ISSN 1511-1512
MOH/S/RAN/55-13(AR)

ANNUAL REPORT

MINISTRY OF HEALTH

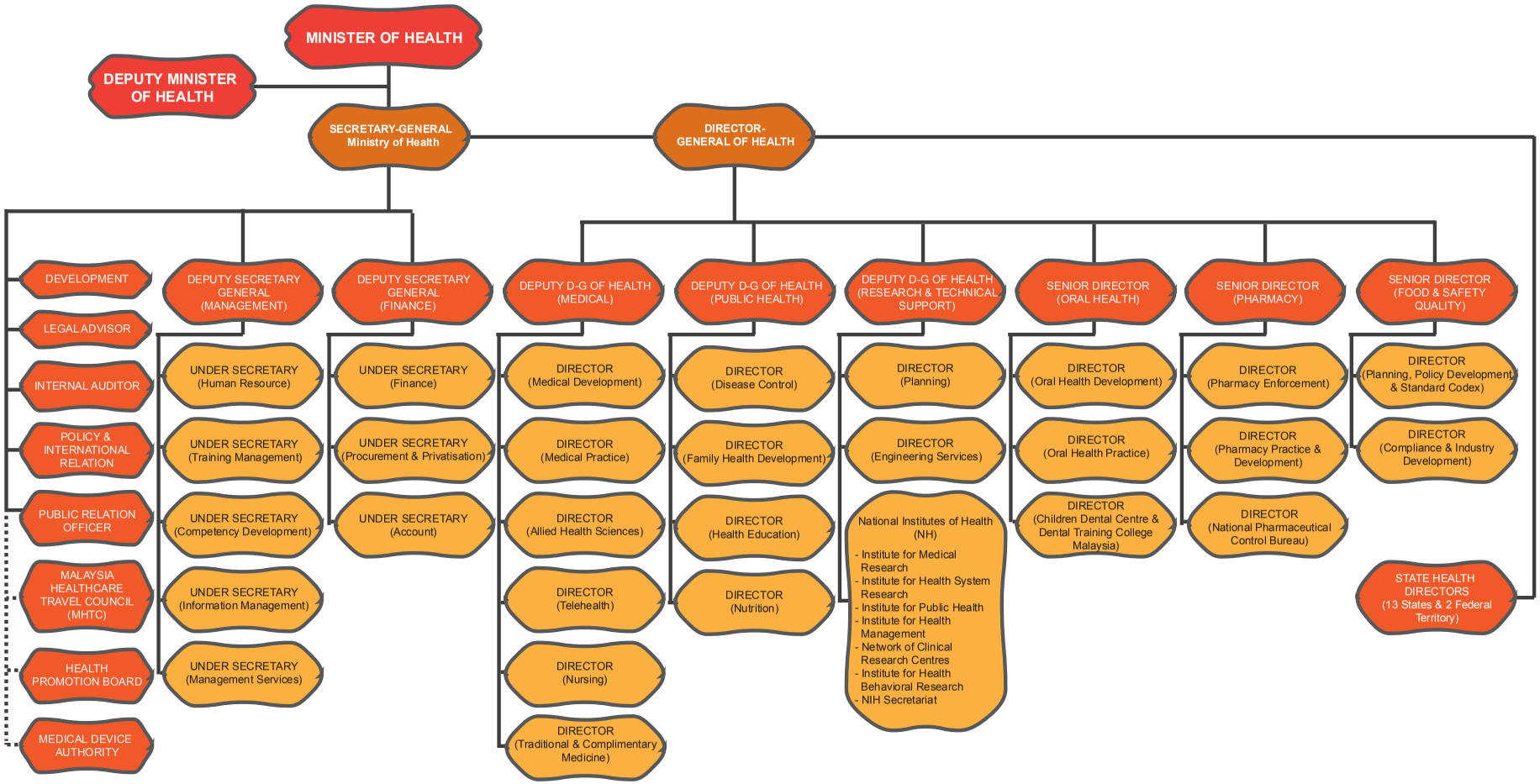
2012

CONTENTS

Annual Report
Ministry of Health Malaysia

Editorial Board

ORGANISATION CHART
MINISTRY OF HEALTH, MALAYSIA



VISION

A nation working together for better health.

MISSION

The mission of the Ministry of Health is to lead and work in partnership:

- to facilitate and support the people to:
  - √ fully attain their potential in health
  - √ appreciate health as a valuable asset
  - √ take individual responsibility and positive action for their health
- to ensure a high quality health system that is:customer centre
  - √ equitable
  - √ affordable
  - √ efficient
  - √ technologically appropriate
  - √ environmentally adaptable
  - √ innovative
- with emphasis on:
  - √ professionalism, caring and teamwork value
  - √ respect for human dignity
  - √ community participation

1 Health Status

INTRODUCTION

Malaysia is a vibrant and dynamic country enjoying continued economic growth and political stability since its independence 55 years ago. Malaysians today are generally healthier, live longer, and are better disposed to be more productive. The overall level of health attained is one of the key measures of the success of our country. Good health enables Malaysians to lead productive and fulfilling lives. In addition, a high level of health contributes to increased prosperity and overall social stability.

Population Structure

Based on the Population and Housing Census of Malaysia 2010, the population of Malaysia in 2012 was 29.34 million with an annual population growth rate 2011-2012 of 1.3. The total population in 2012 increased by 0.38 million as compared to 28.96 million recorded in 2011. The geographical distribution of population showed that Selangor had the highest population of 5.65 million, while Federal Territory of Putrajaya recorded the lowest population of 0.08 million (Table 1). However, Federal Territory of Putrajaya recorded the highest annual population growth rate of 3.9, while Perak and Perlis recorded the lowest annual growth rate of 0.7.

TABLE 1
POPULATION AND ANNUAL POPULATION GROWTH RATE BY STATE, MALAYSIA 2011-2012

State	Population ('000)		Annual Population Growth Rate
	2011[p]	2012[p]	2011/2012
Perlis	237.5	239.4	0.8
Kedah	1,973.1	1,996.8	1.2
Pulau Pinang	1,593.6	1,611.1	1.1
Perak	2,397.6	2,416.7	0.8
Selangor	5,577.4	5,650.8	1.3
FT Kuala Lumpur	1,694.5	1,713.4	1.1
FT Putrajaya	76.4	79.4	3.9
Negeri Sembilan	1,042.9	1,056.3	1.3
Melaka	833.0	842.5	1.1
Johor	3,401.8	3,439.6	1.1
Pahang	1,524.8	1,548.4	1.5
Terengganu	1,074.0	1,092.9	1.8
Kelantan	1,615.2	1,640.4	1.5
Sabah	3,316.4	3,371.7	1.7
FT Labuan	89.8	91.6	1.9
Sarawak	2,516.2	2,545.8	1.2
MALAYSIA	28,964.3	29,336.8	1.3

Notes:
1. *Mid-Year Population Estimates based on the adjusted Population and Housing Census of Malaysia 2010.*
2. *The added total may differ due to rounding.*
3. *FT = Federal Territory*
4. *State data for 2011 and 2012 are preliminary figures*

Source: Department of Statistics, Malaysia

Overall, the population in Malaysia is relatively young, with 35.9% of the total population were below 20 years of age, and only 8.3% of the population aged 60 years and above (Table 2). In 2012, the economically-productive population which consists of population aged 15 to 64 years was 20.0 million or 68.3% of the total population, while the economically dependent i.e age below 15 years and 65 years and above was 9.3 million or 31.7% of the total population.

TABLE 2
STATISTICS RELATED TO POPULATION, 2012

Population	Number ('000)	% of Total Population
Male	15,093.7	51.4
Female	14,243.1	48.6
Youths (below 20 years)	10,544.4	35.9
Elderly (60 years and above)	2,438.6	8.3
Economically-productive (age 15-64 years)	20,034.5	68.3
Economically-dependent (age below 15 & above 64 year)	9,302.3	31.7

Notes:
1. Mid-Year Population Estimates based on the adjusted Population and Housing Census of Malaysia 2010.
2. The added total may differ due to rounding.

Source: Department of Statistics, Malaysia

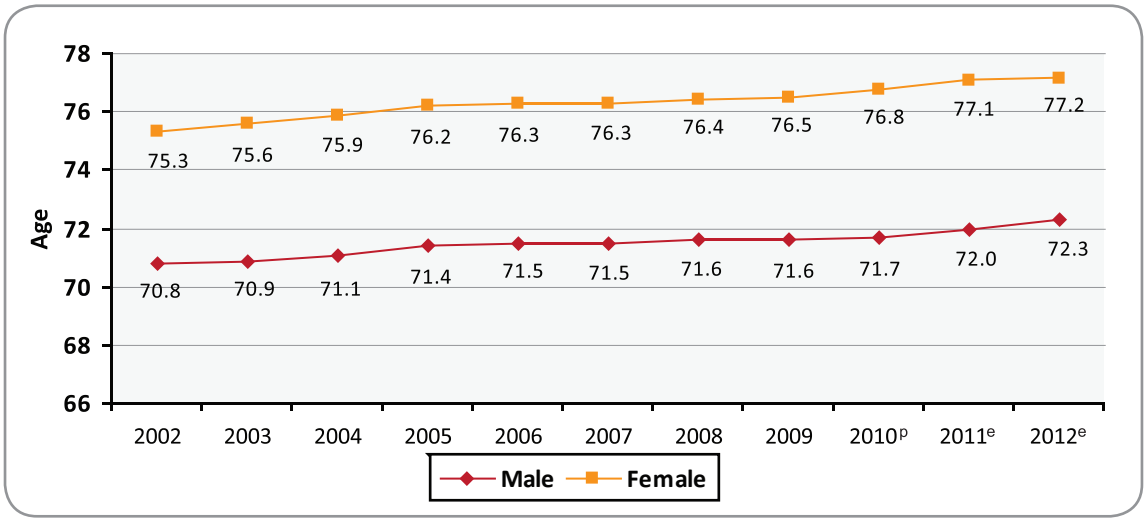
Health Status

Health status can be gauged by the use of health status indicators. Indicators such as life expectancy at birth, mortality and morbidity status of the country were among the indicators that can be measured, and serve as an indication of the state of health of individuals, and thus the health of the overall population.

- ***Life Expectancy at Birth***

Life expectancy is a measure of the number of years, on an average, that a person can expect to live. With the improvement in the nutritional and socio-economic status of the population, Malaysians can expect to live much longer than in the past. The estimated life expectancy at birth based on the estimated 2012 data has increased to 72.3 years for male and 77.2 years for female respectively, as compared to 70.8 years for male and 75.3 years for female recorded in 2002 (Figure 1).

FIGURE 1
LIFE EXPECTANCY AT BIRTH (IN YEARS) BY SEX, MALAYSIA, 2002-2012



Notes:

1. p = Preliminary figures
2. e = Estimated figures
Source: Department of Statistics, Malaysia

- ***Mortality***

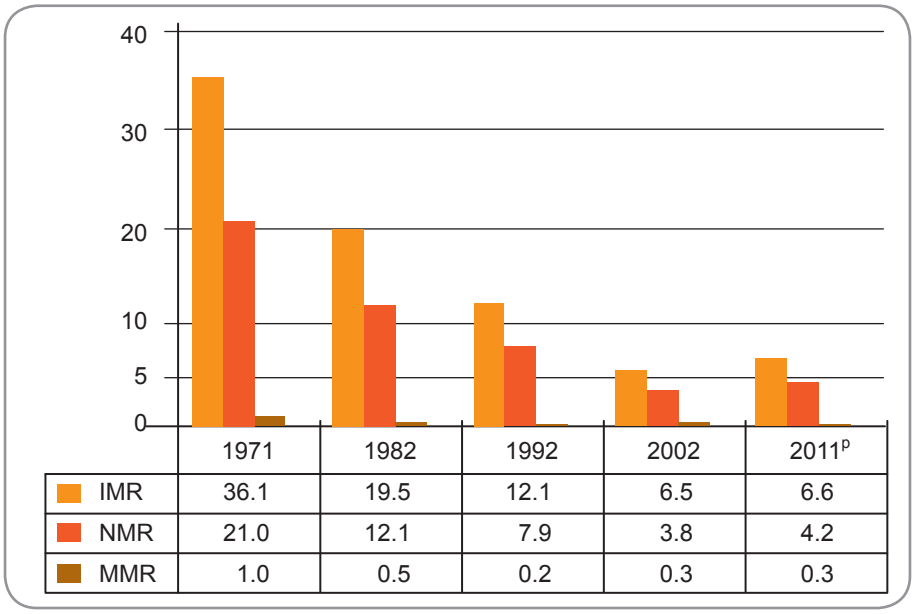
Mortality data provides a useful endpoint for measuring health. These data provide a comprehensive picture of the health of the community, since it covers every individual. Many different types of measures are used to provide views of health from differing perspectives.

For the past 40 years (1972-2012), the mortality rates in Malaysia had been decreasing. The trend of maternal mortality ratio (MMR), infant mortality rate (IMR) and neonatal mortality rate (NMR) in Malaysia are shown in Figure 2.

The MMR, which refers to the ratio of deaths occurring in women during pregnancy, childbirth or within 42 days after childbirth, due to causes directly or indirectly related to the pregnancy or childbirth, showed an apparent decreasing trend from 1.0 per 1,000 live births in 1972 to 0.3 in 2011. Even though there was a slight increase in the MMR in 2002, the rate has stabilized for the past 10 years, i.e. from 1991 to 2011. This may be due to the improved reporting system introduced in 1990, with the establishment of the Confidential Enquiry into Maternal Deaths (CEMD) by the Ministry of Health Malaysia (MoH).

IMR per 1,000 live births had improved from 36.1 in 1972 to 6.6 in 2011. Besides that, the trending of neonatal mortality rate per 1,000 live births for the same period shows an overall decreasing trend when compared to 21.0 in 1972.

FIGURE 2
IMR, NMR AND MMR, MALAYSIA, 1971-2011



	1971	1982	1992	2002	2011[p]
IMR	36.1	19.5	12.1	6.5	6.6
NMR	21.0	12.1	7.9	3.8	4.2
MMR	1.0	0.5	0.2	0.3	0.3

Notes:

1. p = preliminary figures, all figures are per 1,000 live births
2. Data 2012 not yet available
Source: Department of Statistics, Malaysia

The trend for the other mortality rates remains relatively the same from 2007 to 2011 (Table 3). Intensive immunization efforts and other related programmed were carried out by both the public and private sectors to improve this rates. These data can also be attributed to the nutritional status improvement of the children, improvement of immunity, and improving environmental conditions.

TABLE 3
MORTALITY RATES IN MALAYSIA, 2007-2011

Indicator	2007	2008	2009	2010	2011[p]
Crude Death Rate (per 1,000 population)	4.5	4.7	4.8	4.6	4.6
Maternal Mortality Ratio (per 100,000 live births)	29.0	27.3	27.0	26.1	25.5
Infant Mortality Rate (per 1,000 live births)	6.2	6.2	6.9	6.7	6.6
Neonatal Mortality Rate (per 1,000 live births)	3.8	3.9	4.3	4.3	4.2
Under Five Mortality Rate (per 1,000 live births)	7.9	8.0	8.5	8.4	8.1
Toddler Mortality Rate (per 1,000 population aged 1-4 years)	0.4	0.4	0.4	0.4	0.4
Stillbirth Rate (per 1,000 births)	4.4	4.3	4.4	4.5	4.5
Perinatal Mortality Rate (per 1,000 births)	7.2	7.3	7.6	7.7	7.6

Notes :
1. p = preliminary figures
2. Data 2012 not yet available
Source: Department of Statistics, Malaysia

- ***Morbidity***

The health status of a community is usually measured in terms of morbidity, which focuses on the incidence or prevalence of disease, and mortality, which describes the proportion of death in a population.

Hospitalisation indicates the severity of disease that needs further treatment, stabilization of patients or the need of isolation in order to prevent the spreading of the diseases to others. For the period of 2000-2012, the number of admissions in MoH Hospitals had increased 45.6% to 2,264,019 in 2012 from that of 1,555,133 in 2000. The 10 principal causes of hospitalization in the MoH Hospitals for 2012 are shown in Table 4. The diseases were regrouped to groupings based on the International Statistical Classification of Disease 10th Revision (ICD10). In 2012, "Pregnancy, childbirth and the puerperium" (27.32%) was the top cause of admissions in MoH hospitals followed by "Diseases of the respiratory system"(11.02%).

TABLE 4
10 PRINCIPAL CAUSES OF HOSPITALISATION IN MoH HOSPITALS, 2012

Principal Causes	Percentage to total admissions
1. Pregnancy, childbirth and the puerperium	27.32
2. Diseases of the respiratory system	11.02
3. Injury, poisoning and certain other consequences of external causes	8.22
4. Diseases of the circulatory system	7.55
5. Certain conditions originating in the perinatal period	7.55
6. Certain infectious and parasitic diseases	6.82
7. Diseases of the digestive system	4.88
8. Diseases of the genitourinary system	4.48
9. Factors influencing health status and contact with health services	3.64
10. Neoplasms	3.34

Note: Based on ICD10 3-digit code grouping
Source: SMRP Inpatient Database, Health Informatics Centre, MoH

Similarly, the number of deaths (for all causes) in MoH Hospitals for the period of 2000-2012 increased 67.7% from 30,319 in 2000 to 50,849 in 2012. "Diseases of the circulatory system" was the top cause of death in MoH hospitals recorded in 2012 (24.69%), followed by "Diseases of the respiratory system" (18.80%) and "Certain infectious and parasitic diseases" (17.17%). The 10 principal causes of deaths in the MoH Hospitals for 2012 are as shown in Table 5.

TABLE 5
10 PRINCIPAL CAUSES OF DEATH IN MoH HOSPITALS, 2011

Principal Causes	Percentage to total deaths
1. Diseases of the circulatory system	24.69
2. Diseases of the respiratory system	18.80
3. Certain infectious and parasitic diseases	17.17
4. Neoplasms	11.64
5. Injury, poisoning and certain other consequences of external causes	5.32
6. Diseases of the digestive system	5.07
7. Diseases of the genitourinary system	4.18
8. Certain conditions originating in the perinatal period	3.43
9. Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified	1.87
10. Diseases of the nervous system	1.75

Note: Based on ICD10 3-digit code grouping
Source: SMRP Inpatient Database, Health Informatics Centre, MoH

Health Facilities and Facility Utilisation

In 2012, there were 919 Health Clinics, 1,831 Community Clinics and 106 Maternal and Child Health Clinics. In 2010, 1Malaysia Clinic was launched in selected urban areas. These facilities provide basic medical services for illnesses and injuries such as fever, cough, colds, wounds and cuts, diabetes, and hypertension. To date, there are 178 1Malaysia Clinics that provide immediate healthcare to population.

As for hospitals, there were 132 government MoH hospitals and 8 Special Medical Institutions with bed complementary of 34,078 and 4,900 beds respectively. Overall Bed Occupancy Rate (BOR) for MoH hospitals and Institutions in 2012 was 72.13% (Table 6).

TABLE 6
HEALTH FACILITIES BY TYPE, TOTAL BED COMPLEMENTS AND BOR, 2008-2012

Facility	2008	2009	2010	2011	2012
Number of MoH Hospital	130	130	131	132	132
Number of Special Medical Institution	6	6	6	6	8
Total Beds Complement[1]	38,004	38,057	37,793	36,148	38,978
Bed Occupancy Rate (%)[1]	65.46	65.45	66.26	68.63	72.13
Number of Health Clinics	802	808	813	879	919
Number of Community Clinics	1,927	1,920	1,916	1,864	1,831
Number of Maternal and Child Health Clinics	95	90	104	106	106
Number of 1Malaysia Clinics	-	-	53	109	178

Note: [1] refers to beds complement and BOR in MoH Hospitals and Special Medical Institutions
Source: Health Informatics Centre, MoH

Publication

Main MoH publications such as Health Facts, Annual Report and Health Indicators may now be accessed through the MoH official portal under the Publications & Reference Tab. Similarly, guidelines and references of more specific topics can be accessed from the sidebar of the same page interface. The decision to make these publications online was to facilitate the public in acquiring Malaysia's health information.

2 MANAGEMENT

INTRODUCTION

The Management Programme consists of six (6) divisions/units answerable direct to the Secretary General, five (5) divisions under Deputy Secretary General (Management) and three (3) divisions under Deputy Secretary General (Finance). The main objective of this programme is to facilitate and support the achievement of the MoH policy and objectives by supporting the other programmes through an efficient and effective service system, human resource management, information technology management, competency and training development and financial management.

The divisions under the Management Section are as listed below:

i. Human Resource Division;
ii. Training Management Division;
iii. Competency Development Division;
iv. Management Services Division;
v. Information and Communication Technology Division;

ACTIVITIES AND ACHIEVEMENTS

HUMAN RESOURCE MANAGEMENT

Human Resources Division (HRD) is responsible for managing matters related to human resources and organizational structure of the Ministry of Health Malaysia (MOH). It involves personnel matters, schemes and remuneration, discipline, integrity and Human Resources Management Information System (HRMIS).

In implementing human resource management in MOH, HRD is facing several issues and challenges throughout the year 2012. One of the main challenges is to create a lean civil service in line with the Government's current policy. This will affect creation of new posts, organizational restructuring and appointment of staff. However, HRD successfully achieved activities as planned for the year 2012.

As of 31 December 2012, 208,865 or 91.5 percent post in MOH have been filled compared with total number of posts which is 228,201. This represents an increase of 2.5 percent compared with 2011. This shows Human Resource Division commitment to deliver better services to the nation. Paramedics and Auxiliary category is the largest group at MOH comprises of 52.5 percent, followed by Managerial & Professional 18.5 percent and Support Staff 29.0 percent.

TABLE 1
STATUS OF POSTS IN MOH, AS OF 31 DECEMBER 2011

No.	Service Group	Post	Filled	Filled %	Vacant	Vacant %
1	Management & Professional	46,361	38,658	83.4	7,703	16.6
2	Paramedic dan Auxilliary	117,286	109,755	93.6	7,531	6.4
3	Common User and Support	64,554	60,499	93.6	4,105	6.4
Total		228,201	208,865	91.5	19,339	8.5

Source: Human Resources Division, MoH

Organizational Structure Establishment
An effective health service delivery system requires a strong organizational structure to meet customer expectations. Hence, HRD ensures that the organizational structure of the Division is sustainable and based on current needs.

In tandem with the Government's policy to implement lean civil service, the Central Agencies had approved an additional 7,290 posts through *Anggaran Belanja Mengurus* (ABM) in 2012. Besides that, the Central Agencies approved a total of 1,681 additional posts to cater nurses' graduates from private colleges to serve with the MOH. This is to ensure the delivery of health services is excellent.

To provide better health services to Orang Asli, MOH has acquired all health facilities from the Orang Asli Development Department (JAKOA). Orang Asli will benefit from the expertise in various fields of medicine and health under MOH.

Scheme, Remuneration and Employee Relations
To attract and retain excellent officers to serve with the Ministry of Health, HRD has continued to improvise existing benefits and allowances. Government has extended a payment for Post Basic certificate holders in 11 areas of critical care and clinical specialization entitled to receive the Incentive Payment Post Basic (BIPB) at the rate of RM100 per month to all qualified Paramedics. The new 11 areas include:

i) Dental Pediatric;
ii) Microbiology;
iii) Infection Control;
iv) Diabetes Management;
v) Primary Healthcare Services;
vi) Rehabilitation;
vii) Sports Medicine;
viii) Forensic;
ix) Gastrointestinal Endoscopy;
x) HIV / AIDS Counseling; and
xi) Breast Imaging.

Appointments
In 2012, the Ministry appointed a number of 10,584 officers to serve with MOH. It comprises of 3,743 House Officers (HO), 496 Dental Officers, 1,172 Pharmacists, 258 other scheme of services in Managerial & Professional and 4,915 support staff were appointed. Meanwhile, a total number of 624 Medical Officers and Medical Specialist are appointed on contract basis to provide better health services.

Career Pathway
In 2012, a number of 15,220 officers were promoted at MOH and this exercise is part of recognition for excellent officers. Besides that, Government has approved the promotion for 461 Medical Specialists to Special Grade *(Gred Khas)* as personal to holders. MOH hopes that this recognition will encourage officers to provide better health services to the nation. Government recognizes staff contributions through better career pathway and benefits which are as competitive as offers from private hospitals.

Integrity and Discipline
To ensure the integrity of the MOH officials at an excellent level, HRD has undertaken various activities based and focussed on enhancement of integrity of the officials. This activities aim to establish a fully moral and ethical workforce whose staff are strong in religious and spiritual values and imbued

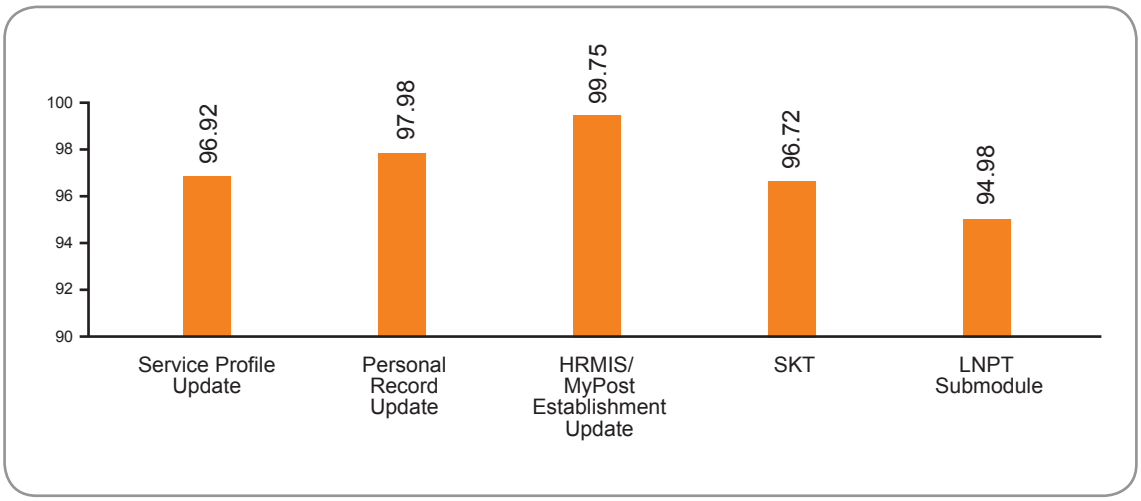
with the highest ethical standards. Furthermore, these activities instil awareness, commitment, and cooperation among all staff so that integrity becomes a way of life and practiced in all fields.

HRMIS

Updating of HRMIS involving Personnel Data, Service Profile, Personal Records and Annual Performance Evaluation Report (LNPT) is a Key Performance Indicator (KPI) for the Secretary General (KSU) and Director General of Health (KPK) of the Ministry of Health Malaysia. In 2012, HRD successfully achieved 85% for KSU's KPI which is rated as Exceed Target. The details achievements for KSU's KPI for HRMIS 2012 are as follows:

From the total posts in MoH, the Paramedic and Auxiliary Group is the largest group comprising of 51%, followed by the Common User and Support Group, and the Management & Professional Group, at 29% and 20% respectively. Details are as shown in Figure 1.

FIGURE 1
MOH SECRETARY GENERAL AND DIRECTOR GENERAL'S HRMIS KPI ACHIEVEMENT IN 2012



Source: Human Resources Division, MoH

Issues And Challenges

In the realization of the planned implementation strategy achieved, HRD is also facing several issues and challenges in implementing these strategies. Among the challenges of human resource management in the Ministry of Health which have been identified include an increased demand for public health services; to implement a lean organization policy; to attract and retain expertise; an equilibrium distribution of health personnel; and the emergence and development of new technologies.

