

e) Collaboration with the Centres of Higher Learning

A total of 11 new applications for the usage of the MOH hospitals for the practical training of Allied Health Professions from the public / private institutions have been approved and 4 colleges have signed the memorandum of agreement/ understanding (MOU / MOA) in the year 2005. Up to December 2005, a total of 34 institutes have had approval given for the usage of the MOH hospitals for the practical training of Allied Health Professionals.

e) Credentialing & Privileging

The Medical Development Division, MOH is in the process of developing a credentialing mechanism for the Allied Health Professionals working in hospitals. This will be done in phases, first involving the Nurses and Medical Assistants working in critical care areas. The organizational structure committees for the implementation of credentialing and privileging for the AHPs have been formed and members were appointed by the Director General of Health in November 2005.

f) Allied Health Professions Bill

The MOH is in the final stages of drafting the 'Allied Health Professions Bill'. The objectives for drafting the Bill is to recognize, register, regulate the professional conduct and promote the continuing professional development of members of the Allied Health Profession.

HEALTH TECHNOLOGY ASSESSMENT

The main outputs of the health technology assessments activity by the Division are health technical assessment, health technology reviews and clinical practice guidelines and to be utilized by the MOH and Government in policy and decision making at any operational level. As a whole, the activities and achievements of the Division in health technology assessment area shown by Table 21.

TABLE 21
Activities and Achievement in year 2005 by Medical Development Division for the Health Technology Assessment Area.

Output	Issues Started 2005	Previous Years Issues	Total	In Progress	No (%) Completed
HTA	8	9	17	13	4 (23.0)
Technology Review	24	-	24	12	12 (50.0)
CPG	5	23	28	22	6(21.4)
Clinical pathway	1	-	1	1	-
Training	6	-	6	-	6 (100.0)

Source: Medical Development Division, MOH

7 papers had been presented at conferences and seminars at both national and international level, covering oral and posters presentation on the health technology assessment topics by the Division's representatives in year 2005. Internationally, the Division had contributed its expertise through technical consultation services to Asia Pacific countries such as Indonesia and Iran. Locally, the Division gave it technical advice on the establishment of Medical Device Regulatory, which is coordinated by the Engineering Services Division.

MEDICAL RESOURCE & EQUIPMENT

The Medical Development Division is responsible for managing the operational budget and providing technical input for any medical equipment to be procured under the budget for the usage of the MOH hospitals and medical institutions. With the cooperation of the Finance Division, Ministry of Health, every effort is made to ensure that any allocation approved abides with Treasury Regulations.

Medical Budget

i. Expenditure Target (ET)

In the year 2005, the Medical Program was provided a total allocation (ET) of RM4,641,259,671.00 an increase of 3% when compared to the previous year. This amount was 63% of the total amount allocated to the Ministry of Health. About 103.47 % was spent and the services and provision expenditure was the main component which consists of about up of 54.32% of the total. Expenditure for emolument amounted to 48.73% of total expenditure.

ii. "New Policies" (*Dasar Baru*)

A total of 6 "New Policies" were approved for the year 2005 which involved RM 25,486,336.00 million (OA 20000). The overall expenditure was 93.67% The total allocation for assets under "One-Off" was RM 27.72 million.

iii. Development Budget

RM 35 million was allocated under projek BP 301 (renovation and upgrading)

Medical Equipment

This unit is responsible in identifying medical equipment for government hospitals and preparing specifications for medical equipment to be purchased. For the year 2005, 36 tenders were prepared centrally. The remaining allocation was distributed to the State Health Departments and was largely procured through quotation. The Medical Resource Unit also coordinates the technical evaluation of consumables that are supplied by Pharmaniaga Sdn Bhd. Procurement of some medical equipment was also done through quotations (for equipments valued < RM200,000.00). For the year 2005, as much as 5 quotations were done centrally by this Division.

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). Telehealth will play an essential role in catalyzing the development of the MSC, as well as furthering the economic development goals in Vision 2020. The Telehealth Unit was setup as a project based unit in the Ministry of Health in 2000 to implement the telemedicine flagship projects. In October 2004 the unit obtained Cabinet approval to be upgraded to a division under the Medical Services Programme.

Telehealth is defined as the integration of information telecommunication, human–machine interface technologies and health technologies to deliver health care, to promote the health status of the people and to create health. In 2004, the telehealth project was reviewed and the scope was reorganised into the following seven components:

- Teleconsultation
- Health Online
- Continuous Professional Development
- Lifetime Health Record
- Personalised Lifetime Health Plan (LHP)
- Call Centre
- Group Data Services

ACTIVITY

Teleconsultation

The primary objective of Teleconsultation (TC) services is to extend specialist medical care to remote health clinics and health centres through teleconsultation links between secondary / tertiary hospitals and the primary care facilities, and thus improve health outcomes. The TC project was implemented over a 30 month period commencing in 2000, linking 41 hospitals and clinics. Reactivation of existing WorldCare Tele-Consultation system was awarded to Solsis (M) Sdn. Bhd. with contract value of RM 6,308,192.30 for the maintenance of equipment, software and network application system in 38 sites for a period of 2 years, commencing 8th June 2005.

Relocation of TC equipment by OCS Technology Sdn. Bhd from the inactive hospitals and health centres to 16 newly identified hospitals started on 4th August, 2005 and was completed by 2nd September, 2005.

The Teleconsultation Unit reviewed the implementation approach of the reactivation based on the feedback from end-users and specialist clinicians of the respective disciplines, as well as discussions, observations and findings of random visits to a few sites, namely Ipoh, Kuala Lumpur and Melaka. As a result, it was decided to focus upon :

- Nine (9) out of the 16 new sites comprising of Hospital Alor Setar, Hospital Pulau Pinang, Hospital Grik, Hospital Taiping, Hospital Sri Manjung, Hospital Ipoh, Hospital Kuala Lumpur, Hospital Selayang, and Hospital Kuala Kubu Bharu, and,

- To ensure all issues and problems related to the provision of teleconsultation services in the 5 identified disciplines (Radiology, Cardiology, Dermatology, Neurosurgery , and Trauma and Emergency Services) are resolved appropriately at the above sites.

Five (5) core working groups representing the specialty disciplines were set-up comprising of Consultants (Teleconsultation "Champions") and end-users representatives from the various division at the Ministry level including Information Technology and Communication Division, Telehealth Division and Medical Development Division. These working groups are responsible to consolidate business requirements and ensure successful implementation of the respective teleconsultation activities. Four (4) hospitals (Hospital Ipoh, Hospital Pulau Pinang, Hospital Sri Manjung and Hospital Grik) have started TC services, namely Teleradiology and Telecardiology, as of December 2005. Reactivation of the TC services is ongoing at the other twenty nine sites as per the original plan.

Health Online

The year 2005 started with in-house development of contents. Four main workshops were organized bringing in specialists in various medical and health fields to write on topics ranging from the newborn to the elderly. A total of 407 topics were completed.

Tender for development and maintenance of Health Online portal was awarded to Imatera Digital Image Services Sdn. Bhd. for RM 1.288 million. The vendor undertook to migrate all contents thus developed into a web-hostable form. Meanwhile other services such as the following were also developed:

- Health Services Directory
- Advisory Services
- Health Alerts
- Health Events
- Discussion Forum
- Latest Findings/News

In September 2005, the portal was showcased at the IAP EXPO in Kepala Batas, Penang. By the end of year 2005, the Government Acceptance Test and Provisional Acceptance Tests were completed.

Continuous Professional Development (CPD)

Following from the 'Way Forward for Telehealth Project', the Continuous Medical Education (CME) project under the MSC Flagship Application was rescoped and renamed as the Continuous Professional Development (CPD) project.

The CPD project comprised of 3 components:

i. Online CPD Monitoring
- CPD logbook
- CPD credit points
- Calendar of events
- Competency assessment

ii. Virtual Library

- Knowledge database of medical and health subjects
- Subscribed e-journals and e-books
- Libraries network linkage within MOH

iii. Modular Distance Learning (MDL)

- Topics of selected medical and health related subjects to be accessible online.
- Interactive sessions of learning and acquisition of credit points.

ACHIEVEMENT

i. Online CPD Monitoring

- In the year 2005, Telehealth Division together with Medical Development Division, CPD Board, Competency Unit of Human Resource Division and Information Technology and Communication Division together had identified and prepare the functional aspects and specifications for the development of Online CPD Monitoring System.
- The project is currently in tender process and expected to be functional in 2006.

ii. Virtual Library/K-hub

- Meetings and collaboration with the librarians had been held to gather requirement for the functional specifications of the Virtual Library System. Information Technology and Communication Division of MOH assisted in planning and preparing for infrastructure, networking and other technical matters.
- 8 libraries within MOH were identified to be linked i.e.:
  - Institute of Medical Research (IMR)
  - MOH Headquarters, Putrajaya
  - Institute of Health Management (IPK)
  - Hospital Kuala Lumpur
  - Hospital Seremban
  - Hospital Penang
  - Hospital Alor Setar
  - Hospital Kuching
- The system is expected to be launched in early 2007.

iii. Modular Distance Learning (MDL)

- Planning and studying the requirements for MDL in various aspects: business model, choice of course delivery, topics to be offered, target groups, business process etc.
- Contributing in preparing specifications with Medical Development Division, MOH
- Pilot project implementation in Hospital Putrajaya and Hospital Selayang in 2006.

Lifetime Health Record (LHR)

Lifetime Health Record (LHR) services is one of the components in the Telehealth services redefined from the Lifetime Health Plan project in MSC KKM Telehealth flagship project.

On 22 March 2005, the Malaysian Administrative and Modernization Planning Unit (MAMPU) approved the request from the Ministry of Health for Consultation Services for Lifetime Health Record. The selection of consultant was finalized in December 2005 and awaiting the award process.

The functional requirement brief for LHR has been completed and approved. In the development of standards for the LHR, the ICD 10 PCS coding for medical procedures has been completed. The ICD 10 PCS coding for the surgical procedures is being reviewed.

The health record component of the National Health Data Dictionary (NHDD) comprises of three sections namely :

- Person Management Record
- Event Summary
  - Hospital Discharge Summary
  - Clinic Visit Summary
- Health Condition Summary
  - Care of Person with Diabetes Mellitus Type II
  - Antenatal and Newborn Care
  - Child Health Care

The review of Person Management Record Data Set Version 2.0 is awaiting approval. The Hospital Discharge Summary Data Set has been updated to version 2.0 in December 2005 and is being consolidated. The draft report for Change Management and Gap Analysis for implementation of the pilot LHR has been prepared.

WAY FORWARD

Teleconsultation

- TC Services for Hand & Microsurgery Services has been planned and is awaiting approval from MAMPU.
- Extension of TC services by area to Sabah, Labuan and Sarawak

Health Online

- Migration of contents in Bahasa Malaysia
- Launching and publicity activities to be carried out
- Development of Health Risk Assessment (HRA) Tools

Continuous Professional Development

- Modular Distance Learning (MDL) pilot to be launched in 2006 in Hospital Putrajaya and Hospital Selayang, with the cost estimate of RM 200,000.

Lifetime Health Record (LHR)

- To develop the business case and implementation strategy of the LHR services through the consultancy services for the LHR project.
- To execute the LHR pilot project implementation in Seberang Perai Utara and Seberang Perai Tengah Districts, involving three hospitals and 13 health clinics, in 2006 – 2008.

CONCLUSION

The Telehealth projects essentially work towards achieving the eight health service goals. The diverse components of the telehealth projects necessitate the involvement and commitment of the various divisions in the Ministry of Health, the programmes as well as the clinician end-user at the facility level. The critical success factors for the successful completion of the Telehealth projects are:

- Teamwork, close collaboration and commitment from the respective program owners,
- Effective project management, and
- Commitment and support of top management in the implementation of related projects.

5

RESEARCH AND TECHNICAL SUPPORT PROGRAMME

Annual Report
Ministry Of Health Malaysia
2005

INTRODUCTION

The Planning and Development (P&D) activity is one of the four activities under the Research and Technical Support Programme. The Planning and Development activity supports the Ministry of Health, as well as 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:

- Health System Planning and Development
- Health Facility Planning and Development
- Health Information System Planning and Management.

The objectives of this Division are as follows:

- To formulate, implement, monitor and evaluate health sector plan to meet the national policies
- 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, that is timely and of quality, for the country, with participation from all stakeholders.

ACTIVITIES AND ACHIEVEMENTS IN 2005

The activities and achievements in 2005 are based on the three core businesses of the Division.

HEALTH SYSTEM PLANNING AND DEVELOPMENT

Preparation for Ninth Malaysia Plan (Health Sector)

The preparations for the health sector plan under the Ninth Malaysia Plan (9MP) (2006 – 2010) began in early 2004. In February 2005, the Conference for the preparation of the Ninth Malaysia Plan (Health sector) was held involving all relevant stakeholders in health including relevant Government Ministries, Universities, private sector and NGOs. During this conference, the thrust and goals of the 9MP (health sector) were endorsed.

The thrust of the 9MP (health sector) is "towards achieving better health through consolidation of services". The six goals of the 9MP (health sector) consists of two primary goals and four supporting goals. The primary goals are to prevent and reduce disease burden and to enhance healthcare delivery system. Meanwhile the supporting goals are to optimize resources, enhance research and development, manage crisis and disasters effectively and strengthen health management information system. Similarly, strategies, key performance indicators and the plan of action based on each of the 9MP goals have been developed.

By the end of 2005, the Ninth Health Plan was finalized and documented as Book I (Country Health Plan), Book II (Programme Health Plan) and Book III (Project List). The proceedings of the 9MP (Health Sector) conference was compiled as another document. The contents of these documents were utilized in the formulation of the Health Chapter in the Ninth Malaysia Plan and also form the basis of the Plan of Action of all stakeholders in health including the Programmes and Activities within the MOH.

National Health Policy

The need for the National Health Policy (NHP) was identified at the mid-term review of the Sixth Malaysia Plan. Since then several drafts of the National Health Policy (NHP) has been discussed at various forums. By the end of 2004, the decision was made to consolidate the various drafts into one National Health Policy (NHP). In 2005, the existing draft containing policies (total of nineteen plus six) was revised with the assistance of an external consultant to develop the NHP framework. A working draft of the NHP was then circulated within the MOH for responses. Subsequently a workshop involving all stakeholders in health is being planned in 2006 to formulate a National Health Policy that will be applicable to all stakeholders in health and health-related sectors.

National Healthcare Financing Mechanism

Since 2000, the Ministry of Health Malaysia (MOH) and the Economic Planning Unit (EPU) have intensified efforts on the proposed development of healthcare financing mechanism. The principles and guidelines of the National Healthcare Financing Mechanism (NHFM) were agreed upon in 2003. Since then, and especially in 2005, these principles and guidelines were disseminated through various forums, seminars, discussions, dialogues and meetings involving the public and private sectors. These sessions were avenues to obtain further inputs and feedbacks on the NHFM and to plan for an appropriate, viable and acceptable NHFM for the country.

Once the concept and principles of the proposed NHFM were presented and agreed upon in principle by the top government officers, the advice was to obtain a consortium of consultant(s), including both local and external consultants, to assist in studying the implementation of the NHFM. In early 2005, the proposal to obtain consultancy for the NHFM was approved by the EPU. This was followed by the NHFM Project Document for NHFM consultancy which was developed and officially endorsed by all three relevant agencies namely EPU, UNDP and MOH in September of 2005.

In addition, the World Health Organisation (WHO) assisted the MOH by providing a short term consultancy in providing inputs for the Essential Health Care Packages (EHCP) which may be needed by the NHFM consortium.

This Division, in preparation for the NHFM, has also been involved in the 'case mix study' and the National Health Account study. Besides these, the Planning and Development Division has been providing technical inputs to other MOH Divisions in matters pertaining to the Private Fees Schedule, Managed Care Organization (MCO) and Globalisation and liberalization of health industries which are all in a way related to the NHFM.

Restructuring of MOH Healthcare Delivery System

The Ministry of Health (MOH) is constantly striving to improve the healthcare system in the country. These improvements are to ensure greater equity and accessibility to healthcare services, further improve quality of services, promote professional competition and efficiency towards the delivery of effective clinical services, efficient use of resources and for many other improvements.

In line with these objectives, since mid-2005, this division has been studying the feasibility and options of restructuring of the MOH healthcare delivery system. This task involves detailed analysis of options based on other country models but best suited to the local needs. In view of this, at the end of 2005, an external consultant was sponsored by World Health Organization (WHO) to help with building of knowledge and capacity building in this area of concern.

HEALTH FACILITY PLANNING AND DEVELOPMENT

In 2005 a development allocation of RM 1.197 billion was approved for Ministry of Health to finance the development of 385 projects (Table 1).

Projects financed under the 2005 allocation included urban and rural health facilities, training facilities for health and dental personnel that were at various stages of planning and implementation. Considering that 2005 represented the final year of 8MP, most of the major projects planned for implementation during the 8MP period, with the allocated 2005 budget, were either completed or near completion (Table 2). Nevertheless, a small number of projects that were still in the early planning or construction stage will be continued as committed projects during the forthcoming 9MP period.

In 2005, new projects designated for implementation through `design and build' or `turnkey', like Hospital Kluang in Johore, Integrated Health Science College, Women and Child Hospital, and National Cancer Institute were launched with preliminary planning and interactions with the appointed consultants. Standard Plans for health clinics were also reviewed to ensure that they meet current service needs, like meeting emerging or re-emerging infectious diseases demands and the progressive improvement and upgrading of the health program. A new standard plan for health clinic named KK Cermai was drawn up in collaboration with JKR. Besides this effort, a number of existing planning norms were reviewed and updated. Apart from these, the planning activity also included preliminary planning and preparatory work in anticipation for the launch of 9MP.

Financial achievement indicates that 99.7% of the 2005 expenditure was spent to complete projects being implemented and also to begin projects where planning was completed. Physically a total of nine new hospital projects were completed and taken over by the Ministry of Health including Hospital Likas Phase I that was acquired from Sabah Medical Center.

Rural health facility development is extremely encouraging whereby 100 of the 176 projects listed for the year were successfully completed and the remaining under planning or construction (Table 3). Similarly urban health projects and dental services projects showed good achievements (Table 4 and 5). 50% of the 24 listed training facility projects were constructed with delays mainly attributed to problems relating to site, scope and changes in project requirements (Table 6).

Implementation of Projects through Project Management Consultants (SPP 4/2000)

A total of 45 projects were implemented using this approach provided under Treasury Circular 4/2000. These projects began in 2003 and at the end of December 2005, 39 were completed. The remaining projects encountered delays arising from various reasons such as site problems, contractors with weak finance or management, and a number of other technical problems. Nevertheless, all projects are expected to be completed before the end of 2006.

Masterplan and Redevelopment Hospitals

RM 77.15 million was allocated in 2005 to implement these projects that included Hospital Kangar, Hospital Sultanah Aminah Johore Bahru, Hospital Umum Sarawak, Hospital Taiping, Hospital Seremban and Hospital Muar and 98.6 % of this allocation (RM 76 million) was spent. The original Masterplan project of eleven state or large hospitals was initiated using the third ADB (Asian Development Bank) loan. After review, one project was dropped (Hospital Sungai Petani) while three have been completed (Hospital Malacca, Hospital Kajang and Hospital Kangar) with the remaining to be carried forward into 9MP and completed by the second year of the plan period.

Equipment Planning

Medical Equipment was implemented in tandem with physical project implementation and therefore similar in expenditure wise as to the physical project planning and in the number of physical facilities completed.

External Financing and Loan

Financing under the first tranche of Islamic Development Bank (IDB-0070-MA) amounting to USD 25 million was completed in the year 2004. The Project Completion Report was prepared and submitted in 2005 to IDB for a review mission before formally closing this project. A second tranche (IDB-0088-MA) to purchase medical equipment for upgrading and replacement of intensive care and diagnostic imaging services throughout the country amounting to USD 25 million begun in April 2003.

HEALTH INFORMATION SYSTEM PLANNING AND MANAGEMENT

Health Management Information System (HMIS)

Health Management Information System (HMIS) provides information for the effective planning, development, coordination and evaluation of the health programme and activities. It is a decision support system for health management and a system that links information to managerial concerns.

Generally, within the Ministry of Health, the HMIS system is being utilized by National Programme Directors/Managers, State Directors/Managers, District Health Officers and supervisory staff at the operational level. They are used mainly for health policy formulation, planning, budgeting, and monitoring as well as research and evaluation purposes.

In 2005, Information and Documentation System Unit (IDS) produce several regular reports and annual publications. Among them are:

- MOH Annual Reports
- Indicators for Monitoring and Evaluation for Strategy for Health For All
- Health status, Health performance and Health utilization
- Health Facts
- HMIS report by sub systems

Special reports were prepared such as Admission and Deaths in Government Hospitals due to Injury in Malaysia (1999-2002) and Occupational Injury in Government Hospitals in consultation with Public Health Divisions.

In line with WHO recommendation to introduce ICD-10 coding for classification of medical diagnosis, all hospitals in the country, both public and private hospitals, are required to code diagnosis using the ICD-10. Since ICD-10 was implemented in 1999, IDS unit had conducted several training sessions to Assistant Medical Record Officers (AMRO) and various categories of staff throughout the country.

Besides training, IDS unit also contributed in the preparation of drafting the document on Health Information System Strategic Plan for Western Pacific Region in WPRO office in Manila.

The networking infrastructure for HMIS (HMIS II) was further improved by installing new personal computer (PC) in all record offices in the MOH hospitals. Hence, various health reports, management and statistical reports as well as notification of infectious diseases can be generated in a timely manner and as and when required. This will also minimize the need for storage space for hard copies of documents. The issues related to networking and broadband connectivity is being addressed in the Information Technology Strategic Plan.

Formats for data collection for Family Health Information System, Blood Transfusion Services and Oral Information System were reviewed to fulfill the requirements of data capture for the expanded and upgraded services. The software application for inpatient and outpatient workload has been enhanced to incorporate information on discharge diagnosis according to ICD-10.

Malaysian National Health Accounts

Malaysian National Health Accounts (MNHA) started as a project by the Government of Malaysia, through the Ministry of Health (MOH) with cooperation from the Economic Planning Unit (EPU) of the Prime Minister's Department and the United Nations Development Programmes (UNDP). It commenced in 2001 and was completed in mid 2005. Following the completion of this project, the MNHA Steering Committee had agreed upon the institutionalisation of MNHA and the MNHA Unit was established in August 2005 under the Planning and Development Division.

In 2005, activities were concentrated on the production of the first MNHA report using data from 1997 until 2002. In 2006, data on health expenditure for 2003-2005 is to be compiled with the second report planned to be completed at the end of 2007.

WAY FORWARD

Among the challenges that the Planning & Development Division will be facing in 2006 and the rest of the 9MP period (2006-2010) includes, the development of 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.