Overall, during 2012, HRD has managed to achieve the target. Various improvements and reforms were implemented in 2012 and it is an ongoing process by HRD to improve service delivery. This achievement demonstrates the commitment of officers in the Division of Human Resources to provide best services in accordance with the government's aspiration.

TRAINING MANAGEMENT

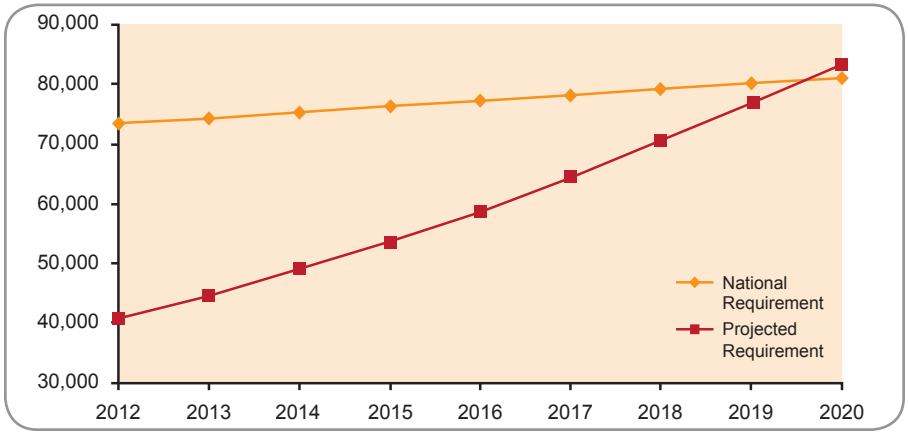
The core activity of the Training Management Division (TMD) is to develop human capital of the Ministry so as to produce an effective and efficient health delivery system. This Division is fully aware and takes cognizant of the changes and dynamism of the ever increasing expectations of the public

at large in seeking first class health services. Hence, towards achieving this aim, its activities are facilitated through the various management training programmes that are designed to produce a work force that is knowledgeable, competent, disciplined, and imbued with strong work ethics, values and commitment to excellence. In short, the focus of the TMD is to increase opportunities for quality training and education with a view to strengthen its human resource base.

Manpower Planning

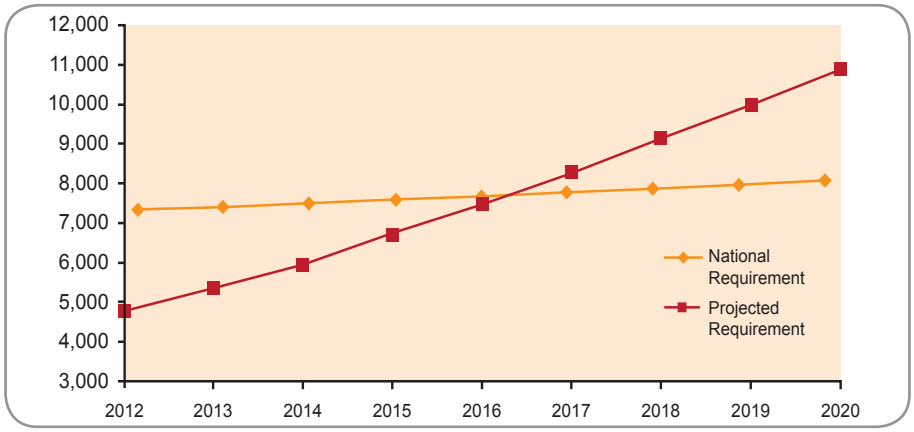
Upon reviewing the projection for the demand and supply of Medical Doctors, Dentists, and Pharmacists indicated that any increase in the supply of Medical Doctors, Dentists, and Pharmacists in the current years would still be inadequate in meeting the needs of the nation. However, it is observed that the gap between the demand and supply of these categories of health care personnel was steadily reduced through the expanded training capacity of the training institutions/ institutions of higher learning over the years. Figure 2, Figure 3, and Figure 4 depict the current and projected national requirement and supply of Medical Doctors, Dentists, and Pharmacists respectively.

FIGURE 2
CURRENT AND PROJECTED REQUIREMENT AND STOCK OF MEDICAL DOCTORS TO POPULATION ON THE RATIO OF 1:400



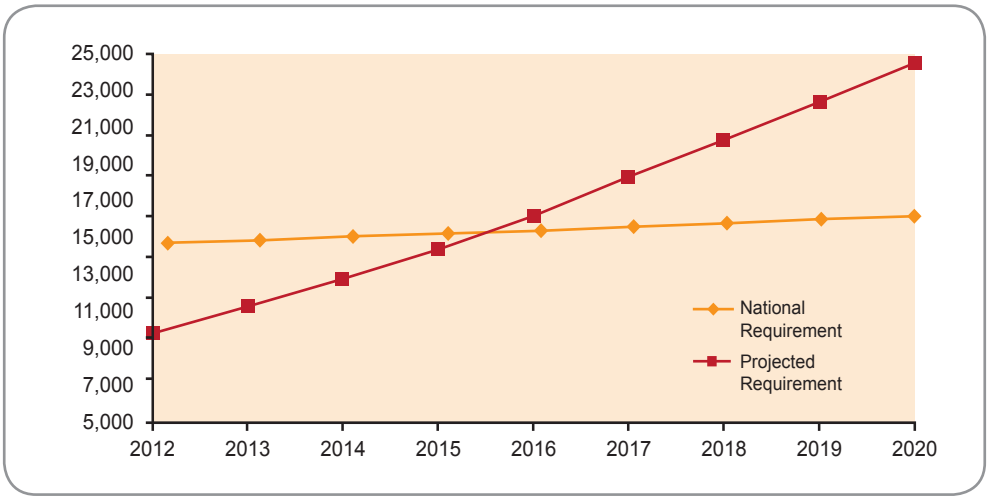
Source: Department of Statistic Malaysia (DOS) and Malaysian Medical Council (MMC)

FIGURE 3
CURRENT AND PROJECTED REQUIREMENT AND STOCK OF DENTIST TO POPULATION ON THE RATIO OF 1:4,000



Source: Department of Statistic Malaysia (DOS) and Malaysian Dental Council (MDC)

FIGURE 4
CURRENT AND PROJECTED REQUIREMENT AND STOCK OF PHARMACISTS TO POPULATION ON THE RATIO OF 1:2,000



Source: Department of Statistic Malaysia (DOS) and Pharmaceutical Services Division, MoH

Training Programmes

Training is a continuing investment to produce trained and competent manpower in the various health care fields. In ensuring the health care personnel of the Ministry of Health (MoH) acquire the necessary skills and knowledge, TMD made itself available in offering a diverse range of training programmes throughout the year encompassing Basic Training, Post Basic Training, Masters level Training for Medical Officers/ Dental Officers/ Pharmacists, Sub-specialty Training for Medical Officers, Doctoral programmes, and Short-term In-service Courses.

There has been an increase in the intake of participants for various categories of training/courses offered, with the exception of the Sub-specialist Training and Short Term In-service Courses in 2012, as compared to the year 2012. For 2011, the intakes for training according to the different categories are as shown in Table 2.

TABLE 2
INTAKE OF TRAINEES BY TYPES OF TRAINING, 2011-2012

No.	Types of Training	2011	2012
1	Basic Training in MOH Training Colleges	6,738	8027
2	Basic Training through 'Outsourcing Program'	345	-
3	Post Basic Training	3,409	3776
4	Specialist Training (Medical Officers)	690	706
5	Sub-Specialist Training (Medical Officers)	149	121
6	Master / Doctoral Programmes	133	161
7	Short Term In-Service Courses (Overseas)	253	73

Source: Training Management Division,MoH

Basic Training

In 2012, 8027 trainees were enrolled for Basic courses offered at MoH Allied Health Science Colleges (AHSC). The number of trainees enrolled for Basic Training in 2012 increased 13% as compared to only 7,083 in 2011. The breakdown of the number of trainees enrolled into the Basic training programmes according to disciplines conducted at AHSC for 2012 is depicted in Table 3.

TABLE 3
INTAKE OF TRAINEES FOR BASIC TRAINING, 2011-2012

No.	Discipline	2011	2012
1	Nurse	2,298	3983
2	Community Nurse	1,844	1217
3	Medical Assistant	806	1370
4	Pharmacy Assistant	195	134
5	Assistant Environmental Health Officer	234	287
6	Medical Laboratory Technologist	364	123
7	Radiographer	111	54
8	Dental Nurse	96	146
9	Dental Technician	49	55
10	Occupational Therapist	202	39
11	Physiotherapist	168	42
12	Dental Surgery Assistant	261	209
13	Public Health Assistant	455	368
Total		7,083	8027

Source: Training Management Division,MoH

Post Basic Training

In 2012, a total of 3,776 AHSP attended Post-Basic training programmes in 38 different disciplines at the various AHSC, which is shown in Table 4. The number of AHSP attending Post-Basic training programmes in 2012 has increased compared to 2011. The most popular demand Post Basic Training programme is Midwifery which registered an enrolment of 941 participants followed by Renal Nursing at 288 and Intensive Care at 250.

TABLE 4
INTAKE OF TRAINEES FOR POST BASIC TRAINING, 2011-2012

No.	Discipline	2011	2012
1	Midwifery	964	941
2	Intensive Care	211	250
3	Preoperative Care	201	223
4	Emergency Care	200	249
5	Paediatric Care	191	208
6	Renal Nursing	186	288
7	Public Health Nursing	168	170
8	Coronary Care	130	147
9	Diabetic Management	130	111

No.	Discipline	2011	2012
10	Neonatal Nursing	126	146
11	Infection Control	98	127
12	Perianaesthesia Care	85	89
13	Oncology Nursing	62	97
14	Health Personnel Management	55	53
15	Neuroscience Care	54	53
16	Orthopaedic Nursing	47	163
17	Otorhinolaringology Treatment	45	31
18	Gastrointestinal Endoscopy	45	52
19	Ophthalmic Nursing	41	45
20	Psychiatric Nursing	40	61
21	Gerontology	36	32
22	HIV/ AIDS Couselling	31	32
23	Haematology	28	-
24	Cytology	26	-
25	Parasitology	24	-
26	Computerized Tomography	23	13
27	Orthodontic Treatment	23	-
28	Pharmaceutical Sterile	22	13
29	Sports Medicine	21	10
30	Medical Imaging (Mammography)	20	18
31	Primary Healthcare	19	31
32	Rehabilitative Nursing	14	13
33	Forensic	13	13
34	Legal and Prosecution	10	27
35	Anaesthesiology	10	9
36	Neurophysiology Clinical	10	13
37	Environmental Health	-	10
38	Periodontic Care	-	25
Total		3,409	3,776

Source: Training Management Division, MoH

Masters Degree Programme for Medical Officers and Sub-speciality Training

In 2009, Public Service Department (PSD) has delegate the authority to approve 'Paid study Leave' to MoH for long-term courses such as Masters Degree and Doctorate Degree. This delegation has given MoH an advantage to shorten the processing time for long-term courses and therefore enhancing the efficiency. A total of 706 Medical Officers were offered Federal Government Scholarship (FGS) to undergo Masters in Medicine degree in various fields of specialization for 2012, which is highlighted in Table 5. The number of Medical Officers offered scholarships increased by 2.32% in 2012 compare to the previous year.

TABLE 5
INTAKE OF MEDICAL OFFICERS FOR MASTERS PROGRAMMES, 2011-2012

No.	Discipline	2011	2012
1	Obstetrics & Gynaecology	39	31
2	Anaesthesiology	78	83
3	Paediatric	41	37
4	Internal Medicine	43	52
5	Psychiatry	34	39
6	Radiology	44	53
7	General Surgery	60	48
8	Ophthalmology	39	35
9	Orthopaedic	47	55
10	Otorhinolaryngology	25	25
11	Pathology	44	52
12	Family Medicine	52	57
13	Public Health	48	45
14	Sports Medicine	5	7
15	Rehabilitation Medicine	8	6
16	Emergency Medicine	52	45
17	Neurosurgery	7	7
18	Plastic Surgery	4	4
19	Clinical Oncology	9	4
20	Paediatric Surgery	3	10
21	Transfusion Medicine	5	5
22	Nuclear Medicine	3	6
Total		690	706

Source: Training Management Division,MoH

In 2012, 121 Medical Specialists received FGS to undergo sub-specialty training in various medical fields, as shown in Table 6.

TABLE 6
INTAKE OF MEDICAL SPECIALISTS FOR SUB-SPECIALTY TRAINING, 2011-2012

No.	Discipline	2011	2012
1	Medicine	47	39
2	Surgery	18	9
3	Paediatric	15	11
4	Obstetrics & Gynaecology	9	10
5	Anaesthesiology	11	14
6	Orthopaedic	13	13
7	Otorhinolaryngology	13	6

No.	Discipline	2011	2012
8	Ophthalmology	13	11
9	Psychiatry	6	2
10	Radiology	4	6
Total		149	121

Source: Training Management Division, MoH

Masters and Doctorate Programme
In 2012, 161 MoH officers from different health services were offered FGS to pursue postgraduate studies both at Masters (154 officers) and at Doctorate level (7 officers) in disciplines related to health sector. The number of scholarships offered in 2012 registered an increased of 21% as compared to 2011 (119 officers in Master Programme and 14 officers in Doctorate Programme). In addition, the bulk of the available scholarships were offered to Dental Officers (57 officers) and Pharmacists (59 officers).

Short Term In–Service Courses
MoH personnel were encouraged to apply and attend short term in-service courses that are financed from the development budget of the 10MP. In 2012, 73 personnel attended short term in-service course overseas as compared to 253 in 2011.

Management of Examinations
For management of examination in 2012, TMD has strengthened the management of basic and post basic examination for all diplomas and certificates courses conducted in AHSC. Throughout the year, new examination questions were developed and reviewed to strengthen the pool of questions in the 'Q-Bank system' for basic and post basic examinations.

Development of Curricula
In 2012, TMD has made efforts to strengthen post basic curricula to accommodate the needs of AHSP for higher academic qualification. There is one Advance Diploma Curricula has been completed in year 2012, which is Histopathology.

Tutor Development
In order to provide quality training, the tutors themselves must be well trained and well equipped with current medical knowledge. Various programs such as Internal Attachment Program, Overseas Attachment Program, Degree and Master Program for Tutors, as well as 24 Update Courses are conducted and implemented in 2012. These programs were meant to expose tutors to the various health facilities locally or overseas with the objective to improve their knowledge and skills in the various available disciplines.

COMPETENCY DEVELOPMENT MANAGEMENT

Competency Development Division (CDD) is responsible for the implementation of competency assessment and development of public servants in MOH. The CDD also manages the departmental subject examinations for 15 schemes of service for the purpose of confirmation in service. In addition, the CDD conducts Competency Based Training (CBT) as well as Training for Trainers (TOT).

The Integrated Programme of Competency and Potential Development (PROSPEK), was introduced for all public servants to replace the Competency Level Assessment (PTK) with effect from 1 January 2012. However, PROSPEK was abolished by the Government through Service Circular No. 4 of 2012 dated 15 May 2012. Work is currently underway by the central agency (Public Service Department) to

study and prepare new competency assessment and development method. Nonetheless, this Division has also prepared competency standards for 80 posts. Activities implemented in 2012 are as shown in Table 7.

TABLE 7
ACTIVITIES IN 2012

No.	Activity	Number Of Service Schemes Involved	Number Of Candidates
1.	Departmental Subject Exams	15	767
2.	Competency Based Training (CBT)	2	189
3.	Training for Trainers (TOT)	2	26

Source: Competency Development Division, MoH

MANAGEMENT SERVICES

The main objective of the Management Services Division (MSD) is to provide efficient and effective support and advisory services in management to ensure all activities within the MOH Headquarters (HQ) are implemented professionally towards enhancing the health service delivery system. The MSD is also responsible to ensure that the required services and facilities are provided to enable each Division within the HQ to excel in their functions. MSD comprises of three main branches consist of several units:

A. General Management Branch
- i. Human Resource Management Unit
- ii Innovation Unit
- iii. Parliament Coordination Unit
- iv. Psychology Counselling Services Unit; and
- v. Administration Unit

B. Finance and Asset Management Branch
- i. Finance Unit
- ii. Asset Management Unit

C. Information Resource Branch
- i. System Management and Digitization Services
- ii. Development and Advisory Services
- iii. Library and Information Services

Personnel Management
The MSD is responsible in managing all service related matters for the 4,493 employees within the HQ. These employees come from various fields as summarized in Table 8.

TABLE 8
VARIOUS CATEGORIES OF MOH HEADQUARTERS EMPLOYEES, 2011-2012

No.	Category	No. of Employees	
		2011	2012
i.	Administration	3	3
ii.	Top Management	97	98
iii.	Professional & management	1,320	1,386
iv.	Support	1,975	2,019
v.	Part Time	240	282
vi.	Training Pool	628	679
vii.	Temporary Addition	3	3
viii.	Pool	15	23
Total		4,281	4,493

Source: Management Services Division, MoH

The core activities of this Unit include the preparation and recording of change reports, to process Appointment Confirmation Date, confirmation of service and issuance of certification to that effect. The performance of each activity is shown in Table 9.

TABLE 9
PERFORMANCES BASED ON ACTIVITIES IN PERSONNEL MANAGEMENT, 2012

No	Activity	Performance
i.	To prepare and record change reports	13,844 reports
ii.	To record service – related matters	24,918 records
iii.	To process the following : - Appointment Confirmation Date - Certification for confirmation of service and confirmation of service - Conferment of pension status	Total of 550 personnel
iv.	To process compulsory / optional / derivative retirement	30- retirements
v.	To process and certify applications for computer, housing and Vehicle loans	68- Winter Clothing's 63- Housing 4- Vehicle
vi.	To Process and certify applications for winter clothing / ceremonial attire allowance	37- Winter Clothing's 69- Ceremonial Attire
vii.	To Process promotion and 'acting' related matters	584- applications
viii.	To certify and confirm entitlement for medical benefits	145 letters
ix.	To issue Covering Allowance Certification	438 applications
x.	To process disciplinary issues	20 cases
xi.	To Conduct Service related Courses	33 Courses

Source: Management Services Division, MoH

Within the scope of personnel management, the MSD has been appointed as the secretariat for the various main committees related to employees' service matters. One of these committees is the Human Resource Development Panel, Which convenes periodically to discuss various issues such as the annual salary increment and selection of the Excellent Service Awards recipients. The Activities of the said panel for 2012 have been summarized in the Table 10.

TABLE 10
SUMMARY OF ACTIVITIES FOR HUMAN RESOURCES DEVELOPMENT PANEL 2012

No	Activity	Performance
i.	Convened once to discuss and certify normal salary movement for employees who have submitted their Annual Performance Appraisal Forms	Total of 6,163 personnel. Meeting convened on 2 April 2012.
ii.	Convened once to select recipients of the Excellent service Awards.	492 selected from a pool of 6,163 personnel. Meeting convened on 8 May 2012.
iii.	Convened four times to consider and award the annual salary increment.	Total of 22 personnel. Meeting convened on 4 October 2012.

Source: Management Services Division, MoH

The MSD is also the secretariat for the Majlis Bersama Jabatan (MBJ), which was set up to enable members to discuss and resolve issues to work systems, administrative matters and employees' welfare. In 2012 The MBJ convened 4 meetings which is the stipulated minimum number of required meetings.

In line with the Government's Vision to modernize its administrative machinery and to create a paperless work-environment, the Public Service Department introduced the Human Resources Management Information System (HRMIS). MOH was selected as one of the pioneer agencies to launch the system. The MSD was tasked to ensure that the HRMIS WAS launched and implemented effectively in the Ministry's HQ. The HRMIS involves numerous human resource related information. In 2010, the achievement for employee personal data entry is summarized in the Table 11.

TABLE 11
HRMIS UPDATING STATUS IN MOH HQ, AS OF 31 DECEMBER 2012

Type of Data	Status	
	Number	Percentage (%)
Personal	4,090	99.00
Family	3,923	91.81

Source: Management Services Division, MoH

Finance Management

The MSD manage all finance related matters for employees in the HQ and personal or official overseas bound trips applications (duration of less than 14 days), these include payment of salaries, allowances, rewards and bonuses. It is also in charge of the HQ's Management Programme whereby a total of RM 1.296 billion has been allocated under operating budget. The performance–based expenditures till December 2012 including Accounts Payable are 105.22% (Table 12).

TABLE 12
TOTAL ALLOCATION AND EXPENDITURE BY ACTIVITY TILL DECEMBER 2012

Department	Allocation	Expenditure
HQ Management	308,249,205.00	331,780,823.77
Human Resources	11,657,000.00	14,,543,676.42
Finance	419,516,283.00	421,092,266.52
Training	426,026,435.00	464,556,259.14
Information Technology	127,601,690.00	128,292,040.95
Competency Development	3,090,233.00	3,472,892.73
TOTAL	1,296,140,846.00	1,363,737,959.53

Source: Management Services Division, MoH

As a Responsibility Centre which is better known as PTJ 1, the MSD also has the role receiving and distributing the allocations warrant for all the other PTJs under it. In 2012, a total of 686 warrants were received while 849 sub-warrants were distributed.

The MSD is also the secretariat to the PTJ-1 Accounts and Finance Management Committee (JPKA). The Committees had met four times as scheduled to monitor the account and financial practices of 15 PTJ-2 and 30 PTJ-3 under its jurisdiction. The other responsibilities of this unit include accounting and revenue collection for the HQ. A total of RM22.01 million as revenue was collected in 2012. In addition, it is also conducts periodical courses for finance staff to equip them with the necessary skills and knowledge that would enable them to carry out their tasks more efficiently and effectively.

TABLE 13
SUMMARY OF OVERSEAS BOUND TRIPS APPLICATIONS

No.	Activities	Achievements
i	Personal Or Official Overseas Bound Trip Application	Personal Trips - 7945 Official Trips - 1031

Source: Management Services Division, MoH

Administration Management
The MSD is in charge of administration matters in the HQ. These include general administration, vehicles management, reports of punch card, security service and filing and correspondence management. The activities and performance pertaining to this unit for 2012 are as in Table 14.

TABLE 14
SUMMARY OF ADMINISTRATIVE ACTIVITIES

No	Activities	Achievements
i.	Compiling Punch Card Reports	- 12 Reports compiled.
ii.	SPANCO car rentals	- 51 official cars for JUSA/Special Grade; - 40 official vehicles replacement; and 161 replacements of leased official vehicles, which lease had expired.

No	Activities	Achievements
iii.	Security • Appointment of Security Services Company for HQ • Department Passes • Security/Access Passes	- Appointment was made and the said companies were monitored accordingly. - 514 passes were issued. - 688 passes were issued.
iv.	Monthly Assembly	- 12 Assemblies were held.
v.	Filing Management	File Registration: - Personal: 15,069 files; - Open: 286 files; - Classified: 982 files; and - Application for disposal = 7,661 files.
vi.	Correspondence Management	- 201,763 letters have been received, sorted and distributed. - Letters sent through postal service: - Domestic Mail: 110,410; - Registered Mail: 13,188; - Air Mail = 511; - Express Mail = 63,716; and - Parcel = 1,166
vii.	Selection of Medical Representatives for the Hajj Season	256 Medical Representatives were selected.
viii.	Event Management	Conducted/facilitated 55 events

Source: Management Services Division, MoH

Throughout the year 2012, four Islamic related courses were conducted. These courses were *Tahsin Bacaan Al Quran Course* and *3 Islamic Human Development Course*. In addition, 32 talks on inculcating Islamic values and 12 *Bicara Rohani* were conducted.

Innovation Management

The summary for innovation management achievements is as listed in Table 15.

TABLE 15
SUMMARY OF INNOVATION MANAGEMENT

No.	Activities	Achievements
i	Innovation Steering Committee Meeting	Convened Three Meetings
ii	Improving Delivery Service Meeting	Convened Four Meetings
iii	KKM Innovation Award	Award For Four Categories
iv	Innovation Convention	750 Participants
v	KKM Convention Innovative And Creative Group	Annually

Source: Management Services Division, MoH

Coordination of MOH Matters in Parliamentary Affairs

MSD had long been entrusted with the coordination of MOH's Parliamentary affairs. The key role and achievements in relation to that scope may be summarized as appeared in Table 16.

TABLE 16
SUMMARY OF PARLIAMENT MANAGEMENT

No.	Activities	Achievements
i.	Parliamentary Coordination (for both House of Representative and Senate)	Preparation for the tabling, reading and debate of MOH Bills in both Houses - Bills approved: i. Medical (Amendment) Act Bill 2012; ii. Traditional & Complementary Medicine Bill 2012; iii. Supplementary Supply Bill (2011) 2012; and iv. Supply Bill 2013. Preparation of speeches of the Honorable Minister of Health in both Houses - Prepared 7 speeches for three sessions meeting Coordinate and compile answers for Parliamentary questions related to MOH - Answered 258 questions for the House of Representatives and 112 questions for the House of Senate in three sessions meeting in 2012.

Source: Management Services Division, MoH

Asset Management
The asset management Unit is responsible for managing matters which are related to assets, rental of premises, maintenance and procurement. The performance for each activity for 2012 is as Table 17.

TABLE 17
SUMMARY OF ASSET MANAGEMENT ACTIVITIES

No.	Activities	Achievements
i	Building Maintenance • Putrajaya Office Complex • Cenderasari Office Building o Cleaning Services o Security Services o Renovation	 - 4 Maintenance Meeting were held - Maintenances Company appointed - Security Company appointed - Renovation for Block E3 completed on February 2012
ii	Premises and Office Space Rental	- 240 office space rental applications were processed - 84 residential rental application were processed
iii	Registration of Asset at MSD	- Inventory: 352 - Asset: 44

Source: Management Services Division, MoH

Information Resources Management
Provides loan and reference services to staff in MOH head office, Virtual Library services to all MOH staff, planning and coordinating development and services of all libraries under MOH. The performance for each activity for 2012 is as Table 18.

TABLE 18
SUMMARY OF INFORMATION RESOURCES BRANCH ACTIVITIES

No.	Activities	Achievements
1	Library and Information Services	i) Reference and referral services – 37 requests ii) Collection borrowed – 3,541 books iii) Borrowers – 1,379 persons iv) Reading Promotion Activities : - Exhibitions - BOOKS2U - We Love To Read@MOH - Talks - Working Trips - Merdeka Quiz - Children Activities - Most Active Readers Of The Month/Year
2	System Management and Digitization Services	Virtual Library - i) Subscription of 4 databases (MD Consult, OVID, Emerald Management and LawNet) ii) Number of users - 23,283 users iii) Usage promotion – 10 visits/demonstrations throughout the country
3	Development and Advisory Services	i) Coordinated functions of 94 libraries under KKM: - 10 institutional libraries - 52 hospital libraries - 32 medical college libraries ii) Provided 4 training courses for 131 staff from 94 libraries under MOH iii) Provided advisory services to 7 libraries iv) An Annual MOH Medical Libraries Meeting for all officers in charged of medical libraries under MOH was held on the 28-29 Jun 2012 with a special dialogue session with Dato' Dr. Mohd. Azhar Haji Yahya, Deputy Secretary General (Admin) MOH v) 662 books and thesis were documented for library collection vi) 12 reading promotion posters were prepared (6 "Nothing To Read" and 6 "Book Review") to promote the usage of library collection

Source: Management Services Division, MoH

INFORMATION MANAGEMENT

Starting from 2011, the Ministry of Health's ICT direction is toward **Strengthening ICT through Integration and Information Sharing** and auxiliary become **Catalyst In Transforming Health Care Services**. Among the important activities undertaken by the BPM through 2012 are as follows.

Improved and consolidated ICT Infrastructure

The Ministry of Health Malaysia has obtained MS ISO / IEC 27001: 2007 Information Security Management System (ISMS) for Data Center Operations Management MOH Headquarters, on July 27, 2012.

IMAGE 1
ISMS CERTIFICATION

SIRIM QAS INTERNATIONAL

CERTIFICATE

ISMS SIRIM

STANDARDS

UKAS MANAGEMENT SYSTEMS

SIRIM QAS International hereby certifies that

KEMENTERIAN KESIHATAN MALAYSIA
BAHAGIAN PENGURUSAN MAKLUMAT
ARAS 5, BLOK E7, PARCEL E
PUSAT PENTADBIRAN KERAJAAN PERSEKUTUAN
62590 PUTRAJAYA
WILAYAH PERSEKUTUAN
MALAYSIA

has implemented an Information Security Management System complying with

ISO/IEC 27001:2005 Information Technology – Security Techniques – Information Security Management Systems – Requirements

Scope of Certification

ISMS FOR THE MANAGEMENT OF DATA CENTRE IN PUTRAJAYA.

Issue date : 27 July 2012

Validity period : 27 July 2012 - 26 July 2015

Certification No. : AR 5686

Khalidah Mustafa
Managing Director
SIRIM QAS International Sdn. Bhd.

SIRIM QAS International Sdn. Bhd.
Company No. 410334 - X
1, Persiaran Dato' Menteri
Section 2, P.O. Box 7035
40700 Shah Alam
Selangor Darul Ehsan
MALAYSIA
Tel : 60-3-55449404
Fax : 60-3-55446787
http://www.sirim-qas.com.my
http://www.malaysiancertified.com.my

This certificate is granted subject to the terms and conditions as stated in the Certification Agreement.

Source: Information Management Division, MoH

The activities carried out in the year 2012 are as listed in Table 19.

TABLE 19
INFORMATION MANAGEMENT DIVISION ACTIVITIES, 2012

No.	Activity	Date
1.	ISMS Workshop No. 1/2012	3 Feb 2012
2.	ISMS Workshop No. 2/2012	22 Feb 2012
3.	ISMS Management Meeting No. 1/2012	18 April 2012
4.	Management Review Meeting No. 1/2012	14 May 2012
5.	Management Review Meeting No. 2/2012	18 May 2012
6.	ISMS Review Workshop	22 May 2012

No.	Activity	Date
7.	Audit by SIRIM	10-11 July 2012
8.	Monitoring Committee Meeting No. 1/2012	12 September 2012
9.	Implementation Committee Meeting No. 1/2012	26 November 2012
10.	Review Workshop For MyRAM, Effective Measurement and Statement Of Applicability	19 December 2012

Source: Information Management Division, MoH

In 2012, BPM in collaboration with MAMPU has implemented the expansion of three (3) applications of the MOH as follows:

- **MyMesyuarat System**

The implementation of MyMesyuarat System is under the National Key Result Area - Community Content and Infrastructure - Entry Point Project E-Government (CCI NKEA EPP) and Empire Online Service. In 2012, CCI NKEA EPP aims to achieve: -

i. 70% of correspondences, memos and minutes of the government are done online; and
ii. 90% of the meeting invitations are made necessary to be sent online.

The expansion of the execution of MyMesyuarat is done in cloud where data and technical service center are provided by MAMPU. In accordance with the decision of MOH Morning Meeting, the Ministry of Health's Headquarter, National Institutes of Health, Pharmaceutical Services Division and Health Department were selected to implement this program.

- **Sistem Kepuasan Pelanggan (e-Rating)**

Furthermore, MAMPU has developed online Individual Customer Satisfaction Evaluation System (e-rating) for counter services to facilitate customers in order to respond to government services effectively and efficiently. The main objective of the exercise is to improve the delivery of public services through the execution of online government services. In 2012, this system has been implemented at the Putrajaya Hospital and Kelana Jaya Health Clinic.

IMAGE 2
E-RATING USER INTERFACE AT KELANA JAYA HEALTH CLINIC

Source: Information Management Division, MoH

- **MyHealth Apps**

The MyHEALTH portal application is implemented to facilitate Malaysian in accessing healthcare information quickly, easily and comfortably at anytime and anywhere through electronice devices including smartphone or other smart devices. In order to meet current needs, this application is developed to be compatible in supporting various type of operating system platform or various type of devices such as iOS, Android, Window Phone and Blackberry. There are six (6) major services provided by this application :

1. Health Facilities
2. Frequently Asked Questions (FAQ)
3. Health Risk Assessment
4. Medical Practitioners
5. Registered products
6. M-Denggi

This application had been officially launched on 29th June 2012 during the Event of Health Media Award by the Malaysian Health Minister.

IMAGE 3
MyHEALTH APPLICATION INTERFACE

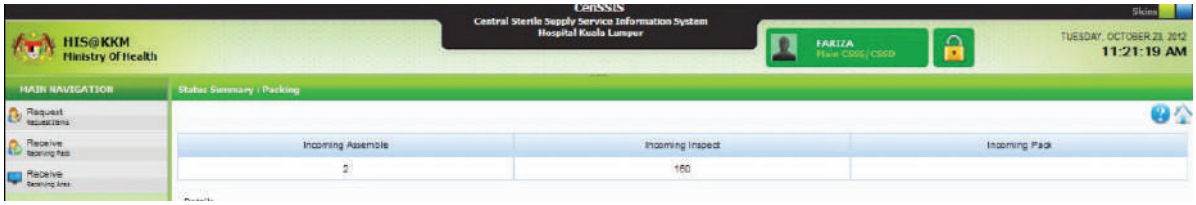
Source: Information Management Division, MOH

Empowering Systems, Applications and Databases

- **Hospital Information System - HIS@KKM**

The development phase of Central Sterile Supply Department (CSSD) Module or now known as CenSSIS was completed in 2013. The testing and acceptance phase is expected to be held in April 2013.

IMAGE 4
CENTRAL STERILE SUPPLY SERVICES INFORMATION SYSTEM (CENSSIS) HIS@KKM MODULE



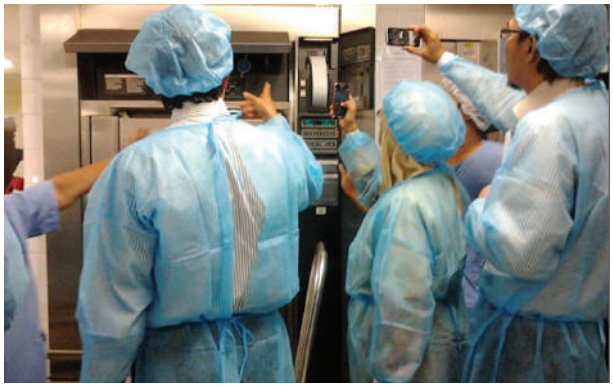
Source: Information Management Division, MoH

Apart from CenSSIS, there are two other modules in HIS @ MOH, namely as LIS and CD. The documentantion of Laboratory Information System (LIS) module is fully completed while the user requirement document for Clinical Document (CD) is completed in the end of 2012.

IMAGE 5
CenSSIS WORKSHOP WITH SUBJECT MATTER EXPERTS

Source: Information Management Division, MoH

IMAGE 6
VISIT TO CENTRAL STERILE SUPPLY DEPARTMENT, STERILIZATION ZONE, HOSPITAL KUALA LUMPUR



Source: Information Management Division, MoH

IMAGE 7
REVIEW AND SIGN OFF SYSTEM REQUIREMENT SPECIFICATION (SRS) FOR LIS WORKSHOP

Source: Information Management Division, MoH

IMAGE 8
OPENHIS REQUIREMENT STUDY WORKSHOP FOR THE CLINICAL DOCUMENTATION (ORTHOPAEDICS) MODULE

Source: Information Management Division, MoH

- **In-house Development**

Utilising in-house expertise available at our disposal, the Information Management Division also developed several systems and applications internally. The following is a list of systems which has been developed in 2012.

i. Sistem Maklumat Rawatan Perubatan (SMRP) Version 1.0

This centralised web-based data collection system was developed to replace the similar standalone system which was previously used in all MOH hospitals since 1999. The decision for this particular system development was made back in 2005 due to issues related with data confidentiality. This system was officially launched in February 2012 and owned by the Health Informatics Centre, Planning Division.

IMAGE 9
SMRP USER INTERFACE

Source: Information Management Division, MoH

ii. Medical Error Reporting System (MERS)

The amendment of Medical Error Reporting System (MERS) was completed in September 2012 and has been used in MOH facilities starting from November 2012. The owner of the system is the Pharmaceutical Services Division.

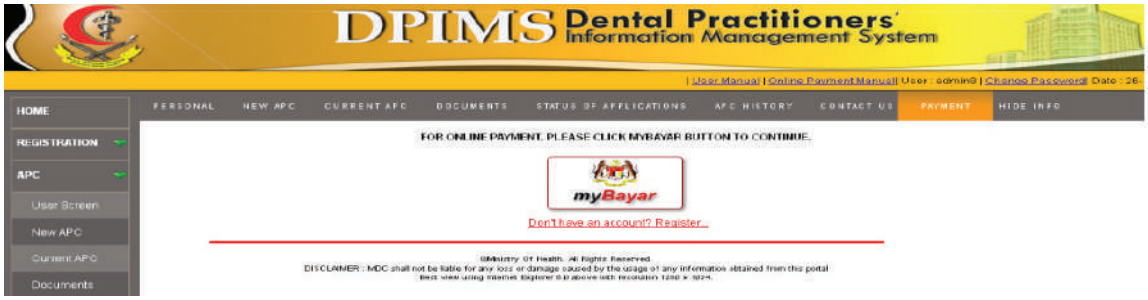
IMAGE 10
MERS USER INTERFACE

Source: Information Management Division, MoH

iii. Dental Practitioner Information Management System (DPIMS)

The collaboration between MOH and MAMPU for the development of DPIMS Payment Online Module and Web Mobile was implemented in October 2012. The owner of the system is the Malaysian Dental Council, Oral Health Division.

IMAGE 11
DPIMS USER INTERFACE



Source: Information Management Division, MoH

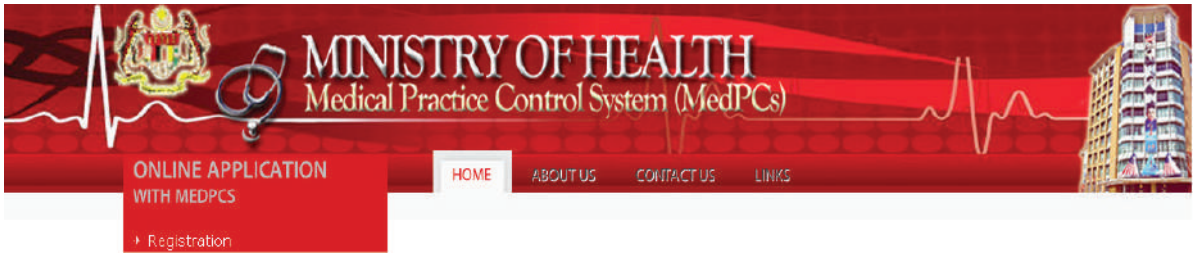
iv. Dental Practitioner Information Management System (DPIMS) (2nd Phase)

The development of DPIMS (2nd phase) was completed at the end of 2012. The testing and implementation phase will be conducted in early 2013. The owner of the system is the Malaysian Dental Council.

v. Medical Practice Control System (MedPCs)

The development phase of the Medical Practice Control System (MedPCs) was completed in November 2012. The testing and implementation phases will be held in 2013. The owner of the system is Medical Practices Division.

IMAGE 12
MedPCs USER INTERFACE



Source: Information Management Division, MoH

vi. Sistem Tabung Bantuan Perubatan (STBP)

The owner of this system is the Finance Division.

IMAGE 13
STBP USER INTERFACE

Source: Information Management Division, MoH

vii. Sistem Perjalanan Ke Luar Negara (SPKKN)

The development of SPKKN was started in June 2012 and completed by September 2012 based on the user requirement. However, the implementation of the system had to be postponed due to a change in the related circular/rule. The owner of the system is the Management Service Division.

IMAGE 14
SPKKN USER INTERFACE

Source: Information Management Division, MoH

viii. Development of the ePengambilan System

The system is developed to replace Sistem Pengambilan Atas Talian (SPAT), as requested by Human Resources Division as the project owner. Development of this system is currently underway.

ix. National Registry of Rehabilitation Program Child Malnutrition or Program **Pemulihan Kanak-Kanak Kekurangan Zat Makanan (PPKZM).**

Improvement of the system has been successfully implemented in 2012. Application of the development is requested by Nutrition Division as the project owner.

IMAGE 15
PPKZM USER INTERFACE

Source: Information Management Division, MoH

x. eKenderaan

The system was developed completely in December 2012 and is expected to be used in January 2013. Application development is requested by the Management Services Division as the project owner.

IMAGE 16
eKENDERAAN USER INTERFACE

Source: Information Management Division, MoH

- **Skills Enhancement for BPM Developer.**

Two (2) series of PHP Code Igniter Framework Course were held for In-house Application Developers/ Programmers Team of BPM, MOH. The training was conducted with services support of OSCC, MAMPU and participants were guided by skilled instructors.

IMAGE 17
PARTICIPANTS OF THE CODE IGNITER FRAMEWORK COURSE AT MAMPU, CYBERJAYA

Source: Information Management Division, MoH

Enhancing the Changes of Management and ICT Cultivation of MOH Employees

In 2012, eight (8) Office Automation (OA) course sessions for 131
MOH staffs were held under this section. BPM training room capacity can only accommodate less than 18 participants for each session

- **BPM Bulletin**

BPM Bulletin's content focused on ICT information for knowledge to all MOH staff. In 2012, BPM has published two bulletins which are Vol. 1/2012 and Vol. 2/2012. Bulletin Vol. 1/2012 is focused on Social Media Best Practices and Bulletin Vol. 2/2012 is focused on Seamless Services.

IMAGES 18
BPM BULLETIN

Source: Information Management Division, MoH

- **Providing Access for Community Involvement in ICT Use of MOH**

In 2012, the MOH Portal was ranked in 9th among the 25 ministries with 90 points. Besides that, the MOH Portal has also maintained recognition of five (5) stars for three (3) consecutive years since 2010.

TABLE 20
MALAYSIA GOVERNMENT PORTALS AND WEBSITES ASSESSMENT 2011 - ACHIEVEMENT

Ranking	Portal/Website	2012		2011		
		Score	Star	Manistry Ranking	Score	Star
1	Ministry of Finance Malaysia	101	5	9	92	5
2	Ministry of Natural Resources and Environment	99	5	3	98	5
3	Ministry of Housing and Local Government	98	5	1	106	5
4	Ministry of Information, Communication and Culture	97	5	11	90	5

Ranking	Portal/Website	2012		2011		
		Score	Star	Manistry Ranking	Score	Star
4	Ministry of International Trade and Industry	97	5	10	91	5
4	Ministry of Works Malaysia	97	5	5	96	5
5	Ministry of Agriculture and Agro-based Industry	96	5	6	95	5
5	Ministry of Defence	96	5	9	92	5
6	Ministry of Education	95	5	8	93	5
6	Ministry of Home Affairs	95	5	15	82	5
7	Ministry of Science, Technology and Innovation	94	5	13	86	5
8	Ministry of Youth and Sports	91	5	12	87	5
9	Ministry of Health	90	5	3	98	5
9	Ministry of Higher Education	90	5	6	95	5
9	Ministry of Tourism	90	5	9	92	5
10	Ministry of Plantation Industries and Commodities	87	5	14	84	5
10	Ministry of Federal Territories and Urban Wellbeing	87	5	7	94	5

Source: Information Management Division, MoH

- **Upgrading the Quality and Governance Management of MoH ICT - MoH ICT Steering Committee (JPICT) Meeting**

In 2012, the MoH JPICT Secretariat has received a total of 43 ICT project proposals to be evaluated technically. The MoH JPICT Meetings – were co-chaired together by the Secretary General and the Director General, and held four times throughout 2012. Details of the meeting are as shown in Table 21.

TABLE 21
MOH ICT STEERING COMMITTEE MEETINGS IN 2012

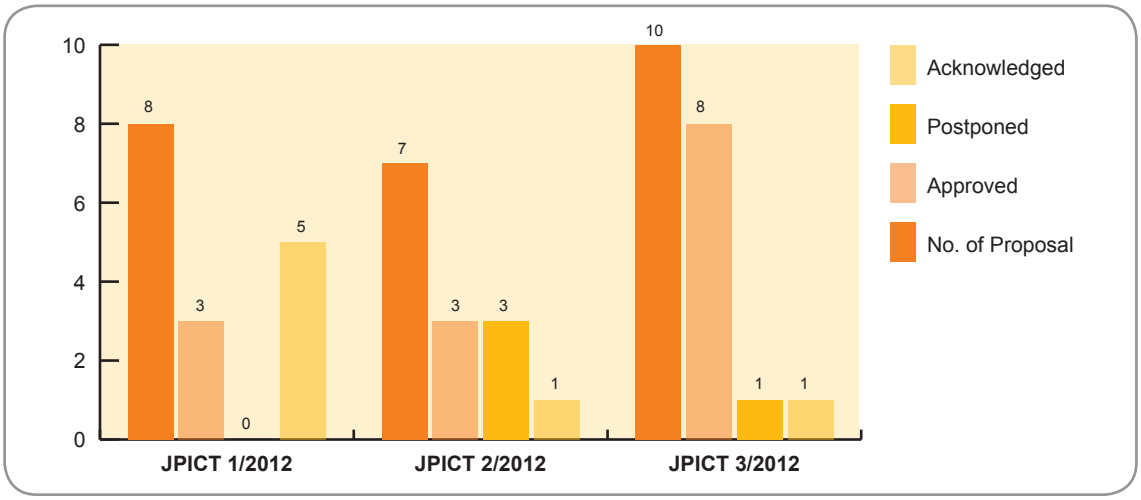
Meeting No.	Date	No. of Papers Discussed	Decisions
1/2012	28 February 2012	8 (3 ICT project papers, 4 acknowledgement papers, 1 product review)	3 approved, 5 acknowledged.
2/2012	10 July 2012	7 (6 ICT project papers, 1 acknowledgement paper)	3 approved, 3 postponed, 1 acknowledged.
3/2012	4 December 2012	10 (8 ICT project papers, 1 acknowledgement paper, 1 policy)	8 approved, 1 postponed, 1 acknowledged.

Source: Information Management Division, MoH

Three (3) projects were approved through circular on November 16th, 2012. One (1) project was presented again in JPICT 3/2012 and officially acknowledged by the Committee.

For 2012, sixteen (16) projects were approved by the Committee with a total estimated cost of **RM18,906,995 million.** Five (5) ICT project proposals for inhouse development were approved at the ICT Technical Committee level and brought to the JPICT Meetings for official acknowledgment.

FIGURE 5
STATISTIC OF PROPOSAL PAPERS DISCUSSED AND APPROVED IN JPICT 2012



Source: Information Management Division, MoH

- **MoH ICT Officers Meeting and Team building program**

This event was held from 5th to 8th November 2012 at the Bukit Gambang Resort City, Kuantan, Pahang and officiated by the Information Management Division Undersecretary. The participants of the program included 83 of Ministry's ICT personnels - IMD Officers Grade F48 and above, ICT Officers from the Headquarters and MoH agencies all over Malaysia.

The meeting sessions were co-chaired by the Deputy Undersecretary of IMD. The participants were also benefited from the policy and technology updated segments conducted by the Telehealth Divisions MoH, GITN, Allied Telesis Sdn.Bhd and Dataware Sdn. Bhd.

CONCLUSION

The main objective of the Management Programme is to enable the achievement of MoH's vision and mission by giving support services such as human resource development, general administration, financial management, information system management, and ICT infrastructure development. In the future, continuous improvement and innovations will be implemented in order to enhance the effectiveness and efficiency of the service delivery system in MoH.

3 FINANCE

INTRODUCTION

The Finance Sector is headed by the Deputy Secretary General (Finance) and comprises of 3 Divisions namely Finance Division, Accounts Division and Procurement and Privatisation Division. This sector is responsible for managing all matters related to finance such as budget and expenditure, accounts management, payments, procurement of assets and services and privatisation in the MoH.

The three main functions of the Finance Division are to formulate financial policies, budget management and revenue collections for the Ministry. The main activities of this Division are to ensure disbursement of allocation, monitoring of expenditure, general finance, revenue management, distribution of financial aid and expenditure system studies.

The role of the Accounts Division is to provide an efficient and quality accounting service in processing, checking and approving payments including emolument for all Responsibility Centres (RC) within the Klang Valley. It is also responsible for processing revenue collection. In addition to preparing the financial and management report, it also inspects the electronic payment system (e-SPKB) and cash auditing at all RC. Accounts Division is divided into two branches namely Management and Operation. With the latest restructuring, Accounts Division extends its role in advisory and as financial solution information provider for managerial decision's support besides carrying out routine processing of financial transactions.

Meanwhile, all matters pertaining to procurement is managed by the Procurement and Privatisation Division. This Division is the main agency for procurement, privatisation, asset, and store management for the Ministry. It is responsible in ensuring that all MoH's procurement is the best, effective, transparent, fair and most cost-effective. It also ensures all privatization programmes are implemented in line with the national privatization policy and monitored effectively so as to improve the standard, efficiency and quality of services provided to the public. The Division also safeguards the managing of stores, inventories and assets of MoH so that the related rules and regulations are in place.

ACTIVITIES AND ACHIEVEMENTS

BUDGET MANAGEMENT

In 2012, a total of RM17.02 billion was allocated to MOH which consists of RM15.15 billion for the Operating Budget (Table 1) and RM1.87 billion for the Development Budget. Operating Budget according to program is shown in Table 1.

TABLE 1
ALLOCATION AND EXPENDITURE OF OPERATING BUDGET IN 2012, ACCORDING TO PROGRAMME

Programme	Allocation (RM)	Expenditure (RM)
Management	1,296,713,400	1,363,737,960
Public Health	2,923,409,277	3,430,403,484
Medical	9,679,712,558	10,602,956,768
Research & Technical Support	159,199,348	174,144,831
Oral Health	524,414,434	639,256,693
Pharmaceutical Service	124,849,130	141,466,797

Programme	Allocation (RM)	Expenditure (RM)
Food Safety & Quality	76,105,818	85,731,076
Malaysian Health Promotion Board	14,000,000	14,000,000
Specific Programme	77,480,743	83,638,032
New Policy	199,335,702	197,651,285
One-Off	75,450,000	74,984,964
Total	**15,150,670,410**	**16,807,971,890**

Source: Finance Division, MoH

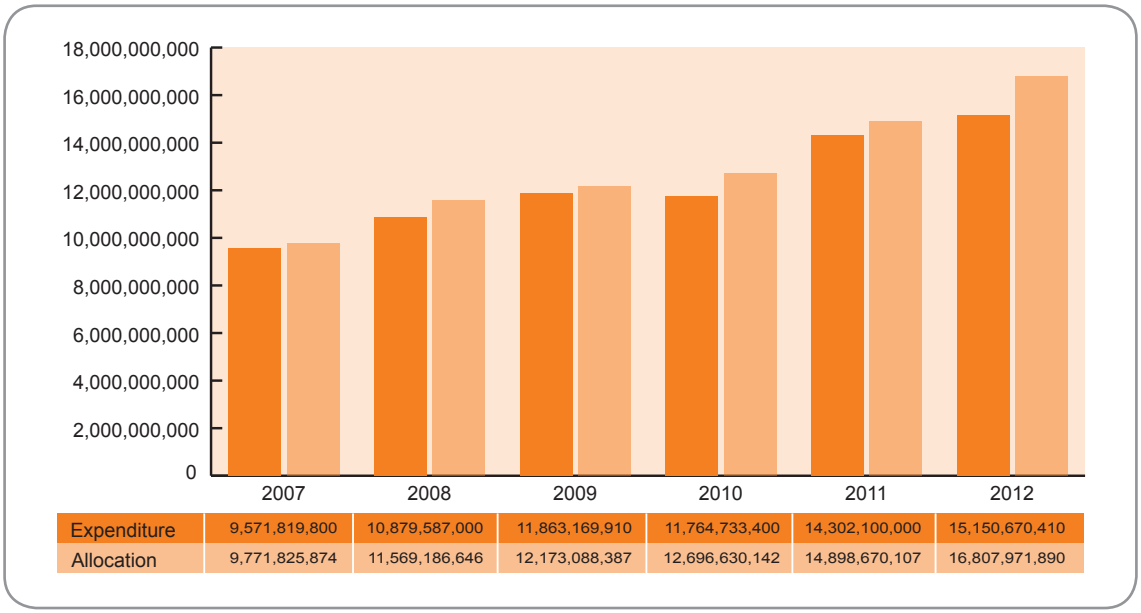
Performance of Operating Expenditure for 2012

The Operating Budget allocation for 2012 was RM15.15 billion which represents an increase of RM0.85 billion as compared to RM 14.30 billion allocated for 2011. However, the total expenditure for 2012 was RM16.81 billion, which was 10.94% higher than the sum allocated. Expenditure in excess of allocation was due primarily to the payment of bonus for 2012, extra emolument as a result of filling up of vacant posts as well as special incentive payments for medical specialists. It was also due to the payment of utility arising from an increase in health facilities.

Overall Performance of Operating Budget from 2007-2012

For the past six years (2007-2012), the Operating Budget allocation for MoH has increased from RM9.57 billion in 2007 to RM15.15 billion in 2012. Meanwhile, the expenditure for operating budget recorded an increase from RM9.77 billion in 2007 to RM16.81 billion for 2012. Figure 1 shows the overall performance of Operating Budget from 2007-2012.

FIGURE 1
OVERALL PERFORMANCE OF OPERATING BUDGET FROM 2007-2012



	2007	2008	2009	2010	2011	2012
Expenditure	9,571,819,800	10,879,587,000	11,863,169,910	11,764,733,400	14,302,100,000	15,150,670,410
Allocation	9,771,825,874	11,569,186,646	12,173,088,387	12,696,630,142	14,898,670,107	16,807,971,890

Source: Finance Division, MoH

Performance of Development Expenditure for 2012

The total expenditure of the Development Budget was RM1.79 billion or 95.32 % of the total budgeted allocation of RM1.87 billion. Development Budget according to project details is shown in Table 2.