The Malaysian National Health Policy, planned to be produced early during the Ninth Malaysia Plan, is to act as a guiding document that is acceptable and used by all stakeholders in health and health-related sector in ensuring the best quality of affordable healthcare services towards achieving excellence in nation building.

With regards to the health plan, in 2006, following approval by the Economic Planning Unit of the Prime Minister's Department, the Health Chapter formulated using the Ninth Health Plan (9HP) will be presented to the Parliament as part of the Ninth Malaysia Plan (9MP). Once approved by the Parliament, the three books of the 9HP will then be published for dissemination to the relevant agencies. At the Ministry of Health (MOH), the 9MP health plan will be the basis for the development and implementation of the Plan of Action of the Programmes and Activities within the ministry. Monitoring and evaluation mechanism of the 9MP health plan will be in compliance with the Prime Minister's Department Circular *"Garispanduan Penilaian Programme Pembangunan" Bil. 3/2005, August 2005.*

In 2006 and the rest of the Ninth Malaysia Plan period (2006-2010), under the Health Information System Planning, the Division will be developing the Health Informatics Center which will comprise of three main units, namely, strategic planning and evaluation, health informatics standard, and operations and documentation. Similarly, the capacity and capability of the MNHA Unit will also be further strengthened.

The completion of new facilities and the upgrading of existing facilities along with appropriate equipments will improve patient accessibility and better quality of services to the community.

In addition, there will be several activities related to capacity building especially in the process of restructuring of the MOH healthcare delivery system.

CONCLUSION

The Planning and Development Division of the MOH will continue to support all programmes and activities within the ministry and also other sectors, including intrasector and intersector, so as to steer the country towards achieving the best in all health related endeavours. This Division will also continue to play an important role in ensuring that MOH activities are geared towards achieving national objectives and the Vision 2020.

TABLE 1
Allocations And Projects In The Year 2005

Project Detail	Facilities	Number of Projects	Allocation (RM '000)	Percent Allocation (%)
00100	Training	24	42.160	3.52
00200	Public Health			
00201	*Rural Health Services*	163	170.504	14.25
00202	*BAKAS (Water Supply & Environmental Sanitation)*	12	1.755	0.15
00203	*Urban Health service*	57	49.609	4.15
00300	Upgrading Hospital Facilities			
00301	*Upgrading Hospital*	79	327.652	27.38
00302	*Masterplan and Redevelopment Hospital*	8	77.150	6.45
00400	New Hospital	35	429.099	35.85
00500	Consiltancy and Feasibility Studies	2	13.897	1.16
00600	Minor works	1	34.933	2.92
00700	Land Acquisition and Maintenance	4	50.006	4.18
	Total	**385**	**1,196.765**	**100.00**

Source : Planning and Development Division, MOH

TABLE 2
Health Facility Projects and Development Allocation For 8MP

Project Detail	Facilities	Number Of Projects	Allocations (RM '000)	Percent Allocation (%)
001	Training	47	336,490	3.54
002	Public Health	1,066	1,445,053	15.21
003	Upgrading Hospital Facilities	286	2,330,165	24.53
004	New Hospitals	37	5,118,292	53.88
005	Consultancy & Feasibility Study	2	30,000	0.32
006	Upgrading & Maintenance	1	180,000	1.89
007	Land Acquisition & Maintenance	4	60,000	0.63
	Total	**1,443**	**9,500,000**	**100.00**

Source : Planning and Development Division, MOH

TABLE 3
Achievements of Rural Health Services Projects in the Year 2005

Type of Facility	Total Projects (8MP)	Total Projects (2005)	Achievements in 2005			
			Tender	Construction	Completion	*Others
Health Clinics/ Community Clinics	230	56	0	8	34	14
Quarters / Upgrading Community Clinics	345	82	2	11	48	21
Quarters / Upgrading Health Clinics (X-Ray and others)	110	33	2	15	13	3
Alternative Birthing Center (ABC)	10	1	0	0	1	0
District Health Office	13	4	0	0	4	0
Total	**708**	**176**	**4**	**34**	**100**	**38**

Source : Planning and Development Division, MOH
Note : * Planning stage

TABLE 4
Achievements of Urban Health Services Projects in the Year 2005

Facilities	Number of Projects (8MP)	Number of Projects (2005)	Achievements in 2005			
			Tender	Construction	Completed	*Others
Health Clinics/ Polyclinics	156	50	2	4	25	19
Hospital Upgrading	194	45	0	18	18	9
Hospital Quarters	63	36	0	3	13	20
Ambulatory Care Centre (ACC)	8	5	0	1	4	0
Low Risk Birthing Centre	1	0	0	0	0	0
Total	**422**	**136**	**2**	**26**	**60**	**48**

Source : Planning and Development Division, MOH
Note : * Planning stage

TABLE 5
Achievements of Dental Health Services Projects in the Year 2005

Facilities	Number of Projects (8MP)	Number of Projects (2005)	Achievements in 2005			
			Tender	Construction	Completion	*Others
Dental Clinics/ Mobile clinics (BP 201 & 203)	199	7	0	0	6	1
Total	**199**	**7**	**0**	**0**	**6**	**1**

Source : Planning and Development Division, MOH
Note : * Planning stage

TABLE 6
Achievements of Training Projects in the Year 2005

Facilities	Number of Projects (8MP)	Number of Projects (2005)	Achievements in 2005			
			Tender	Construction	Completed	*Others
Nurses Training College	13	4	0	1	1	2
Rural Health Training School	2	1	1	0	0	0
Community Nurse's Training School	6	2	0	1	0	1
On-call Complex	5	4	0	1	2	1
Allied Health Sciences College	9	4	0	0	3	1
Medical Assistant's Training School	2	0	0	0	0	0
Others	10	9	1	1	2	5
Total	**47**	**24**	**2**	**4**	**8**	**10**

Source : Planning and Development Division, MOH
Note : * Planning stage

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 division that comprises of three main subdivisions, 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

This division is headed by a director who is assisted by two deputy directors responsible for the Pharmaceutical Enforcement Branch and Pharmaceutical Care Management and Development Branch, respectively and the director of the NPCB. The manpower of the whole Pharmaceutical

TABLE 1
Pharmacist Manpower of Pharmaceutical Services, MOH 2005

Category/ Activity	Grade	No. of Posts	Filled	Vacant	% Filled
Director	**JUSA B (A#)**	1	1	0	100
Pharmaceutical Care Management and Development	**U41**	729	873	-144*	+19
	U44	180	0	180*	0
	U48	125	122	13*	98
	U52	19	0	19*	0
	U54	10	9	1	90
	JUSA C	1	1	0	100
Licensing and Enforcement	**U41**	124	140	-16*	+13
	U44	33	0	33*	0
	U48	37	35	2*	95
	U52	1	0	1*	0
	U54	1	1	0	100
	JUSA C (B#)	1	1	0	100
Regulatory Control of Pharmaceuticals	**U41**	60	57	3	95
	U44	4	0	4	0
	U48	31	29	2	94
	U52	2	0	2	0
	U54	2	1	1	50
	JUSA C	1	1	0	100
Total		**1,362**	**1,271**	**103**	**93**

Source : Pharmaceutical Services Division, MOH

Personal to holder
* Posts that have been traded-off, U41 for U44 and U48 for U52

TABLE 2
Pharmacy Assistant Manpower of Pharmaceutical Services, MOH 2005

Category/ Activity	Grade	No. of Posts	Filled	Vacant	% Filled
Pharmaceutical Care Management and Development	U29	2,383	2,119	264	89
	U32	313	286	27	91
	U36	49	36	13	74
	U38	23	13	10	57
	U40	2	0	2	0
Licensing and Enforcement	U29	9	5	4	56
	U32	8	2	6	25
	U36	3	3	0	100
	U38	0	0	0	-
	U40	0	0	0	-
Regulatory Control of Pharmaceuticals	U29	67	53	14	79
	U32	8	5	3	63
	U36	2	2	0	100
	U38	0	0	0	-
	U40	0	0	0	-
Total		**2,867**	**2,524**	**343**	**88**

Source : Pharmaceutical Services Division, MOH

ACTIVITIES AND ACHIEVEMENTS

ORGANISATIONAL AND HUMAN RESOURCE DEVELOPMENT

Organisational Restructuring

With the approval of several posts of U52 grade and U44 grade in 2005, PSD was reorganized based partly on the restructuring proposal to the MOH to strengthen planning activities, policy management and services implementation of the programme. This reorganisation saw the creation of a new sub-division, the Pharmacy Services and Profession Development sub-division. There are currently 9 portfolios for Pharmaceutical Care Management and Development, 10 for Pharmaceutical Enforcement Branch and 6 for the Pharmacy Services and Profession Development.

Improvement in Pharmacy Manpower

i. Increase in Number of Posts

The increase in the number of posts for Pharmacist and Pharmacy Assistant during the past 5 years has been very encouraging especially for the appointment posts of U41 and promotional posts of grade U44 up to U52 for the pharmacists and grade U32 up to U40 for the pharmacy assistants (Table 3).

TABLE 3
The Number of Posts for Pharmacy Personnel, 2001 - 2005

Category/ Grade	2001	2002	2003	2004	2005
Pharmacist					
U41	569	849	972	980	*916
U44				58	*217
U48	68	97	113	180	184
U52				21	21
U54	13	13	13	13	13
Jusa C	3	3	3	4	4
Jusa B	1	1	1	1	1
Pharmacy Assistant					
U29	2199	2319	2407	2447	2459
U32	201	245	277	248	329
U36	33	41	47	51	54
U38			5	9	23
U40				1*	2

Source : Pharmaceutical Services Division, MOH

* In the year 2005, there is an increments of 94 new posts of U41, but in the same year 158 posts have to be traded-off for the higher grades of U44.

ii. Recruitment of New Staff

In 2005, 416 Provisionally Registered Pharmacists (PRP) were recruited into the public service. This marked the beginning of the Compulsory Service for pharmacists in the government service and the enforcement of the Registration of Pharmacists Acts (Amendment 2003) and its Regulations. In addition, 110 pharmacists from the last group of graduates not affected by compulsory service who had undergone pre-registration pupilage training also joined the service.

As for the pharmacy assistants, 129 diploma holders were appointed in 2005. MOH had also succeeded in getting approval for an additional 80 places for re-employment of retired pharmacy assistants of which 26 were filled in 2005.

iii. Promotion

Apart from the 19 pharmacy assistants who were promoted to the grade of U38, 23 to U36 and 138 to U32, there was no other promotional exercise for the pharmacy personnel in 2005 following the changes of New Remuneration Scheme (SSB) to the Malaysian Remuneration Scheme (SSM), and also the introduction of Competency Evaluation (PTK) in the public service.

REGULATORY CONTROL OF PHARMACEUTICAL

Pharmaceutical Product Quality Assurance

The regulatory control of pharmaceuticals is responsible for ensuring the safety, efficacy and quality of pharmaceuticals as well as safety and quality of traditional medicines and cosmetics marketed locally. Until the end of 2005, a total of 115,886 products have been registered. A total of 31,787 applications were received for the year 2005, which was a decrease compared to the year before (34,099 in 2004). The bulk of the applications were for the registration of cosmetics (90.1%) followed by traditional products (5.7%), 'scheduled poison' drugs (2.2%) and non-poison drugs (2.0%). The total revenue collected by NPCB was RM8.7 million. The statistics relating to

TABLE 4
Application for Product Registration, 1985 - 2005

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	3973	145	4,328	20,257
1993	376	111	7059	51	7,597	27,854
1994	400	168	4080	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	1347	610	3,542	43,299
2000	427	444	1523	262	2,656	45,955
2001	578	487	1154	150	2,369	48,324
2002	509	448	1603	214	2,774	51,098
2003	263	266	1471	26,177	28,177	79,275
2004	529	720	2220	30,630	34,099	113,374
2005	703	645	1807	28632	31,787	145,161
Total	**16,554**	**12,529**	**28,546**	**87,532**	**145,161**	**145,161**

Source : Pharmaceutical Services Division, MOH

TABLE 5
Cumulative Number of Registered Products, 1991 - 2005

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

Source : Pharmaceutical Services Division, MOH

TABLE 6
NPCB Revenue Collection, 2005

Activity	RM
Product Registration	6,783,600.00
Pharmaceutical Product Authentication	251,500.00
Import License & Clinical Trial Import License	466,500.00
Manufacturer license	329,000.00
Wholesaler license	437000.00
GMP auditing	48,250.00
Laboratory services	304,762.00
Published goods sale	13335.00
Other sales	60,522.64
Total	**8,694,469.64**

Source : Pharmaceutical Services Division, MOH

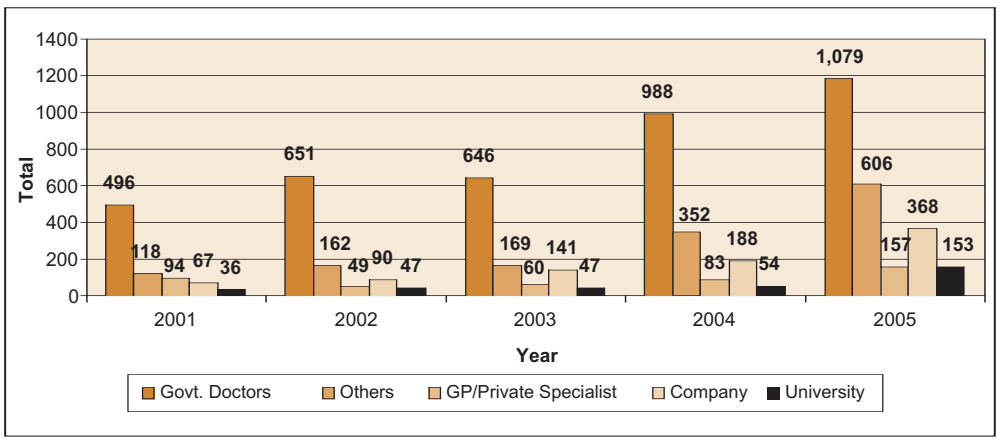
After the products are registered, the quality of the products in the market is continuously monitored by NPCB through its surveillance activities. A total of 2,483 registered products were sampled for this purpose and this represented 8.13% of the targeted number of registered products. A total of 1,428 labels and package inserts had been checked. 42 products were issued warning letters and NPCB handled 269 complaints. 74 products were recalled from the market; 3 Degree One (within 24 hours) product recalls were issued, all of which were traditional medicines. There was no Degree Two (within 72 hours) product recall for the year 2005. A total of 71 product batches were recalled within 30 days (Degree Three) comprising 12 prescription drugs, 3 non-prescription drugs and 56 traditional medicines. Throughout the year 2005, NPCB received a total of 2,363 adverse drug reaction (ADR) reports, a 42% increase as compared to the previous year 2004 (Figure 1). Out of those reports, 2,009 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 56,641 tests were done on 4,605 samples and of these samples, 2,165 were samples for application for registration, 1,985 samples from surveillance activities, 101 samples from complaints, 272 samples were obtained from enforcement activities and 82 samples were from other sources (Figure 2).

Figure 3 shows that in the year 2005, 296 manufacturing premise licenses were issued of which 87 were for pharmaceutical, 148 for traditional and 61 for cosmetic manufacturers. For importers, a total of 652 import licenses were issued comprising of 175 pharmaceutical, 137 traditional and 340 cosmetic import licenses. A total of 943 wholesaler licenses were issued of which 422 of these licenses were issued to wholesalers of 'scheduled poison' drugs and the remaining 521 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).

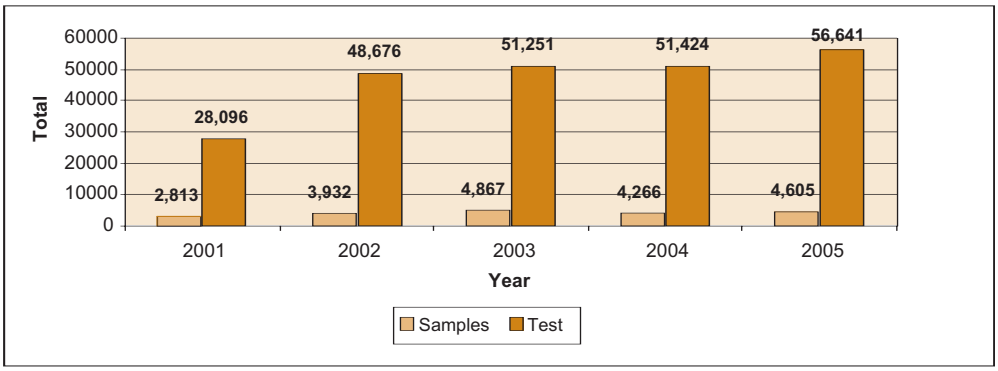
NPCB also publishes the Drug Control Authority '*Berita Ubat-ubatan*' and Malaysian Adverse Drug Reactions to disseminate drug and regulatory information to health professionals and the industry. In 2005, the Information and Communication Unit of the Centre for Organisational Development of NPSB received 3,739 enquiries through telephone, e-mail, facsimiles and letters from the government agencies, companies and the general public.

FIGURE 1
Analysis of ADRs By Reporters (N=2,363), 2001-2005



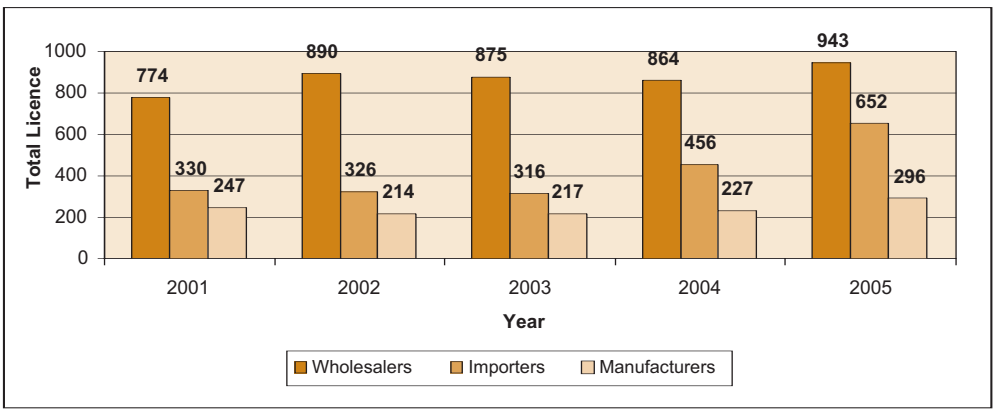
Source : Pharmaceutical Services Division, MOH

FIGURE 2
Samples Tested, 2001 - 2005



Source : Pharmaceutical Services Division, MOH

FIGURE 3
Total Licence Issued, 2001-2005



Source : Pharmaceutical Services Division, MOH

On-line Product Registration

All registration application for pharmaceutical, traditional, cosmetics were submitted on-line except for new chemical entity products and biotechnology products. In 2005, the on-line system was expanded to include new modules such as application for product variation and appeals.

The licensing of manufacturers, importers and wholesalers for cosmetics in the previous years was successful and in 2005, importance was given to technical guidance sessions conducted for the cosmetic industry. Some of the guidelines used to facilitate product registration were re-evaluated. The finished document was then made ready for download from the NPCB website (www.bpfk.gov.my).

International Involvement

NPCB continued to play an active role in its regulatory harmonisation efforts through ASEAN Consultative Committee for Standards and Quality (ASCSQ), 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 the WHO and the Pharmaceutical Inspection Cooperation Scheme (PIC/S) to handle training in the field of GMP and undertake auditing/checking of GMP regionally under the Technical Co-operation program EC-ASEAN. Auditing in co-operation with PIC/S was conducted with Danish auditors at the factory of Pharmaniaga Sdn. Bhd.

Visits and Training of Guests from Overseas

Through out the year 2005, NPCB received a total of 55 international visitors from various countries such as Cambodia, India, Laos, Singapore, EU, Indonesia, Tanzania, Namibia, USA, Spain, Sudan, Vietnam, France, Korea and Iran. 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 or Pharmacovigilance and Surveillance.

ENFORCEMENT AND LICENSING

The main activities of the Pharmaceutical Enforcement Branch in PSD, MOH are carried out by 11 main units, which are the Advertisement Control Unit, Licensing Unit, Precursor Control Unit, Law Drafting Unit, Intelligence Unit, Special Task (Poisons, Unregistered Products and Counterfeit) Unit, Special Task (Cosmetic) Unit, Diversion Control Unit, Investigation Unit, Prosecution Unit and Consumer Protection Unit.

Advertisement Control

The Medicine (Advertisement and Sale) Act 1956 provides the basis for the control of advertisements of medicines, appliances, remedies, skill and services that relate to medical and health claims. The PSD, MOH as the custodian of this Act has put into place an enforcement mechanism that is committed to eradicating illegal advertisements. A total of 81 cases were investigated under Medicine (Advertisement and Sale) Act 1956 and 160 warning letters were issued in 2005 (Table 7 and 8).

Licensing

i. Licences issued by the State Enforcement Branch

The number of licence issued has increased from 2,887 poison licence type A in 2004 to 2,956 in 2005. There was a slight increase in the type B licence from 1,309 in 2004 to 1,340 in 2005. However the number of Sodium Hydroxide permit issued dropped from 1,679 in 2004 to 1,654 in 2005 (Figure 4). The highest increase in the issuance of type A licenses in 2005 was in Sarawak, where 202 type A licenses were issued compared to 163 in 2004; followed by Sabah where 171 licences A were issued in 2005 in comparison to 139 in the year 2004. For the issuance of type B licences, the biggest increase in the licences issued was in Penang where 202 licences were issued in 2005 compared to 186 licences in the year 2004 (Table 9).

ii. Licences Issued by the Pharmaceutical Services Division MOH

As shown in Figure 5, the import authorisations for Dangerous Drugs issued by PSD was almost similar in 2005 (150) and 2004 (154). The import authorisations for Psychotropic Substances was almost constant at 272 in 2005 and 278 in the year 2004. However, the number of export authorisation issued in 2005 had decreased to only 21 as compared to 31 in 2004.