TABLE 2
DEVELOPMENT ALLOCATION AND EXPENDITURE BY PROJECT DETAILS, 2012

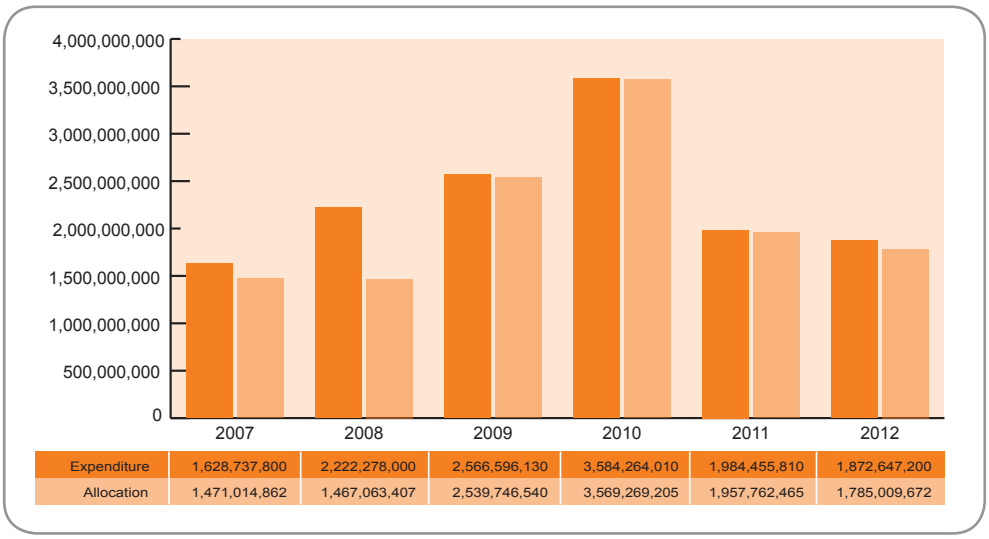
Project Detail	Title	Allocation (RM)	Expenditure (RM)	Percentage (%)
00100	Training			
00101	Construction of New Colleges	22,803,400	22,481,285	98.59
00102	Upgrading of Training Projects	2,621,168	2,621,128	100.00
00104	Outsourcing	27,700,000	26,777,112	96.67
00105	In-Service Training	60,000,000	60,167,349	100.28
00200	Public Health			
00201	Rural Health Services	130,305,200	113,343,874	86.98
00203	Urban Health Services	154,048,600	153,444,456	99.61
00300	Hospital Facilities	615,591,500	613,628,260	99.68
00400	New Hospitals	250,613,676	235,228,336	93.86
00500	Research & Development	15,000,000	14,737,560	98.25
00600	Restructure, Upgrade & Repair	145,000,000	139,537,767	96.23
00700	Land Procurement & Maintenance	10,041,856	10,041,861	100.00
00800	ICT Facilities	30,000,000	26,494,169	88.31
00900	Staff Facilities			
00901	Rural Quarters Facilities	10,381,300	9,166,247	88.30
00902	Urban Quarters Facilities	30,183,200	28,515,730	94.48
00904	Health Offices	19,117,300	16,772,580	87.74
01100	Equipment & Vehicles	321,500,000	312,051,918	97.06
94000	National Key Economic Area	27,740,000	0	0
TOTAL		**1,872,647,200**	**1,785,009,672**	**95.32**

Source: Finance Division, MoH

Overall Performance of Development Budget from 2007-2012

Figure 2 shows the overall performance of the Development Budget allocation and expenditure from 2007 until 2012. In general, the development expenditure for MoH for the past six years has been less than the allocation provided, but increased from 90.32% in 2007 to 95.32% in 2012.

FIGURE 2
OVERALL PERFORMANCE OF DEVELOPMENT BUDGET, 2007-2012



	2007	2008	2009	2010	2011	2012
Expenditure	1,628,737,800	2,222,278,000	2,566,596,130	3,584,264,010	1,984,455,810	1,872,647,200
Allocation	1,471,014,862	1,467,063,407	2,539,746,540	3,569,269,205	1,957,762,465	1,785,009,672

Source: Finance Division, MoH

REVENUE MANAGEMENT

Revenue Collections

The total revenue collection for MoH in 2012 was RM 401,122,191.38 which is 21.5% (RM 70,844,747.83) higher than revenue collection for the year 2011. Sum of RM 253,560,358.27 was collected from the charges of health services in hospitals and clinics while RM 147,561,833.11 (36.78%) was collected from other revenues such as fines, rentals, sales, etc. The breakdown of the revenue classifications for 2012 as compared to 2011 are shown in Table 3.

TABLE 3
TOTAL REVENUE COLLECTION 2011 & 2012

Code	Revenue Classification	Amount (RM)	
		2011	2012
60000	Tax Revenue	-	-
71000	Licenses, Registration Fees and Permits	8,039,552.78	10,420,419.75
72000	Services and Services of goods	263,636,784.64	274,550,714.24
73000	Receipts from Sales of Goods	3,095,273.38	3,137,068.88
74000	Rentals	14,014,540.58	10,358,245.27
75000	Interest and Returns of Investment	123,115.27	172,221.14
76000	Fines and Penalties	12,389,055.25	34,568,151.14
80000	Non-revenue Receipts	26,006,571.28	67,372,296.18
90000	Revenues from Federal Territory	1,805,537.22	543,074.58
Total		**330,277,443.55**	**401,122,191.38**

Source: Finance Division, MoH

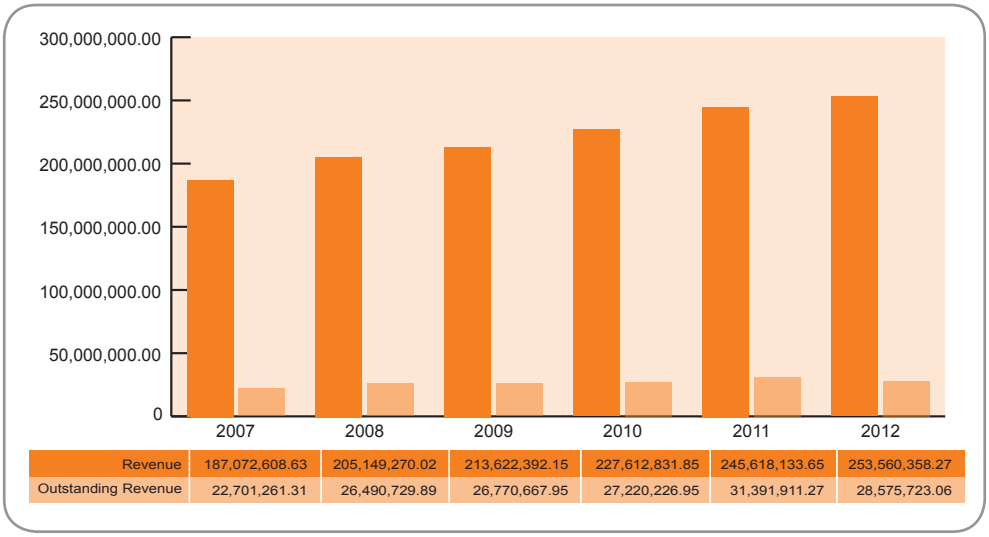
- **Outstanding Revenue**
  Total outstanding revenue collection in 2012 decreased by 14.71% to RM 39,133,574.75 from RM 44,892,036.51 in 2011. Out of these, a total of RM 28,575,723.06 of the outstanding revenue was due from charges of health services under the Fees (Medical) Order 1982, while RM 10,557,851.69 was due from other revenues such as fines, rentals, sales, etc.

- **Collection and Outstanding Revenue For Health Services Under The Fee (Medical) Order 1982 For 2012**
  The total revenue collection for health services under the Fees (Medical) Order 1982 for the year 2012 was RM 253,560,358.27 of which RM 165,399,980.15 was contributed by Malaysians as both in-patient and out-patient, and Full Paying Patients for services provided by clinics/hospital, while RM 88,160,378.12 was contributed by non-Malaysian patients.

  In 2012, a total of RM 28,575,723.06 of the outstanding revenue was due from charges of health services under the Fees (Medical) Order 1982. A total of RM 11,602,335.50 and RM 16,973,387.56 of the outstanding revenue were due from Malaysian and non-Malaysian patients respectively.

  The total revenue collected under the Fees (Medical) Order 1982 from 2007 to 2012 showed an average increment of RM 13,297,549.93 or 20%. The revenue collected in 2012 increased by RM 7,942,224.62 as compared to RM 245,618,133.65 collected in 2011 (Figure 9). Meanwhile, outstanding revenue collection for health services under the Fees (Medical) Order 1982 for 2012 decreased by 9% or RM 2,816,188.21 as compared to 2011.

FIGURE 3
COLLECTION AND OUTSTANDING REVENUE UNDER THE FEES (MEDICAL) ORDER 1982, 2007-2012



	2007	2008	2009	2010	2011	2012
Revenue	187,072,608.63	205,149,270.02	213,622,392.15	227,612,831.85	245,618,133.65	253,560,358.27
Outstanding Revenue	22,701,261.31	26,490,729.89	26,770,667.95	27,220,226.95	31,391,911.27	28,575,723.06

Source: Finance Division, MoH

MoH is very committed in reducing hospital outstanding revenue by taking concerted efforts such as the following:

- Enforcement of deposit payment by patient before admission.
- Encourage private company to have agreement of Bank Guarantee with MoH for admission of their staff or dependents in government hospitals.
- Implementation of Foreign Worker Insurance –*Foreign Workers Medical Insurance Protection*

Scheme

- Payment of hospital bill via Internet Banking.
- E-Payment (payment by credit card).

FINANCIAL AID AND SUBSIDY TO NON –GOVERNMENTAL ORGANIZATIONS (NGO)

There are three types of financial assistance offered by MoH to NGOs, which are:

1. *Assistance For Health Related Activities*

In 2012, a sum of RM 8,350,019.70 was allocated by MoH to NGOs in the form of financial aid to support health-related programs and activities such as home visits for palliative patients, awareness campaigns and other related activities to patients. This allocation was given to Malaysian Hospice Council, National Diabetes Institute (NADI), Malaysian National Cancer Association and others. MoH also provided funds amounting to RM 1.5 million to the Malaysian AIDS Council (MAC) in 2012 to fund the operational cost of that organization.

2. *Capital Grant*

The grant was given to new dialysis centers run by NGO to a maximum of 10 dialysis machines. In 2012 a sum of RM 494,176.00 was allocated to NGOs in the form of capital grant.

3. *Haemodialysis Subsidy*

This subsidy is to help poor patients who are undergoing dialysis due to chronic kidney failure in NGO Haemodialysis Centres, with a subsidy of RM 50.00 for each treatment and RM 30.00 subsidy for erythropoetin injection. Each patient will be given an average of RM 1040.00 of subsidy per month. In 2012, MoH had allocated a sum of RM 31.17 million to NGOs as subsidy payments for haemodialysis treatment.

WAY FORWARD

In essence, in the midst of a challenging and constantly changing social and economic environment, organizational effectiveness is vital to ensure the Finance Sector's ability to fulfil its responsibilities with distinction at the highest level. Strong and performance-dedicated workforce are among the Sector's important milestone. We will continue to strive to achieve the highest level of excellence in fulfilling our responsibilities and to deliver the trust that has been entrusted to us.

4 PUBLIC HEALTH

INTRODUCTION

The Public Health Programme is lead by the Deputy Director General of Health (Public Health). The objectives of the Public Health Programme are (1) to serve the communities especially the rural area populations with health services which relate to promotion, prevention and basic health care, and (2) to assist individuals and communities to participate towards behavioural changes in order to achieve and maintain optimum health status and prevention of spreading diseases that can affect their life socially and economically.

There are four Divisions in the Public Health Programme, namely the Disease Control Division, the Family Health Development Division, the Health Education Division, and the Nutrition Division.

ACTIVITIES AND ACHIEVEMENTS

DISEASE CONTROL

COMMUNICABLE DISEASE PROGRAMMES

HIV/AIDS Diseases Control Program

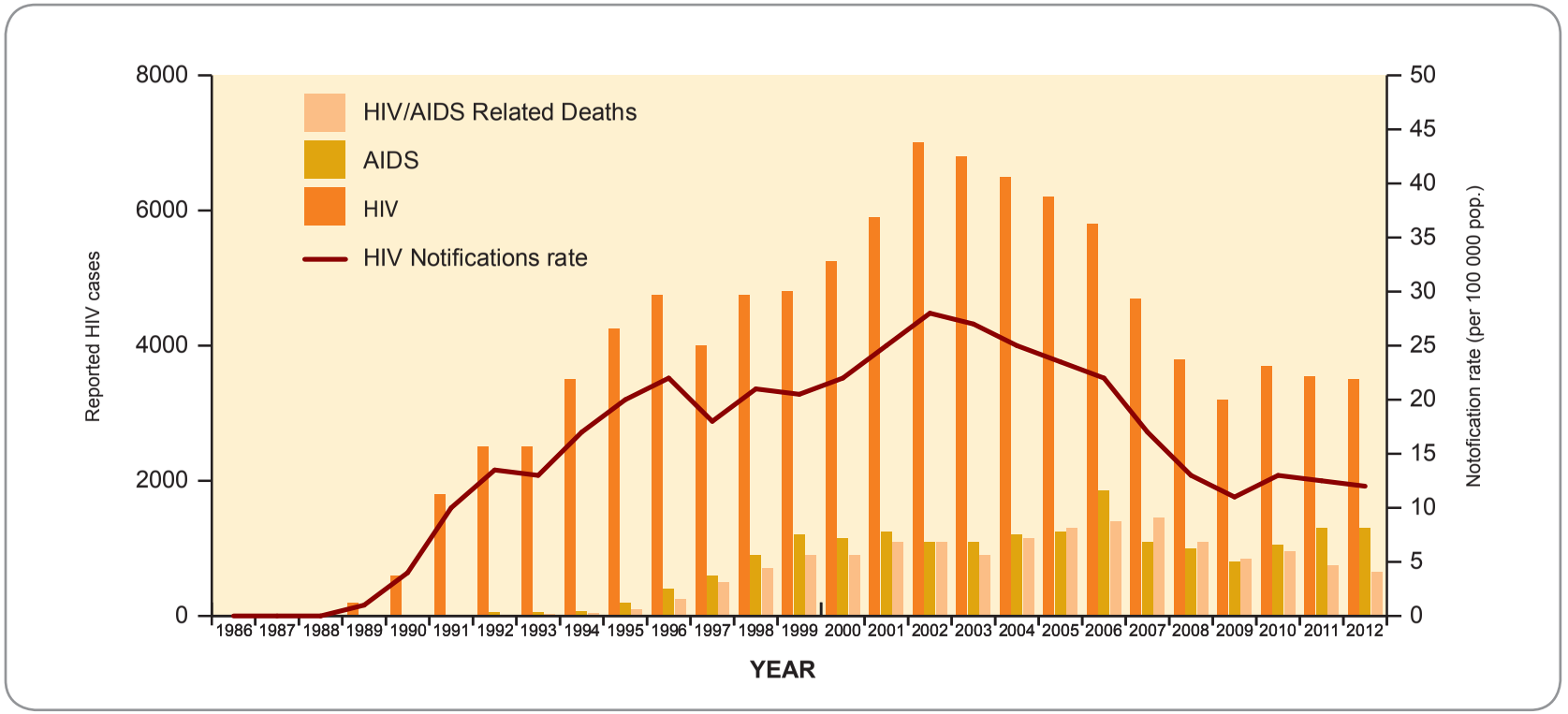
In 2012, there were 82,591 people living with HIV in Malaysia, prevalence rate of 0.5%, with 3,438 new cases of HIV – down from 6,978 in 2002. Since 1986, there have been 98,279 reported cases of HIV infection with 15,688 reported HIV/AIDS-related deaths. The rate of new cases was 11.7 per 100,000 population and we are aiming to reduce the rate of new HIV cases to 11.0 per 100,000 population by 2015. Based on the current achievement, we are on track to reach the target.

The HIV epidemic in Malaysia is concentrated among key affected populations, especially injecting drug users (IDUs), female sex workers, transgender women, and men who have sex with men. In the earlier phase of the epidemic, IDU was the key driving factor with 70-80% of all new reported cases attributed to injecting drug use in the 1990s.

The implementation of harm reduction programmes since 2005 has reduced the number of HIV infections through needle sharing with infections attributed to injecting drug use dropping by 50% between 2009 and 2012. In 2010, sexual transmission superseded injecting drug use as the main driving factor of new infections.

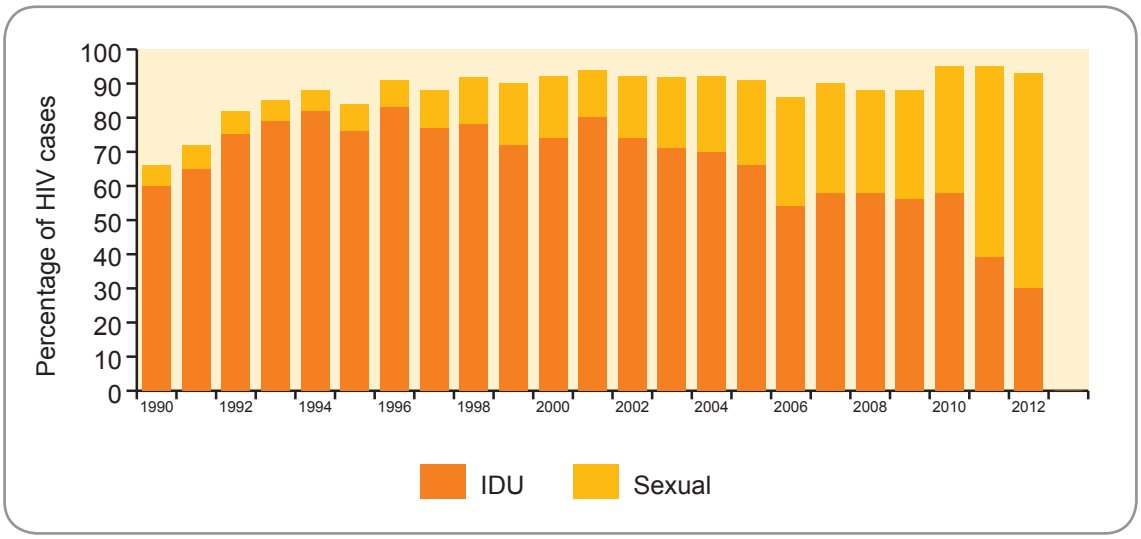
Males continue to represent the majority (90%) of cumulative HIV cases. While new infections among males began to decline significantly in 2003, the rate among women is showing the opposite trend. Women and girls constituted around 27% of newly infected persons nationwide in 2012 compared to barely 5% ten years ago.

FIGURE 1
HIV/AIDS STATISTICS IN GENERAL, 1986-2012



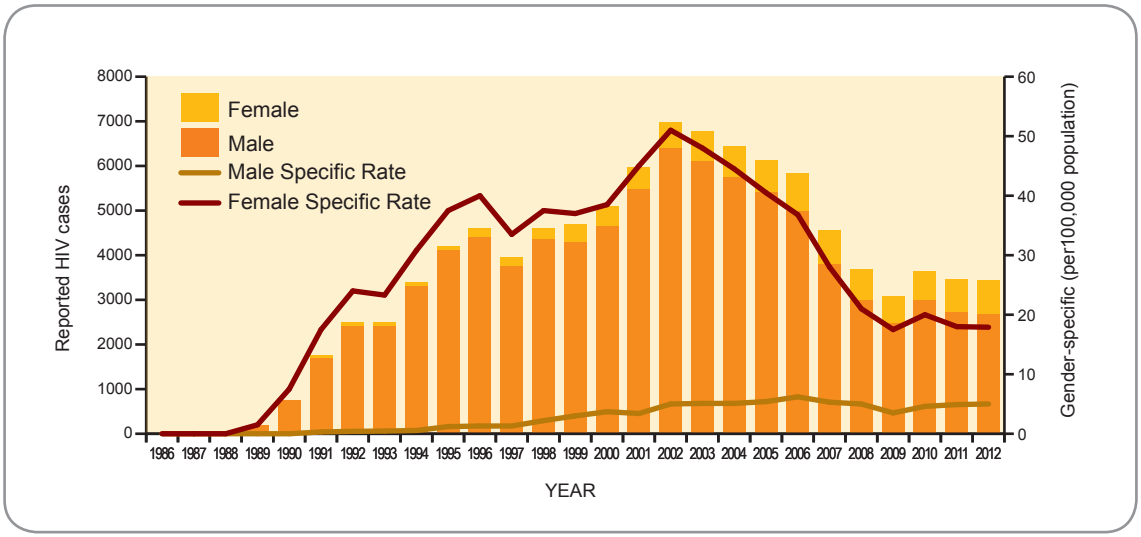
Source: Disease Control Division, MoH

FIGURE 2
PROPORTION OF INJECTING DRUG USERS (IDUs) TO SEXUAL TRANSMISSION AS CAUSE OF HIV EPIDEMIC IN MALAYSIA, 1990-2012



Source: Disease Control Division, MoH

FIGURE 3
GENDER-RELATED STATISTICS OF HIV EPIDEMIC IN MALAYSIA, 1986-2012

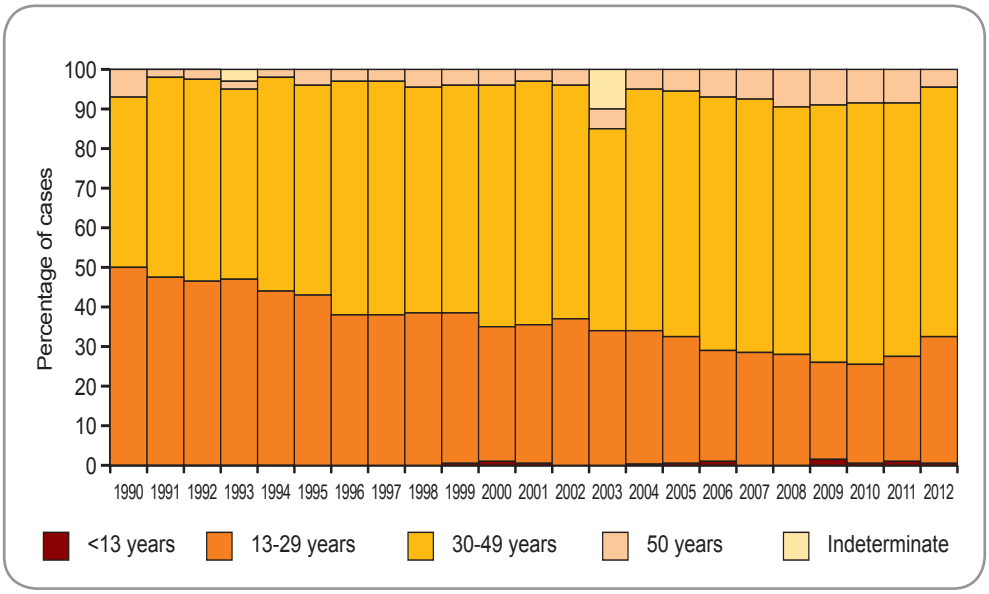


Source: Disease Control Division, MoH

The extent of the epidemic among the transgender population has long been unknown, but a 2012 survey of the transgender community found an HIV prevalence rate of 5.7%. Men who have sex with men account for 2.5% of the cumulative cases with an HIV prevalence rate as high as 13%. Female sex workers account for 0.6% of all reported HIV cases, but this is taken as a gross underreporting, and prevalence is as high as 4.2%. For the past two years, HIV transmitted through sexual activities overtook HIV transmission through sharing injecting equipment. In 2012, the distribution of new HIV cases acquired the disease through sexual activities were: homosexual / bisexual (19.0%) and heterosexual (44.7%). Integrated Bio-behavior Surveillance (IBBS) conducted in 2012 showed that

HIV prevalence among MARPS namely MSM (12.6%), Transgender (5.7%) and Female Sex worker (4.2%). Our surveillance data also showed that the composition of cases in relation of age group almost consistent for almost two decades. In 2012 the age group distribution of new HIV cases were 0.67% for group less than 2 yrs; 0.81% for group of 2 to 12 yrs; 2.24% for group of 13 to 19 yrs; 29.14% for group of 20 to 29 yrs; 40.90% for group of 30 to 39 yrs and 4.86% for group of more than 50 yrs. However about 0.12% was not classified due to unable to trace the case.

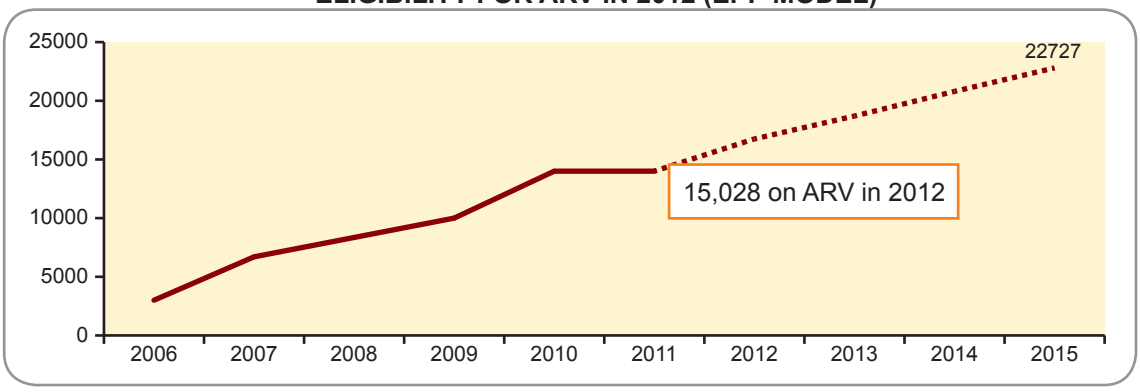
FIGURE 4
AGE GROUP DISTRIBUTION OF NEW HIV CASES, 1990-2012



Source: Disease Control Division, MoH

Malaysia provides affordable access to clinical care through the public health system. Two significant achievements included the availability and provision of first line ARV treatment at no cost for those who need it and the availability of ARV treatment for incarcerated populations, specifically for prisoners with HIV as well as inmates in drug rehabilitation centres. In 2012, about 15,028 PLHIV was currently on ARV which gave us coverage of 38.5% from total eligibility.

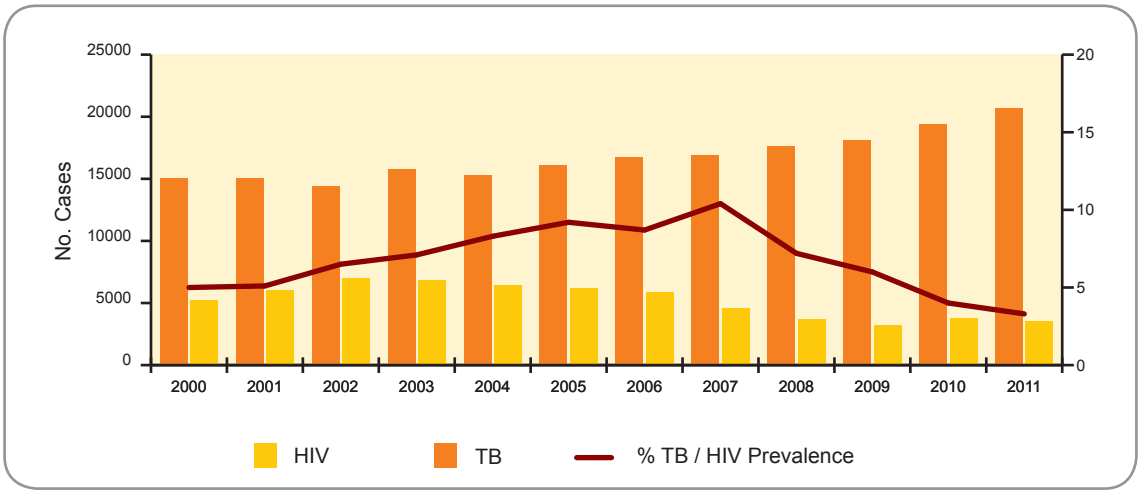
FIGURE 5
ELIGIBILITY FOR ARV IN 2012 (EPP MODEL)



Source: Disease Control Division, MoH

The number of HIV/TB co-infections reported nationwide is about 8% of total HIV cases. To curve this HIV/TB co-infection, the government started Isoniazid prophylaxis (IPT) in 2010. Harm reduction, including needle and syringe exchange programmes and methadone maintenance therapy, remains the cornerstone of the Malaysian Government's HIV prevention strategy.

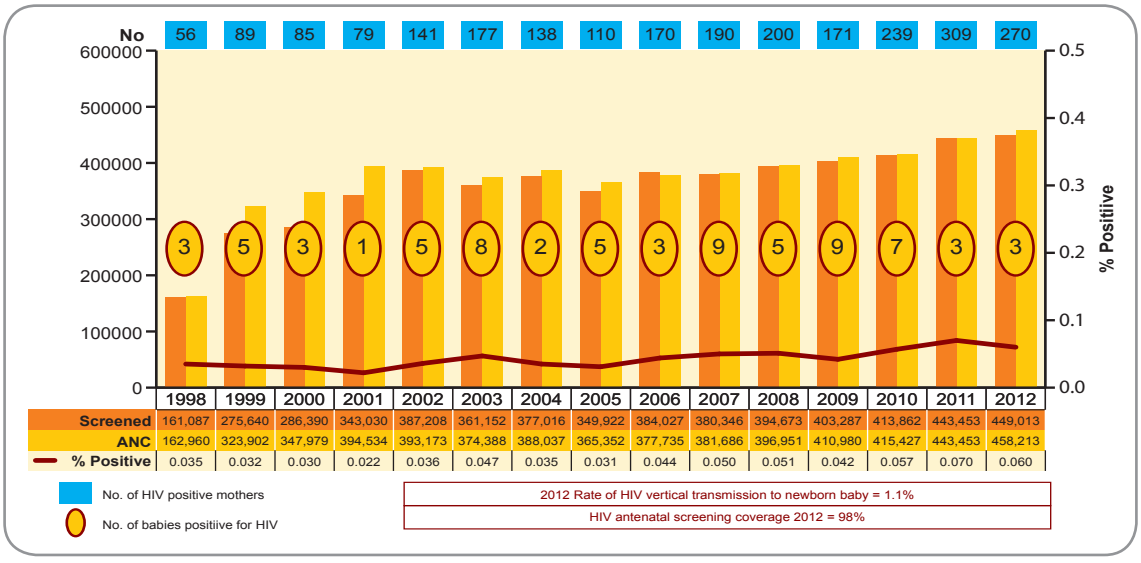
FIGURE 6
HIV/TB CO-INFECTIONS, 2000-2011



Source: Disease Control Division, MoH

The Prevention of Mother to Child Transmission (PMTCT) programme was implemented nationwide in 1998 in all government health facilities. Approximately almost 100% of antenatal attendees in public facilities or more than 75% of total pregnant women in the country have access to antenatal care in public healthcare facilities and in 2012 a total of 449,013 pregnant women attending antenatal care had HIV screening. The vertical transmission is about 1.3%.

FIGURE 7
HIV IN MOTHERS AND BABIES, 1998-2012



Source: Disease Control Division, MoH

Vaccine Preventable/Food Waterborne Diseases Control Program

- **Vaccine Preventable Diseases Control Programme**

Malaysia remains free of wild poliovirus since 1992 and was declared polio free in October 2000, together with other countries in the Western Pacific Region.

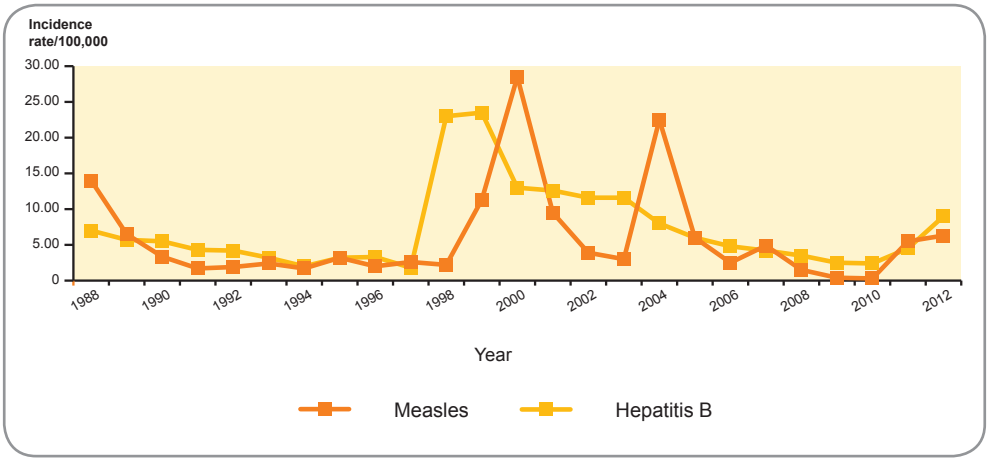
Following risk assessment for wild poliovirus importation done in 2011, supplementary immunization activities (SIA) were carried out in 2012, in districts with low vaccination coverage. The acute flaccid paralysis (AFP) surveillance has successfully achieved the non-polio AFP rate of 1.85 per 100,000 populations less than 15 years old in 2012, above the target set by WHO of 1 in 100,000 populations less than 15 years old. Malaysia has also started the environmental surveillance for wild poliovirus from sewage system in 2012. No wild poliovirus detected from any of the three plants chosen in WPKL.

The increase in measles cases seen in 2011 continued in 2012. In 2012, 1,876 cases were reported with an incidence rate of 6.39 per 100,000 populations, compared to 1,569 cases (incidence rate of 5.50/100,000) in 2011. The enormous increase was contributed by 100 clusters of measles outbreaks, compared to 30 clusters in 2011. Around 75% of cases occurred in Selangor, WP Kuala Lumpur and Sarawak with 60% of cases never had measles vaccination. No deaths were reported in 2012. Endemic measles genotypes were D8 and D9. There were 3 clusters with more than 10 cases per cluster, indicates poor herd immunity in the affected community. Two of these clusters occurred in welfare homes for children.

All states have carried out risk assessments in their districts. Districts at high risk of measles transmission in the community conducted SIAs to close the immunity gap. The target for elimination of measles in Malaysia is shifted from 2012 to 2016.

The incidence rate of Hepatitis B in Malaysia was 8.99 per 100,000 populations in 2012, compared to 4.38 per 100,000 populations in 2011, as shown in Figure 8. The number of cases among Malaysian born after 1989 (the year of initiation of hepatitis B vaccination for children) was 137 in 2012 compared to only 37 cases in 2011. Most of them (81.4%) aged 18 years old and above. The increase in cases is partly contributed by a greater awareness among medical practitioners to notify Hepatitis B cases.

FIGURE 8
INCIDENCE RATE OF MEASLES AND HEPATITIS B PER 100,000 POPULATIONS IN MALAYSIA, 1988-2012

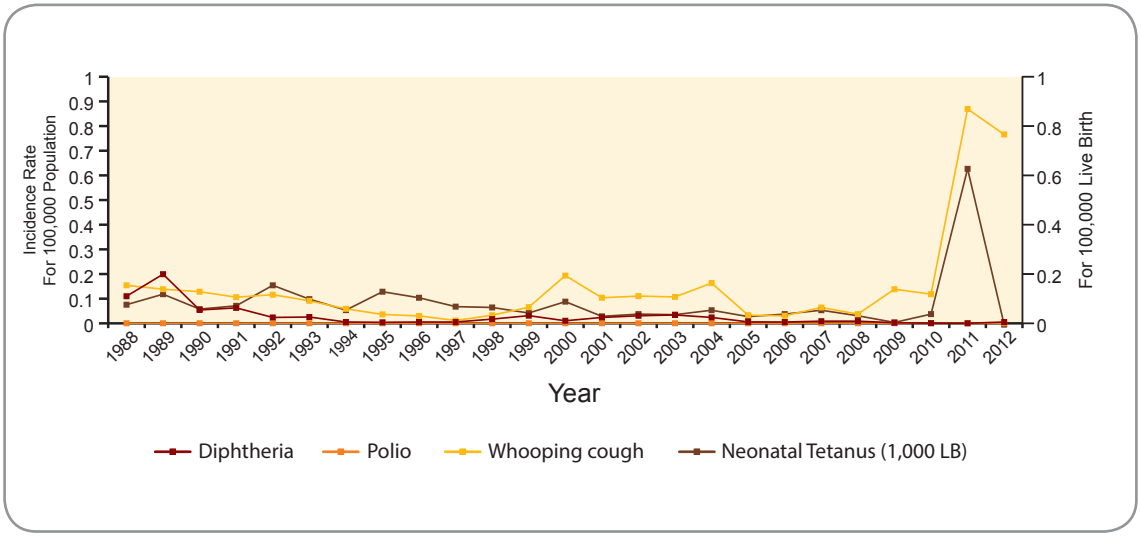


Source: Disease Control Division, MoH

In Malaysia, the incidence rates of diphtheria, neonatal tetanus and pertussis (whooping cough) have been sustained to less than 1/100,000 for the past 20 years as shown in Figure 9. In 2012, 224 pertussis cases were reported, compared to 249 cases in 2011. The increased incidence of pertussis in the past two years was caused by introduction of PCR test on clinical samples from suspected pertussis cases.

There was an increase of neonatal tetanus cases from only 3 cases in 2011 to 9 cases with 2 deaths in 2012. All cases were from Sabah and involved foreigners, except one case was a Malaysian. There was no diphtheria case since 2011. However, diphtheria antitoxins stockpiling at 6 major hospitals based on zone is still being maintained.

FIGURE 9
INCIDENCE RATE OF DIPHTERIA, PERTUSSIS, NEONATAL TETANUS AND POLIOMYELITIS PER 100,000 POPULATION IN MALAYSIA, 1988-2012

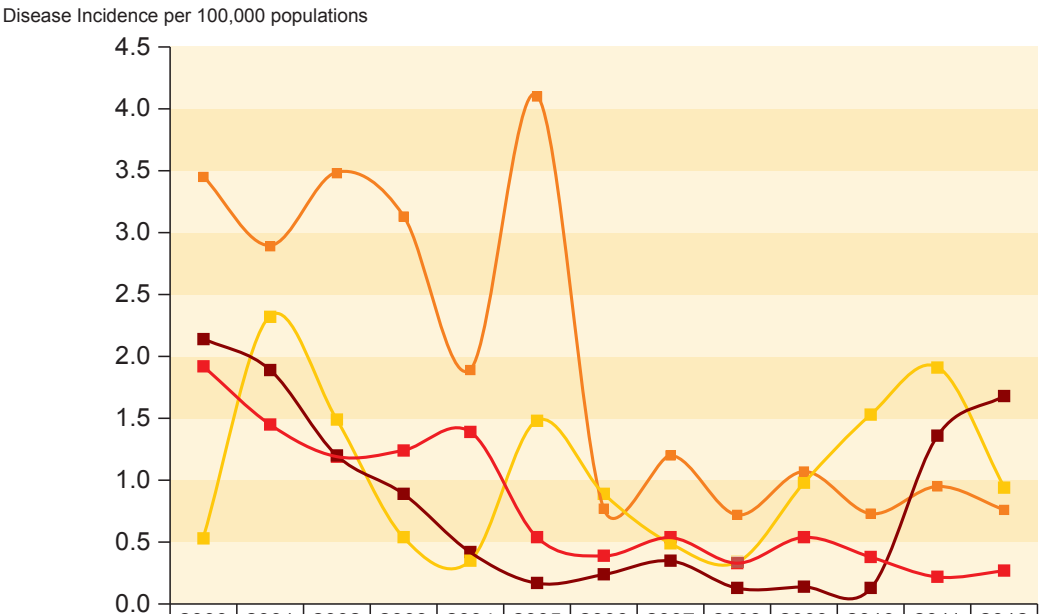


Source: Disease Control Division, MoH

- **Food and Waterborne Diseases Control Programme**

With the exception of cholera which shows cyclical trend, typhoid, hepatitis A and dysentery showed a declining trend from 2000 to 2010 (Figure 10). However, in 2011 and 2012, hepatitis A recorded an increasing trend which corresponds to many outbreak occurrences in few Orang Asli Settlements. The average incidences of all these diseases were less than 2 cases per 100,000 populations in 2012.

FIGURE 10
INCIDENCES TREND OF CHOLERA, TYPHOID / PARATYPHOID, HEPATITIS A AND DYSENTERY IN MALAYSIA, 2000-2012

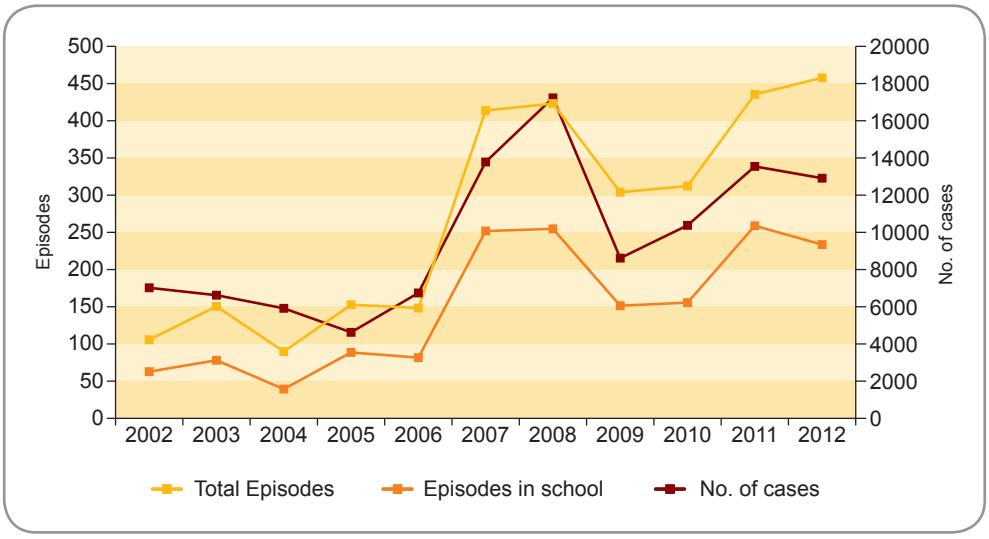


	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
typhoid	3.45	2.89	3.48	3.13	1.89	4.1	0.77	1.2	0.72	1.07	0.73	0.95	0.76
cholera	0.53	2.32	1.49	0.54	0.35	1.48	0.89	0.49	0.34	0.98	1.53	1.91	0.94
hepatitis A	2.14	1.89	1.20	0.89	0.42	0.17	0.24	0.35	0.13	0.14	0.13	1.36	1.68
dysentry	1.92	1.45	1.19	1.24	1.39	0.54	0.39	0.54	0.33	0.54	0.38	0.22	0.27

Source: Disease Control Division, MoH

In 2012, the incidence of food poisoning was 44.23 per 100,000 populations, lower than that recorded in 2011 (57.06 per 100,000 populations). The episodes of food poisoning occurred in schools in 2012 has reduced to 51% (232 from 454 episodes) as compared to 59.2% (257 from 434 episodes) in 2011. The episodes contributed by the National 1Malaysia Milk Programme (Program Susu 1Malaysia (PS1M) has also dropped by 5%; which was 79 from 232 episodes (17.4%) in 2012 and 97 from 257 episodes (22.4%) in 2011.

FIGURE 11
FOOD POISONING EPISODES IN MALAYSIA, 2000-2012



Source: Disease Control Division, MoH

Zoonosis Diseases Control Program

- **Ebola, Plague, Nipah, Rabies and Avian Influenza**

No cases of Avian Influenza, Ebola, Nipah, Plague, and Rabies reported in 2012.

- **Leptospirosis**

During 2012, there were 3,665 cases of Leptospirosis recorded from CDCIS e-Notification system with 48 deaths (case fatality rate of 1.3%). There were also 25 leptospirosis outbreaks reported in 2012. Table 1 shows the number of cases, deaths and outbreaks by states.

TABLE 1
LEPTOSPIROSIS CASES, DEATHS AND OUTBREAKS BY STATES IN MALAYSIA FOR 2012

STATE	CASES			DEATHS	OUTBREAKS
	MALE	FEMALE	TOTAL		
Johor	39	30	69	1	0
Kedah	207	60	267	5	0
Kelantan	138	30	168	4	2
Melaka	301	140	441	2	1
Negeri Sembilan	104	48	152	2	1
Pahang	122	41	163	0	0
Perak	202	78	280	4	2
Perlis	23	4	27	2	2
Pulau Pinang	98	30	128	2	0
Sabah	286	124	410	8	2
Sarawak	222	70	292	7	7

STATE	CASES			DEATHS	OUTBREAKS
	MALE	FEMALE	TOTAL		
Selangor	631	222	853	7	2
Terengganu	100	26	126	3	1
FT Kuala Lumpur	188	94	282	0	5
FT Labuan	3	4	7	1	0
TOTAL	**2664**	**1001**	**3665**	**48**	**25**

Source: Disease Control Division, MoH

- **Brucellosis**

Brucellosis was made an administrative notifiable disease on 6 September 2012 due to an outbreak in year 2011 reported amongst people who drank unpasteurised milk sourced from a goat farm in Pulau Pinang. In 2012, there were 12 cases and one (1) outbreak of *Brucellosis* involving two (2) people in Kedah notified to Disease Control Divison.

- **Sarcocystosis**

On 22 August 2012, GeoSentinel (the surveillance program of the International Society of Travel Medicine and CDC) reported an outbreak of muscular sarcocystosis like illness among travellers to Tioman Island whom travel in early June 2012. The first outbreak was reported on 31 October 2011 by GeoSentinel. In September 2012, surveillance for Sarcocystosis was carried out by MOH, with the collaboration of the Department of Wildlife and National Parks, Malaysia (PERHILITAN) and Parasitology Department, University of Malaya (UM).

Active case detection was carried out twice by Rompin District Health Office and no muscular Sarcocytosis like illness has been detected among the residents in Kg. Salang, Tioman Island. Ongoing passive case detections still conducted at the Health Clinic in Tioman Island.

- **Q Fever**

Four (4) cases of Q fever reported to Disease Control Division in 2012.

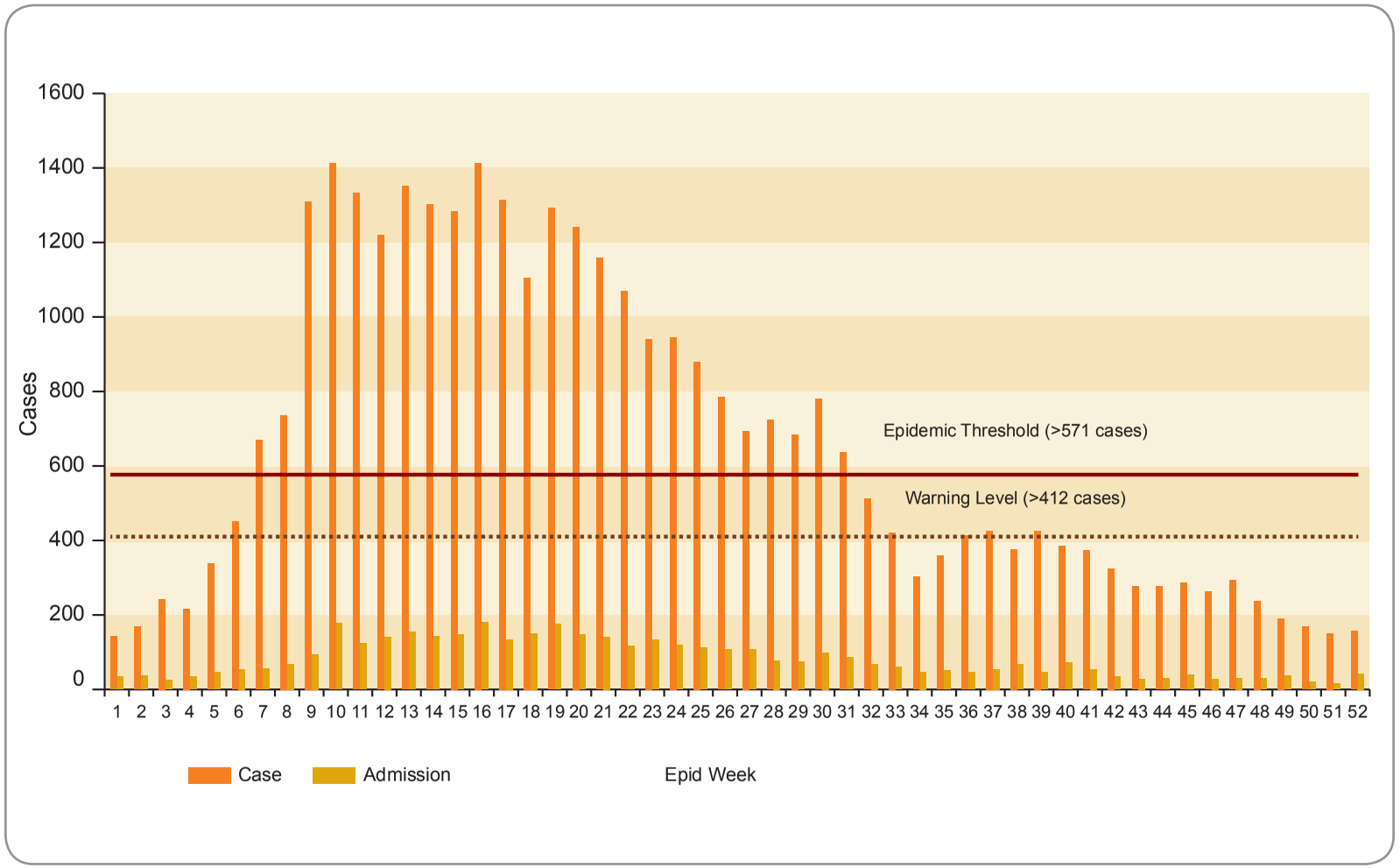
- **Hand Foot and Mouth Disease (HFMD)**

The number of HFMD cases reported in 2012 was 34,519. The cases were nearly five (5) times higher compared to 2011. One (1) HFMD death was reported in 2012 involving a four year old boy from Selangor. There were also 1,893 HFMD outbreaks in 2012. The trend for HFMD was as in Figure 12.

Enterovirus Surveillance is done through designated sentinel clinics throughout the country since 2007. From September 2012, MOH focuses on nine (9) states with high burden of HFMD cases for laboratory surveillance.

In 2012, the predominant circulating HFMD strain in Peninsular Malaysia was Enterovirus 71 (55.4%). However, the predominant circulating virus for Sabah and Sarawak was Coxsackie A16, comprising of 56.7% and 65.1% respectively.

FIGURE 12
HFMD CASES BY STATES IN MALAYSIA FOR 2012



Source: Disease Control Division, MoH

- **Influenza A (H1N1)**

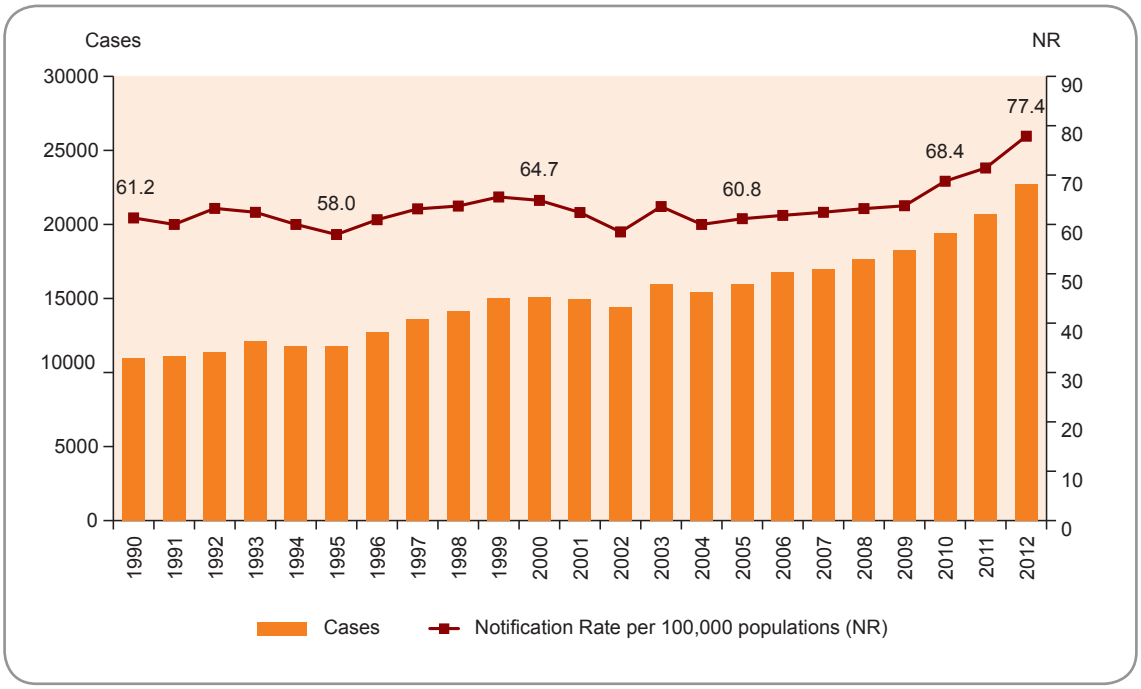
Although World Health Organization (WHO) announced the world is in the post-pandemic period in August 2010 and no longer monitors infection of influenza A (H1N1). MOH still monitors the cases of influenza A (H1N1) through Crisis Preparedness Response Centre (CPRC). There were 273 influenza A (H1N1) cases with three (3) deaths reported in 2012. However, the reported cases did not reflect the real situation in Malaysia.

Tuberculosis/Leprosy Control Program

- **National TB Control Programmes (NTBCP)**

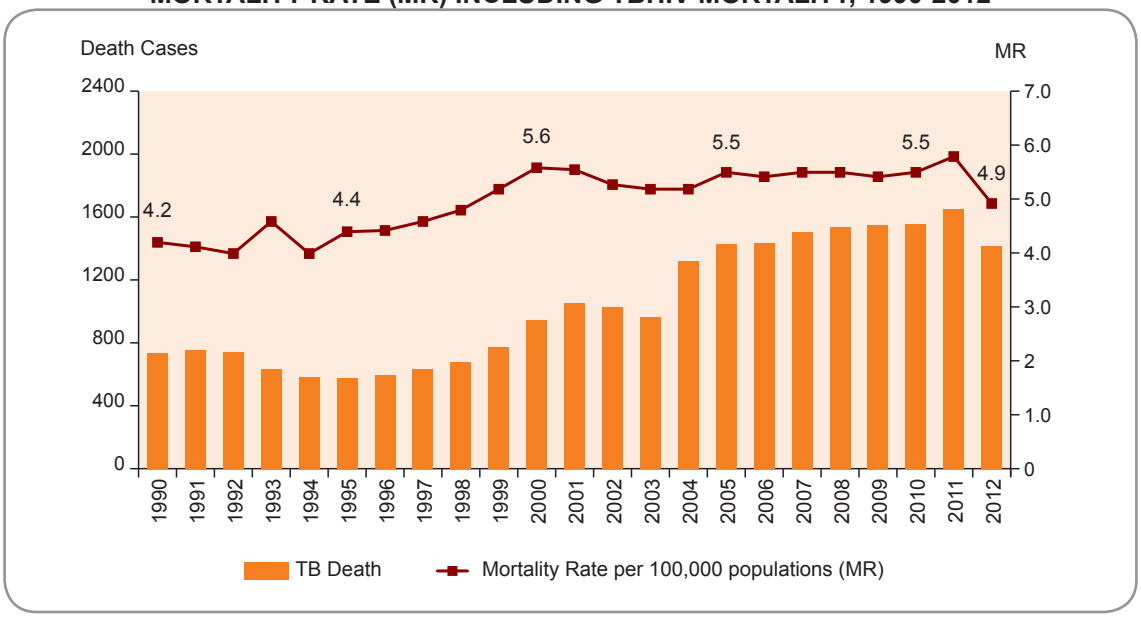
In 2012 there were 22,710 TB cases notified, reflecting a notification rate of 77.4 per 100,000 population. Number of TB cases notified in 2012 had increased by 9.9% as compared with number of TB cases notified in 2011 (20,666 cases). There were 1,414 TB deaths (excluding TBHIV mortality) reported giving rise to 4.9 TB deaths per 100,000 populations. The Case Detection Rate (CDR) was 95%. Cure Rate for new smear positive cases was 78% and treatment success rate for new smear positive cases was 79%.