TABLE 7
Investigations and Legal Actions Against Unlawful Advertisements, 2005

Cases Investigated and Legal Actions Taken by	Number
Pharmaceutical Services Division, MOH	59
Pharmacy Enforcement Branches (from the various States of Malaysia)	22
Total	**81**

Source : Pharmaceutical Services Division, MOH

TABLE 8
Warning Letters to the Media Editors and Advertisers, 2005

Warning Letters Sent to	Number
Editors	13
Advertisers	68
Editors & Advertisers	79
Total	**160**

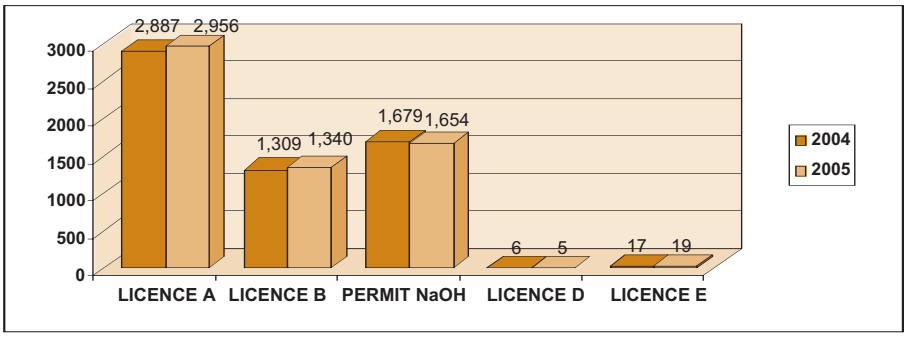
Source : Pharmaceutical Services Division, MOH

TABLE 9
Issuance of Licence under Poison Act 1952 (Revised 1989) by States, 2005

State	Licence A	Licence B	NaOH	Licence D	Licence E
Perlis	14	5	4	1	0
Kedah	124	61	34	4	0
P.Pinang	324	202	152	0	0
Perak	210	67	146	0	1
Selangor	920	344	404	0	2
F.T. K.Lumpur	440	69	25	0	1
N. Sembilan	80	42	73	0	0
Melaka	71	52	70	0	6
Johor	214	188	343	0	4
Pahang	59	43	108	0	0
Terengganu	34	39	58	0	0
Kelantan	89	18	18	0	0
Sabah	171	82	76	0	0
F.T. Labuan	4	17	4	0	0
Sarawak	202	111	139	0	5

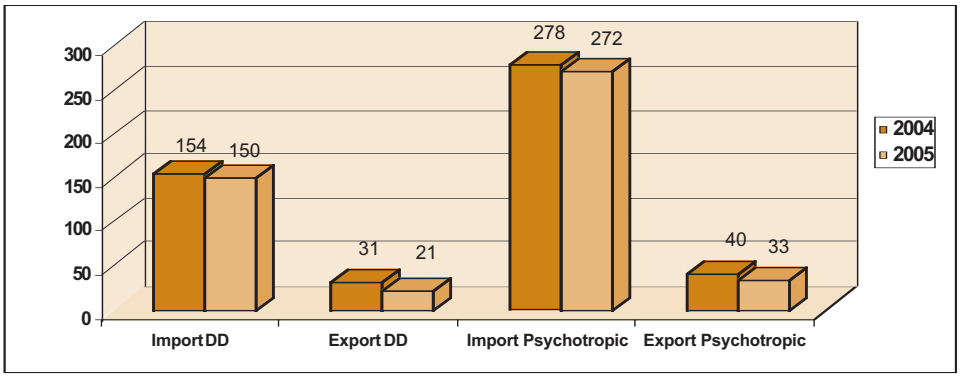
Source : Pharmaceutical Services Division, MOH

FIGURE 4
Issuance Of Licence Under Poison Act 1952 (Revised 1989), 2004 - 2005



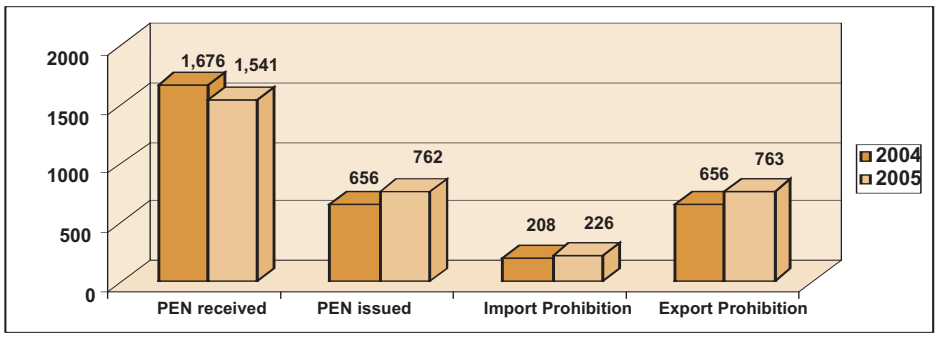
Source : Pharmaceutical Services Division, MOH

FIGURE 5
Import / Export Authorisation for Dangerous Drugs & Psychotropic Subtances, 2004-2005



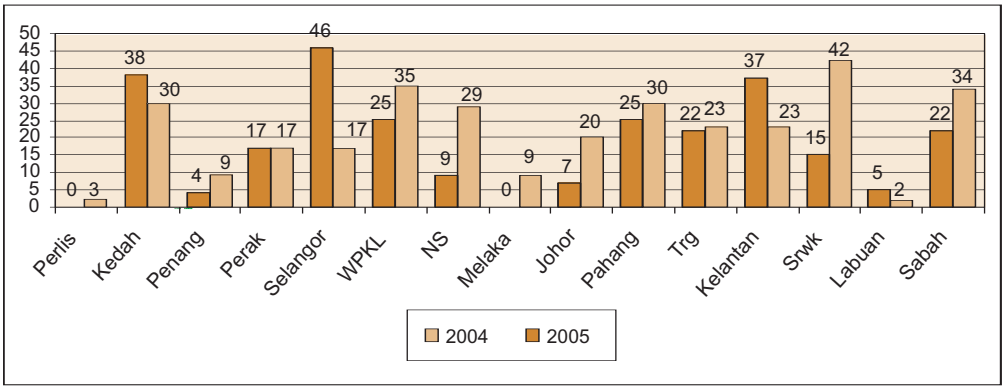
Source : Pharmaceutical Services Division, MOH

FIGURE 6
Control of Precursor Chemicals, 2004 - 2005



Source : Pharmaceutical Services Division, MOH

FIGURE 7
Pre-Operation Intelligence Activities by States, 2004 - 2005



Source : Pharmaceutical Services Division, MOH

iii. Control of Precursor and Certain Chemicals

The control in the import/export of precursors and certain chemicals like beta-agonist and saccharin is under the Custom (Prohibition on Import/Export) Order. In 2005, prohibition of import approval for precursor was 226 compared to 208 in 2004. The approval for export was 763 in 2005 compared to 656 in 2004 (Figure 6).

The control of export of precursor chemicals uses Pre-export Notification (PEN) to prevent diversion of these precursors to illicit market. PEN is issued to inform the importing countries regarding export of precursor chemicals under the UN Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances 1988. The numbers of PEN received in 2005 was 1,541 as compared to 1,676 in the year 2004. The numbers of PEN issued for export of precursor chemicals in 2005 was 762 compared to 656 in the year 2004.

Drafting of Pharmacy Legislations

In 2005, the Pharmacy Legislations Drafting Unit of PSD updated the 4 Acts and Regulations below:

(a) Registration of Pharmacists (Amendment) Act 2003
(b) Registration of Pharmacists Regulations 2004
(c) Poisons Regulations (Amendment) 2003
(d) Dangerous Drugs Regulations (Amendment) 2004

Pre-Operation Intelligence

The number of pre-operation intelligence conducted by all states had increased from 272 in 2004 to 323 in 2005. Surveillance conducted prior to raid operation was highest in Sarawak with 42 cases followed by Wilayah Persekutuan Kuala Lumpur with 35 cases, Sabah 34 cases, and Pahang and Kedah respectively with 30 cases (Figure 7).

Special Task (Operation)

Based on information from Special Task Operation unit together with that from Intelligence, Diversion Control and Special Task on Cosmetics unit and from other reliable sources of information coupled with specific Plan of Action for 2005, raids were carried out either by each state alone or with the help of states and units (Figure 8).

The value of seizure had decreased from RM 27.3 million in 2004 to RM 9.92 million in 2005 (Figure 9). The highest seizure was RM 2.86 million in Kuala Lumpur followed by RM 1.64 million in Selangor, RM 1.45 million in Penang and RM 1.16 million in Kelantan. Most of the products seized in 2005 were traditional medicines valued at more than RM 4.91 million followed by products classified as poisons at RM 1.87 million and over-the-counter products at RM 1.44 million (Table 10).

Pharmaceutical Diversion Control

Diversions of psychotropics substances especially buprenorphine, midazolam and precursors especially pseudoephedrine tablets were closely monitored and analysed for its trend of abuse. In 2005, 87 private medical clinics throughout Malaysia had been inspected with regards to the supply of buprenorphine tablets for the treatment of addicts. Meanwhile, 3 pharmacies and 2 private clinics had been investigated for the high volume purchase of pseudoephedrine tablets. In November 2005, a new approach using written attestation was introduced to control the diversion of psychotropics substances by using Regulation 12(2)(b) of the Poisons (Psychtropics Substances) Regulations 1989. Since then a wholesale pharmacy and a medical clinic had been investigated in the transactions of 14,000 tablets of Midazolam in a singe day without a written attestation.

Prosecution

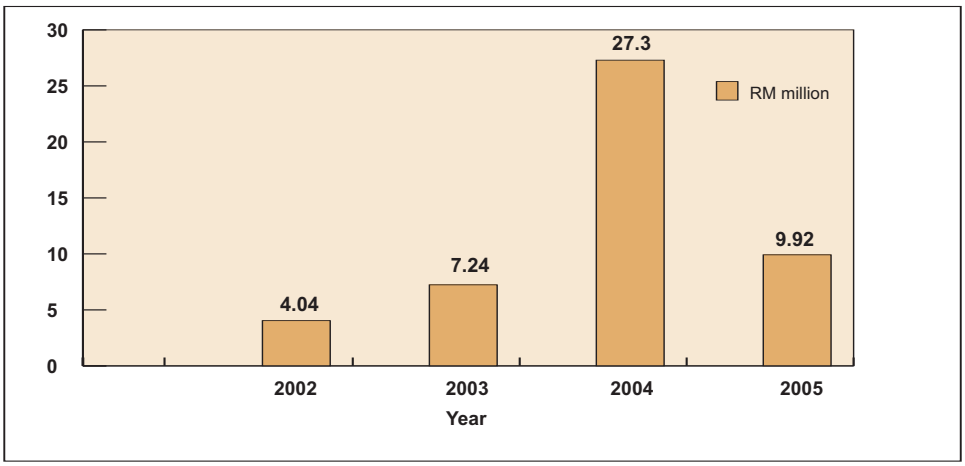
The prosecution of 317 cases were completed in 2005 with a total collection of RM1,027,000 in fines. The breakdown of prosecutions completed within the year according to the Acts enforced and the respective states are tabled in Table 11. The amount collected in fines from offences under the Sales of Drugs Act 1952 were the highest with RM741,000 i.e. 46% collected followed by offences under Poisons Act 1952 with RM185,950 i.e. 38% collected. F.T. of Kuala Lumpur showed the highest collection in fines with a total amount of RM256,400 followed by Selangor (RM240,600) and Terengganu (RM102,700).

FIGURE 8
Raids and Special Inspection Of Premises by The Pharmacy Enforcement Officers For Unregistered Medicines




Source: Pharmaceutical Service Division, MOH

FIGURE 9
Value of Items Seized, 2002 - 2005



Source : Pharmaceutical Services Division, MOH

TABLE 10
Types and Values of Products Seized, 2005

Type of Products	Value (RM)
Poisons	1,872,474.00
Over-the-Counter	1,439,020.00
Traditional	4,911,386.00
Cosmetic	529,497.00
Psychotropic substances	489,536.00
Counterfeit	7,093.00
Sex stimulants	232,208.00
Non Steroidal Anti Inflammatory	4,795.00
Others	29,194.00

Source : Pharmaceutical Services Division, MOH

TABLE 11
Prosecution *(Completed)* By Acts and Location For Year, 2005

No.	Location	Poisons Act 1952	Poisons Act 1952 *(Psychotropic Substances)*	Sales Of Drugs Act 1952	Medicines (Advertisement and Sales) Act 1956	Total No. of Cases	Total Fine Collected (RM)	(%)
1.	Perlis	2	-	2	-	4	9,000	1
2.	Kedah	1	1	3	-	5	15,000	1.5
3.	Pulau Pinang	8	3	10	-	21	63,200	7
4.	Perak	9	-	10	-	19	49,000	6
5.	Selangor	13	4	24	-	41	240,600	13
6.	F.T. KL	16	4	35	-	55	256,400	17
7.	N. Sembilan	3	2	10	-	15	25,150	5
8.	Melaka	2	-	4	-	6	9,800	2
9.	Johor	14	2	19	1	36	74,750	11
10.	Pahang	4	-	4	-	8	21,500	3
11.	Terenganu	3	20	12	-	35	102,700	11
12.	Kelantan	12	-	6	1	19	27,400	6
13.	Sarawak	16	-	6	1	26	60,700	8
14.	Sabah	16	1	1	3	21	65,400	7
15.	F.T. Labuan	2	-	-	-	2	4,000	0.5
16.	BPF, KKM	-	-	-	4	4	2,400	1
Total		**121**	**37**	**146**	**10**	**314**	**1,027,000**	**100**
Percentage(%)		**39**	**12**	**47**	**3**	**100**		
Total Fine Collected (RM)		**185,950**	**92,700**	**741,050**	**7,300**	**1,027,000**		

Source : Pharmaceutical Services Division, MOH

Consumer Protection

The main activities of the Consumer Protection Unit are focused on giving and disseminating information and knowledge on the usage and selling of medicine and cosmetics in the market to the public and target groups that include individual, family and the communities in urban and rural area. The information, knowledge and creation of awareness among the target groups were disseminated through the electronic and printed media. In 2005, 96 exhibitions, 16 dialogues and 51 talks were successfully delivered by the unit.

PHARMACEUTICAL CARE MANAGEMENT

Procurement and Distribution

In 2005, this unit conducted 4 meetings to draw up the specifications of 109 drugs to be tendered and 5 meetings of the Drug Evaluation Technical Committee were held to evaluate tender offers for 96 drugs.

The value of all drug contracts handled in 2005 were RM 281.2 million as compared to RM 320.44 million in 2004 and RM 205.37 million in 2003.

The total of drug expenditures from the year 1995 to 2005 are shown in the Table 12 below. The total value of drug purchases from Syarikat Pharmaniaga Logistics Sdn. Bhd for 2005 was RM 428 million for drugs and RM 80 million for medical equipment. The 5 drug classes with the highest purchased value are shown in Table 13.

Ministry of Health Drug Formulary

MOH Drug Formulary consists of drugs approved for use in all hospitals/Institutions in MOH. The drugs in the formulary are listed according to generic names and coded with Malaysian Drug Code (MDC) for identification. By the end of 2005, the MOH Drug Formulary consisted of 1322 preparations. In 2005, 39 drugs were added to the Formulary while 106 drugs were deleted (Table14).

TABLE 12
Annual Drug Expenditure, 1995 - 2005

Year	Expenditure (RM Million)
1995	205.9
1996	224.7
1997	261.9
1998	303.8
1999	326.2
2000	346.3
2001	485.0
2002	526.5
2003	751.3
2004	808.0
2005	915.4

Source : Pharmaceutical Services Division, MOH

TABLE 13
Drug Class with 'Highest Purchased Value', 2003 - 2005

2003		2004		2005	
Drug Class	Purchase Value (RM million)	Drug Class	Purchase Value (RM million)	Drug Class	Purchase Value (RM million)
Cardiovascular	70.2	Cardiovascular	77.3	Cardiovascular	76.0
Antibiotic	60.7	Antibiotic	60.7	Antibiotic	56.7
Neuromuscular	39.4	Metabolism	45.0	Metabolism	49.8
Metabolism	38.1	Other Antimicrobial	35.3	Neuromuscular	49.2
Other Antimicrobial	21.1	Neuromuscular	34.0	Respiratory	25.8

Source : Pharmaceutical Services Division, MOH

TABLE 14
Statistics for MOH Drug Formulary, 2000 – 2005

Year	Proforma Received	No. Of Panel Meeting	No. Of Drug Circulars	Drugs Approved		Drug Deleted
				Proforma B	Proforma D	
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

Source : Pharmaceutical Services Division, MOH

TABLE 15
Request of Drugs Outside MOH Formulary by MOH hospitals/ Institution, 2004 - 2005

Description		2004		2005	
		Approved	Not Approved	Approved	Not Approved
Registered Drugs	Approximate cost	7,429,006.00	1,544,310.29	11,936,387.00	3,551,758.38
	Types of Drugs	120	82	152	90
	No of request	501	153	452	166
Non-Registered Drugs	Approximate cost	5,924,699.22	1,131,656.36	11,345,203.00	1,191,774.53
	Types of Drugs	140	51	164	34
	No of request	323	67	512	52

Source : Pharmaceutical Services Division, MOH

Drugs Outside MOH Formulary

Approval for use of drugs outside the MOH Drug Formulary must be from the Director General of Health. As shown in Table 15, in 2005 approvals for use of registered drugs outside MOH Formulary were given to 152 types of drugs, amounting to nearly RM11, 936,387 while approvals for unregistered drugs from MOH Institutions alone was approximately RM11, 345,203, for 164 types of drugs.

Malaysian Drug Code

In 2005, the first edition of Malaysian Drug Code (MDC) with 4,293 products was produced. This edition is only for the drugs in the MOH Formulary that are registered with Drug Control Authority (DCA) and is available in the Pharmaceutical Services Division's web www.pharmacy.gov.my. MDC is a code assigned to a particular drug for identification based on the Anatomical Therapeutic Chemical Classification (ATC) structure of WHO.

Clinical Pharmacy Services

The Pharmaceutical Service of hospitals and health clinics under MOH aims to provide comprehensive patient-centred pharmaceutical care. This is achieved through the provision of clinical pharmacy services such as medication counselling service, ward pharmacy service, drug information service, clinical pharmacokinetic service (CPS), total parenteral nutrition (TPN) and IV admixture service, oncology pharmacy service and nuclear pharmacy service. The achievements of these services are summarised in Table 16.

i. Medication Counselling Service

Medication counselling through individual, discharge and group sessions is 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 drug use. A total of 133,323 patients were counselled on their medications in 2005 as compared to 62,000 in 2004.

ii. Drug Information Service (DIS)

The primary goal of Drug Information Service (DIS) is to improve the quality of patient care by answering drug-related questions directly applicable to patient care. In 2005, a total of 19,648 enquiries were received by hospital pharmacies of which 1,342 enquiries related to Adverse Drug Reactions (ADR) were reported 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/Unit Dose System. In 2005 specialised clinical pharmacy services in the areas of respiratory, critical care and nephrology was established in hospitals such as Melaka, Selayang and Kuala Lumpur.

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 2005, a total of 61,907 patients had received individualized drug therapy through the pharmacy clinical pharmacokinetic service (CPS) provided by 73 hospitals throughout the country.

v. Oncology Pharmacy Service

Oncology pharmacists play a significant role in cancer patient treatment by dispensing and reconstituting cytotoxic drugs. A total of 31 hospital pharmacies in the country dispense cytotoxic drugs to cancer patients but by the end of 2005, only 16 hospitals provided pharmacy cytotoxic drug reconstitution services. In 2005, 64,947 cytotoxic drugs were reconstituted by hospital pharmacies, an increase of almost 45% over the 45,057 drugs reconstituted in 2004.

vii. Nuclear Pharmacy

In 2005, Hospital Pulau Pinang, Hospital Kuala Lumpur, Hospital Sultanah Aminah, Johor Bahru and Hospital Umum Kuching were identified to provide pharmacy nuclear services. As of December 2005, pharmacists from Hospital Pulau Pinang and Kuala Lumpur were involved in the quality control and preparation of radiopharmaceuticals for nuclear medicine use.

TABLE 16
Achievements in Clinical Pharmacy Service, 2005

Services	2005
1. Medication Counselling Service	
i. No. of patients counselled:	63,760
• Out-patient	18,149
• In-patient	37,000
• Ward Discharged	14,414
• Health	
ii. Total no. of patients counselled	133,323
2. Drug Information Service	
i. No. of enquiries received	19,648
ii. No. of ADR reported	1,342
3. Clinical Pharmacokinetic Service	
i. No. of hospitals	73
ii. No. of cases	61,907
iii. No. of drugs	14
4. Parenteral Nutrition Service	
i. No. of hospitals	18
ii. No. of bags(adults)	7,651
iii. No. of bags(Children)	20,380
5. Intravenous Admixture Service	12
i. No. of hospitals	53,677
ii. No. of cases	108,307
iii. No. of preparations	
6. Cytotoxic Drug Reconstitution Service	
i. No. of hospitals	16
ii. No. of preparations	64,947
7. Drug Dispensing Service	
A. Hospital	
i. No. of prescriptions received	11,280,531
ii. No. of prescriptions intervened	93,068
B. Health	
i. No. of prescriptions received	20,952,259
ii. No. of prescriptions intervened	647,816
C. Total no. of prescriptions received	32,232,790
D. Total no. of prescriptions intervened	740,884

Source : Pharmaceutical Services Division, MOH

TABLE 17
Transactions of Integrated Drug Dispensing System, 2004 and 2005

Transactions	2004			2005		
	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
Total No. of Cat. A Drugs	18,710	8,419	27,129	25,914	12,868	38,782
Total No. of Cat. B & C Drugs	43,133	16,189	59,322	50,845	23,561	74,406
Total Cost of Cat. A Drugs (RM)	857,486	350,903	1,208,389	1,278,718	556,931	1,835,649
Total Cost of Cat. B & C Drugs (RM)	310,011	117,170	427,181	427,909	203,443	631,352
Total Cost of Drugs (RM)	1,167,497	468,073	1,635,570	1,706,627	760,374	2,467,001

Source : Pharmaceutical Services Division, MOH

Primary Care Pharmacy Services

The pharmaceutical care services rendered at the health clinics aimed at improving the patients' quality of life through individual and group medication counseling, continuous medication education, home medication review and also community program. Specialized services are also being rendered to help patients in managing diabetes, hypertension, asthma and cigarette smoking cessation. In 2005, 10,836 patients were counselled individually and group counselling involving 2,901 patients were conducted. Lately, pharmacists at the clinics are also involved in the methadone therapy program.

Integrated Drug Dispensing System

The Integrated Drug Dispensing System (IDDS) was initially started as a pilot project from December 2001 to May 2002 in which 7 states took part. By 2005, all states in Malaysia have started the system. The aim of IDDS is to enable patients, particularly follow-up cases, obtain their drugs at health facilities nearest to their home, and this will especially benefit patients who stay in remote areas.

Table 17 shows that although the total number of prescriptions transacted in both years was quite constant, the total expenditure involved in the transactions have increased by 51% between 2004 and 2005. Intra-state referrals have increased by 16% and inter-state referrals increased by 44.27% between 2004 and 2005. The state that made the most intra-state referrals was Penang followed by Johor at increases of 103% and 15%, respectively. Meanwhile, Kedah (164%) and Perak (110%) had the highest increases in interstate referrals.

Research and Development (R&D)

Pharmacy research has a wide scope with high potentials. Generally researches done in 2005 were focussed on descriptive studies to obtain baseline data to initiate future studies. Even though research has not resulted in policy changes, efforts were made to study priority areas such as those pertaining to cost saving, patient safety, consumer's education, and clinical pharmacy. The pharmacy R&D activities in 2005 are shown in Table 18.