FIGURE 13
TB NOTIFICATION RATE (NR) IN MALAYSIA, 1990-2012



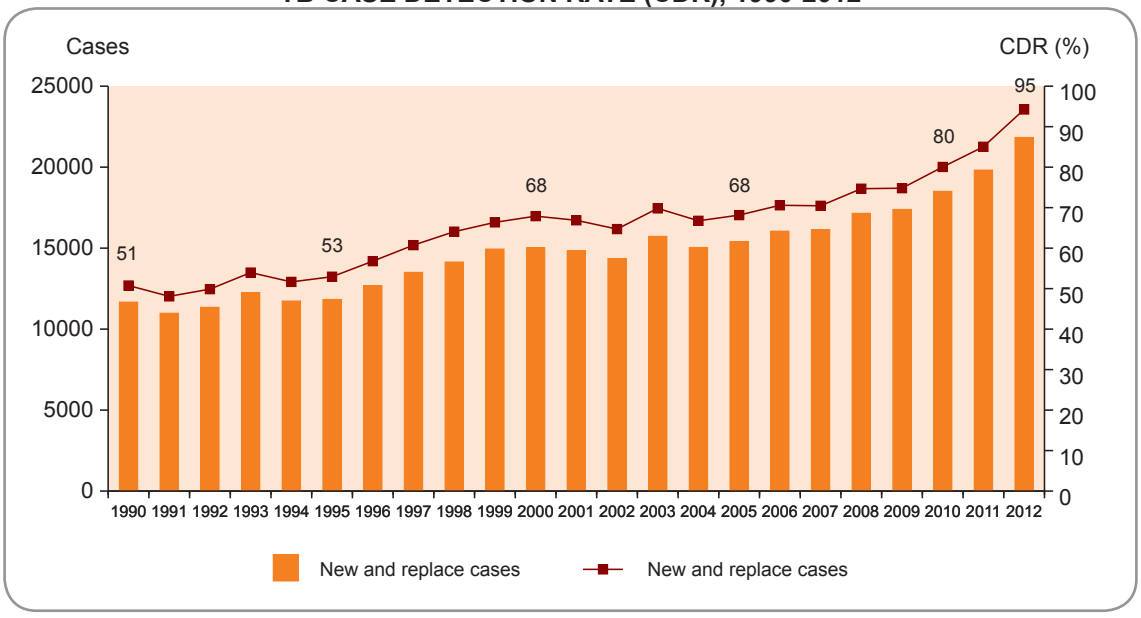
Source: Disease Control Division, MoH

FIGURE 14
MORTALITY RATE (MR) INCLUDING TBHIV MORTALITY, 1990-2012



Notes:
In 2012, TB death excludes TBHIV mortality
In 1990-2011, include TBHIV mortality.
Source: Disease Control Division, MoH

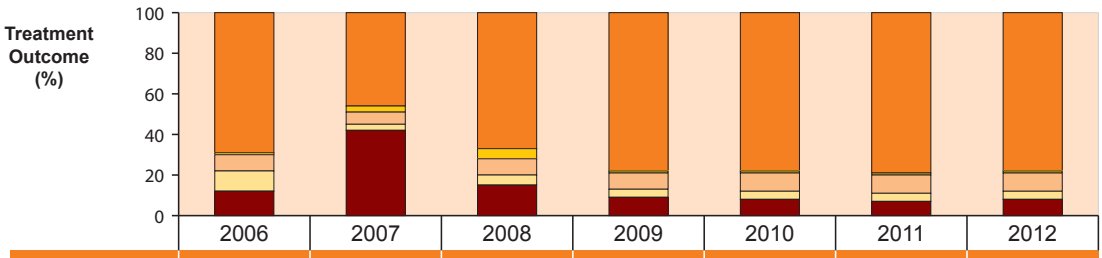
FIGURE 15
TB CASE DETECTION RATE (CDR), 1990-2012



Source: Disease Control Division, MoH

In 2012, of the 22,710 TB cases notified in 2012, 21,249 cases (93.6%) were classified as new cases, 14,237 (62.7%) smear positive cases, 5,393 (23.7%) smear negative/ smear not done/not known; and 3,080 (13.6%) extra pulmonary TB cases.

FIGURE 16
TREATMENT OUTCOME OF NEW SMEAR POSITIVE CASES, 2006-2012



	2006	2007	2008	2009	2010	2011	2012
Cure	69	46	67	78	78	79	78
Complete	1	3	5	1	1	1	1
Died	8	6	8	8	9	9	9
Defaulted	10	3	5	4	4	4	4
Failed	0	0	0	0	0	0	0
Not evaluated	12	42	15	9	8	7	8

Source: Disease Control Division, MoH

Sabah contributed the highest number of TB cases i.e. 4,426 cases (19.5%) followed by Selangor 3,560 cases (15.7%), Sarawak 2,430 cases (10.7%), Johor 2,046 cases (9.0%), Federal Territory of Kuala Lumpur 1,906 cases (8.4%), Perak 1,554 cases (6.8%), Kelantan 1,436 cases (6.3%), Penang 1,245 cases (5.5%), Kedah 1,174 cases (5.2%), Pahang 890 cases (3.9%), Terengganu 733 cases (3.2%), Malacca 546 cases (2.4%), Negeri Sembilan 480 cases (2.1%), Perlis 185 cases (0.8%) and Federal Territory of Labuan 99 cases (0.4%).

i) TB - HIV

Notified TBHIV cases in 2012 was 1347 cases (5.9%), a reduction of 17.3% as compared to notified TBHIV cases in 2011 (1,629 cases). Selangor contributed the highest number of TBHIV cases i.e. 192 cases (14.3%) followed by Kelantan 179 cases (13.3%), Johor 166 cases (12.3%), Federal Territory of Kuala Lumpur 164 cases (12.2%), Pahang 128 cases (9.5%), Terengganu 109 cases (8.1%), Perak 73 cases (5.4%), Sarawak 65 cases (4.8%), Penang 60 cases (4.5%), Sabah 55 cases (4.1%), Kedah 54 cases (4.0%), Malacca 50 cases (3.7%), Negeri Sembilan 42 cases (3.1%), Perlis 8 cases (0.6%) and Federal Territory of Labuan 2 cases (0.1%).

ii) TB Among MoH Workers, HCW

In 2012 there were 221 TB cases among MoH workers and increased of 15.1% as compared to 192 cases notified in 2011. Among 221 cases, 88 cases were nurses, 28 cases were medical officers, 8 cases were medical laboratory technologists, 7 were assistant medical officers and 90 cases were in the other category of MoH workers.

iii) Multi Drug Resistant TB, MDR -TB

There were 74 (0.8%) cases of MDR-TB notified out of 9,722 (42.4%) drug sensitivity testing done in the year 2012.

iv) NTBCP Activities

a) BCG

BCG immunization as part of universal immunization for children was launched in 1961. The target set for BCG coverage was 95%. BCG immunization is to prevent severe TB disease during childhood especially TB meningitis and miliary TB.

b) Isoniazide Preventive Therapy, IPT

IPT for people living with HIV was introduced in 2011in Malaysia. Many studies has shown that IPT will reduce the risk of developing TB disease in people living with HIV. Since the implementation in 2011 the number of people living with HIV started on IPT has increased from 459 in 2011 to 1120 in 2012.

c) Screening of TB Symptomatic Patients

Screening of TB symptomatic patients is one of the activities to detect and treat early TB cases. All patient with TB symptoms should have their sputum examined to rule out whether they have TB disease or not. Number of screening for symptomatic cases has increased to more than double in the year 2012 as compared to 2004. Similarly, symptomatic screening coverage also has shown increasing trend.

v) Challenges

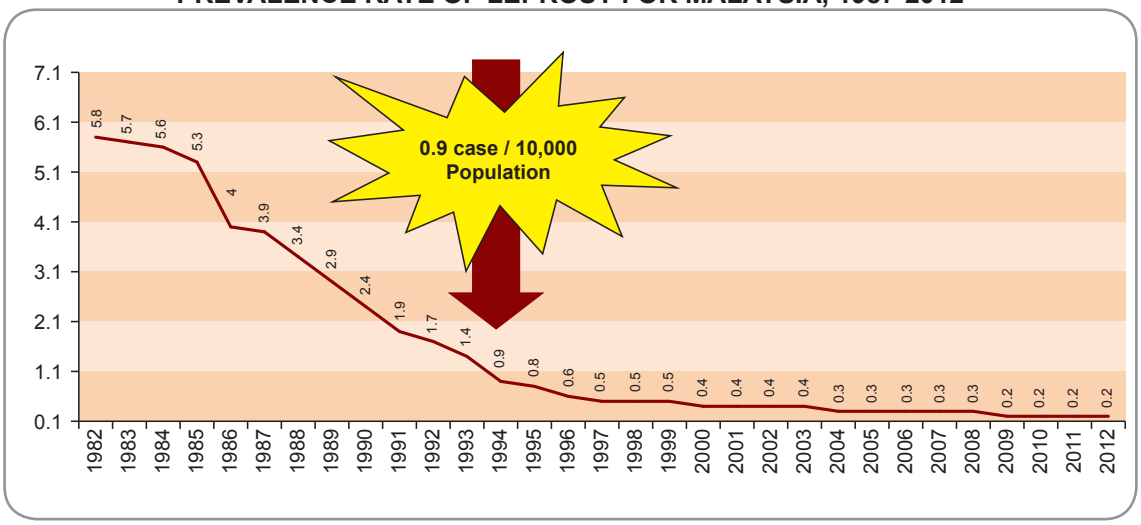
NTBCP faced many challenges to further reduce the burden of TB disease as the population of the high risk group developing TB disease; namely elderly, immunosuppressed e.g. diabetes mellitus, chronic renal failure; is also increasing in Malaysia. Strengthening case detection and prompt treatment are also limited by resource constraint, behavior and attitude of people involved in the care of TB patients, and complexity of TB disease. Ensuring TB patient to complete treatment is another challenge as the proportion of 'defaulted' TB patients remains unchanged for the past 5 years.

NTBCP is currently implementing National Strategic Plan to Control TB, 2011-2015 to strengthen and enhance all activities to reduce burden of TB disease in the country. As MoH will not be able to combat TB disease alone, other agencies and community participation are also required.

- **Leprosy Control Programme**

The National Leprosy Control achievement remained at a prevalence of 0.2 case/10,000 population for 2012 since 2009. This achievement may indicate the success story of MDT Blister Pack and also may reflect the commitment by our healthcare workers in ensuring patient's adherence till completion of treatment. This is shown from the graph below (Figure 17).

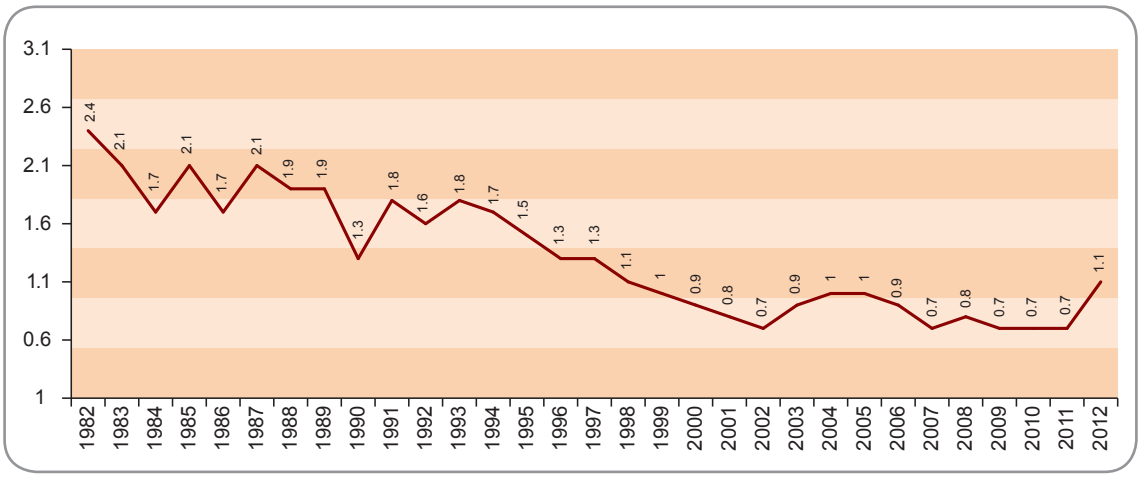
FIGURE 17
PREVALENCE RATE OF LEPROSY FOR MALAYSIA, 1987-2012



Source: Disease Control Division, MoH

However, too much focus on the national prevalence rate may somehow 'mask' the actual incidence of leprosy in an area, particularly at district and locality level. This statement is made true by the sudden surge of new cases detected in 2012 as shown in the graph below (Figure 18.

FIGURE 18
INCIDENCE RATE (NEW LEPROSY CASES) FOR MALAYSIA, 1987-2012



Source: Disease Control Division, MoH

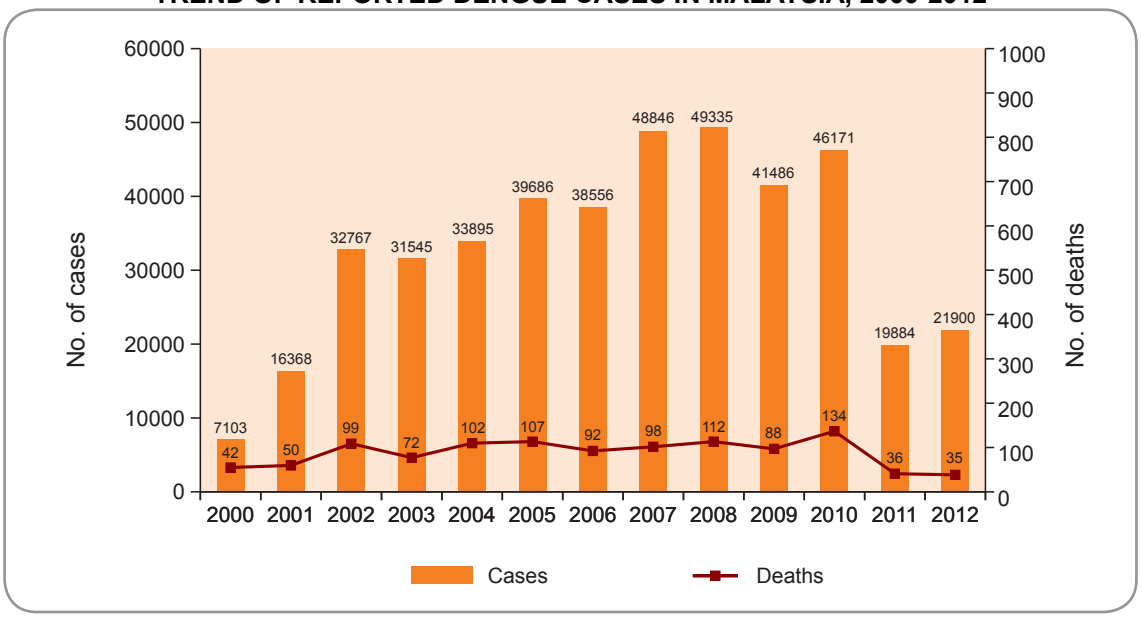
The drastic increment in new cases reported for 2012 was due to increase case detection at district level by Active Case Finding particularly in Sabah and Sarawak, where community in areas of endemic were screened at large, on the field. The achievement has proven that leprosy is still a burden in some parts of Malaysia and we have yet to reach elimination in all the districts of Malaysia.

Vector Borne Diseases Control Program

- **Dengue Fever Control Programme**

Dengue fever is one of the significant public health problems in Malaysia. The reported Dengue cases have generally been increasing in the recent years (Figure 19). In 2012, a total of 21,900 cases and 35 deaths were reported. This was equivalent to approximately 76 cases per 100,000 populations. States showing the highest Incidence Rate (IR) of Dengue cases (per 100,000 populations) were Selangor (175), Federal Territory of Kuala Lumpur (104), Kelantan (72) and Perlis (70) (Table 2). The case fatality rate in 2012 was 0.16%, a reduction compared to the previous year which recorded 0.18%. In parallel with the number of reported dengue cases, Selangor contributed the highest number with 12 deaths; followed by Federal Territory of KL & Putrajaya and Perak each with 5 deaths, Kedah with 4 deaths, Sabah and Negeri Sembilan each with 2 deaths and Perlis, Pulau Pinang, Johor, Pahang dan Sarawak each reporting 1 death.

FIGURE 19
TREND OF REPORTED DENGUE CASES IN MALAYSIA, 2000-2012



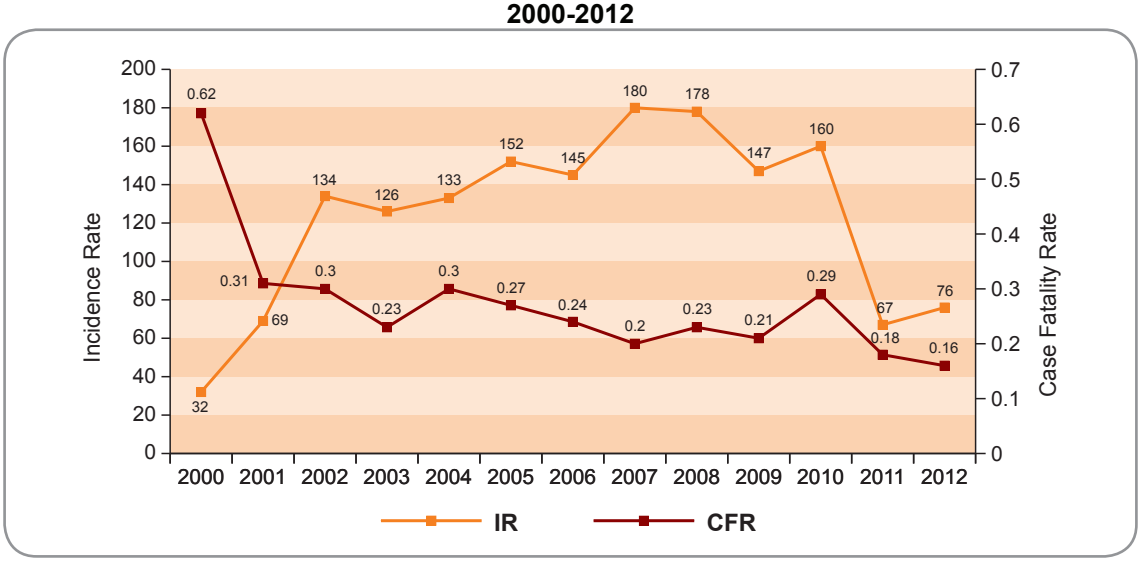
Source: Disease Control Division, MOH

TABLE 2
DENGUE INCIDENCE RATE (IR) AND CASE FATALITY RATE BY STATES IN MALAYSIA, 2012

STATES	Population	Cases	Death	IR (100,000)	CFR
Perlis	246,300	172	1	70	0.58%
Kedah	2,012,900	817	4	41	0.49%
Pulau Pinang	1,625,300	791	1	49	0.13%
Perak	2,526,000	1,716	5	68	0.29%
Selangor	5,219,800	9,113	12	175	0.13%
FT Kuala Lumpur & Putrajaya	1,752,100	1,814	5	104	0.28%
Negeri Sembilan	1,033,000	552	2	53	0.36%
Melaka	790,000	449	0	57	0.00%
Johor	3,368,300	1,650	1	49	0.06%
Pahang	1,567,800	641	1	41	0.16%
Terengganu	1,078,700	739	0	69	0.00%
Kelantan	1,738,600	1245	0	72	0.00%
Sarawak	2,572,800	1519	1	59	0.07%
Sabah	3,226,700	672	2	21	0.30%
FT Labuan	96,600	10	0	10	0.00%
MALAYSIA	**28,854,900**	**21,900**	**35**	**76**	**0.16%**

Source: Disease Control Division, MOH

FIGURE 20
INCIDENCE AND CASE FATALITY RATE OF ALL REPORTED DENGUE CASES IN MALAYSIA, 2000-2012



Source: Disease Control Division, MOH

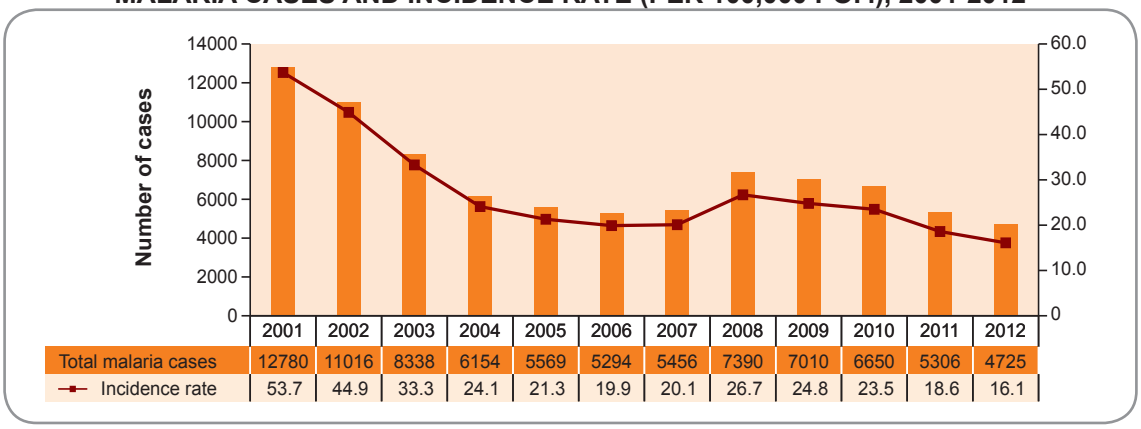
There were 3,959,258 premises inspected for mosquito breeding in 2012 with 58,690 of which were found to be positive for *Aedes* breeding compared to 3,065,080 premises inspected with 44,511 premises with positive *Aedes* breeding in the previous year. The number of premises inspected and premises positive with *Aedes* breeding increased by 22.5% and 24% compared to the previous year. There was a decrease of 3% in fogging activities in 2012 (20,601,207 premises) compared to 2011 (21,266,180 premises). There were 875,313 premises, where Temephos was applied in 2012 compared to the 770,499 premises in 2011 which shows a 12% increased. As for the results of the premise inspection activity, it showed that the highest *Aedes* index was at the construction sites which were 8.74%, followed by factories at 8.56%, vacant land (8.02%), recreation areas at 7.28 % and schools (6.41%).

- **Malaria Control Programmes**

In 2012, there were 4,725 confirmed Malaria cases in Malaysia, which showed a reduction of 581 cases (11%) as compared to 5,306 cases in year 2011. The incidence of malaria has declined from 18.6 per 100,000 populations in 2011 to 16.1 per 100,000 populations in 2012 (Figure 2.5c). The incidence rate for locally acquired malaria cases reduced from 14.6 per 100,000 populations in 2011 to 7.1 per 100,000 populations in 2012 (Figure 2.5d). A total of 1,345 (29%) malaria cases were detected among foreigners, a 21% reduction compared to 2011 with 1,700 cases. A total of 16 deaths occurred in year 2012, which is a reduction of 11% compared to previous year (18 deaths). The case fatality rate for malaria has been less than 0.5% since 2006 (Figure 2.5e).

Plasmodium knowlesi was the main malaria parasite in 1,813 cases (38%), followed by *P. vivax* with 1,461 cases (31%), *P. falciparum* (19%), *P. malariae* (10%) and mixed infection (2%). Most cases (90%) were detected through Passive Case Detection (PCD). Almost all cases (99%) were investigated and received complete radical treatment. The two main strategies of vector control implemented were indoor residual spraying (IRS) and use of insecticide treated nets (ITN).

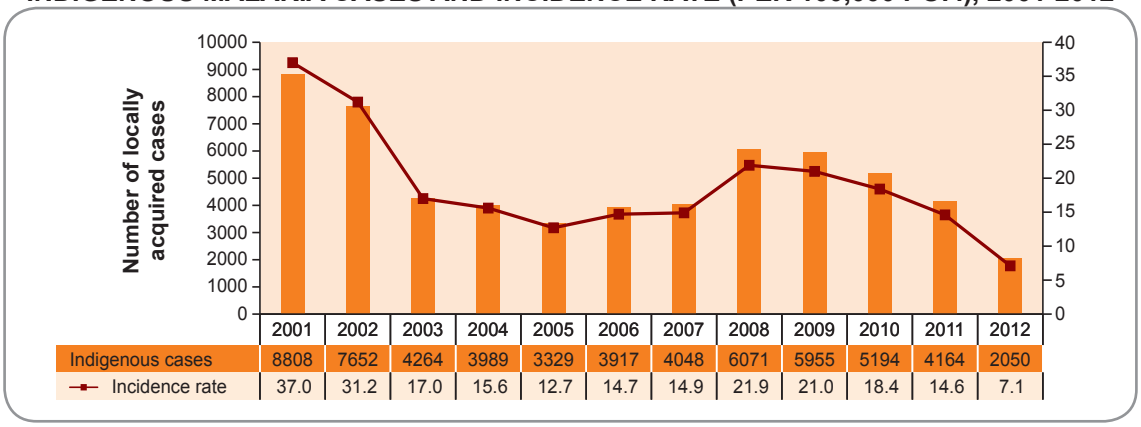
FIGURE 21
MALARIA CASES AND INCIDENCE RATE (PER 100,000 POP.), 2001-2012



	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Total malaria cases	12780	11016	8338	6154	5569	5294	5456	7390	7010	6650	5306	4725
Incidence rate	53.7	44.9	33.3	24.1	21.3	19.9	20.1	26.7	24.8	23.5	18.6	16.1

Source: Disease Control Division, MOH

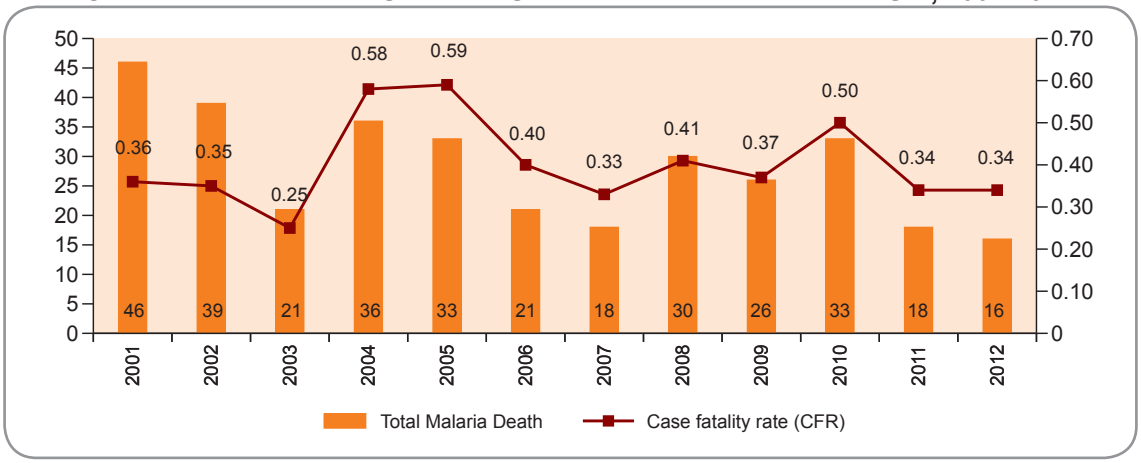
FIGURE 22
INDIGENOUS MALARIA CASES AND INCIDENCE RATE (PER 100,000 POP.), 2001-2012



	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Indigenous cases	8808	7652	4264	3989	3329	3917	4048	6071	5955	5194	4164	2050
Incidence rate	37.0	31.2	17.0	15.6	12.7	14.7	14.9	21.9	21.0	18.4	14.6	7.1

Source: Disease Control Division, MOH

FIGURE 23
TOTAL MALARIA DEATHS AND CASE FATALITY RATE IN MALAYSIA, 2001-2012



Source: Disease Control Division, MOH

- **Lymphatic Filariasis Elimination Programme (LFEP)**

A total of 267 filariasis cases were reported in 2012 showing a decreasing number of cases (31%) compared to the previous year (387 cases). In 2012, the prevalence rate of filariasis was 0.93 per 100,000 populations. The number of cases noted increase in year 2011 and 2012 as compared to 2010 due to increase detection of cases from survey activities in elimination programme. Out of 267 total cases, 155 cases (58%) are detected among the immigrants and 112 cases (42%) are detected among locals. In 2012, the predominant parasite species were *Wuchereria bancrofti* which contributes to 56%, followed by *Brugia malayi* (periodic) 35% and *Brugia malayi* (subperiodic) 9%. Total of 185,826 blood samples were taken and examined to detect microfilaremia. This is an increased number of samples (2.7%) compared to samples taken in 2011 (180,998).

- **Typhus Control Programme**

In 2012, a total of 8 Typhus cases were reported, a decrease of 5 cases (38%) compared to the previous year (13 cases). The incidence rate of Typhus was 0.03 case per 100,000 population. The 8 typhus cases were reported from Pulau Pinang (4 cases), Selangor, Perak, Pahang, and Terengganu (1 case each). All cases were scrub typhus.

- **Japanese Encephalitis Control Programme**

In 2012, there were 22 reported Japanese Encephalitis (JE) cases in Malaysia, an increase of 10 cases (83.3%) as compared to 12 cases in 2011. Sarawak contributed the highest number with 12 cases, followed by Negeri Sembilan with 4 cases, Sabah 3 cases and 1 case respectively reported in Perak, Kedah and Johor. Two (2) deaths recorded last year each case respectively reported in Sarawak and Negeri Sembilan. The national incidence rate (IR) increased from IR 0.04 per 100,000 populations the previous year to IR 0.08 in 2012. Most of the JE cases reported were female (63.6%) and 76.3% were among the age group of 0 to 29 years.

- **Chikungunya Control Programme**

In 2012, a total of 93 Chikungunya cases were recorded showing an increase of 63 cases (210%) compared to the previous year (30 cases) due to two reported outbreaks occurred in Selangor (1 episode) and Perak (1 episode). Of these 84.9% cases reported were detected through Passive Case Detection (PCD) while 15.1% detected through Active Case Detection (ACD). The urban areas accounted for 51 cases (55%). Selangor reported the highest number of cases in 2012 with 57 cases (61.3%), followed by Perak 20 cases (21.5%), Pahang 5 cases (5.4%), Sarawak 4 cases (4.3%), Johor 3 cases (3.2%), Negeri Sembilan 2 cases (2.1%) and Pulau Pinang and Kelantan recorded 1 case respectively (1.1%). 37.7% of the cases occurred among the age group of 26-35 years. All Chikungunya cases are monitor daily through vekpro online web based surveillance system.

- **Control Activities at International Entry Points of Entry**

Control activities at international points of entry mainly for plague and yellow fever surveillance. In year 2012, 58 from 63 points of entry have conducted the *Aedes aegypti* surveillance and rodent study at the entry point. Only 2 states recorded the presence of rodent with flea at the airports which are Selangor (KLIA) and Sabah (KKIA). Sabah recorded flea index upon the threshold 1.0. For surveillance at the ground crossing, only Perlis recorded positive ovitrap for *A.aegypti* surveillance. However 5 states in Malaysia namely Perlis, Selangor, Melaka, Sabah and Sarawak were recorded positive ovitrap for *A.aegypti* surveillance for seaports.

NON-COMMUNICABLE DISEASE PROGRAMMES

Cardiovascular Diseases/Cancer/Tobacco Prevention Control Program

- **Diabetes and Cardiovascular Diseases Programme**

i) Highlights on Implementation of the National Strategic Plan for Non-Communicable Diseases (NSP-NCD) in 2012

The implementation of the healthy eating guideline in schools calls for a concerted effort by both Ministry of Health and Ministry of Education. A newly revised guideline on foods sold in school canteens was published by the Ministry of Education in January 2012. This was supported by the depiction of calorie contents of food sold in school canteen, whereby the Ministry of Education has made it compulsory for canteen operators to display the calorie content of foods and beverages sold. This is mainly to educate the school children to eat according to their daily calorie requirement and to have informed choices on the calorie content. Currently, the BMI measurement is being integrated with the National Physical Fitness Standard for Malaysian School Children (SEGAK) programme by the Ministry of Education. Thus, the student's BMI measurement especially for Standard 3 to Form 5 school children are taken by physical education teachers while the BMI measurements for the remaining school children (Standard 1 and 2) are taken by the respective school class teachers. It is also the responsibility of the school teachers to inform or report the students' BMI status to parents. In this respect, MOH is responsible for the overall monitoring of the students BMI status. The school children who are obese or severely malnourished will be referred to the nearest health clinic for further management or investigations.

The implementation of the circular on healthy menus during meetings in public sectors is carried out in stages and it is on a voluntary basis. Awareness training, conducted by the Nutrition Division, to all the ministries has also been conducted for all 25 ministries prior to the issuance of the Public Service Department circular on healthy menus during meeting. The responses were quite overwhelming based on their interest and participation in the briefings. Meanwhile, within MOH, the implementation of circular on healthy menus during meeting is made mandatory through a Director General of Health circular.

MOH has also collaborated with the Department of Local Authorities, under the Ministry of Housing and Local Governments. On 21 March 2012, the 65th Meeting of the National Council of Local Governments had approved a guideline for all Local Authorities, for the enforcement of the regulation on the sale of food and beverages outside of school perimeters. The Ministry of Housing and Local Governments has issued a circular dated 13 July 2012 to all Local Authorities to support implementation of this new policy, which essentially bans the sale of unhealthy food and beverages by mobile vendors outside of the school perimeters.

Secondly, at the 11th National Food Safety and Nutrition Council Meeting held on 13 December 2012, a guideline on marketing of food and beverages to children was adopted. This also fulfilled the country's commitment on Resolution WHA63.13, on marketing of food and non-alcoholic beverages to children, adopted at the World Health Assembly in May 2010. The main objective of this guideline is to limit the exposure of children to marketing of food and beverages high in fat, sugar and salt.

ii) Highlights on Implementation of the Non-Communicable Diseases Prevention 1Malaysia (NCDP-1M) Projects

The NCDP-1M is a major activity under Strategy 1 of NSP-NCD: Prevention and Promotion, which also incorporates Strategy 4, as the involvement of members of the community and civil society

is crucial in the implementation of NCDP-1M. In summary NCDP-1M incorporates NCD risk factor screening and intervention in three different settings i.e. community, workplace and schools. The underlying principle of NCDP-1M is empowering individuals and communities for individual- or community-based NCD risk factor interventions.

From its small beginnings in October 2010 with 200+ projects throughout the country supported by a special dedicated fund allocated by the Director General of Health, Malaysia, the number of projects continues to expand. In 2012, a *Dasar Baru* of RM4 million was approved specifically to support the implementation of NCDP-1M. The Malaysian Health Promotion Board (MySihat) has also been a strong collaborative partner in supporting the implementation of NCDP-1M at several sites. Nationwide, until 31 December 2012, there were more than 32,000 clients participating in 496 NCDP-1M projects, and in total, they had undergone more than 55,000 NCD risk factor screenings since the inception of NCDP-1M in October 2010 (Table 3). Overall, the success rate for weight reduction among clients who have opted to participate in the intervention program after six-months was 32%, with an average weight loss of 3.4kg.

TABLE 3
SUMMARY OF THE IMPLEMENTATION OF NCDP-1M
(OCTOBER 2010 UNTIL 31 DECEMBER 2012)

State	No. of Projects	Total Clients	Total Assessments
Johor	175	5,901	9,077
Kedah	18	996	1,664
Kelantan	27	1,300	3,242
Melaka	93	13,733	21,167
Negeri Sembilan	23	1,020	1,583
Pahang	23	1,029	2,273
Perak	12	916	1,212
Perlis	20	522	1,323
Pulau Pinang	10	1,049	1,560
Sabah	18	1,779	3,001
Sarawak	24	1,037	1,819
Selangor	23	2,576	4,322
Terengganu	17	628	1,577
FT Kuala Lumpur	8	232	661
FT Labuan	3	205	275
FT Putrajaya	2	60	1,027
Overall	**496**	**32,983**	**55,783**

Source: Disease Control Division, MOH

iii) Publication of the National Health and Morbidity Survey (NHMS 2011) on Non-Communicable Diseases

In January 2012, the Institute of Public Health had officially released the published NHMS 2011 report on Non-Communicable Diseases (Volume II of the NHMS 2011 series). Subsequently, on 12 to 14 June 2012, the National Institutes of Health (NIH), MOH had organised the 15th National Institutes of Health Scientific Meeting, incorporating the National Health and Morbidity Survey

2011 and the Global Adults Tobacco Survey (GATS). The NCD Section of the Disease Control Division was involved primarily in four of the papers presented during the scientific meeting:

1. Plenary 3: Policy on Non-Communicable Diseases, by Datuk Dr Lokman Hakim bin Sulaiman, Deputy Director General of Health (Public Health), MOH.
2. Symposium 4: NCDs: Cardiovascular Diseases – Current Burden of Diabetes in Malaysia, by Dr Feisul Idzwan Mustapha, Disease Control Division, MOH.
3. Symposium 4: NCDs: Cardiovascular Diseases – The Epidemiology of Hypertension in Malaysia, by Dr Gurpreet Kaur, IKU
4. Symposium 4: NCDs: Cardiovascular Diseases – Hypercholesterolaemia: Are we doing enough?, by Ms. Helen Tee, IKU

Copies of the powerpoint presentations during this Scientific Meeting is available at the Institute of Health Management (IHM) website, at http://www.ihm.moh.gov.my/index.php/en/power-point-presentation-15th-nih-scientific-meeting

iv) National Diabetes Registry (NDR)

The National Diabetes Registry (NDR) was established to keep track of the target achievement and clinical outcomes of patients with diabetes managed at primary healthcare clinics (Klinik Kesihatan or KK) under MoH. The NDR started in 2009, initially with manually collected data and subsequently migrated to a web-based data collection system in 2011. All patients receiving diabetes care at 644 participating KKs are required to be registered into the NDR and the status of patients is regularly updated. From 2009 to 2012 there were 657,839 patients registered in the NDR, of which 653,326 were diagnosed with Type 2 Diabetes (T2DM). The number of registered T2DM patients ranged from 106,101 in Selangor to 524 in FT Labuan. The mean age of T2DM patients in the NDR was 59.7 years old, 41.6% were men and 58.4% were women, as shown in Table 4. The mean age at diagnosis for T2DM patients was 53 years old, with a mean duration of follow-up of 6.5 years. In terms of ethnicity, 58.9% were Malay, 21.4% were Chinese and 15.3% were Indian.

TABLE 4
TYPE 2 DIABETES PATIENTS ENROLLED FROM 2009-2012

State	No. of patients, n(%)	Male, n(%)	Mean age(95% CI)
Johor	92,750 (14.2)	38,386 (41.4)	59.8 (59.7-59.9)
Kedah	42,344 (6.5)	16,482 (38.9)	59.1 (59.0-59.2)
Kelantan	27,002 (4.1)	9,692 (35.9)	59.3 (59.2-59.4)
Melaka	42,974 (6.6)	18,640 (43.4)	61.0 (60.9-61.1)
Negeri Sembilan	57,869 (8.9)	25,288 (43.7)	60.4 (60.3-60.5)
Pahang	38,119 (5.8)	15,972 (41.9)	58.9 (58.8-59.1)
Perak	74,492 (11.4)	31,604 (42.4)	61.1 (61.1-61.2)
Perlis	13,388 (2)	5,311 (39.7)	58.9 (58.7-59.1)
Pulau Pinang	40,439 (6.2)	17,271 (42.7)	60.6 (60.5-60.7)
Sabah	11,302 (1.7)	4,933 (43.6)	58.8 (58.6-59.0)
Sarawak	43,333 (6.6)	17,046 (39.3)	59.3 (59.2-59.4)
Selangor	106,101 (16.2)	45,019 (42.4)	58.5 (58.4-58.6)
Terengganu	22,272 (3.4)	8,275 (37.2)	58.3 (58.2-58.5)
FT Kuala Lumpur	37,713 (5.8)	16,261(43.1)	60.5 (60.4-60.7)

State	No. of patients, n(%)	Male, n(%)	Mean age(95% CI)
FT Labuan	524(0.1)	202(38.5)	55.8 (54.8-56.8)
FT Putrajaya	2,704(0.4)	1,408(52.1)	54.5 (54.1-54.9)
Total patients, n (%)	**653,326(100)**	**271,790 (41.6)**	**59.7 (59.7-59.7)**

Source: Disease Control Division, MOH

v) Participation in Global/Regional Meetings

a) Regional Meeting on National Multisectoral Plans for NCD Prevention and Control. Kuala Lumpur, Malaysia, 11-14 June 2012

To assist countries in developing these national multi-sectoral policies and plans for NCDs, WHO and the Ministry of Health, Malaysia jointly hosted this Regional Meeting on National Multi-sectoral Action Plans for NCD Prevention and Control. Examples of multi-sectoral action on NCD from around the Western Pacific Region were shared at the meeting. These included approaches at a national level, as well as activities at a sub-national or local level. Examples of MSA were also shared in relation to the four main NCD risk factors: unhealthy diet, physical inactivity, tobacco use and alcohol consumption. Despite the common challenges and gaps, a number of entry points and opportunities were identified, along with key elements of successful approaches. In addition to plenary sessions, countries worked in small groups as country teams in outlining the next steps in developing multi-sectoral action plans for NCD in their specific countries. WHO also used this meeting to inform countries of the process for reviewing the Global NCD Action Plan, and for the further development of the global monitoring framework and voluntary global targets. Some preliminary feedback was received from participants at the meeting, and Member States have additional opportunities to contribute feedback over the coming months.

b) Japan-WHO Regional Consultation for Promoting Healthier Dietary Options for Children. Saitama, Japan, 26-29 March 2012

In addressing the topic of 'Improving Dietary options for children', this consultation meeting focused on school nutrition initiatives and the implementation framework for action to address marketing of foods and non-alcoholic drinks to children. These themes were complementary and convergent, as one of the WHO recommendations on food marketing to children specifically addresses 'settings where children gather' and states that these 'should be free from all forms of marketing of foods high in saturated fats, trans-fatty acids, free sugars or salt'. The consultation meeting sought to strengthen policy and programme initiatives across the eleven participating countries, to strengthen systems for ensuring communication of accurate nutrition information, across school and community settings, consistent with national dietary guidelines.

c) 65th World Health Assembly. Geneva, Switzerland, 21-29 May 2012

The agenda item 13.1: Prevention and control of non-communicable diseases, was discussed during the Assembly. This is as follow-up to the United Nations Political Declaration on the Prevention and Control of Non-Communicable Diseases in New York, USA. During the meeting, the Assembly adopted the decision of a global target of 25% reduction in premature deaths due to NCD by year 2025. The final set of global NCD indicators and targets will be ready by end of 2012.

d) Second Informal consultations with Member States on the Development of the Global Action Plan for the Prevention and Control of NCDs 2013-2020, and Formal Meeting with Member States on the Global Monitoring Framework, Geneva, Switzerland, 1-7 November 2012

Malaysia also participated in the discussions for these two meetings. One of the outputs was the finalisation of the WHO Global Monitoring Framework for NCDs, after extensive negotiations, to be tabled as a resolution in the 132nd Session of the WHO Executive Board, in January 2013. In addition, the first draft of the Global Action Plan for the Prevention and Control of NCDs will also be presented at the 132nd Session of the WHO EB for formal comments and guidance on finalisation of the Action Plan.

e) Diabetes Quality Assurance Program in Primary Care, 2012

For 2012, indicator for Quality of Diabetes Care at MOH Facilities: Glycaemic Control did not achieve target of 30% leading to SIQ nationally. Achievement for Malaysia for 2012 is 18.2%, and compared to 2009 (13.3%) when this QA was initiated, there has been a slow increasing trend. Only WP Labuan managed to achieve the standard set. Three other states with the highest achievements were Sabah (28.5%), Perlis (27.9%) and WP KL/PJ (24%).Three states with the lowest achievements were Sarawak (6.97%), Kelantan (11.5%) and Pahang (15.08%).

vi) Primary Healthcare Clinics Supervision for Diabetic Care at MOH Facilities 2012

Primary healthcare clinics supervision is routinely done every year looking into management of diabetic patients at primary healthcare clinics as well as the clinical outcomes of diabetic patients. Supervision is done at all primary healthcare clinics throughout Malaysia every year with selection of states and clinics to be visited done at beginning of the year. Supervision focus on discussion of problems encountered in diabetes services and to identify gaps and needs on methods of improvement.

In 2012, several primary healthcare facilities in Terengganu, Kelantan and Sabah have been chosen for diabetes care supervision by NCD Unit Disease Control Division KKM. Several major factors have been identified among all states contributing to the shortfall in diabetes services, and thus diabetes control of patients. These include: (i) lack of knowledge and not complying to our Diabetes CPG among healthcare providers; (ii) lack of health education among patients; and (iii) poor coverage of HbA1c testing.

vii) Coordinating the Dietetic Services in Health Clinic

NCD Section together with Family Health Development Division (Primary Section) and The Main Technical Committee of Dietitian continue to supervise and monitor the activities of the dietitian especially in the management of Non Communicable Diseases in 2012.

a) Background of Dietetic Services in Health Clinic.

Under the ABM budget 2012, approval of another 6 posts of dietitian in the health clinic has increased its number to 18 posts compared to only 12 posts in 2011. Though there are 18 posts of permanent dietitian at the clinic, visiting dietitian from hospitals are still doing dietary consultation to patients, either individually or in group in specified health clinic based on request and arranged schedule.

b) Management and Technical Meeting

There were 3 National Community Dietetic Management Meetings and 4 Technical Meetings held in 2012. The Technical meetings held were **"Hands on of the Health Informatics' (HIC) data"** in June 2012 and **"Development of Draft Documents Specification for Healthy Cafeteria"** in November 2012. The Document Specification

will be used for the implementation of Healthy Cafeteria as pilot project in selected cafeterias in MOH hospitals. The meeting with Nutritionist and Dietitian chaired by Director of Family Health and Development Division held on 24th November 2012 was to finalize the scope of work, direction and workload of each profession. A standardized referral form were then finalized and agreed to be used by both profession stating cases that can be seen by each profession in health clinics.

c) Workload of dietitian in health clinics (Comparison from 2010-2012)

The number of patients seen by dietitian in health clinic showed increasing trend from the year 2010 until 2012, as compared to the number of patients seen by visiting dietitians from hospitals. The Highest number of cases seen is diabetes followed by Gestational Diabetes, Hypertension and hypercholesterolemia.

d) Quality Improvements Activities

Key Performance Indicators (KPIs) on process and outcome for health clinic dietitians:

- Percentage of referred Diabetic patients who turned up for dietary consultation in health clinics
  ***standard* : ≥75 % of referred diabetic patient turned up for dietary consultation**
- Percentage of Gestational Diabetes patients who achieved normal Blood Sugar Profile (BSP) range after dietary consultation in health clinics.
  standard: ≥80% of Gestational diabetes patient with normal BSP after dietary consultation
- Percentage of active obese patients with diseases that has reduced at least 5% of initial weight after dietary consultation in 6 months
  standard: ≥50% of obese patients with disease have reduced at least 5% of initial weight after dietary consultation

All the KPIs for 2012 were discussed under trial to make sure data collection and the standard were able to be fulfilled by the entire health clinic dietitian. Reporting and finalizing of the standard will be done in the year 2013.

e) Other activities

Intervensi Sayangi Diri is an NCD risk factors intervention programme focusing on three main components which are mental health, physical activity and healthy diet. This programme followed the initiatives of healthy workplace for healthy workforce with staffs of Bahagian Kawalan Penyakit to start of with. A diary namely *Intervensi Sayangi Diri* Book was provided to all staffs that provide information on food calorie and also to function as record of all activities pertaining to this programme.

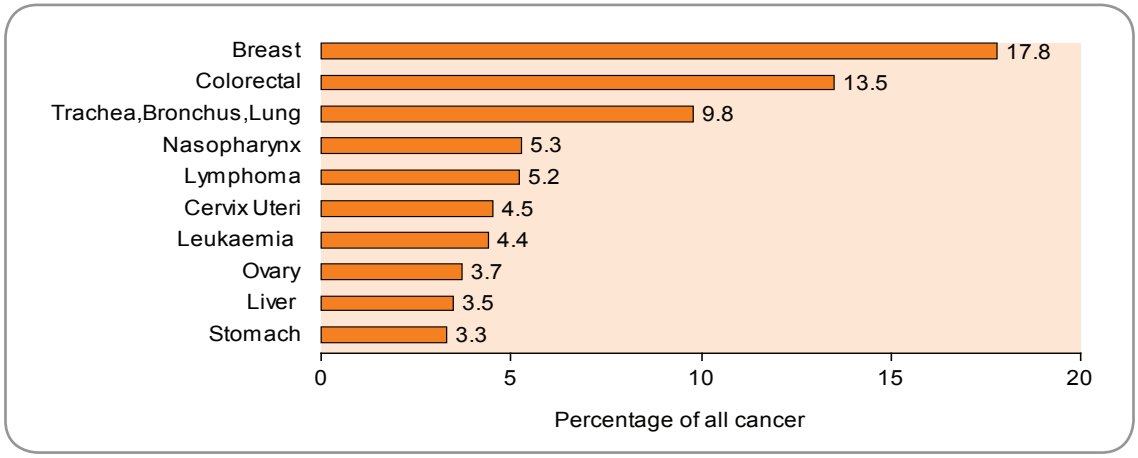
- **Cancer Control Programme**

The National Cancer Control Programme is carried out by all relevant disciplines and stakeholders. The strategies and activities are mainly based on objectives, targets and key priorities spell out in the National Cancer Control Blueprint which was approved and endorsed by the Cabinet in 2008. The main objective of the National Cancer Control Blueprint is to reduce the negative impact of cancer by decreasing the disease morbidity, mortality and to improve quality of life of cancer patients and their families. The main function of the Cancer Unit in Disease Control Division, MOH is to reduce the cancer burden in the country through primary and secondary prevention by working closely with the relevant stakeholders within the Ministry of Health as well as the other governmental agencies and Non-Governmental Organisations. Another important function of the Unit is providing information on cancer statistics through the population-based National Cancer Registry.

i) The National Cancer Registry (NCR)

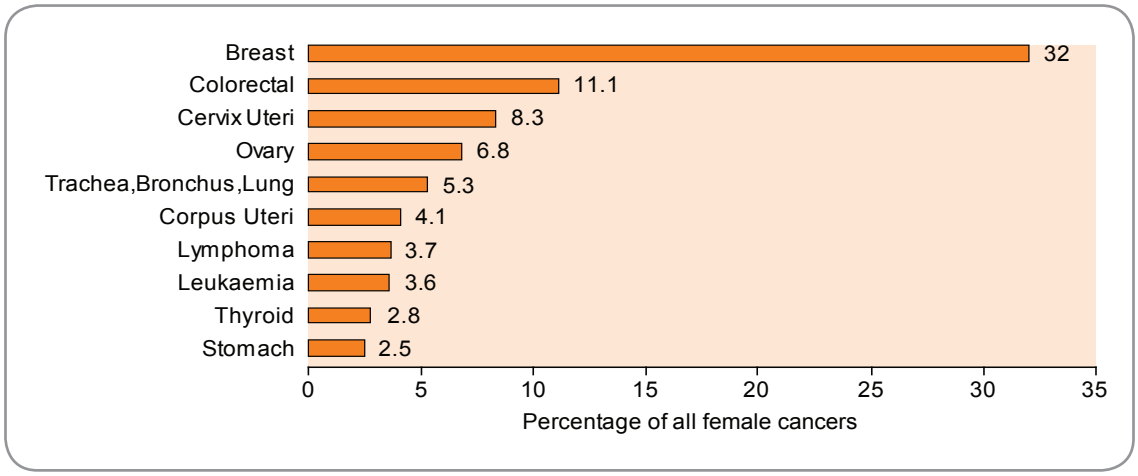
The National Cancer Registry (NCR), started collecting and managing cancer data from January 2007. All State Cancer Registries are required to send cancer data collected at state level to the Ministry of Health to be registered at the NCR data-base. In 2012, NCR prepared the 2009 cancer report, another yearly report based on number of cases notified and registered at the NCR. There were 17,141 cancer cases diagnosed in 2009 reported and registered to NCR, comprised of 7737 male (45.1%) and 9404 (54.1%). Of these 41.1% were Malay, 40.9% Chinese, 9.1% Indian and 8.9% others. Figure 24 described the leading cancers amongst the general population in Malaysia. The three leading cancers among the general population in Malaysia were breast (17.8%), colorectal (13.5%) and lung (9.8%). In males, the three leading cancers were colorectal (16.5%) followed by lung (15.4%) and nasopharynx (9.%) while in females, the three leading cancers were breast (32.0%) followed by colorectal (11.1%) and cervix (8.3%). Figure 26 showed the incidence of cancers occurred at all ages and increases with age. The incidence rate in males exceeded the incidence rate in females after the age of 60 years.