TABLE 18
Activities of Pharmacy R & D in 2005

Activity	2005
Meeting of Research and Development Sub Committee	3
Number of Research Planned	12
Number of Research Conducted	5
Number of Training Conducted in 2005	4
Number of Research with collaboration with other agencies	2
Number of Research Presented at Scientific Conference, Seminars	5

Source : Pharmaceutical Services Division, MOH

TABLE 19
Activities of Pharmacy Board in 2005

Status	2005
No. of New Pharmacists Registered	379
No. of Pupil Pharmacists Registered (Compulsory service had started)	0
No. of Provisional Pharmacists	420
No. of New Body Corporate Registered	87
No. of Renewals of Annual Retention Certificate	3,955
No. of Renewal of Annual Certificate for Body Corporate	218
Total No. of Pharmacists in the Register (including the re-registration)	4,341
Total number of foreign pharmacist registered	7
Number of new premises recognized for provisional training	0
Number of pharmacy programme recognized/ monitored	4

Source : Pharmaceutical Services Division, MOH

TABLE 20
Comparison of Applications Processed by
Medicine Advertisements Board (MAB) 2003, 2004 and 2005

Activities	2003	2004	2005
Total Number of Applications	881	1,236	1,613
Total Number of Approvals	803	1,053	1,338
Number of Approvals through the Fast Track System	488 (61%)	751 (71%)	843 (63%)
Total Amount of Fees Collected	RM 88, 100.00	RM 123, 600.00	RM 161, 300.00

Source : Pharmaceutical Services Division, MOH

TRAINING

Apart from the various in-service courses conducted by the pharmacy departments in the states, a total of 43 courses on 35 topics were organized by PSD, MOH in 2005. In addition, 36 pharmacists were sent for attachments in the field of general pharmacotherapy at the Melaka General Hospital and in the field of nephrology pharmacy at Selayang Hospital.

In 2005, 16 pharmacists underwent short overseas training in countries such as Singapore, Thailand, Belgium, Germany, Japan, Phillipines. Austria, Ethiopia, Indonesia, USA and China. 4 other hospital pharmacists were sent for attachment training in USA in the areas of diabetic and critical care.

The Continuous Professional Development (CPD) Programme for the pharmacists and pharmacy assistants had also been successfully piloted in 2005 whereby 78% of pharmacists and 62% of pharmacy assistants had achieved the minimum credit points required.

SECRETARIAT TO STATUTORY BOARDS

Pharmacy Board

The Pharmacy Board of Malaysia [PBM] is responsible for the registration of pharmacists, body corporate and pupil pharmacists in Malaysia. In year 2005, the first batch of pharmacists for the four years compulsory service in the public sector were registered as Provisional Registered Pharmacists (PRP).

Besides the registration of pharmacists, PBM was also actively involved in other activities such as the renewal of Annual Certificate for Pharmacists, Annual Certificate for Body Corporate, accreditation and monitoring of pharmacy programme in universities and the conducting of Forensic Examination/ Jurisprudence Test in 2005. The PBM decided that PRP need to pass this Jurisprudence test during their provisional year. The statistics of the registration status of pharmacists in the country is shown in Table 19.

Medicine Advertisements Board

The Medicine (Advertisement and Sale) Act 1956 provides the basis for the control of advertisements of medicines, appliances, remedies and skill and services that relate to medical and health claims. The Act also provides for the formation of the Medicine Advertisement Board (MAB), which is responsible for the regulation of the relevant advertisements. The responsibility to enforce the Act rests with the PSD, MOH. In 2005, the board received a total of 1613 applications. Table 20 listed the comparison of applications processed by MAB for the past 3 years.

Drug Control Authority

The Drug Control Authority (DCA) is the executive body responsible for the registration of pharmaceutical, traditional and cosmetic products and the issuance of manufacturer's, wholesaler's and import licences. The NPCB is the secretariat and executive arm of the DCA. DCA held 11 meetings throughout the year 2005. The DCA had discussed, agreed and decided on policies as follows:

i. Not to register all products including cosmetic products containing Comfrey herb and Senecio spp due to safety reasons.

ii. Withdrawal of registration of products containing Thioridazine based on safety issue.
iii. Amendment of the mandatory statement on label and package insert for traditional products containing ginseng to "Safety of long term use has not been established".
iv. Requirement of warning statement on label and package insert for all products containing Propolis, Royal Jelly and Ginkgo/Biloba/Gingko Extract.
v. Amendment of the word "Poison" which is the mandatory labelling requirement for all products containing scheduled poisons to "Controlled Medicines".

Poison Board

The Poison Board, as an advisory board, has been empowered to assess the classification of medicine/chemical substance, and thereby to advice the Minister in accordance to the provisions of the Poisons Act 1952. The Board met for its 61st meeting on 1st September 2005 and decided on the following:-

i. Classification of poisons for 30 new chemical entities as listed in Table 21.
ii. Amending the classification of a Poison Tacrolimus for external use is classified as group C poison
iii. Amending the Second Schedule

The Board has agreed to list the following items in Second Schedule:

a. Pipet
b. Media Culture
c. Microtitre Plate
d. Test Strip

TABLE 21
Classification of New Chemical Entities

No.	Name of Drug/ Chemical Entity	Therapeutic Classification	Group
1.	Pemetrexed	Folic acid analogues	B
2.	Duloxetine HCl	Antidepressant	B
3.	Teriparatide	Calcium homeostasis	B
4.	Atomoxetine	Centrally acting sympatomimetics	B
5.	Riluzole	Other nervous system drug	B
6.	Aripiprazole	Antipsychotic	B
7.	Adalimumab	Monoclonal antibody	B
8.	Melagatran Hcl	Thrombin inhibitors	B
9.	Ximelagatran	Thrombin inhibitors	B
10.	Rasburicase	Chemotherapeutic	B
11.	Diacerrein	Non steroid anti-inflammatory and antirheumatic agent	B
12.	Cilostazol	Anticoagulant	B
13.	Pioglitazone	Antidiabetic	B
14.	Ciclesonide	Glucocorticoids inhalants	B
15.	Levocetrizine dihydrochloride	Antihistamine	C

Source: Pharmaceutical Services Division, MOH

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. The year 2005 marked the beginning of Compulsory Service for pharmacists with the enforcement of the Registration of Pharmacists Acts (Amendment 2003) and its Regulations. Although the entry of the PRP poses a demanding task to the limited existing pharmacists to supervise and provide the required training, it gives hope for a fast development of pharmaceutical services in the public sector.

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 enhancement of pharmacovigilance activities, exchange of technical information and collaboration with other regulatory authorities on product evaluations and Good Manufacturing Practice (GMP) inspections. In 2005, NPCB continued with the preparation for the registration of veterinary products and pharmaceutical active ingredients. When implemented, it will be the fifth and sixth phase, respectively of the overall product registration package. In terms of quality control, the NPCB laboratory will continue the efforts towards obtaining ISO 17025 certification. 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, ADR monitoring and information dissemination to produce a more comprehensive regulatory system. The current computer system, QUEST 2 will also be upgraded to QUEST 3 under the 9th Malaysian Plan (2006-2010).

Improvement in the awareness and knowledge on health among the pubic 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, accord better consumer protection thus leading to improvement in the quality use of medicines by the consumers. 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.

Geared towards improving and upgrading the quality of pharmacy practice, various strategies have been outlined, including 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 to 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 literatures through hands-on training of critical appraisal and evidence-based evaluation.

The proficiency of the pharmacy personnel will be upgraded through credentialing system, continuous professional development programme and specialization of pharmacy service for various disciplines of pharmacy. Oncology pharmacy, radio pharmacy and clinical pharmacy are potential areas to be developed into specialized fields. In addition, specialities in pharmacokinetic laboratory techniques and analysis, pharmacoeconomics and regulatory activities could be expanded as these expertises are unique to pharmacists. Pharmacists in those identified areas need to make positive impacts to better patient care. Then only could the policy makers be convinced about the relevancy of these services towards health care of the people. These developments will be the momentum towards an established pharmacy specialization 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 harmonization efforts by the various ASEAN and WHO committees and working groups. This is also one of the means to ensure that Malaysian products are of equal standing and accepted in the world.

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 2005. 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. This is to ensure that each chemical entity is unique in terms of substance, dosage, its salt and proprietary name. 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 improvement of the various clinical activities. The improvements carried out include the upgrading of infrastructure in various hospitals and strengthening of pharmacists' 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.

INTRODUCTION

The Engineering Services Division was established in 1968 as the Environmental Health and Engineering Unit under the Division of Health with two sections; the Public Health Engineering Section and the Radiation Protection Section. In 1981, this unit was upgraded to be the Engineering Services Division. There are four main sections in the Division which include:

- Environmental Health Engineering Section
- Healthcare Facility Engineering Section
- Radiation Health and Safety Section
- Hospital Support Services Regulatory Section

The objectives of the Engineering Services Division are:

- The establishment and implementation of suitable programs to protects public health.
- Ensure that the National Drinking Water Quality Surveillance Program is implemented effectively following the guidelines so as to safe-guard the health of the consumer.
- Ensure that Environmental Sanitation Program 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 program for Ministry of Health (MOH) buildings and facilities and provide technical advice where appropriate.
- Issues licenses under the Atomic Energy Licensing Act 1984 (Act 304) for the usage of radiation apparatus and radioactive materials in medicine.
- Provide services in the implementation of Quality Assurance Program (QAP) and radiation protection activities so as to ensure that radiation apparatus and radioactive materials meet the safety and performance standards.

ACTIVITY AND ACHIEVEMENT

Environmental Health Engineering Section

The Environmental Health Engineering activities have four core programmes which include Water Supply and Environmental Sanitation Programme, the National Drinking Water Quality Surveillance Program (NDWQSP), Clinical Waste Management Programme and the Environmental Health Protection. 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 supply 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 the rural area. 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 programmes incorporate simple technological principles that emphasized on simple design, construction and maintenance. The requirement for the system is that 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 types of systems installed through out 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 2,172 of various types of systems were installed in 2005. These systems provided service to 2,819 houses. The overall status of rural water supply coverage is about 95.43% that represent 1,623,865 rural houses. *(Table 1)*

Sanitary Latrines

Sanitary latrine is to be constructed for every household in rural area. 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.

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. It is envisaged that subsequently, the people will realise the benefit of such a practice and will construct their own latrines in the future when replacement is required.

In 2005 MOH constructed a total of 5,970 of pour flush latrines. The coverage of sanitary latrines at the end of 2005 was 98.92% that represent 1,683,141 of rural population. *(Table 2)*

Sullage and Solid Waste Disposal

In the early stage of the BAKAS programme, the installation of sullage and solid waste disposal was given lower priority due to urgent needs for water supply and sanitary latrines. As the coverage of water supply and sanitary latrines is almost 100% achieved the installation of sullage and solid waste disposal has been given a higher priority. In 2005 a total of 3,541 sullage disposal systems and 3,720 solid waste disposal systems were constructed and this represent a total household coverage that represent the total coverage of 56.62% (963,487) and 66.26%(1,127,368) respectively. (*Table 2).*

TABLE 1

Construction of Rural Water Supply Project by Ministry of Health in 2005

State	Total No. of Houses In Rural Area	Sanitary Well		Sanitary Well With House Connection		Gravity Feed System		Rainwater Collection		JKR / KKM Connection		Total		Total Houses Supplied (Cummulative)	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	38,315	0	0	0	0	0	0	0	0	174	174	174	174	37,680	98.34%
Kedah	177,685	32	59	1	1	0	0	0	0	684	699	717	759	171,616	96.58%
P.Pinang	70,654	0	0	0	0	0	0	0	0	60	60	60	60	70,360	99.58%
Perak	149,048	4	4	0	0	2	87	0	0	5	5	11	96	146,980	98.61%
Selangor	96,203	0	0	0	0	0	0	0	0	0	0	0	0	96,203	100.00%
N.Sembilan	66,349	2	2	0	0	0	0	0	0	33	33	35	35	65,706	99.03%
Melaka	68,866	0	0	0	0	0	0	0	0	28	28	28	28	67,571	98.12%
Johor	144,365	0	0	0	0	1	150	4	4	26	26	31	180	144,198	99.88%
Pahang	144,151	12	54	0	0	2	175	0	0	94	94	108	323	141,422	98.11%
Terengganu	129,307	22	22	3	6	0	0	0	0	420	420	445	448	121,098	93.65%
Kelantan	245,935	0	0	84	362	5	70	0	0	243	243	332	675	200,167	81.39%
Sarawak	192,146	2	30	0	0	9	223	85	85	0	0	96	338	185,963	96.78%
Sabah	199,632	0	0	0	0	6	138	150	150	0	0	156	288	191,663	96.01%
Malaysia	**1,722,656**	**74**	**171**	**88**	**369**	**25**	**843**	**239**	**239**	**1,767**	**1,782**	**2,193**	**3,404**	**1,640,627**	**95.24%**

Source : Engineering Services Division, MOH

TABLE 2

Construction of Latrines, Sullage and Solid Waste Disposal System by Ministry of Health in 2005

State	Total No. of Houses In Rural Area	Latrines			Sullage			Solid Waste Disposal System		
		Nos. Built	No. of Houses Supplied	Coverage (%)	Nos. Built	No. of Houses Supplied	Coverage (%)	Nos. Built	No. of Houses Supplied	Coverage (%)
Perlis	38,315	119	38,118	99.49%	89	19,489	50.87%	81	22,526	58.79%
Kedah	177,685	575	174,740	98.34%	503	45,960	25.87%	991	79,836	44.93%
Penang	70,654	209	70,453	99.72%	122	52,867	74.83%	208	63,084	89.29%
Perak	149,048	191	147,483	98.95%	289	78,114	52.41%	350	102,221	68.58%
Selangor	96,203	20	94,731	98.47%	36	82,108	85.35%	200	87,147	90.59%
N.Sembilan	66,349	20	66,295	99.92%	43	50,569	76.22%	0	51,969	78.33%
Melaka	68,866	71	68,293	99.17%	150	47,807	69.42%	55	59,822	86.87%
Johor	144,365	63	143,881	99.66%	102	131,351	90.99%	67	134,322	93.04%
Pahang	144,151	111	136,549	94.73%	108	80,304	55.71%	0	85,868	59.57%
Terengganu	129,307	406	128,520	99.39%	250	63,769	49.32%	362	82,618	63.89%
Kelantan	245,935	132	242,125	98.45%	323	77,834	31.65%	244	123,707	50.30%
Sarawak	192,146	688	188,833	98.28%	932	113,578	59.11%	1,443	109,158	56.81%
Sabah	199,632	191	188,488	94.42%	857	136,403	68.33%	89	146,747	73.51%
Malaysia	**1,722,656**	**2,796**	**1,688,509**	**98.02%**	**3,804**	**980,153**	**56.90%**	**4,090**	**1,149,025**	**66.70%**

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. As a result, guidelines for the implementation of an effective and comprehensive NDWQSP were formulated with the co-operation of agencies such as World Health Organisation (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 recently 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.

The NDWQSP that has been adopted nationwide since 1983 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 year 2005, 143,815 water samples were taken from nearly 490 water courses which cover the whole states in Malaysia. Nearly 209 sanitary surveys were implemented throughout the country in 2005, with 46 public water treatment plants need follow-up action. The water sampling performance for 2005 is as shown in Table 3.

Other activities under the NDWQSP are the investigation and assessment at estates, resort islands and rural areas. Most of the water supply systems in the stated 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 386 estates in Malaysia and 134 resort islands in Johor, Kedah, Selangor, Pahang, Terengganu, Sabah and Sarawak were investigated and assessed in year 2005.

Investigation activities during water crisis were implemented last year for several affected areas in Selangor, Negeri Sembilan, Melaka and Johor. In 2005, a training collaboration specifically for NDWQSP was conducted, namely National Sanitary Survey Course for Public Water Supply System in Batu Pahat and Muar, Johor. Technical comments were also being given to more than 80 local and international manufacturers for the packaged drinking water/natural mineral water licensing in 2005.

TABLE 3

Summary of Drinking Water Sampling Performance for 2005, Malaysia.

State	Group 1			Group 2			Group 3			Group 4			Total Number of Samples Taken
	A	B	C	A	B	C	A	B	C	A	B	C	
Perlis	896	841	93.9%	190	176	92.6%	65	61	93.8%	22	22	100.0%	
Penang	4,112	4,251	103.4%	822	867	105.5%	297	300	101.0%	100	86	86.0%	
Kedah	10,047	10,037	99.9%	2,156	2141	99.3%	638	614	96.2%	233	221	94.8%	
Perak	11,657	12,044	103.3%	2,433	2506	103.0%	810	760	93.8%	300	394	131.3%	
Selangor	11,347	12,044	106.1%	2,868	2268	79.1%	812	640	78.8%	228	156	68.4%	
Kuala Lumpur	2,260	1,026	45.4%	387	147	38.0%	157	54	34.4%	24	20	83.3%	
N. Sembilan	6,109	5,618	92.0%	1,344	1127	83.9%	449	386	86.0%	169	107	63.3%	
Melaka	3,607	3,281	91.0%	780	627	80.4%	261	171	65.5%	56	9	16.1%	
Johore	15,117	12,924	85.5%	3,843	2765	71.9%	864	573	66.3%	393	247	62.8%	
Terengganu	6,444	6,452	100.1%	1,531	1422	92.9%	383	372	97.1%	120	112	93.3%	
Kelantan	6,018	6,202	103.1%	1,353	1372	101.4%	443	446	100.7%	220	206	93.6%	
Pahang	14,247	13,227	92.8%	3,999	3510	87.8%	1,240	1,061	85.6%	646	503	77.9%	
Peninsular Malaysia	**91,861**	**87,947**	**95.7%**	**21,706**	**18928**	**87.2%**	**6,419**	**5,438**	**84.7%**	**2,511**	**2,083**	**82.9%**	**114,396**
Sarawak	18,000	17,480	97.1%	4,000	3305	82.6%	1,000	1,189	118.9%	400	559	139.8%	
Sabah	8,150	5,917	72.6%	1,200	729	60.8%	451	184	40.8%	172	56	32.6%	
Malaysia	**118,011**	**111,344**	**94.4%**	**26,906**	**22,962**	**85.3%**	**7,870**	**6,811**	**86.5%**	**3,083**	**2,698**	**87.5%**	**143,815**

Source : Engineering Service 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 scheduled (ideal schedule)
B = Number of samples taken.
C = Percentage of samples taken (%).

Quality Assurance Programme (QAP) for National Drinking Water Quality Surveillance Programme. (NDWQSP)

To further enhance the effectiveness of the programme, a Quality Assurance Programme (QAP) for NDWQSP was launched in December 1992 and implemented by all states in Malaysia in January 1993. Since 2004, the QAP standards were set based on five performance indicators; i.e. 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. Table 4 indicates a compliance trend for every performance indicator from 1993 to 2005, while Table 5 shows the breakdown of the NDWQSP QAP performance for 2005.

TABLE 4

A Compliance Trend For Every NDWQSP QAP Performance Indicator from 1993 until 2005.

Indicator / Year	Residual Chlorine (%)	E.coli (%)	Residual Chlorine & E.coli (%)	Turbidity (%)	Aluminium (%)
1993	8.5	2.5	1.3	-	-
1994	5.3	1.3	0.5	-	-
1995	5.1	1.3	0.4	-	-
1996	4.8	1.3	0.4	7.7	-
1997	3.3	1.3	0.3	7.6	-
1998	3.1	1.3	0.3	6.7	-
1999	3.1	1.3	0.3	5.8	-
2000	3.1	1.3	0.3	4.8	-
2001	2.8	0.9	0.3	4.1	-
2002	2.8	0.9	0.3	3.8	-
2003	2.8	0.9	0.3	3.4	-
2004	2.8	0.5	0.3	3.2	10.2
2005	2.8	0.5	0.3	3.2	10.2

Source : Engineering Service Division, MOH

TABLE 5

Performance of QAP for NDWQSP in 2005, Malaysia.

State / Indicator	Residual Chlorine (QAP < 2.8%)			E.coli (QAP < 0.5%)			Residual Chlorine & E.coli (QAP < 0.3%)			Turbidity (QAP < 3.2%)			Aluminium (QAP < 10.2%)		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
Perlis	717	99	13.8	719	8	1.1	717	10	1.4	710	3	0.4	146	60	41.1
Kedah	8,647	210	2.4	8,532	30	0.4	8,532	20	0.2	8,638	183	2.1	1,655	166	10.0
Penang	3,289	19	0.6	3,319	29	0.9	3,303	0	0.0	3,289	19	0.6	488	41	8.4
Perak	9,604	79	0.8	9,604	32	0.3	9,604	24	0.2	9,286	74	0.8	1,856	186	10.5
Selangor	8,423	656	7.8	8,422	4	0.0	8,422	22	0.3	8,405	70	0.8	1,854	238	12.8
Kuala Lumpur	953	0	0.0	953	0	0.0	953	0	0.0	953	0	0.0	128	17	13.3
N. Sembilan	4,619	143	3.1	4,618	30	0.6	4,618	28	0.6	4,602	69	1.5	888	147	16.6
Melaka	3,119	165	5.3	3,107	6	0.2	3,107	9	0.3	3,102	67	2.2	565	146	25.8
Johor	10,447	662	6.3	10,571	56	0.5	10,444	3	0.0	9,336	53	0.6	2,144	786	36.7
Pahang	10,379	459	4.4	10,371	71	0.7	10,371	232	2.2	10,368	374	3.6	1,896	425	22.4
Terengganu	5,681	28	0.5	5,684	2	0.0	5,681	0	0.0	5,675	58	1.0	1,130	115	10.2
Kelantan	5,064	367	7.2	5,064	27	0.5	5,064	13	0.3	5,060	597	11.8	1,022	210	20.5
Peninsular Malaysia	**70,942**	**2,887**	**4.07**	**70,964**	**295**	**0.42**	**70,816**	**361**	**0.51**	**69,424**	**1,567**	**2.26**	**13,772**	**2,537**	**18.42**
Sarawak	12,502	205	1.6	12,665	66	0.5	12,360	5	0.0	8,040	19	0.2	2,146	488	22.7
Sabah	4,767	484	10.2	4,215	29	0.7	4,215	54	1.3	4,421	342	7.7	444	77	17.3
Malaysia	**88,211**	**3,576**	**4.05**	**87,844**	**390**	**0.44**	**87,391**	**420**	**0.48**	**81,885**	**1,928**	**2.35**	**16,362**	**3,102**	**18.96**

Source : Engineering Service Division, MOH

Note:

A = Number of samples analyzed.
B = Number of samples violated.
C = Percentage of samples violated (%)

• Clinical Waste Management

The Clinical Waste Management consists of the following components:

- Development of policy and guidelines
- Training and advisory services
- Programme monitoring
- Programme evaluation

In 1992, a policy and guidelines on clinical waste management that meet all requirements stipulated in the Environmental Quality (Scheduled Wastes) Regulation 1989 was formulated. The guidelines known as "Guidelines For The Management Of Clinical and Related Waste in Hospitals and Health Care Establishment, Ministry of Health" consist of three main section, i.e., policy, guidelines and action plan for clinical waste programme.

The clinical waste service was privatized to three concession companies on 1st of January 1997. The company and the zone that the service is provided is as following:

Faber Mediserve Sdn. Bhd.	-	Northern zone, Sabah and Sarawak
Redicare (M) Sdn. Bhd.	-	Eastern and Central zone
Pantai-Medivest Sdn. Bhd.	-	Southern zone

During 2005, total of 7,014 tonnes of clinical waste were sent to the three concession companies.

With the implementation of this program, it is envisage that a proper clinical waste management by all Ministry of Health's hospitals and health care facilities can be carried out in conformity with the legal and environmental health requirements.

• 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 Healthcare Facility Engineering main role is to provide the technical support and input to all the healthcare programs and activities through:

- An effectively designed maintenance program for healthcare facilities and engineering systems
- An efficient and effective project management
- Technical advice and support in the field of hospital engineering and healthcare facilities

Activities

- Identify and plan the need for continuous upgrading of engineering facilities, replacement of equipment and plant and physical improvement to the existing health institutions.
- Manage and monitor the upgrading works of engineering systems and replacement of equipment and facilities in hospitals
- Provide engineering inputs in the procurement of medical and non-medical equipment and engineering systems in the hospitals and health institutions.
- Draft and formulate the related engineering guidelines for hospital engineering and healthcare facilities

Achievement

• Program Management

The Section has been entrusted to manage the following program. (Table 6)

• Technical Support and Advisory Services

Healthcare Facilities Engineering Section had also assisted the Medical Division, Dental Division, Planning and Development Division and State Health Departments in the procurement of medical and engineering equipment (electrical / mechanical) for hospitals and health institutions. (Table 8)

TABLE 6
Upgrading Hospital and Clinic Program Management

Activities	Cost (RM)	Expenditure %
Replacement of Split / Window Air Conditioning for Health Office and Clinics	1.25 million	95%

Source : Engineering Service Division, MOH

TABLE 7
Project Management

Type of Project	No of Project
Upgrade Healthcare Facilities and Engineering Systems	5
Procurement and Installation of Biomedical Equipment	2

Source : Engineering Service Division, MOH

TABLE 8
Technical Support and Advisory Services

Technical Advice	Numbers
Verification of specification and evaluation of tender for biomedical equipment	31
Testing & Commissioning of ambulances	402
Technical inspection of new hospitals and facilities	15
Vetting of plans and technical inspection of private hospitals	20

Source : Engineering Service Division, MOH

Radiation Health and Safety Branch

The Radiation Health & Safety Branch (RHSB) is responsible for ensuring the safe usage of ionizing radiation in medicine. There are two approaches adopted to carry out this responsibilities; via licensing and enforcement under the Atomic Energy Licensing Act 1984 (Act 304) for private hospitals and clinics and via implementation of all the requirements of Act 304 and its subsidiary regulations in the government hospitals and Health Clinics under the Ministry of Health Malaysia (MOH). For the government sector the approach also includes Quality Assurance Program (QAP) and medical physics advisory services. RHSB is also responsible for the development of Codes and Standards for ionizing radiation (IR) and non-ionizing radiation (NIR). It is also responsible for improving and updating existing Codes and Standards under Act 304.

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 and non-ionizing radiation in medicine are minimized and within acceptable levels.

Activities and Achievement

- **Licensing**

A total of 580 licences were issued in 2005, there comprising 143 evaluations for new licences and 437 for renewals of licences. The statistics involved in the issuance of licences in 2005 is illustrated in Table 9. Meanwhile, the total number of licenced and registered premises where the irradiating apparatus are located in Malaysia, both in government and private sectors are show in Table 10. Table 11 shows the total number of equipment in Malaysia both in government and public sectors by type of irradiating equipment.

TABLE 9
Total Number of Licences Issued in 2005

Agency \ Month	JAN	FEB	MAC	APR	MAY	JUNE	JUL	AUG	SEPT	OKT	NOV	DEC
Medical	13	7	14	5	16	11	11	13	7	15	15	17
Dental	37	24	35	27	32	36	38	34	23	39	44	38
Veterinary	3	1	0	1	0	1	1	2	0	0	0	1
Hosp/Radiotherapy	1	1	2	3	3	1	1	0	0	0	1	4
Class H	0	0	0	0	0	0	0	0	1	1	0	0
New Licences	**10**	**6**	**7**	**10**	**20**	**18**	**12**	**14**	**6**	**11**	**12**	**17**
Renewal	**44**	**27**	**44**	**26**	**31**	**31**	**39**	**35**	**25**	**44**	**48**	**43**
Total No Of Licence Issued	**54**	**33**	**51**	**36**	**51**	**49**	**51**	**49**	**31**	**55**	**60**	**60**

Source : Engineering Service Division, MOH

TABLE 10
Total Number of Licenced and Registered Premises as of December 2005

Type of Premises	No. of Premises		Total
	Public	Private	
Hospital	143	97	240
Health Clinic	141	NA	141
Dental Clinic	340	1,142	1,482
Radiotherapy Centre	3	17	20
Radiology Clinic	NA	39	39
GP's/ Non-Radiological Specialist Clinic	NA	1,303	1,303
Veterinary Clinic	1	34	35
Total	**628**	**2,632**	**3,260**

Source : Engineering Service Division, MOH

TABLE 11
Total Number of Irradiating Equipment in Public and Private Sector Health Facilities (as of December 2005)

Type of Irradiating Equipment	No. of Equipment		Total
	Public	Private	
General / Mobile X-Ray	933	1,333	2,266
Dental (Intra Oral / OPG)	550	1,258	1,808
Fluoroscopy / Mobile C-Arm	126	210	336
Angiography / Cath-Lab	16	53	69
CT Scanner	34	122	156
Mammography	29	98	127
Others	6	54	60
Total	**1,694 (35.1%)**	**3,128 (64.9%)**	**4,822 (100%)**

Source : Engineering Service Division, MOH

- **Monitoring and Enforcement**

These activities include inspection visits, monitoring of complaint, compliance with the quality assurance program requirement and enforcement of licensing activities. All enforcement activities including inspections, investigations, raids and prosecutions are carried out on all licensed premises to ensure maximum compliance to licensing requirements. A total of 152 premises were inspected, out of which 86 (56.6%) premises complied with all licensing requirements while 66 (43.4%) did not fully comply with all licensing requirements. 38 warning letters were issued and 28 x-ray machines were sealed in premises that did not fully comply with the licensing requirements.

- **Quality Assurance Programme (QAP) and 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 this activity, a total of 63 plans for government institutions were inspected and evaluated. These included the successful implementation of new project and upgrading new hospitals.
4 workshops in ionizing radiation including radiotherapy and non-ionizing radiation were successfully organized to improve radiation safety and to enhance quality of medical diagnostic imaging service in government hospitals and health clinics.

- **Development of Codes and Standards**

The activities carried out to develop Codes & Standards include:

- Developing Guidance Notes in radiology, radiotherapy and nuclear medicine to compliment the "Radiation Health and Safety Regulation (the use of ionizing radiation in medicine, dental & veterinary) 200_. which is in the process of being gazetted.
- Carry out studies related to safety in the used of ionizing radiation and non-ionizing radiation
- Compilation of international standards and references from other countries.
- Carry out studies on surveillance system in other countries.
- Participating in International Electromagnetic Fields (EMF) Project organized by World Health Organization (WHO).
- Organising a national conference with stakeholders for the purpose of circulating information and obtaining feedback from the public.
- Cooperation with SIRIM in developing standards.
- Developing draft 'Guidance Document on Health and Safety Aspects of Mobile Phone and Base Station' which will be discussed at The Inter-Agency Scientific Advisory Committee on Non-Ionizing Radiation.

Hospital Support Services Regulatory Section

The privatization of hospital support services involves a total of 123 hospitals and 4 institutions of the Ministry of Health in 1997. This project involves an annual expenditure of more than RM500 million for a concession period extending for fifteen 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 28th October 1996. The Take Over Date of all the services and the transfer of 2681 Government employees from the Ministry of Health to the three companies took place on 1st January 1997.

A Regulatory Unit was established in March 1998 in the Engineering Services Division of the Ministry of Health to monitor the performances of the Concession Companies. The Unit comprises of a unit head (Deputy Director) and 7 senior engineers in the fields of Biomedical, Mechanical, Electrical, Civil and Public Health Engineering. The Government has also appointed an independent consultant, Sistem Hospital Awasan Taraf Sdn. Bhd. (SIHAT) to assist the Regulatory Unit to supervise this project. Under the supervisory and consultancy contract, SIHAT Sdn. Bhd. will monitor the project through periodic field inspections, the use of the central management information system, technical audits and feedbacks from the various hospitals and concession companies.

One of the major activities of the Regulatory Unit is to monitor the implementation and compliances of the services to the Concession Agreement, Technical Requirements and Performance Indicators (TRPI), Master Agreed Procedures (MAP) and Hospital Specific Implementation Plan (HSIP).

The additional assets procured throughout the year and the upgrading of the hospitals by the Ministry of Health has contributed significantly to the increase in the workload of the hospital support services. The grant of concession has also been extended to the newly completed hospitals and the concession companies have been mobilized into these new hospitals. Apart from monitoring and mobilization of the five hospital support services, the Unit is also actively involved in the technical inspection of any newly completed hospitals or projects before hand-over. Table 12 indicates the workload of the hospital support services for 2005.

Privatising the five hospital support services has resulted in substantial benefits to the Ministry of Health specifically and to the nation in general. A comprehensive clinical waste management system has been established in all the Ministry of Health's Hospitals. The cleansing service provides a clear and visible evidence of the improvements made as a result of privatization. All hospitals are not only well maintained and kept clean but hygienic too at all times. High quality linen is supplied for staff and patient use with the laundering techniques controlled in line with the infectious control procedures. Evidently, operations and managements of the engineering services have improved with all works requested and complaints being tracked through a well-structured computerized management information system. A proper fault reporting system has also been defined. All the assets are registered and their maintenance histories updated. Planned preventive maintenance is scheduled and carried out on all biomedical equipment, plants, facilities and engineering systems, thus making the Ministry of Health the fore runner in instilling good maintenance culture within its organization.

TABLE 12
Workload of the Hospital Support Services in 2005

No. of Contract Hospitals (as of 1997)	127
New Hospitals / Institution in MOH (from 1997 to 2005)	20
No. of FEMS assets	270,369
No. of BEMS assets	120,425
No. of scheduled work orders	787,836
No. of unscheduled work orders	498,012
Weight of clean linen issued	27,152,846 kg
No. of new hospitals / projects inspected before hand-over	8

Source : Engineering Service Division, MOH

Note : *"Contract Hospitals" : as stated in the Hospital Support Service Consession Agreement that includes all hospitals, mental hospitals, leprosy centers, health institutions, food laboratories, National Blood Bank, Respiratory Center, and Health Management Institute.*

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 be an effective monitoring and enforcement unit has always been a big challenge to the Division. The core business common to all the Sections in the Division is monitoring programs, projects and services; and enforcement of legislative requirements. Being effective requires knowledge and adequate resources. Appropriate mechanism and definite parameters for monitoring need to be established. Right sizing the organization is critical so that monitoring activities can be effectively carried out. Apart from the manpower, the staff needs to be adequately equipped with the proper tools and equipment.

- The challenge is to provide technical input and professional project management in new development projects and any 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 plants. Quality, standards and regulations are met in all projects meeting the objectives and the needs of MOH and the client. Projects must be completed on time and within the specified budgetary framework.

CONCLUSION

- In the view of the expanding of services in the 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 continuity of the all programs planned.

- The need to improve and upgrade the current conditions of the buildings and equipment/system to cater for the rapid change in technology and demand of the medical services is inevitable. A planned program to upgrade, refurbish and replace old and obsolete equipment and facilities needs to be established to ensure that the healthcare facilities are functional and safe to use. The Healthcare Facility Engineering will play a vital role in the implementation of the upgrading projects identified in the Ninth 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 of 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 for medical purposes and to ensure that the benefits from both ionizing and non-ionizing radiation were minimized.

In 2005, the National Institutes of Health (NIH) continued to evolve to be recognized as centres of excellence in health research. The establishment of the NIH Secretariat in October 2005 helped facilitate the research management of the NIH. Another major milestone occurred when staff of the Division of Health Education, Institute for Public Health was transferred to the Institute for Health Promotion, thus, strengthening the capacity of the Institute. All other Institutes have also contributed greatly towards evidence based research and training for major programmes of the Ministry. The following reports from each the Institutes illustrate their research activities, progress, achievements and future prospects.

INSTITUTE FOR MEDICAL RESEARCH

The Institute for Medical Research (IMR) is the research arm of the Ministry of Health and its main function is to carry out research to identify, elucidate, control and prevent diseases and health issues/problems prevalent in the country. The IMR also provides specialized diagnostic services, training in specialized fields and consultative/advisory services.

The IMR has 689 posts, of which 556 (80%) have been filled. There are 179 persons in the Managerial and Professional Group, comprising scientists, doctors, dentists, veterinarians, librarians, system analysts, a statistician, a pharmacist and administrative officers. The rest of the staff ie. 377 persons belong to the Technical and Support group. The total budget available to the Institute was about RM 55.4 million, an increase of 2.4% over the 2004 budget of RM 54.09 million.

The IMR serves as the SEAMEO TROPMED Regional Centre for Microbiology, Parasitology and Entomology, World Health Organisation (WHO) Regional Centre for Research and Training in Tropical Diseases, WHO Collaborating Centres for (1) Training to Eliminate Lymphatic Filariasis, and (2) Ecology, Taxonomy and Control of Vectors of Malaria, Filariasis, and Dengue (since 1986) and the Secretariat of the Inter-Islamic Network for Tropical Medicine (INTROM). The Institute is also the national focal point for the WHO Collaborative Surveillance Programme on Antibiotic Resistance in the Western Pacific Region and the National Influenza Centre.

RESEARCH ACTIVITIES

In 2005, staff members of the Institute were engaged in 91 projects. The Institute published 73 scientific papers and produced 14 reports. The reports are generally prepared to meet specific requests made by various government departments and agencies. In addition, staff of the Institute presented 130 papers at local and international seminars.

In 2005, the main research activity in the Allergy and Immunology Research Centre centred on fish allergy, particularly on the identification and characterization of allergens in locally consumed fish. The major allergens of the narrow-barred Spanish mackerel were 50 kD and 42 kD components. The red and gold snappers, both, yielded a 51 kD major allergen. The golden snapper also yielded a 46 kD major allergen, while the red snapper's other major allergen was 42 kD. In our evaluation of the Phadiatop test, we found it to be useful in the diagnosis of inhalant allergy, particularly dust mite allergy. As the AIRC's diagnostic service includes tests offered nationally, a study was also carried out to determine the effect of temperature, transit time and agitation on test results. Not unexpectedly, the study showed that longer transit times and higher temperatures did adversely affect the results of the phagocytic function test. Hence, the AIRC will work with distant hospitals to resolve this issue.

The Cancer Research Centre comprises the Haematology, Molecular Pathology and Stomatology Units. In 2005, the Haematology Unit ventured into the following new research areas; 1) profiling gene expression in Malaysian breast cancer, funded by a Topdown National Biotechnology Directorate (NBD) Research Grant, 2) RNA interference in haematological malignancies, funded by a MAKNA Cancer Research Award, and 3) ex vivo cord blood cell expansion, a collaborative study with the National Cord Blood Bank. The Unit's other projects include a study of p53 expression in colorectal cancer, detection of p53 mutations using a kit, and the application of molecular cytogenetic techniques on bone marrow aspirates. The Unit continued to serve as the National Referral Centre for Cytogenetic Analysis, and provided specialized diagnostic services in the 1) screening of thalassaemia and haemoglobinopathies, 2) molecular diagnosis for thalassaemia, 3) confirmation of alpha thalassaemia (sole provider in Ministry of Health Malaysia), 4) rapid bcr/abl transcript quantitation in Chronic Myeloid Leukaemia patients, and 5) detection of the common translocations present in paediatric leukaemia.

The Molecular Pathology Unit was engaged in 5 research projects on cancer. The first project was a study of the genes related to colorectal cancer in a large group of affected patients. The objectives of the second study were to screen microalgae extracts for anti-neoplastic and anti-viral properties, and to elucidate the mechanism of these properties at the molecular level. The third study was a preliminary investigation to determine the importance of the tumour suppressor genes p53 and RB2/p130 in nasopharyngeal carcinoma. The fourth study was a mutational analysis of the PTEN gene in sporadic colorectal tumours, while the last study concerned the effects of metal complexes on cancer cells.

The Stomatology Unit started a weekly consultative Oral Medicine clinic at the Kuala Lumpur Hospital and continues research in the clinicopathologic aspects of oral cancer and oral diseases.

The Diabetes and Endocrine Unit, one of two units in the Cardiovascular, Diabetes and Nutrition Research Centre, continued to study the effect of water-soluble Kacip Fatimah on the endocrine system. In 2005, the Unit started a collaborative study, examining the effect of Tinospora crispa or patawali on diabetes, with Kolej Universiti Kejuruteraan & Teknologi Malaysia (KUKTEM) and the Karolinska Institute, Sweden.

The Nutrition Unit, CDNRC, determines the major food components, by proximate analysis, as well as the mineral, vitamin and sugar content of all samples, including prepared food, animal feed, and vegetables, sent for analysis. The Unit also supplies rapid test kits to determine iodine levels in salt and water samples. The number of salt and water iodine test kits prepared in 2005 showed an increase, of about 16 %, over the number prepared in 2004. The Unit has completed the study of a modified micro-method for measuring urine iodine and will recommend its use by all the iodine laboratories in the Ministry of Health Malaysia.

The Environmental Health Research Centre (EHRC) maintained its focus on environmental health related research and activities. The Centre's three major projects were: 1) mercury exposure among dental health workers; 2) exposure to pesticides through vegetables; and, 3) the relationship between climate change and infectious disease. A number of small research projects were also carried out by the officers of the Centre covering various aspects of environmental health such as environmental toxicology, environmental microbiology and recreational water quality. In addition, a hepatitis surveillance program was initiated by the EHRC to monitor Hepatitis B infection among the IMR staff.

During the year, the EHRC also assisted in the investigation of fungal infestation of a government building in Kuala Lumpur, mercury exposure in Trengganu and suspected river contamination by animal farm effluent.

The EHRC successfully converted to the new ISO14001-2004 standard and retained ISO14001 certification. The centre is committed to improving environmental management systems for the prevention of pollution through its research activities. The EHRC maintained its role as an information clearing house, through the annual publication of the Environmental Health Focus. It also organized the annual environmental health forum with the theme on Occupational Health.

The Herbal Medicine Research Centre (HMRC), which comprises the Information Phytochemistry, Toxicology and Pharmacology and Bioassay Units, is engaged in establishing the 'Global Information Hub on Integrated Medicine'. The Information Unit continued the T/CM survey, *'Tinjauan awal penggunaan perubatan tradisional dan komplimentari di Malaysia'* in collaboration with the Institute for Health Systems Research, MOH. Part of this study entailed obtaining information from several identified T/CM practitioners' bodies, regarding apprenticeship, continuous education and daily practice. In 2005, two modalities of treatment, namely acupuncture and homeopathy, were studied in projects funded by the IMR Small Research Grant scheme. For reference, the unit has also started a voucher specimen collection of the plants studied by the HMRC.

The main function of the Phytochemistry Unit is to provide phytochemical analysis in herbal research. The unit has commenced research in the new area of chemical standardization and identification of adulterants in herbal products. Funded by the IMR Small Research Grant scheme, the phytochemical analysis of polysaccharides in mushrooms, *Hericium erinaceous* and *Ganoderma lucidem,* identified at least 3 monosacharide. Analysis of *Centella asiatica* (Accession No. 7) (MARDI) confirmed the presence of 2 unidentified compounds detected in earlier studies of *Centella asiatica* (Accession No. 11). The isolation and identification of these two compounds is in progress. Studies of the crude extract of *Phyllagathis rotundifolia* showed potent anti-oxidant activity. Phytochemical extraction and fractionation of *Piper sarmentosum*, *Curcuma xanthorrhiza* and *Gynura procumbens* was also carried out and bioactivity studies are in progress.

The Toxicology & Pharmacology Unit was engaged in 5 projects funded by the IMR Small Research Grant, of which three have been completed. These projects examined the effect of *Labisia pumila var pumila* extracts/products on drug metabolising enzymes, genotoxicity and the level of heavy metals.

The general objective of the Bioassay Unit is to verify claims made about medicinal plants, regarding prevention and treatment of malaria, cancer, bacterial infection and hypertension, through research. In 2005, the Unit's research was centered on malaria and cancer. Of the seven projects that received MOSTE and MOH funding, 6 were ongoing while one was new. In addition, 5 small projects were funded by the IMR Small Research Grant Scheme, and 1 project was funded by SEAMEO. Under the bilateral Malaysia-India programme, the Unit coordinated a hands-on workshop, 'Techniques in Immunomodulatory screening of herbal drugs', from 25-30 July.

The Infectious Diseases Research Centre (IDRC) embraces the Acarology, Bacteriology, Entomology, Parasitology and Virology Units. The major research concerns of the Acarology Unit were the distribution of ectoparasites (especially ticks) on small mammals, and control of house dust mites. Our staff participated in 2 national scientific expeditions where the ectoparasitic fauna of small mammals was examined. In the laboratory, a tick colony was established with the

development of an in vitro technique for feeding ticks. A new programme to evaluate the measures to control house dust mites, was started in 2005. We have, so far, evaluated the laboratory efficacy of one commercial disinfectant, 2 plant extracts, and a commercial ionizer.

The Bacteriology Unit maintained its surveillance of resistance to commonly prescribed antibiotics in selected bacteria. A preliminary study of the in vitro antibiotic susceptibility of Malaysian isolates of *Helicobacter pylori* was carried out. The aim was to determine the resistance pattern of the organism against commonly prescribed antibiotics, namely clarithromycin, amoxicillin, amoxicillin-clavulanate, metronidazole, ciprofloxacin, levofloxacin and tetracycline by minimum inhibitory concentration (MIC) determination using E-test. Another study examined the in vitro susceptibility pattern of Malaysian methicillin-resistant *Staphylococcus aureus* (MRSA) strains to teicoplanin. The results showed that MRSA strains from Malaysian hospitals are susceptible to teicoplanin and hence potential as an alternative treatment for MRSA. The Unit also analyzed Helicobacter pylori and MRSA drug resistance at the gene level. DNA fingerprinting of metronidazole-resistant Helicobacter pylori of the ureaC gene was carried out by PCR-RFLP. RFLP analysis was also done on the fusA genes from fusidic acid-resistant MRSA isolated from Malaysian patients. The aim was to determine the mechanism of mutation in these genes.

In view of the importance of dengue, the Entomology Unit conducted a number of studies on dengue vectors. The bioefficacy of several control agents and devices was evaluated. A biolarvicide against *Aedes* vectors, *Bacillus thuringiensis H-14* was field-evaluated in a residential area and effective larviciding was observed. For the first time, the effect of residual spraying of a pyrethroid, deltamethrin against *Aedes* was field evaluated. The results indicated that Aedes populations were controlled to some degree by deltamethrin. The effect of copper on the development of *Ae albopictus* larvae was examined and the results showed that 20 g/L of copper achieved complete mortality. The field test of an electric mosquito trapping device showed it was effective in reducing the *Aedes* population. Studies also examined the bionomics of and dengue infection in the vectors. Sublethal dosages of an insect growth regulator had no effect on the dengue vectorial capacity of *Aedes aegypti*. Transovarial dengue virus was detected in field-collected *Ae aegypti* and *Ae albopictus* while laboratory studies indicated that transovarial dengue-2 virus may persist, for up to 5 generations, in *Ae aegypti* larvae. The attempts to quantify dengue-2 virus using plaque assay in the C6/36 cell line gave promising results. Determination of the durability of the IMR RT-PCR mosquito-dengue infection detection kit showed it was stable for about 3 weeks at 20C. The first ever study of *Ae aegypti* susceptibility to the chikungunya virus showed this mosquito was a potential vector.

The Entomology Unit also studied malaria vectors. In this regard, a field evaluation of a new formulation of deltamethrin applied by residual spraying, showed that it was effective against malaria for up to 9 months at 25 mg/m2.

The Insecticide studies included: the bioefficacy of a commercial household aerosol against Ae aegypti under simulated field conditions, bioefficacy of residual-sprayed alpha-cypermethrin on a sandy beach for the control of sandflies, bioefficacy of pyrethroid-impregnated net for the control of house fly in a poultry farm and the biochemical analysis of insecticide susceptibility of culicine mosquitoes.

The Entomology Unit also carried out other studies, and these were: adult mosquito trapping using yeast-generated CO2, allergens from the *Pycnoscelus* cockroach, surveillance of diurnal and nocturnal dipterous flies in Putrajaya, report of a fatal case of hornet sting and a case of nasopharyngeal myiasis due to *Chrysomya bezziana*.

The Parasitology Unit continues to be actively involved in malaria research. This year the unit detected *Plasmodium knowlesi*, by nested PCR, in 11 blood slides from patients who were found to be positive for *P. malariae* by microscopic examination. Since expertise in microscopic examination is not available this unit will provide assistance in the identification of *P. knowlesi* by nested PCR. Studies have incriminated Anopheles latens as the vector of *P. knowlesi* in Kapit Sarawak. The molecular characterization of *Entamoeba histolytica* and *Entamoeba dispar* is ongoing.

The Virology Unit focussed 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. In 2005, the Unit was involved in investigating several outbreaks suspected to be of viral aetiology in Peninsular Malaysia. From February till May, the Unit was involved in the investigation of the Hand, Foot and Mouth Disease (HFMD) outbreak in Johor, Pahang and Penang. In April, the unit identified influenza B as the causative agent of an outbreak of acute respiratory infection in a residential school in Penang. In May 2005, the Unit helped to rule out virus infection in an outbreak of acute respiratory distress syndrome in Malacca, Kelantan and Perak. During a dengue outbreak in Penang in October, the Unit identified dengue 1 as the main circulating serotype.

The WHO National Laboratory for Polio Eradication at the Virology Unit performed satisfactorily in the WHO-organised quality assurance programme conducted in 2005 and retained accreditation, which it has held since 1998.

The aim of the project on maternal-child HIV, initiated in 1990, is to determine the epidemiology of paediatric HIV and evaluate available diagnostic tests to facilitate early diagnosis of paediatric HIV infection. Since 1995, the Polymerase Chain Reaction (PCR) technique, routinely, provides early diagnosis of HIV infection in the paediatric age group. The HIV sero-surveillance programme continues with the unit serving as the National reference centre for cases with difficult or unresolved serology. HIV-2 sero-surveillance was introduced, several years ago, current data indicates that HIV-2 has not been introduced into the Malaysian population.

The Unit's maintains surveillance programme to monitor the circulating dengue virus serotype, influenza and hand, foot and mouth disease for Ministry of Health. The dominant circulating dengue serotype in 2005 was still Dengue 1 and as for influenza, A/California/7/2004-like and B/Hong Kong/330/2001-like strains were found to be the predominant strains for influenza A and B respectively.

The Medical Research Resource 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 Biotechnology Unit examined the role of the Interleukin-1 beta gene polymorphism in systemic lupus erythematosus (SLE). DNA obtained from ninety two SLE patients from the Medical Clinic at the UKM Hospital were genotyped at the promoter and exon-5 regions of the IL-1 beta gene using PCR-RFLP. Statistical analysis gave no evidence that IL-1 beta polymorphism affected susceptibility and pathogenesis of SLE in Malaysian Chinese patients. The association of gene polymorphism in the Angiotensin converting enzyme (ACE) with Immunoglobulin A nephropathy was investigated in biopsy-proven patients. The association between ACE polymorphism and ischaemic heart disease patients was also studied in a group of 100 confirmed coronary artery disease patients at the National Heart Institute. The study showed

that there was no association between ACE gene deletion polymorphism and coronary heart disease. The unit continued the study of the genetics of *Giardia duodenalis*. Faecal specimens from Orang Asli patients admitted to Gombak Hospital were analysed. The *Giardia duodenalis* gene encoding the homologous cysteine-rich trophozoite surface antigen (TSA-11) was typed, cloned and sequenced to obtain a phylogeny tree. Most of the local isolates showed polymorphism among themselves and with pathogenic WB strain.

The Epidemiology and Biostatistics Unit was engaged in the following studies: 1) prevalence and factors related to smoking among secondary school students in land settlement areas of Kota Tinggi, Johor; 2) helminth infection in small mammals from Ulu Gombak Forest Reserve and the risk to human health; 3) risk Factors of Gestational Diabetes Mellitus among women attending government antenatal clinics in Melaka Tengah District : a case control study; 4) factors related to alcohol drinking among the adolescents in Federal Territory, Kuala Lumpur; 5) obesity among primary schoolchildren in Kuala Selangor : a cross-sectional study; 6) application of seasonal decomposition forecasting technique for forecasting air pollution in Kuala Lumpur; 7) hepatocellular carcinoma (HCC) in Malaysia : demography, clinical features and outcome; 8) smoking behaviour among elderly males aged 60 years and above in Malaysia: prevalence, knowledge and attitude towards risk of smoking habit; and, 8) environmental risk factors of rheumatoid arthritis: hospital based case-control study. In addition, the unit has a strong training role. It provides training in the use of statistical software for research, and in research methodology, which is tailored for junior and new IMR staff. The Epidemiology and Biostatistics Unit also offers epidemiological and statistical consultancy services to IMR staff and to staff from other institutions/agencies.

Three new programmers and one support staff joined the Information Technology Unit this year. Two staff members are pursuing Masters Degrees in local universities.

The Specialized Diagnostics Centre comprises the Biochemistry Unit and the Molecular Diagnostic Protein Unit. The research activities of the Biochemistry Unit centre on the development and evaluation of new screening and confirmatory methods for IEM. This includes analysis of VLCFA and Phytanic Acids for the diagnosis of Peroxisomal diseases, Galactose measurement to screen Galactosemia, rapid detection of urine succinylacetone to diagnose hepato-renal tyrosinemia, determination of urinary pterins by HPLC in the biochemical profiling of hyperphenylalaninemia.

The Biochemistry Unit and the Malaysian Association of Clinical Biochemists organized the 'Quality in Clinical Chemistry' workshop at the IMR for about 140 participants. The lecturers, who were from Singapore and University Science Malaysia, spoke on subjects such as Quality Control and method validation. The Unit also assisted the Paediatric Institute, KLH in organizing a 'Short Course on Genetics and Inborn Error of Metabolism' held between 5 and 7 December 2005.

Tandem Mass Spectrometry (LC MS/MS) has replaced Thin Layer Chromatography (TLC) in the screening of amino acid/organic acid disorders and fatty acid oxidation defects. Analysis of plasma Very Long Chain Fatty Acids and Phytanic Acid as diagnostic markers for peroxisomal disorders have also been offered this year. The detection of Orotic acid in urine, important in the diagnosis of urea cycle defects, has been suspended, as the test reagent was found to be hazardous and has been withdrawn from the market. A new HPLC technique is being developed to replace the old method. The tests for iron and total iron binding capacity were devolved to hospital laboratories.

The Molecular Diagnostics and Protein Unit focussed on two areas of research; specific proteins and the molecular diagnosis of genetic diseases including IEM. Three research projects were undertaken in specific proteins, the first being the evaluation of a new specific protein, serum Cystatin C which was found to be a better endogenous marker for Glomerular Filtration Rate (GFR) than Creatinine in terms of analytical performance and diagnostic value. The second was a comparative study of Capillary Zone Electrophoresis and conventional agarose electrophoresis systems for serum protein analysis. This fully automated, multi-channel instrument dedicated to serum protein separation is a rapid, highly reproducible and reliable high throughput screening system for protein analysis and particularly advantageous in clinical chemistry laboratories with a high workload. The third was a preliminary study of the molecular characterization of Ras Oncogene activating mutations in Multiple Myeloma. A heterozygous polymorphism in the H-Ras gene was found in a patient diagnosed with IgD λ Multiple Myeloma, one of the rarer isotypes. This project is still ongoing and will be extended to other genes of interest.

Our second research focus is the molecular study of selected genetic diseases including IEM. We started a new study of mitochondrial DNA encoding 16 additional mitochondrial genes namely ND5, ND6, ATP8, COX III, ND4L and transfer RNA genes (Val, Leu1, Leu2, Ser1, Ser2, Asp, Lys, Gly, Arg, Ile and His) apart from the five already established genes (D-Loop, ND1, ND4, CytB and ATP6). Mitochondrial disorders or more commonly, mitochondrial cytopathy, display an extensive genetic heterogeneity in causation. Some of the more common disorders that have mutations in the mitochondrial DNA include Leigh's Syndrome, LHON, NARP and Mitochondrial Myopathy. Novel mutations in Leigh's Syndrome have been identified in two patients. We have also been able to study a few LHON cases as well as mitochondrial myopathy. In our study of FRAXA CGG Repeats in Fragile X Syndrome we found three full mutation and two pre-mutation cases of the 74 probable cases examined. We have since offered this as one more test in the molecular diagnostic service for the country. In addition, we have been able to identify six cases with various abnormal isoforms of mucopolysaccharidoses (MPS) cases from the 128 probable MPS cases examined. The outcome of this R&D is the specialized diagnostic tests which supports clinicians / paediatricians in providing early diagnosis and treatment or genetic counselling, appropriate to the case.

DIAGNOSTIC SERVICES

In 2005, the Institute performed 238,581 diagnostic tests. This represents an increase of 11.2 % over the previous year's total of 214,549.

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 of the Institute also serve as referral centres to MOH Laboratories throughout the country. During the year, 95 staff members provided consultative services at the national level, while 13 staff members provided such services at the regional/international level.

SCIENTIFIC AND TECHNICAL TRAINING PROGRAMMES

Training activities carried out by the Institute comprise both regular courses offered annually as well as ad hoc training programmes and attachments to various units for industrial training. The regular training courses include the three-year Diploma in Medical Laboratory Technology course, and the two SEAMEO-TROPMED six-month postgraduate courses namely, the Diploma in Applied Parasitology and Entomology and the Diploma in Medical Microbiology. The ad hoc programmes provided training opportunities for 587 scientists, medical doctors and allied health personnel from other departments and local and foreign institutes. Of these 69 were undergraduates from local tertiary institutions who received training through attachments spent at the various units of the Institute. The Institute also conducted 28 training courses during the year.

CONFERENCES AND STAFF DEVELOPMENT

Staff members of the Institute participated actively in scientific exchange in that 162 members attended various local and international conferences, seminars and scientific meetings. In terms of training, 334 staff from the Institute attended training courses/workshops: 327 members attended short courses/workshops, of less than three months duration, while 7 attended courses of longer duration. In 2005, 33 staff members pursued post-graduate qualifications, with 18 enrolled for PhD and 15 for Masters Degrees. In the same year 3 were awarded Masters, and 3 their PhD degrees.

WAY FORWARD

The Institute will emphasize on 5 prioritized activities namely focusing research in four key areas, strengthening existing and establishing new national reference centres, setting up a central facility, improving upon existing centre-specific programmes and implementation of the Global Information Hub on Integrated Medicine. The Institute has niched its strategies against its unique set of strengths and prioritized activities that are most likely to achieve results within the time frame

In the 9th Malaysian Plan, the Institute for Medical Research will consolidate resources while enhancing the capacity and capability to improve the delivery of the core businesses of research and specialized diagnostic services. Training and consultations will remain as the other main functions of the Institute.

CONCLUSION

To have the capability to conduct world class research and to deliver quality services, the Institute must have talented and committed individuals within the workforce. The Institute will plan and provide relevant training and coaching to its researchers so that they remain motivated, innovative and have the right skills for the job at hand. The Institute will build on existing networks and create new synergies to widen its collaboration with external parties in national research initiatives.
Top management support and financial backing for building of facilities, manpower recruitment and training are crucial for the IMR to realize these objectives and to operate effectively and efficiently.

INSTITUTE FOR PUBLIC HEALTH

The Institute for Public Health Research (IPH) was establish at the beginning of the Five Year Plan of the Second Rural Development Project (1961 - 1965). The importance of training in health and research for the purpose of raising the health status was the main reason for setting up this Institute. After 39 years in existence, IPH has developed rapidly with various functions in research, training, information distribution and consultation. Since its formation, it has successfully trained various categories of health personnel at the basic stage and in advancement levels. In the future, IPH has planned to place greater emphasis on research as its main function besides preserving training to provide higher quality and professionalism in service.

OBJECTIVES

The objectives of the Institute for Public Health are 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 training courses include the traditional long courses such as the Post- Basic Training for Public Health Inspectors, Public Health Nurses Training, the Post Graduate Course in Health Education and the in-service short courses.

The Institute plays a major role in providing training to fulfil the needs of public health personnel in human resource development in Quality Assurance, Research Methodology, Counselling, Information Technology, Epidemiology and Disease Control, Environmental and Occupational Health, Family Health and Nutrition, Food Safety, Quality Control of Drink Water, Health Education, Communication/Risk Communication and Patient Education.

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 Institute for Public Health provides technical consultancies both locally and regionally in the Transfer and Training Technology for ACT Malaria, Breastfeeding: inter-country consultancy to Brunei, Burden of Disease for Program Managers and Risk communication for all categories of personnel in the Ministry of Health.

RESOURCES

The Institute's academic force constitutes of 30% of the total number of staff. It includes officers from the medical and the public health fields, inspectorate, nursing, health education and other related fields consisting of nutrition, food technology, microbiology, entomology, chemistry and statistics. The rest of the staff comprise of administrative and support group.

FACILITIES

Situated in a location comprising 45 acres on Bukit Bangsar, Kuala Lumpur, the IPH has modern facilities which provide a conducive environment for working and intellectual development. The facilities include computer laboratories, lecture rooms, library, audiovisual equipment room, sanitary workshop, multipurpose hall, medical clinic, hostel blocks with dining hall, surau, staff quarters, healthy kitchen, cabin for research purposes, sports and recreation facilities such as badminton, tennis, volleyball netball and sepak takraw courts.

Theoretical teaching is insufficient to produce health personnel who are skilled and motivated to carry out their responsibilities and duties in actual field conditions. The institute therefore has practical training centres for Health Inspectors all over Malaysia to do their practical training. Nurses and Health Education Officers also carry out community based practical and intervention studies.

RESEARCH PROJECTS

The year 2005 saw the staff in the Institute initiating several major research projects carried out on its own or in collaboration with several agencies and funding from MOH . These include the National Health & Morbidity Survey III (NHMS III), National Ear and Hearing Disorders, Intervention Package to Improve Exclusive Breastfeeding Practice, Nutritional Status & Dietary Intake Of Breast Cancer Patients (pre and post treatment) Attending Government Hospitals and Food Consumption Survey.

In addition to the above there were also about 12 intervention projects aimed at behaviour changes in the community undertaken by the student Health Education officers with the supervision from Health Education Officers in IKU and lecturers from UKM. The projects cover Pap Smear, Relaxation Technique, Exercise, Compliance of diet, medicine and exercise among diabetic patients, Obesity, COMBI for Dengue Control, Doktor Muda, Breakfast Intake and Quality of Life Among Asthmatic Patients.

SPECIAL PROJECTS

IKU had conducted Occupational Safety and Health Week for 5 days beginning from 8th till 12th August 2005. The objective was to enhance awareness and knowledge among IPH, IHM and IHSR staff regarding safety and health at workplace. Among the activities were Health Screening, Talk on Ergonomics, Occupational Safety and Health Act 1994, Stress Management, First Aid Course and Demonstration on Using Fire Extinguisher.

TRAINING

There were seven long courses conducted in the Institute. These include the training of Health Education Officers at the Post Graduate level for 2 groups, three Health Inspectors Post Basic trainings namely Investigation & Prosecution of Public Health Legislations (12 months), Environmental Sanitation (6 months) and Safety Hygiene and Safety (6 months) and the Public Health Nurses Training (April & July session). In addition to these, 33 short courses were conducted for public health personnel as in Table 1.

TABLE 1
Short Courses Conducted for Public Health Personnel

FIELD	NO.
TB Management	4
Dengue Virus Isolation in Mosquito and its role in surveillance	1
Diabetic Mellitus Diseases Control	1
Outbreak Control & Management	1
Introducing tom ISO 9001:2000	1
Surveillance and Malaria Control	1
Occupational Safety and Health Training	2
Ergonomics and Manual Handling Training	1
Safety Food Course & HACCP	1
Introduction to KMAM Course	1
Sanitary Survey Course	1
Food Act & Inspection Course	1
Introduction to Internal Air Quality, Environmental Health Impact Assessment & Environmental Risk Assessment Course	1
Care of The Elderly	1
Primary Health Care	1
Adolescent Health and Counselling Skills	1
School Health Program	1
Breastfeeding Counselling	1
Nutrition Communication	1
Management of Community Healthy Kitchen	1
Statistics Analysis Using SPSS	1
Basic Management of Diet Therapy	2
Research Methodology in Dietetics	1
Basic Management of Diet Therapy for adolescent Basic	1
Risk Communication	1
Public Speaking	1
Patient Education	1
ICD-10 Course for Assistant Medical Record Officers in Sabah & Sarawak	1

Source : Institute for Public Health

CONSULTANCY SERVICES

The Institute also provided consultancy services. Among the notable ones are in the field of Burden of Disease, Breast Feeding, Effective Communication, Risk Communication for Program Managers and Professional Staff, Health Promotion, Epi-Info, Chemistry (Analytical & Organic), Family Health and Nutrition.

Three papers were presented namely “Issues in implementation of the National Ear and Hearing Disorder Survey” (in 6th Academy of Medicine Scientific Meeting 2005), Baby’s Food (in Breastfeeding Forum 2005) and Community Dietetic Services for Special Needs Children (in Technical Meeting of the National Community Rehabilitation Coordinating Committee (NCBRCC)).

PUBLICATION

Publication for this year was submitted by the Family Health Division to the Journal of Public Health Medicine – supplementary Issue 2005, with the title ‘National Ear and Hearing Loss Disorder Survey – Current Issues in Implementation’.

ATTACHMENT OF UNIVERSITY STUDENTS

Some students from local universities were attached to the Family Health Division as part of their learning process.

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 were send for various courses, workshops, seminars and conferences under the WHO budget and also the local training budget. One staff had been granted WHO Fellowship for training in nutritional programme.

WAY FORWARD

To be a centre of excellence in public health research so as to enhance health and quality of life for the nation. Besides that, IPH has a vision to promote health, wellbeing and quality of life for the community through public health research, training and technical assistance. This will be achieved by:

- Conducting, coordinating and assisting in research
- Offering focused educational programs that facilitate health care
- Timely transfer of knowledge gained from evidence based practices
- Fostering strategic partnerships with relevant organizations both nationally and internationally.

CONCLUSION

The Institute for Public health aspires to become a regional centre for public health training and the also 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 course as requested by its clients.

CLINICAL RESEARCH CENTRE

RESEARCH

Clinical Research Centre's (CRC)main core research areas are Clinical Trial, Clinical Epidemiology, Clinical Economics and Databases /Registries. We have taken great strides in promoting research activities especially targeting clinicians in the form of conducting training activities. The numbers of clinical trials that CRC is conducting as well as the industry-sponsored trials are increasing. Supported by the extensive information technology capabilities, CRC provide a wide range of clinical trial services aiming to meet all the clients' outsourcing needs.

Overall there seems to be an increase in the number of projects undertaken by CRC as compared to the previous year. The clinical research projects undertaken for the year 2005 were as follows: Clinical Trials 11 projects, Clinical Economics 1 project, Clinical Epidemiology 8 (2 of which are by Clinical Databases/Registries). The duration of most projects is more than a year. Some of the major projects that are on going are namely, National Medicines Use Survey and National Medical Device Survey.

PUBLICATION

Overall there seems to be an increase in research publications and technical reports from year to year. There has been a gradual shift of publications in local or regional journals towards publications in prestigious international journals. 5 of our publications were accepted by the international journals and 2 research reports were published. Table 2 shows CRC research publication.

TABLE 2
CRC Publication

	Journal Article / Investigator	Publisher
1.	Randomized controlled trial of pulse intravenous cyclophosphamide versus mycophenolate mofetil in the induction therapy of proliferative lupus nephritis Ong LM, Hooi LS, LimTO, Goh BL, Ghazali A, Rozina G, Teo SM, Wong HS, Tan SY, Wan Shaariah, Tan CC, Zaki M	Nephrology 2005; 10, 504 - 510
2.	Refractive Error and Visual Impairment in School-Age Children in Gombak District, Malaysia Goh PP, Abqariah Y, Pokharel GP, Ellwein LB	Ophthalmology 2005; 112: 678 - 685
3.	Prevention of renal failure: The Malaysian experience Hooi LS, Wong HS, Zaki M.	Kidney International 2005; 67: S70-S74
4.	Economic Evaluation of Centre Haemodialysis and Continuous Ambulatory Peritoneal Dialysis in Ministry of Health Hospitals, Malaysia Hooi LS, Lim TO, Goh A, Wong HS, Tan CC, Ghazali A, Zaki M.	Nephrology 2005; 10: 25-32
5	Cost-Effectiveness Analysis of Malaysian Neonatal Intensive Care Units Irene Guat Sim Cheah, Anna Padma Soosai, Swee Lan Wong, Teck Onn Lim.	J Perinatol 2005; 25(1): 47 - 53

Source : Clinical Research Centre

REPORTS

1) Twelfth Report of the Malaysian Dialysis and Transplant Registry, 2004 Kuala Lumpur, 2005
2) Directory of Dialysis Centres in Malaysia 2005

The full publications and reports can be viewed and downloaded from our website at http://www.crc.gov.my/publications/

TRAINING

Human Resource

CRC's multi-disciplinary research team consists of highly qualified professionals from a variety of health, scientific and IT backgrounds. This is to ensure that we always have the right people with the right skills. CRC has sent a number of her staff on conferences and training courses both locally and abroad; to obtain skills in the relevant research areas. E.g. International Training Course on Drug & Therapeutics Committees, an International Conference on Defining Roles, Responsibilities and Relationship, National Regulatory Conference 2005, World Congress of Epidemiology, 2005 Joint Statistical Meetings, 6th Ministry of Health Malaysia – Academy of Medicine of Malaysia Scientific Meeting 2005. All these conferences and training is needed to keep the staffs up-to-date on the development of research.

Workshops

There were a total of 7 courses conducted by CRC in 2005, training a total of 206 participants. Among the specific areas of expertise provided were on research methodology & biostatistics, good clinical practice, clinical economics workshop, quality improvement in health care and critical appraisal. Evidence Base Medicine (EBM) Unit has been transferred to IMR since December 2004. And thus their activities such as EBM workshop have ceased and were transferred over to IMR since then. The GCP workshops were conducted in month of March, June, August and October in Pulau Pinang, Kuala Lumpur and Sarawak. As for the Research Methodology, Biostatistics and Economic Workshops, it was held in March and July in Pulau Pinang and Kuala Lumpur. The workshops conducted for the year 2005 were as in Table 3.

TABLE 3
The Number of Workshops Conducted and Participants Trained for the Year, 2005

Units	2005	Total Participants 2005	Total Workshops Conducted from year 2000 to date	Total Participants Trained from year 2000 to date
Good Clinical Practice	5	154	21	728
Introductory Biostatistics	1	36	4	127
Clinical Economics	1	1 6	3	93
Total	**7**	**206**	**28**	**948**

Source : Clinical Research Centre

CRC RESEARCH CLINICS AND CONSULTATION

There is a steady increase of consultation over the past 3 years: 21 (2003), 51 (2004) and 76 (2005). The requests for consultations were from clinicians and Master's student on attachment in Hospital Kuala Lumpur. The consultations were for study design, sample size planning, proposal / protocol development, data management and statistical analysis. Depending on client's problem, CRC team of clinical epidemiologist, trial physician, clinical economist, data management experts, biostatistician and IT expert will be made available for the discussion. As for international consultancy, CRC was invited to conduct the Clinical Trial Methods and GCP Methodology for The Aga Khan University, Pakistan. CRC Research Clinic and consultation services for the year 2005 were as in Table 4.

TABLE 4
CRC Research Clinics and Consultation Services for the Year, 2005

Services Requested	2005
Study Design	10
Sample Size Planning	7
Proposal/Protocol Development	7
Data Management	15
Assistant with Statistic Software	14
Data Analysis	30
Others	0
Total	**83**

Source : Clinical Research Centre

CONCLUSION

In 2005, CRC was organized into seven units of which three (Clinical Epidemiology, Clinical Trials & Clinical Economics) were research units while the remaining three were support units. In terms of manpower, 26% of posts remained unfilled in CRC including 1 post for Medical Officer U41, 1 post for Research Officer Q41, 1 post for Assistant Research Officer Q27 and 1 post for Administrative Assist. N17(Sec).

Research activities have increased, especially in the establishment and maintenance of clinical databases. The increasing workload in clinical databases is reflected in the increasing number of registry reports while research publications and technical reports have remained relatively stable. It should be noted that given the increasing size and complexity of the types of the research projects undertaken by CRC, most of the recent research require a longer duration to complete and may not be completed within the reporting year when the research grant was awarded.

Training has also become an increasingly important activity for CRC. Both the number of training events and the average number of participants per event have increased, placing more strain on the staff concerned to organize and coordinate the events concerned. CRC has set a track record of being able to deliver its promise to her clients in term of research and research related projects. CRC intends to maintain this track record with the vision of one day becoming the National preferred partner for future clinical research.

INSTITUTE FOR HEALTH SYSTEMS RESEARCH

The year 2005 marked another major milestone for IHSR. The Institute for Health Systems Research had been recognized with the approval of 66 posts under the "dasar baru" programme. In April 2005, the Institute moved into its own building, occupying the building vacated by the Health Education and Communication Centre (HECC) in Bangsar. The following activities had been successfully conducted by IHSR in 2005:

RESEARCH

i. National Community Survey on the Utilisation of Traditional and Complementary Medicine (T/CM) amongst the Malaysian Community

This study, a cross-sectional community-based survey, sought to acquire information on the prevalence and practices of T/CM in the Malaysian community which include the types of health problems or conditions that made them choose T/CM, their preferred T/CM products and procedures, frequency of visits and their expenditure on T/CM. Data collection was conducted in 6 weeks towards the end of 2004. A response rate of 81.2% was attained. In 2005, data cleaning process continued, including coding of T/CM practices and modalities to enable their categorization. Report writing was also initiated.

ii. The World Health Survey 2002 (WHS 2002)

Malaysia completed the data collection and data entry processes for the World Health Organisation (WHO) WHS 2002 in 2003, ahead of many other countries who participated in this multi-country survey. In 2005, two senior officers from the Institute had a 7-day attachment with the WHO coordinating teams in Geneva to understudy the analysis technique, the standardisation and the assumptions made in the report generated by WHO. Subsequent analysis was carried out by the Malaysian team for Malaysia's data and a workshop to deliberate on preliminary analysis of WHS 2002 in Malaysia was held in September 2005. Report writing ensued following the workshop.

iii. Implementation of the Client Charter in the Ministry of Health Malaysia

The project has been completed and the report is undergoing editing. It was found that Client's Charter was widely implemented in the healthcare facilities. However, the findings were less encouraging in terms of its monitoring and evaluation. A large proportion of the clients wished for services by the facilities to adhere to the respective Charters.

iv. Pilot Study on Health Research Systems Analysis

This was a continued project from 2003. The initiative by the WHO is an effort to strengthen health research system in its member country. In 2005, while waiting for the Institutional Survey instrument for the project to be ready from WHO, IHSR continued to analyse data collected from individual surveys, media analysis and focus group discussions. The draft instrument for the Institutional Survey was ready towards the end of 2005 and the survey is expected to be carried out in 2006.

v. Health Policy Research in the Western Pacific Region (EVIPNet Asia)

The WHO Headquarters and the Western Pacific Region (WPRO) initiated an initiative to develop networks to support informed decision making in low and lower income countries. This move in WPRO is called Evidence-Informed Policy Network in Asia (EVIPNet-Asia). Malaysia is one of the countries participating in this initiative, with a team led by the Institute's Director and members comprising representatives from the MOH, universities, NGOs, and private sectors. In 2005 a letter of intent (LOI) was submitted for the planning phase of the networks. The LOI was submitted for peer review and competitive grant bidding together with six other submissions from the Philippines, Lao PDR, Vietnam, and three teams from China (Beijing, Shandong and Sichuan). Malaysia succeeded in receiving a financial award from the WHO and the Alliance for Health Policy and Systems Research (AHPSR). The next stage of the project is to further develop the implementation plan for the project which will again be subjected to external peer review for competitive grant award.

Beside the research projects listed above, the institute had also been collaborators and/or advisors of following projects:

- An Intervention Study on Infant Feeding Practices in Negeri Sembilan
- Evaluation of Family Medicine Specialists (FMS)
- National Ear and Hearing Disabilities Study
- Malaysian Adult Nutrition Survey
- Evaluation of Total Hospital Information System (THIS)
- Young Adult's Oral Health
- National Health and Morbidity Survey III
- Evaluation of the "TAK NAK" Campaign

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 in the data entry and preliminary analysis phases.

TRAINING

The Institute had conducted 5 training courses with a total of 158 attendees. 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 played host to many visiting fellows, national and international visitors. In 2005, the Institute organised an international workshop on "Development of Networks to Support Health Decision Making", held at Grand Seasons Hotel from 13-15 June 2005. The workshop was attended by researchers from Canada, China, Brunei, Lao PDR, the Philippines, Vietnam, Africa and Europe, as well as representatives from the WHO Head Quarters and WPRO. The Institute also provided attachment programmes for a number of final year and masters students from local universities.

The Institute continued its human resource strengthening and capacity building by providing opportunities for its officers to attend relevant training courses, both locally and internationally.

CONSULTANCY

Throughout 2005, 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 were often invited as speakers and panellists at various conferences and seminars organised both by the MOH and local academic institutions.

PRESENTATIONS AND PUBLICATIONS

In 2005, the institute has made 46 presentations at various national and international fora. The Institute had also organised a national meeting on the Presentation of World Health Survey 2002 results, held on 19 – 22 September with a total number of 58 participants from various departments and programmes in MOH. Findings from the survey were presented and inputs received were consolidated in the preparation of the WHS 2002 report for Malaysia. The institute also published 9 articles in journals and produced 10 technical reports on its research activities in 2005.

CONCLUSION

Year 2005 brought new light to the Health Systems Research Programme. The efforts contributed by IHSR staff and those who had collaborated and supported IHSR activities were paid off by the recognition of IHSR as an Institute of its own. IHSR formalized its Advisory Board, who had contributed significantly to the future direction of the Institute. IHSR owed its achievements in 2005 to the dedicated work of its staff and continued support from higher authorities, programmes and people whom we have worked with at ground level. These achievements could motivate IHSR staff to do better in the future.

INSTITUTE FOR HEALTH MANAGEMENT

The Institute for Health Management (IHM) was established as the management research and training wing for the Ministry of Health. In 2001, IHM officially operationalized at its own building. Being an organization focusing on health management, it hopes to do its part in contributing 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 this by optimizing linkages and networking both locally and globally.

The vision of the IHM is "to be a centre of excellence in health management research, training and consultancy and that it shall optimize avenues for linkages and networking, both locally and globally". This is to enable the Institute 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.

To establish the vision, IHM will:

- Boldly explore and inculcate through research and training, innovative ways of leading and managing the health care system.
- Be a source of internal management consultancy to the health care system.

- Be a learning organization that actively encourages continuous learning and access to information.
- Espouse positive work value especially teamwork, professionalism and caring culture so that the health sector in the country can emerge as one that is led and managed effectively to benefit the health of all Malaysia.

RESOURCES

IHM is headed by a director grade U54 and assisted by five head of departments (grade U48) and supported by professionals and supportive staff. In total, IHM runs by 40 personnel's (30 permanent staff and 10 temporary staff) in 2005. There are 4 vacant posts for professionals and supportive groups.

In 2005, the financial allocation given to IHM was RM3.74 million. Out of that figure, 42.8% was spent under services and supply, 34.4% under emolument, 5.0% under asset 14.8% under development and 3.0% under ISO and research.

ACTIVITIES AND ACHIEVEMENTS

There are three core functions of IHM namely research, training and consultation related to area of health management, that were carried out incrementally since 2001. However, since IHM has the facilities for training in terms of space and equipments, demand on using those facilities are markedly increasing. In 2005, IHM had 68 collaborative activities with various agencies be it within ministry or NGOs as compared to 65 in 2004, 49 in 2003 and 18 in 2002.

There are two types of research that are carried out by IHM, those planned early of the year and ad-hoc basis which commonly instructed by the top management of MOH whenever there are emerging issues. In general, average for research conducted by IHM is four per year. In 2005, 4 out of 6 researches were completed within the same year. Out of that 2 were ad hoc basis. Findings were either presented or published in scientific journal (Table 5).

TABLE 5
Performance of Research by IHM, 2001- 2005

Research	Year				
	2001	2002	2003	2004	2005
Total number of research projects planned	2	4	1	6	6
Total number of research projects completed	2	4	1	4	4
Total number of research findings presented/ published	4	6	7	5	11

Source : Institute for Health Management

Training component has gradually increased in numbers as in line with increase demand and manpower capacity. In 2001, there were 5 training courses offered. However, in the following year, 35 courses were conducted as the training capability and capacity were available. Since then, the average courses conducted remain around 36 per year. In 2005, IHM had conducted 87.3% of the total training planned as in Table 6.

TABLE 6
Number of Training Courses Implemented by Each Department 2001 – 2005

Department	2001	2002	2003	2004	2005
Health Resources Development	5	13	16	14	8
Quality In Health	-	19	18	10	12
Technology & Knowledge Management	-	-	2	10	16
Health Policy	-	2	-	2	6
Economy & Health Financing	-	1	-	-	6
Total Number of Training	**5**	**35**	**36**	**36**	**48**

Source : Institute for Health Management

As a training center, IHM had produced several modules and publication related to the training needs and health management related issues. In 2005, there were 3 publications developed namely Towards Ideal Ward, Guidelines in Documentation MS ISO 9001: 2000 and Management for Doctors (Table 7).

TABLE 7
Publication by IHM, 2001 – 2005

Publication	Year				
	2001	2002	2003	2004	2005
Total number of IHM publications	1	5	4	3	3

The third component of IHM core function is consultation. To date, the requests were mainly in the area of quality and information technology such as auditing and documentation related to MS ISO 9001: 2000 and statistical software usage.

In the year 2005, IHM received Certificate of ISO 9001:2000 as well as BS EN ISO 9001:2000 in all 3 areas (Research, Training and Consultation) from:

- MOODY International Certification
- United Kingdom Certification Services - UKAS (UK)
- Certification D'enterprises & De Personnel - COFRAC (France)

On 25 Nov 2005 IHM officially became a UNICEF Collaborating Centre for Health Policy Enhancement and Appraisal. Linkages are also being explored with WHO (for health workforce development), Charles River Centre (for top leadership development and to bring in Harvard University lecturers), World Bank (for Regional Training on Health Financing and Health Sector Reform).

WAY FORWARD

Vision of IHM as centre of excellent in research, training and consultation by the year 2009. IHM will continue the 3 core business. At least 4 project of research will be completed in the same year. About 54 number of training planned for the year 2006 with 80% (44 number of training) will be implemented. 6 numbers of consultation and 3 books publication are targeted for the year. Linkages and collaboration works with Program/Activities at MOH level as well as out site of MOH will continue such as UNICEF, World Bank and others.

Quality Policy of IHM is to develop competence human resource through research, training and consultation. ISO 9001:2000 activities will continue with the implementation of regular internal audit, surveillance audit as well as Management Review Meeting from time to time to make sure institutionalised ISO 9001:2000 being implemented.

CONCLUSION

Despite of shortage in manpower capacity, IHM strives to fulfil the need of health care providers and MOH in general. Within the limited capacity, IHM able to get ISO 9001:2000 for the 3 core business. Smart partnership, effective and efficient collaborative networking, ensures the continuity of services provided. Continuous support from the top management are crucial in ensuring things to be and can be done promptly and efficiently. Hopefully, vision of IHM to become as centre of excellent in research, training and consultation by the year 2008 become reality.

INSTITUTE FOR HEALTH PROMOTION

The activities of the Institute for Health Promotion were initially carried out by the Social and Behavioural Research Division of the Institute of Medical Research, which was itself established in 1987. The research work carried out by this Division focused more on the health behaviour of individuals and the community that was closely linked with communicable diseases like malaria, tuberculosis, dengue and leprosy. At the same time, emphasis was also given to studies on factors that influence the actions that people take in promoting their health. In 1996, the Ministry of Health proposed to expand the role of the Division of Social and Behavioural Research to be at par with that of an Institute so as to enable its staff to expand their scope. Also proposed to be included are the various environmental determinants of human living for the purpose of stimulating behavioural change.

The Institute for Health Promotion was thus established and became operational in July 1999 with two research officers (Grade Q2 and Q3). In December 2005, the Health Education Division of the Institute for Public Health (IKU) was merged together with the existing staff of IHP. The IHP will soon move to its new premise within the grounds of IKU once the renovation works are completed.

RESEARCH

The year 2005 saw the staff in the Institute for Health Promotion involved in several research projects. These include :

i. Third National Health Morbidity Survey
ii. Focus Group Discussion on Risk Communication

iii. Status of Malaysian Dietary Intake
iv. Exclusive Breast Feeding in N Sembilan
v. Corporate Culture in Kajang Hospital

The other research areas were 16 post graduate student's projects.

TRAINING

The Institute conducted the 15th Post Graduate Program in Health Education (essentially Health Promotion) for 16 participants. The post graduate health education program has been conducted since 1975. So far 148 HEOs have been trained. This is a service oriented rather than an academic program tailored specifically for health education officers attached to the MOH. In addition to these, 3 short courses were conducted for public health personnel which were on risk communication, patient education and public speaking.

CONSULTATION

The Institute also provided consultancy services. Among the notable ones are in the field of Risk communication, Effective Communication, Communication and Interpersonal skills, Public Speaking, Health Promotion, Health Education, Behaviour Theories, and Approaches and Strategies in Patient Education for program manager and professional staff. The officers in the Institute also provide consultancy for the student post graduate health education program significantly in planning and research methodology.

HUMAN RESOURCE DEVELOPMENT

To equip the staff of the Institute for Health Promotion with the latest education technology and develop knowledge in Health Promotion. Staff members were sent for various courses, workshops, seminars and conference. These include Health Promotion, English, Intervention Studies on Breastfeeding, Health System Research, Scientific Meetings of the MOH, and International Conference on Health Communication.

CONCLUSION

The IHP aspires to be a centre for behavioral research and training in health promotion in the Asia-Pacific Region. It also aspires to be a WHO Collaborating Centre for Behavioural Research and Training in Health Promotion.

It wishes to work together with the other institutes under the NIH to collaborate in research and training wherever there are overlaps in its core business. It also wishes to strengthen the existing partnership with UKM and form partnerships with other universities to conduct training and research. It will conduct national, regional and international symposiums, seminars workshops and meetings so as to be on par with other IHPs on a regular basis.

THE NATIONAL INSTITUTE FOR NATURAL PRODUCTS, VACCINES AND BIOLOGICALS (9BIO)

The 9BIO is the Ministry of Health's contribution to the Prime Minister's aspiration of making Malaysia the region's biotechnology hub and becoming a developed country by 2020. In order to become the region's biotechnology hub, it is critical that Malaysia develop a competitive edge over other countries. The Ministry of Health Malaysia will be contributing to this aspiration by maximizing our strength in biodiversity and directing our focus to developing our natural products specifically in herbal medicinal products. The formation of the National Institute for Natural Products, Vaccines and Biologicals (9BIO) has been itemized as one of the strategies and have been included in a stimulus package announced by the then Finance Minister of Malaysia, YAB Dato' Seri Dr. Mahathir on the 21 May 2003 to promote new sources of growth and decrease our dependence from outside sources.

In addition to the government's drive to be the region's biotechnology hub, the constantly evolving nature of both biotechnology and biodiversity has given rise to additional yet essential reasons for the development of the institute. These are:

i. Rise of threats – emerging diseases (Nipah virus, SARS, avian flu, dengue fever etc.)
ii Current concerns over Bioterrorism (Anthrax, smallpox)
iii. Entirely dependent on foreign manufacturers for vaccines (childhood and adult vaccines)
iv. Mitigate outflow of money due to purchase of vaccine from foreign manufacturers
v. Exploit biodiversity to produce herbal medicines and pharmaceuticals
vi. Potential economic stimulus (Halal vaccines for OIC)
vii. Build research culture as steps towards knowledge-based economy

The major terms of reference for the National Institute for Natural Products, Vaccines and Biologicals are as follows:

NATURAL PRODUCTS

i. Implement, promote and monitor rigorous research in Traditional/ Complementary Medicine (T/CM).
ii. To bring together an alliance of expertise from within MOH, other local research institutions and private entities with the purpose of integrating research, development, clinical trials and commercialization of potentially useful natural products.
iii. Support, enhance, complement the coordinating and consolidation effort undertaken for R&D in Herbal Medicine through the National Committee for R&D in Herbal Medicine through the National Committee for R&D in Herbal Medicine (NRDHM).
iv. Establish public-private sector collaboration to accelerate and fast track the commercialization of potential herbal medicinal products by promoting intersectoral research using government grants eg Industrial Grant Scheme to support research and development.
v. Promote establishment of manufacturing facilities to support the production of herbal product.
vi. Promote the conduct of basic and applied multidisciplinary research to discover and develop natural products for use as pharmaceuticals and dietary supplements
vii. Facilitate the understanding of the biological and chemical properties of medicinal plants

VACCINES AND BIOLOGICALS

i. Ensure adequate supply of basic childhood vaccines (DPT OPV/IPV, Hepatitis B, MMR HiB). This may be realized either by bulk purchase, filling and finish packaging or based on sublicence from a reputable multinational vaccine manufacturer. With the acquisition of expertise and the premise to cater for production, we will be able to scale up any seed vaccine from other sources in times of emergencies eg. Smallpox vaccines or Anthrax vaccines.
ii. Capability to cater for R&D for newer vaccines required as per disease prevalence in the ASEAN region (Nipah Virus vaccines, Japanese Encephalitis vaccines, Enterovirus vaccines and Dengue vaccines) which might not be the priority for development by vaccine manufacturers as they are not of great commercial interest.
iii. Create a critical mass of experts on vaccine R & D.
iv. Partnering with 'biotech' start-up until Phase 3 (technology transfer with exclusivity arrangements).
v. Partnering with industry for mass production and marketing.

In addition to this, to achieve scientific excellence, innovations and vigour to fully exploit the potential of biotechnology, new research endeavours such as research into vaccines for infectious diseases of importance to the region such as Enterovirus (hand foot and mouth disease), Nipah, Japanese Encephalitis and Dengue will be initiated.

RESEARCH ACTIVITIES (PHASE ONE RESEARCH)

The Institute has initiated several research projects for vaccines, natural products and biologicals for emerging and preventable diseases this year. These studies focusing on the above are as follows:

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.

DEVELOPMENT OF FACILITIES AND HUMAN RESOURCES

9BIO will be located within the industrial site at Bandar ENSTEK, district of Labu in the state of Negeri Sembilan. About 62 acres of land was purchased from Tabung Haji Holdings by the Ministry of Health and the first phase of the development is anticipated to be ready by the year 2007-2008. A core team comprising of 22 posts were created temporarily for a period of one year to carry out the initial functions, especially in the planning stage towards the formation of 9BIO. The Institute has also obtained its status as the Pusat Tanggungjawab 1 (PTJ1) to manage the budget allocated.

The following activities were initiated in the year 2005:

i Planning of the temporary location of the administrative office and laboratories.
ii Procurement of laboratory equipment and Bioinformatics System.
iii Training of personnel in the relevant fields.
iv Creation of new posts.

WAY FORWARD

In order to achieve these goals, the National Institute for Natural Products, Vaccines and Biologicals will be formed as a Government-Linked Company (GLC) with the establishment of a Public-Private Partnership (PPP). The PPP will contribute in terms of the designing, building, equipping and maintaining the premise. The GLC status on the other hand, will ensure that the government is the majority shareholder thus enabling indirect control to ensure the nation's interest. The move towards these goals has been initiated in 2005 and is planned to be firmly established in 2006.

The institute plans to operate utilizing four arms, namely: R&D, Commercial Production, Filling & Packaging and Marketing. The R&D Arm forms the backbone of the institute and currently has ongoing projects as stated in the Activities and Achievements Section. New research areas are also constantly being surveyed and looked into, for example, research into the field of Avian Influenza. The Commercial Production Arm involves the building of seed vaccine capability and mass production for distribution. The Filling & Packaging Arm 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 Arm involves finding the market for halal vaccines as well as negotiations for supply to the Ministry of Health and if negotiations permit, to other government as well. All these endeavors will only be possible with strategic alliances with national, regional and international research facilities as well as industry collaborators and partnerships.

Among the key activities that have been prescribed under the Institute are:

i. **Facilities & Human Capital Development**

Involves providing appropriate research facilities and resources to do research in vaccines, natural products and biologicals. This has been initialized last year with the purchase of the land and the formation and training of the core team. The building of the Phase 1 Biomedical Research Facility, with bio-containment laboratories and a process development lab, will follow in its wake and commence in the year 2006.

ii. **Research Activities (Stage 1 Research)**

Involves the undertaking of research in and development of vaccines, natural products and biologicals for emerging and preventable diseases. As above, this stage has already been initialized since year 2005.

iii. **Post-Research Activities (Stage 2 Research)**

Comprises the undertaking of preclinical studies and clinical trials. Currently, one study is underway (as listed in the section above).

iv. **Production (Stage 3 Commercialization)**

Consists of manufacturing, including contracting out of manufacturing of vaccines, natural products and biologicals. This stage will be initialized with the building of Phase 1 – Formulation, Fill & Finish Suite (for natural products & vaccines) - to commence in the year 2006. The Phase II – 'Biomanufacturing for Large Scale Manufacture' stage is currently planned for commencement in the year 2007.

v. **Standards Development**

encompasses the promotion of safe and efficacious commercialization of herbal and traditional medicine. This is somewhat tied-in with the Research Activities stage.

CONCLUSION

This year was the landmark year for the Institute as the core team was formed to look into the initial administrative and laboratory work. The team will ensure that the goals set up by 9BIO such as the formation of the Government Linked Company (GLC) under the Ministry of Health, the establishment of Public Private Partnership with relevant associates, and the probable temporary location of the Institute, will be achieved with success in the year of 2006.

6

HEALTH LEGISLATION

Annual Report
Ministry Of Health Malaysia
2005

INTRODUCTION

In carrying out its duties, Ministry of Health has to resort to the use of a multitude of legislations. Most of these legislations were developed over time as the need arose. Many new legislations are also in contemplation and being drafted to regulate different aspects of health in Malaysia. These legislations are either in the form of Acts of Parliament or subsidiary legislations made under the relevant Acts. The various Acts and subsidiary legislations enforced by Ministry of Health now numbering 24 Acts and 812 over subsidiary legislations and have varied characteristics and styles. To keep up with advancement of science and technology globally as well as to cater for the change of human needs, these legislations require regular updating and improving.

ACTIVITY AND ACHIEVEMENTS

For 2005, there was no new legislation relating to health passed by Parliament. However, there are proposal to formulate some new legislation to regulate on certain required health or health related issues, for instance, the Pathology Laboratory Bill (law that is not passed yet by Parliament is refer to as Bill), Medical Devices Bill and Malaysian Health Promotion Board Bill. Although these proposed new legislations are not finalised yet and still in the consideration of the Ministry of Health, some current existing legislations did go through updating and amendment as required. They include the following Acts and subsidiary legislations made thereunder:-

Dental Act 1971

There were amendments to the First Schedule and Second Schedule of the Dental Act 1971 by inserting newly recognised universities and colleges for registration of dental practitioners. There was also the Declaration of Nominee Selected to be a Member of the Malaysian Dental Council.

Food Act 1983

There was an amendment to the Food Act 1983 named as the Food (Amendment) Bill which was tabled for the first reading in *Dewan Rakyat* and awaiting the second reading and tabling in the *Dewan Negara* that are scheduled next year. There were also amendments to the two regulations under the Food Act 1983, namely :

a. Control of Tobacco Products (Amendment) Regulations 2005; and
b. Food (Amendment) Regulations 2005.

Optical Act 1991

There was only one notification under this law i.e. the Declaration of Results of Election to the Optical Council of Malaysia.

Medical Act 1971

The Second Schedule to the Medical Act 1971 was updated where the names of some universities currently on the list were amended and some new ones that are granted recognition by the Malaysian Medical Council were inserted. This recognition allows medical graduates from those relevant universities to be accepted as registered medical practitioners. There was also the Declaration of a Vacant Position in the Malaysian Medical Council.

Sales of Drugs Act 1952

There was only one declaration under the Control of Drugs and Cosmetic Regulations 1984 and that was the Appointment of Member and Alternate Member of the Authority.

Poisons Act 1952

There were two amendments to the list of poisons i.e. in the Poisons List (Amendment) Order 2005 and Poisons List (Amendment) (No. 2) Order 205.

Medical Assistants (Registrations) Act 1977

There was a new list of the persons registered under the Medical Assistants (Registrations) Act 1977 published by the Registrar called the List of Medical Assistants.

WAY FORWARD

Beside updating and amending current existing legislations from time to time, Ministry of Health is setting its priority in bringing into force the Private Healthcare Facilities and Services Act 1998 by ensuring that the two relevant draft regulations made under the 1998 Act to be completed and finalised as soon as possible. Other than that, the earlier mentioned new Bills will continue to be deliberated.

7

INTERNAL AUDIT

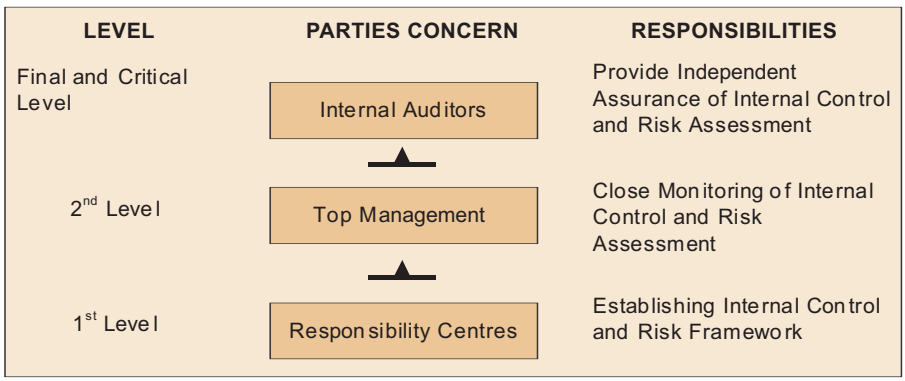
INTRODUCTION

The Internal Audit Branch (IAB) of Ministry of Health (MOH) was established in 1980 in accordance with Treasury Circular 2 of 1979. The IAB is directly responsible and report to the Secretary General of MOH. IAB is being headed by a Grade W54 Auditor and is being assisted by 22 supporting staffs.

ESTABLISHING A GOOD INTERNAL CONTROL STRUCTURE IN MOH

MOH Internal Auditors being in the forefront, working very closely with MOH managers at all levels and across MOH in order to establish a workable internal control structure. Figure I below shows MOH Internal Control Structure.

FIGURE 1
MOH Internal Control Structure



ACHIEVEMENTS

The IAB's achievement as indicated by the number of Responsibility Centres being audited from the year 2001 until 2005 is as in Table 1.

Financial Audit

The financial audit includes the review of MOH internal controls and compliance to laws and government rules and regulations. It covers 4 aspect comprising of collection, expenditure, asset management and office administration.

Performance Audit

Performance audit is also carried out to ensure that the organisation uses its resources economically, efficiently and effectively. It is also known as a 'value for money' audit. Through performance audit, IAB would be able to identify the weaknesses in management of programmes and activities and propose steps to overcome the issues and challenges in order to enhance MOH service delivery to the stakeholders.

Investigation Audit

Investigation audit is also being carried out as at when needed. It could be based on complaint letters or through risk-based analysis.

TABLE 1
Total Number Of Responsibility Centres Audited From 2001 To 2005

Type of Audit	Year				
	2001	2002	2003	2004	2005
Financial Audit	46	58	34	27	35
Performance Audit	29 (12 topics)	37 (8 topics)	11 (5 topics)	30 (7 topics)	33 (9 topics)
Investigation Audit	8	4	5	13	9
Total	**83**	**99**	**50**	**70**	**77**

Source : Internal Audit Branch, MOH

MOH Internal Audit Committee

In 2003, the IAB established the MOH Internal Audit Committee. The establishment of MOH Internal Audit Committee is really a milestone achievement for MOH being the only Ministry to create such a committee. The main objective of this Internal Audit Committee is to assist the IAB to carry out a evaluation on the status of internal control in financial management in all the MOH Responsibility Centres throughout the country. The overall evaluation results are shown in Table 2.

TABLE 2
Internal Control Evaluation On Financial Management

Category Of Internal Control On Financial Management				
Grade	Level	Marks (%)	No. Of Responsibility Centres	
			2004	2005
A	Excellent	85-100	263	298
B	Good	75-84	66	79
C	Satisfactory	55-74	26	29
D	Weak	0-54	14	7
Total Responsibility Centre			369	413

Source : Internal Audit Branch, MOH

The IAB major challenge in the years ahead is to convert all the B, C and D grade Responsibility Centres to A grade. Presently, the Internal Audit Committee have 120 members who are existing MOH officers and the members are divided into 6 zones. All the members had been trained by IAB officers with knowledge on financial matters and techniques on auditing.

CONCLUSION

The way forward for IAB is managing change in the government operating mode which is manual to ICT as well as to enhance the overall management. Therefore, pre-auditing is crucial. Getting involve in the System Development Life-cycle, doing performance audit onto the ICT systems as well as other activities and reviewing internal control framework within the system in MOH is much anticipated.

8

CORPORATE POLICY AND HEALTH INDUSTRY

Annual Report
Ministry Of Health Malaysia
2005

INTRODUCTION

The Corporate Policy and Health Industry Division is the new name of the Corporate Division which was established on 7 June 2002. This Division is responsible directly to the Secretary General and its primary objective is in formulating policies related to the health sector. This Division is also responsible for 'cross cutting' issues and serves as a focal point for MOH with respect to inter-agency communications. The functions of this Division were expanded to include the role of the secretariat for all matters related to the Malaysian Cabinet when the Cabinet Section of the Management Division was relocated to this Division in April 2003. Subsequently in August 2004, the Division was the MOH's focal point for all issues pertaining to international relations and trade in health services and goods and the focal point for World Health Organisation (WHO) in the country when the International Relations Section of the Management Division come under the purview of this Division.

In September 2005, this Division was given the additional task to nurture the development of the local healthcare industry. Hence, this Division is now known as the Corporate Policy and Health Industry Division with 3 sections namely the Corporate Policy and Secretariat Section, the International Relations Section and the Health Industry Section.

ACTIVITIES AND ACHIEVEMENTS

Corporate Policy and Secretariat Section

The Corporate Policy and Secretariat Section's primary areas of responsibility are:

a) non-clinical policy analysis and advice;
b) policy research;
c) Post-Cabinet Meeting;
d) 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;
e) all matters related to the Malaysian Cabinet;
f) 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
g) the general management of the Division.

Policy Papers

The policy papers prepared by this Section in 2005 were:

a) The Role of MOH in the Development of the Healthcare Industry as a Source of Economic Growth;
b) Resource Based Planning Perspective; and
c) Utilisation of MOH Facilities by Foreign Patients.

Cabinet Meetings and other High Level Meetings

For the year 2005, a total of 22 Cabinet Notes and 32 Memorandum from MOH were processed for presentation in the Malaysian Cabinet Meetings. In addition, this Section has also prepared 60 official comments on Memorandums submitted by other ministries, 56 official feedbacks on decisions taken by the Cabinet and 8 official feedbacks on decisions taken by the Secretary Generals and Head of Services' Meetings.

In 2005, this Section has also processed 3 Notification Papers for the Menteri Besar and Chief Minister's Meetings and 2 Notification Papers for the Council of Rulers' Meetings.

High Level Meetings within MOH

The Corporate Policy and Secretariat Section was also the secretariat for these meetings in 2005:
a) 34 Post-Cabinet Meetings;
b) 17 Morning Prayers;
c) 3 Secretary General's Meetings with the Undersecretaries and Deputy Undersecretaries;
d) 2 Secretary General's Meetings with State Health Directors; and
e) 1 Secretary General's Meeting with Deputy State Directors (Management) and Deputy Hospital Directors (Management).

Health Economics Course

The Section has also conducted an Introductory Health Economics Course for Administrative Officers in MOH in May 2005. A total of 26 officers have successfully completed the course.

International Relations Section

The International Relations Section's primary areas of responsibility are as follows:

a) World Health Organisation (focal point for Malaysia);
b) all issues pertaining to international relations and trade in health services and goods;
c) coordination of Health Ministers Bilateral Meetings on Health;
d) coordination of Senior Officials Bilateral Meetings on Health;
e) coordination of Minister's overseas visits; and
f) coordination of visits to MOH by foreign dignitaries and officials.

World Health Organisation (WHO)

For the year 2005, the International Relations Section has coordinated and processed applications from MOH officers to attend 63 meetings/workshops/study visits overseas under the sponsorship of WHO. This Section also coordinated the application and approval for placement of 23 foreign WHO Fellows and 30 foreign WHO Consultants and Temporary Advisors into Malaysia to undertake fellowship placement in various institutions in Malaysia.

The Section also coordinated the attendance of Malaysian delegation to meetings organised by WHO led by the Minister of Health:

a) The Pre-World Health Assembly for Commonwealth's Minister of Health Meeting in Geneva, Switzerland on 15 May 2005;
b) The World Health Assembly in Geneva, Switzerland, from 16 to 25 May 2005; and
c) WHO Western Pacific Regional Committee Meeting in Noumea, New Caledonia from 19 to 23 September 2005.

Bilateral and Multilateral Cooperation

In 2005, 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. Participations in the JCMs were either as delegates or through preparation of inputs or talking points for 2005. They were:

a) The 3rd Malaysia-Bangladesh JCM in Dhaka, Bangladesh from 6 to 7 June 2005;
b) The 8th Malaysia-Iraq JCM in Putrajaya from 12 to 14 October 2005; and
c) The 2nd Malaysia-Cuba JCM in Putrajaya from 22 to 25 March 2005.

In addition to JCMs, this Section was also involved in providing inputs for other bilateral economic cooperation meetings such as:

a) the 1st Malaysia-European Union Senior Officials Meeting in Cyberjaya on 24 May 2005;
b) the 1st Malaysia-Thailand Joint Trade Commission (JTC) Meeting in Kuala Lumpur on 30 May 2005;
c) the Malaysia-India Joint Study Group for the Comprehensive Economic Cooperation Agreement in New Delhi, India from 11 to 12 August 2005; and
d) the 12th Malaysia-Australia JTC Meeting in Kuala Lumpur on 26 August 2005.

In 2005, this Section provided inputs for national briefs and speaking notes in conjunction with visits by national leaders to foreign countries such as:

a) the Prime Minister's visit to New Zealand and Australia from 30 March to 8 April 2005;
b) the Prime Minister's visit to Brunei Darussalam from 20 to 30 August 2005;
c) the Deputy Prime Minister's visit to the People's Republic of China from 31 August to 6 September 2005; and
d) the Prime Minister's visit to Indonesia from 19 to 20 December 2005.

Inputs for national briefs and speaking notes were also prepared in conjunction with visits by:

a) the President of Singapore from 11 to 15 April 2005;
b) the President of the Republic of Korea from 9 to 10 December 2005;
c) the Prime Minister of the People's Republic of China from 14 to 15 December 2005; and
d) the Prime Minister of Japan from 12 to 14 December 2005.

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 2005, this Section facilitated 30 study visits and training attachments in various institutions and divisions under MOH involving 121 foreign visitors from Vietnam, Indonesia, Bangladesh, Brunei Darussalam, People's Republic of China, Republic of Korea, Namibia and Uzbekistan.

On the multilateral front, the International Relations Section participated and facilitated inputs for three ASEAN Coordination Committee on Services (ASEAN-CCS) meetings held in Kuala Lumpur from 29 to 31 Mac 2005, in Bandar Seri Begawan, Brunei Darussalam from 11 to 14 June 2005 and in Hanoi, Vietnam from 16 to 19 August 2005. These meetings were held back to back with the ASEAN Healthcare Sectoral Working Groups meetings, the ASEAN Roadmap on Integration of the Health Sector meetings and the ASEAN Mutual Recognition Arrangement meetings of which, officers from this Section were involved as well.

This section also prepared inputs for various other multilateral meetings such the ASEAN Summit and individual meetings between ASEAN and its dialogue partners in 2005.

Trade and Health

In 2005, the International Relations Section had secured the cooperation of both WHO and the World Trade Organisation (WTO) to hold an Initial Planning Mission for Trade and Health, which was held from 2 to 6 May 2006. The main objective of the mission was to assist MOH in preparing a comprehensive country analysis of trade and health issues. The mission succeeded in identifying several key issues that required further analysis by national experts and recommended several measures including dialogues and consultations with relevant stakeholders from both the public and private sector.

As a follow up to the recommendations presented by the mission, this Section prepared a working paper entitled 'International Trade Relations in the Healthcare Sector' that was presented at the MOH Committee for Policy and Planning Meeting held on 8 June 2005. Among the key recommendations in the paper was the setting up of the Special Committee on International Trade and Health to be chaired by the Secretary General of MOH. Under this special committee, several Experts Working Group were to be set up, each to discuss, deliberate and strategise upon key issues on trade and health with a view to provide coherent policy direction upon these issues. The inaugural Special Committee on International Trade and Health meeting was held on 24 October 2005.

In the area of bilateral trade agreements, the International Relations Section has been working closely with the Ministry of International Trade and Industry in forwarding MOH's input for Malaysia's position in bilateral trade meetings between Malaysia and the following countries:

a) Australia;
b) New Zealand;
c) India;
d) Japan; and
e) The United States of America.

Health Industry Section

The primary objective of the Health Industry Section which was set up in September 2005 is to promote and develop the healthcare industry including health tourism.

In 2005, this Section secured the approval of a special fund from the Ministry of Finance to finance its activities. Much of the activities of this Section for 2005 were focused on planning to operationalise the function of this new Section.

9

IMPORTANT EVENTS IN 2005

12 JANUARY

- Presented Donation to the NST Tsunami Fund on behalf of the Ministry of Health Malaysia.

7 MARCH

- Official Launching of Port Dickson Hospital as an IMU Teaching Hospital.(Represented by YB Deputy Minister of Health).

24 MARCH

- ***World TB Day*** : Themed "Frontline TB Care Providers: Heroes in the Fight Against Tuberculosis", the World TB Day 2005 was celebrated at Berjaya Times Square on 24 March 2005. It was officiated by the Parliament Secretary, the Y.B Dato' Lee Kah Choon.

7 MARCH AND 23 APRIL

- Teleprimarycare is a method of delivering health care services to patient and the people using information technology and communication facilities. The TPC project was launched in Johor by the Johor Menteri Besar on 7 March and followed by Sarawak on 23 April. The Occasion in Sarawak was launched by Sarawak Chief Minister.

25 APRIL

- ***World Health Day*** :Themed "Make Every Mother and Child Count", the World Health Day 2005 was officiated by the Y.A.B Datin Paduka Seri Endon Mahmood at Nikko Hotel.

5 MAY

- Attended the Commemoration Ceremony of Hospital Kangar's New Building by His Majesty Seri Paduka Baginda Yang Di Pertuan Agong XII.

7 MAY

- Officiated Blood Donation Campaign and Medical Check-Up at the JKKK Batu 11, Recreation Centre, Cheras.

9 -10 MAY

- The 33rd Session of the Codex Committee on Food Labelling, at Sutera Harbour Hotel, Kota Kinabalu, Sabah.

31 MAY

- ***National Tobacco Free Week*** : Themed "The Role of Professionals against Tobacco", the National Tobacco Free Week was officiated by the Y.B Federal Territory Minister at Universiti Malaya,Kuala Lumpur.

1 AUGUST

- ***World Breastfeeding Week*** : Themed "Family Food and Breastfeeding: Love and Health", the World Breastfeeding Week was officiated by the DYMM Raja Permaisuri Terengganu at Kuala Terengganu.

2 AUGUST

- Signing of the Agreement for Blood Supply between the Ministry of Health and the Private Hospital at The National Blood Center, Kuala Lumpur

9 AUGUST

- Signing of the Memorandum of Agreement for Subsidy between the Ministry of Health and the Non Governmental Organisations' Haemodialysis Centre atThe Mawar Haemodialysis Centre, Seremban, Negeri Sembilan.

16 AUGUST

- Health Communication - Healthcom 2005 International Conference at the Crown Plaza, Mutiara Hotel, Kuala Lumpur.

6 SEPTEMBER

- Case-Mix Second International Conference, 2005 officiated by YBMK at Berjaya Times Square Hotel & Convention Centre, Kuala Lumpur.

29 SEPTEMBER

- ***World Heart Day*** : Themed "Healthy Weight: Healthy Shape" the celebration was officiated by the Y.B Dato' Shafie Ooyub, the Deputy Director-General of Health (Public Health) in Alor Setar, Kedah.

10 OCTOBER

- ***World Mental Health Day*** : Themed "The Relationship between Physical and Mental Health: Mental and Physical Health Across the Life-Span", this Day was officiated by the Y.B Dato' Lee Kah Choon, the Health Parliamentary Secretary, on behalf of the Y.B Dato' Chua Soi Lek, the Health Minister Malaysia, at the Millennium Hall, Kepala Batas, Seberang Perai Utara, Pulau Pinang.

14 NOVEMBER

- ***World Diabetes Day*** : Themed "Foot Ulcer Prevention", this Day was officiated by the Chief Minister of Sarawak, the Y. B. Dato' Patinggi Haji Taib Mahmud at the Water Front, Kuching, Sarawak.

1 DECEMBER

- ***World AIDS Day*** : Themed "Keep the Promise: Stop AIDS", the celebration of this Day was only carried out at state levels

31 DECEMBER

- Information Technology Strategic Plan (ISP) for the year 2006-2010 formulated.