FIGURE 24
TEN MOST FREQUENT CANCERS, MALAYSIA, 2009



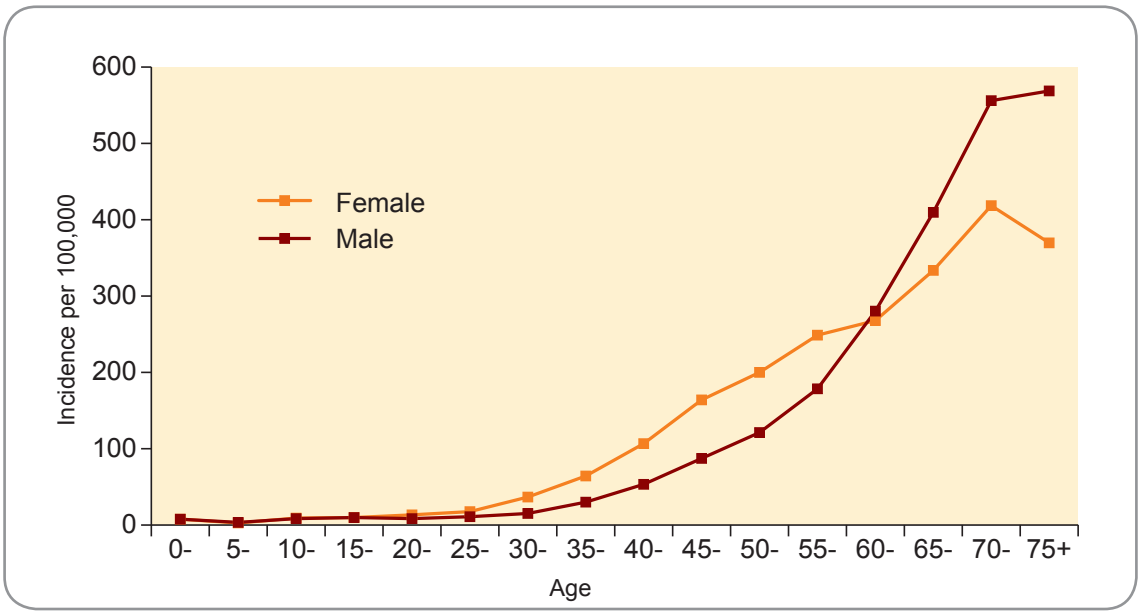
Source: Disease Control Division, MOH

FIGURE 25
TEN MOST FREQUENT CANCERS, FEMALE, MALAYSIA 2009



Source: Disease Control Division, MOH

FIGURE 26
AVERAGE AGE-SPECIFIC INCIDENCE RATE, ALL RESIDENCE, BY ALL SITES AND SEX, MALAYSIA 2009



Source: Disease Control Division, MOH

ii) Colorectal Cancer Screening Project

Colorectal cancer has become one of the important cancers in Malaysia. In view of this, in 2012, a colorectal screening project were carried out in 6 states, i.e Negeri Sembilan, Pahang, Perak, Terengganu, Penang and Federal Territory of Kuala Lumpur & Putrajaya. It is ambitioned that the project can be expended as national screening programme in the very near future.

The project carried out the 6 states was an opportunistic screening targeted for population age 50 to 70 years without any sign and symptoms of the cancer using qualitative immunological Fecal Occult Blood Test (iFOBT). A total of 3100 people were screened from the period of 1st January 2012 to 31st December 2012. The positive rate for the test was 4.3% and 63.9% of the positive test cases were actually underwent colonoscopy. Of those who underwent colonoscopy, 7.1% were detected to have colonic polyps, a risk for developing colorectal cancer and 4.7% were detected to have colorectal cancer. The detection rate for colorectal cancer among all individuals who had iFOBT done were 0.13% which is comparable to the result of screening programme in Japan in 2006 i.e 0.15%.

iii) Impact Mission by the International Atomic Energy Agency (IAEA) and World Health Organisation (WHO)

In 2012, MOH received assessment visit for country capacity on Cancer Control Programme by a team of experts from the IAEA and WHO which took place on 24 – 28 September 2012. The experts assessed the capacity of the various disciplines in cancer control ranging from Prevention, Cancer Information, Screening and Early Detection, Diagnosis, Treatment, Rehabilitation, Palliative Care, Traditional and Complementary Medicine and Research within the MOH. Lengthy discussions with the relevant officers at the Ministry, site visits to the MOH health facilities including the primary health clinics, hospitals and clinical laboratory in the Klang Valley and Kuching, Sarawak as well as the private health facilities and NGOs were carried out. Recommendations to improve the current capacity were given by the experts.

- **FCTC Secretariat and Control Programme**

The Tobacco Control & FCTC Unit is responsible for the development FCTC Secretariat and Control Program. *Note: FCTC is an intersectoral collaboration and capacity building.* The Unit serves as the National Secretariat for the implementation of the world's first and only global legal tool, i.e. the WHO Framework Convention on Tobacco Control (WHO FCTC). This Unit is now known as the FCTC Malaysia, since the Malaysian Government officially became a party to the WHO FCTC in December 2005. The National Secretariat has also participated in the Fifth Session of the Conference of Parties (COP) to the WHO Framework Convention on Tobacco Control on November 12-17, 2012 at COEX Convention Centre in Seoul, Republic of Korea. This meeting was attended by delegations of more than 140 Parties as well as the representatives of seven States that are not Party to the Convention and 18 intergovernmental and nongovernmental organizations accredited as observers. The outcome of the Fifth Session of the Conference of Parties (COP) had adopted the Protocol to Eliminate Illicit Trade in Tobacco Products, following previous negotiations that took place in 2008-2012. Currently, the National Secretariat has undertaken a workshop for the involvement of the related agencies for the participatory working processes in this Protocol. Once finalized, MoH Malaysia would embark upon preparing a working paper together with shared comments from the Ministry of Finance for the cabinet in order to undertake the signatory processes by the Government of Malaysia. At the national level, FCTC Malaysia coordinates at least four interagency meetings to discuss FCTC implementation status.

Legislation and Enforcement

In 2011, the Tobacco Control & FCTC Unit had successfully enacted provisions for smoke-free areas in support of the Smoke-Free Melaka Initiative (MBAR) commenced by the Melaka State Government. This foremost project was a collaborative effort between an alliance of non-government organizations (GaNMBAR) with financial commitment from the Malaysian Health Promotion Board (MySihat) and the Government through its numerous agencies. Smoke-Free Melaka Initiative (MBAR) then became an important model project for other Heritage Sites within the ASEAN Region. This initiative was later followed by Smoke-Free Penang and Johore Initiative which is respectively known as PENBAR and JBAR. Both initiatives were gazetted for Smoke Free Zones on 1 October 2012 and enforced on 2 October 2012.

Smokefree initiative and progress at Penang, Malacca and Johore, involves key performance indicators for 2012 and various enforcement achievements with respect to Control of Tobacco Products Regulations 2004. The sampling and analysis mechanism for nicotine and tar, with improved payment methods for various compounds served within the Control of Tobacco Products Regulations 2004 are currently being studied upon.

Enforcement of the provisions in the Control of Tobacco Products Regulations is being carried out throughout the country by over 2,000 MoH enforcement officers located at the states and district levels. There are two major types of enforcement activities, i.e. the routine and the thematic operations known as 'Enforcement Information Blast' or "E-Info Blast". Tables 5 & 6 summarise enforcement activities carried out in 2012 compared with prior years.

TABLE 5
COMPILATION REPORT FOR OPS E-INFO BLAST, 2010-2012

No.	Activities	2010	2011	2012
1	Number of premises inspected	11,539	17,162	14,515
2	Number of notice of error produced	1,441	2,571	3,228
3	Compound values imposed (RM)	273,850.00	594,700.00	811,900.00

Source: Disease Control Division, MOH

TABLE 6
NATIONAL PERFORMANCE OF CTPR ENFORCEMENT, 2008-2012

No.	Activities	2008	2009	2010	2011	2012
Compound produce under Control of Tobacco Product Regulations Amendment 2008						
1	No. of notice produced (sec. 32B)	7,100	11,980	17,346	24,096	29,859
2	No. of compounds produced	4329	6,619	10,260	13,646	16,483
3	No. of compounds produced (RM)	919,535	1,419,136	2,198,939	3,024,630	4,017,953
4	No. of compounds described	3,679	6,304	9,219	12,981	15,254
5	The total amount paid compound (RM)	321,613	556,180	993,775	1,778,865	1,691,604
6	Percentage of the compound described	85%	95.2%	89.8%	95.1%	93%
Court action under Control of Tobacco Product Regulations Amendment 2008						
7	The no. registered in court	3,098	4,351	6,175	5,873	8,152
8	Number of Fine	665	670	854	892	1,085
9	Fines (RM)	165,895	147,098	228,870	255,205	320,270
10	Number of imprisoned	0	1	1	1	3
11	Number of D&A Cases	62	117	40	24	16
12	Number of DNAA Cases	1079	2,758	3,387	3,174	4,219
13	Seized	NA	NA	10,905	8,671	9,393
14	Value	NA	NA	331,557	59,739	61,170

Source: Disease Control Division, MOH

Anti-Tobacco Promotion

The Tobacco Control & FCTC Unit works closely with the MOH Health Education Division to implement appropriate health promotion activities in order to increase public awareness about the hazards of tobacco and the benefits of not smoking. Amongst the activities include the nationwide 'Tak Nak Merokok' media campaign, World No Tobacco Day celebration and the New Breath Beginning Ramadhan Campaign together with smoke-free initiatives for a Blue Ribbon Campaign was launched on 28 February 2012 by our previous Minister of Health at the Sunway Convention Centre, Sunway Medical Centre. This campaign creates a national climate for a social movement for health whereby, Ministry of Health through the Malaysian Health Promotion Board or MySihat together with support from WHO Western Pacific Region had embarked upon this campaign for the implementation of Article 8 of the WHO FCTC, which is, "protection from Exposure to Tobacco Smoke". There were 15 recipients comprising from business corporate entities, institutions of higher learning and universities were awarded the Blue Ribbon Certification during the nationwide launching campaign.

A joint collaborative effort organized by MySihat and SEATCA for the launch of a workshop "Towards A Smoke Free Malaysia" was held on 11-13 December 2012 whereby, various seminar and workshop planning were undertaken for Smoke-free Focal Points and religious leaders at Penang.

Smoking Cessation

Together with the Primary Health Care Section of the Family Health & Development Division, MOH, the Tobacco Control Unit conducted a workshop on 'Brief Intervention in Smoking Cessation' for relevant officers from all the State Health Departments and selected staff from specific health centers. This was part of a pilot project introduced by the World Health Organization, Western Pacific Regional Office (WPRO) to test simple brief intervention techniques alongside other approaches in smoking cessation.

National Tobacco Survey

Malaysia carried out its first Global Adult Tobacco Survey (GATS) in November 2011, by which the report was published in June 2012. This tobacco specific national survey supported by the WHO and the US Centers for Disease Control (CDC USA) was a very comprehensive study compared to the National Health & Morbidity Surveys. The Global School-based Student Health Survey 2012 had also been completed with the publication of the factsheet. However, the report would be in publication during the preparation of this report.

Mental Health/Violence Injury/Alcohol & Subtances Abuse Prevention Control Program

- **Mental Health Programme**

The Mental Health Unit under the Non-Communicable Disease Section is responsible for the development of the Mental Health Programmes. Several activities were conducted in 2012 as following:

i) National Strategic and Action Plan for Suicide Prevention Plan

A National Strategic and Action Plan for Suicide Prevention Programme was developed by the technical working group and was presented and approved at the Public Health Exco and Policy Meeting which is chaired by Deputy Director General of Public Health in July 2012. This plan outlines the implementation strategies among which are:

- Improving awareness among public and health care providers on suicide and suicidal behaviour.
- Promote early detection of signs and symptoms of mental disorders and risks factors for suicide among primary health care providers, teachers, school counsellors, police, community and religious leaders and emergency medical care personnels.
- Foster intersectoral collaboration among various agencies towards enhancing suicide prevention.
- Promote capability and capacity building in the identification of at risk of suicidal behaviour and "Handling Suicidal Person"
- Encourage research on suicide and suicidal behaviour for evidence-based policy making.
- Promote responsible media reporting of suicidal behaviour
- Advocate relevant agencies on efforts towards reducing access to lethal means.

ii) Mental Health Promotion Advisory Council Meeting

Advisory Council for Mental Health Promotion was set up by the MOH in August 2010. This Council which is chaired by the Health Minister consists of members of various experts with backgrounds related to mental health. The members include government and university psychiatrists, public health specialists, representative from Education Ministry, president of Malaysian Psychiatric Association, president of Malaysian Mental Health Association, presidents of mental health NGO's as well as representatives from media. This council serves to advise the Health Minister on issues related to mental health as well as providing insights and views on the strategy and directions in the implementation of mental health activities. Mental Health Unit of Disease Control Division acts as the secretariat for this council. The council had its meeting on the 4th June 2012.

iii) Healthy Mind Services (MINDA SIHAT)

The Healthy Mind Services which was piloted since 2008 until 2010 at nine Health Clinics throughout Malaysia was implemented using the Guidelines and Standard Operating Procedure of Healthy Mind Services. The objective of the service is to promote the community to screen for their mental health status and risk factors to identify stress, anxiety and depression, and to empower the community to handle stress effectively through instilling mental health life skills and relaxation techniques. This programme has been extended to other Health Clinics in 2011. 806 Health Clinics carried out the screening programme. A total of 93328 attendees were screened and 1,307 new cases were detected to have mental health problems.

iv) Follow Up Treatment and Psychosocial Rehabilitation for Mentally Ill at Health Clinics

A total of 212 (26.0%) Health Clinics had implemented the follow up treatment for the stable mentally ill patients. There are currently 41,084 cases. Till December 2012, a total number of new cases treated at health clinics were 2019 cases. There were 1332 discharges.

v) Psychosocial Rehabilitation

A total of 384 cases had received psychosocial rehabilitation in 26 health clinics implementing psychosocial rehabilitation services to improve their psychosocial functioning and promote independent living in the community. 97 new cases were reported and there were 30 discharges. 2374 home visits were carried out.

vi) Healthy Mind Programme in School

151 schools took part in the project. 18704 students were screened and the results showed that the percentage of students who had severe stress was 7.6% (1,422 students), severe anxiety was 12.4% (2,315 students) and signs of severe depression were 7.8% (1,454 students). Of these, 16.6% was referred to counsellors for intervention and 1.3% was referred to Health facilities. This program will be expanded to include more schools over the years. Till December 2012, 150 counsellors were trained in a workshop held on 31 July - 2 Aug 2012.

- **Violence Injury Prevention (VIP) Programme**

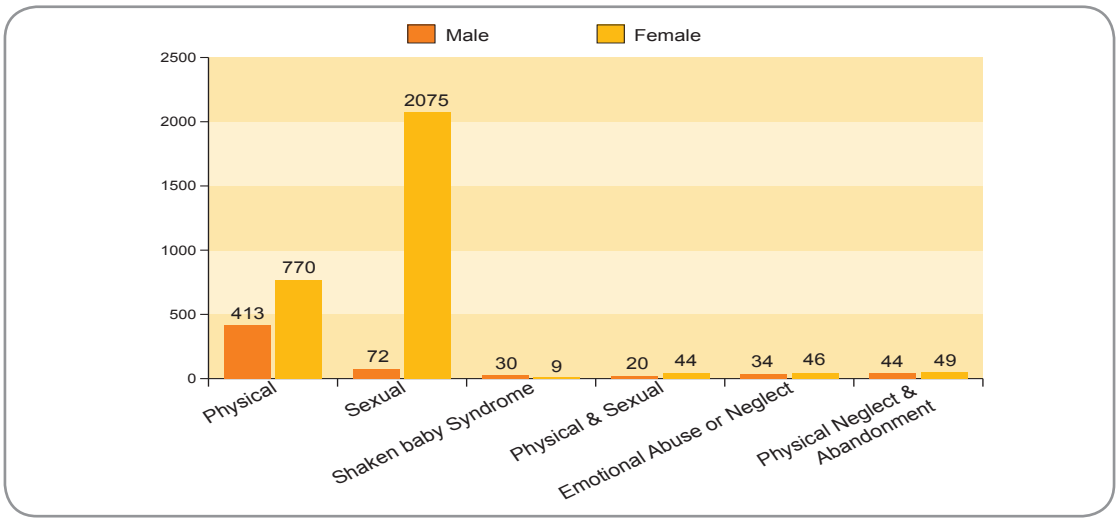
VIP unit is the focal point for the health sector in issues related to violence and injury prevention program within MoH. The health sector is one of the main data sources for violence and injury for this country. Violence and Injury Prevention (VIP) unit routinely compiles and analyses data from;

- The Health Informatics Center (MOH Admission and Death Due to Injury)
- One Stop Crisis Center (Child Abuse and Domestic Violence Data)
- The SCAN Team (Child Abuse Data)

Health Facts 2012 indicates injury, poisoning and certain other consequences of external causes as the 3rd principal causes of hospitalization MoH Hospitals in 2011. The most common cause of injury is Road Traffic Accidents (76,545), followed by fall (29,316), assault (6,371), intentional self-harm (2,450) and drowning (296). Drowning most commonly affected young children aged 0-4 years (116, 39%).

To date, there are 47 SCAN Team established in MOH Hospitals. Data are collected every three months from the SCAN Team and from Jan till December 2012, there were 3,606 cases of child abuse referred to the team, 59.5% of which are sexual abuse (Figure 27). 104 cases of child abandonment and 39 cases of Shaken Baby Syndrome were amongst the cases seen by the team in 2012.

FIGURE 27
NUMBER OF CASES REPORTED TO MOH SCAN TEAM JULY–DECEMBER 2012, BY TYPE & SEX



Note: excluding Klang Hospital (April-December 2012) and Selayang & Kajang Hospitals (July-December 2012)
Source: VIP Unit, Disease Control Division, MoH

MOH provides a dedicated service for victims of domestic violence, child maltreatment and sexual assault cases, known as One Stop Crisis Center (OSCC), which is currently available in 129 MOH Hospitals. It operates 24 hours a day and is under the administration of the Accident and Emergency Department of the hospital.

i) Advocacy And Intersectoral Collaboration

MoH is one of the leading agencies in the area of Child Maltreatment and Domestic Violence. As the focal point, VIP had actively involved in the relevant interagency committee such as the Child Protection Coordinating Council which is under the secretariat of the Department of Social Welfare.

VIP Unit is also a member of the National Road Safety Council. VIP works very closely with Ministry of Transport in the area of road safety and has contributed in the development of Malaysian National Road Safety Action Plan.

ii) Safety and Health Monitoring Of Nurseries

To further enhance safety and health aspects of children in nurseries, safety and health monitoring guideline and checklist had been produced. This is in addition to the Health Technical Assessment Checklist which is used during health inspection once a Nursery is registered by the Social Welfare Department. Monitoring assessment is then conducted six (6) month later to further ensure the compliance of health and safety aspect as prescribed under the Health Technical Assessment Checklist and reports will then be submitted to Social Department Welfare for appropriate actions.

iii) Working together Documents related to Domestic Violence Act

VIP has worked together with Ministry of Women, Family and Social Welfare in coming up with a working together document related to Domestic Violence Act which aims to facilitate the implementation process of the act.

iv) Participation In National/International Workshop and Forum

a) Workshop on Strengthening national capacities to Collect VAW Statistics in the ASEAN

Region (6-9 August 2012)

b) Seoul Forum on Suicide Prevention in The Western Pacific Region (13-14 September 2012)

v) Capacity Building

Violence sensitization and First Responder Life Support (FRLS) training for health staff are routinely conducted at least once a year at state level. In 2012, a total of 20 sessions of violence prevention sensitization training and 22 sessions of Domestic Violence and Child Abuse Management training were conducted nationwide.

To enhance the skill of health personnel in providing first aid to injured cases, a total of 294 FRLS training session were conducted. In addition, 81 sessions of FRLS training was also provided for the community in order to encourage public participation in giving first aid to the victims at site of incidence.

vi) Health Education Materials

To facilitate the running of these trainings, a module and relevant health education materials have been produced and distributed to all State Health Departments. The health education materials include pamphlets on;

a. Milk Choking
b. Shaken Baby Syndrome
c. Home Safety
d. First Aid For Children

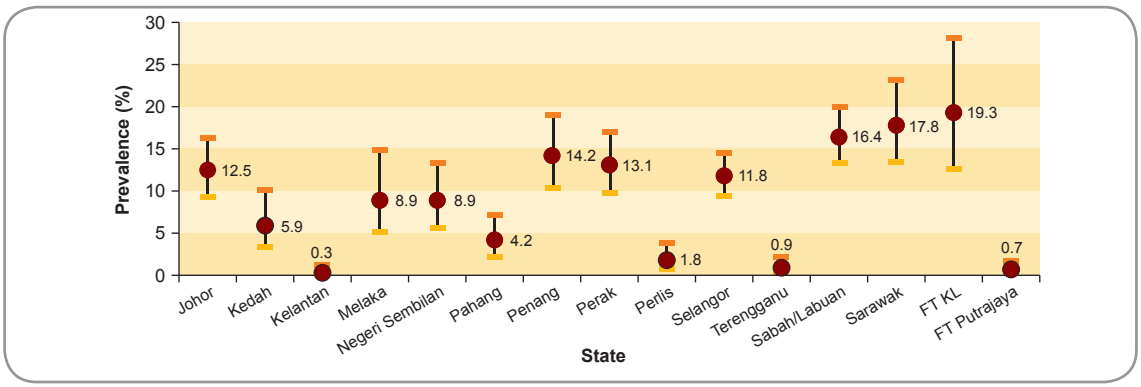
- **Alcohol & Substances Abuse Prevention Programme**

Alcohol and Substance Abuse Prevention Unit is responsible for activities relating to prevention and reduction of psychoactive drug use, abuse and dependence including alcohol. In addition, this unit also compiles and disseminates scientific information on alcohol and substance use, misuse and dependence, as well as their health and social consequences.

i) Alcohol consumption data from National Health Morbidity Survey (NHMS) 2011

The NHMS 2011 has shown that the prevalence of lifetime abstainers was 81.7% and ever consumed alcohol was 17.8%. Meanwhile, the prevalence of current drinker was 11.6%. In this survey, the current drinker was defined as those who consume alcohol for the past one year. There was a slight increase in prevalence of current drinker compare to NHMS 2006 which was 11.4%. Three states with highest prevalence of consumption were Federal Territory Kuala Lumpur, Sarawak and Sabah as per demonstrated in Figure 28.

FIGURE 28
PREVALENCE OF CURRENT DRINKER, BY STATE, IN 2011



Source: Disease Control Division, MOH

Among the current drinker, the prevalence of consumption was high in male, age group between 20-24 years old and lives in urban area.

ii) Human capacity development

National Training of the trainers (TOT) on alcohol screening and brief intervention (Alcohol SBIRT) was carried out on the 10-12 July 2012 at the Avillion Admiral Cove Hotel, Port Dickson. This yearly event was jointly organized with the National Institute of Health with an objective to increase knowledge and skills on alcohol screening and intervention, as well as increasing human capacity in the field of addiction medicine in Malaysia. The target group was MOH's staff working at primary care clinic. This was the fourth TOT training on Alcohol SBIRT conducted at national level.

Apart, normally, conducted by local speakers, one training workshop on alcohol screening and intervention using Alcohol Use Disorder Identification Test (AUDIT) by international speaker was successfully conducted in September 2012. It was a collaboration effort between MOH and Kuala Lumpur World Health Organization (WHO) office. The 2-days training workshop was conducted by a guest speaker, Professor JB Saunders. He is a Professor and Consultant Physician in Internal Medicine and Addiction Medicine based in Australia. He has worked with the World Health Organization for many years and was responsible for developing the AUDIT questionnaire, and is a member of WHO's Expert Advisory Panel on Mental Health and Substance Abuse.

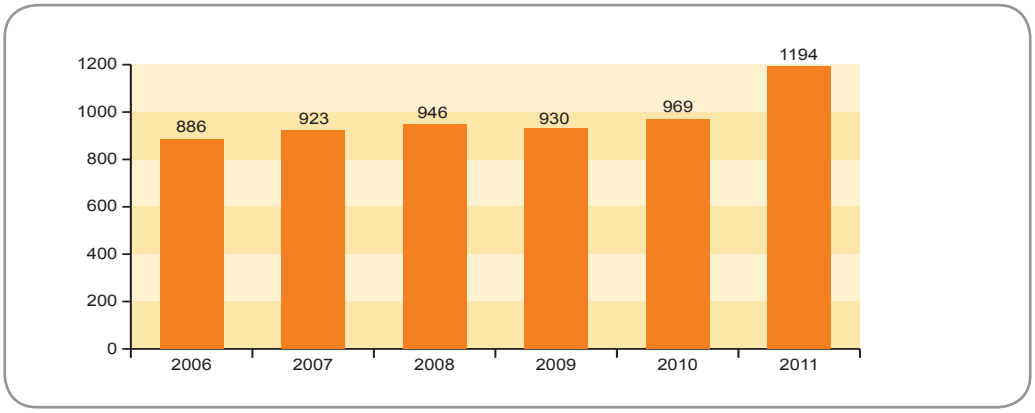
iii) Guidelines and training module development

There were two guidelines that have been developed in 2012 namely "*Garispanduan Saringan dan Intervensi Alkohol untuk Sukarelawan di Komuniti*" and "*Prosedur Operasi Piawai Pengendalian Penyalahgunaan Amphetamine dan Lain-lain Psikostimulan di Penjagaan Kesihatan Primer dan Komuniti".* Together with these guidelines, appropriate training modules were also produced to support the guidelines.

iv) Surveillance of alcohol-related harm

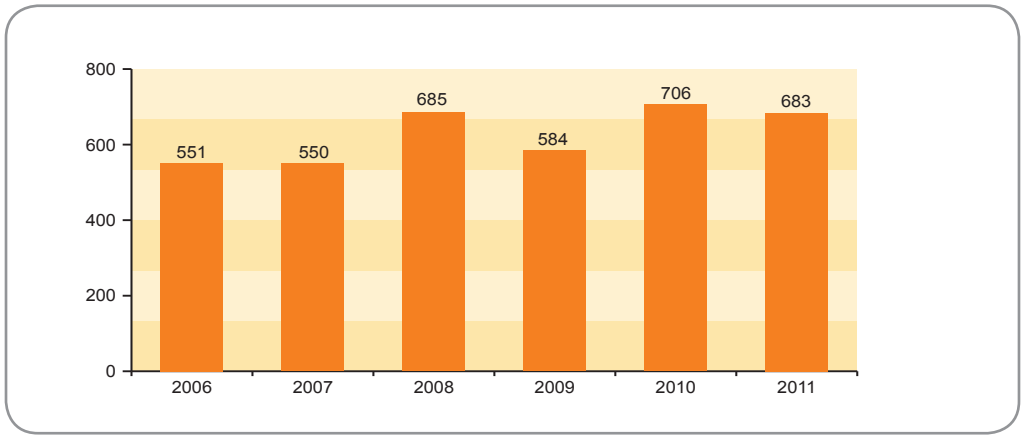
There are 3 diseases that specifically related to alcohol consumption, that are alcoholic liver cirrhosis, mental and behavioral disorder related to alcohol and also methanol poisoning. Data retrieved from admission to MOH's hospital census revealed a slight increase in the number of admission for mental and behavioral disorder related to alcohol use as per shown in Figure 29. Meanwhile no obvious trend was observed for alcoholic liver cirrhosis cases as per shown in Figure 30. Methanol poisoning in MOH's hospital shown no obvious trend was observed for the past 7 years (Figure 31). However, the cases show an increasing trend for the past three years.

FIGURE 29
MOH HOSPITAL ADMISSION DUE TO ABNORMAL MENTAL AND BEHAVIOURAL DISORDER RELATED TO ALCOHOL USE, 2006-2011



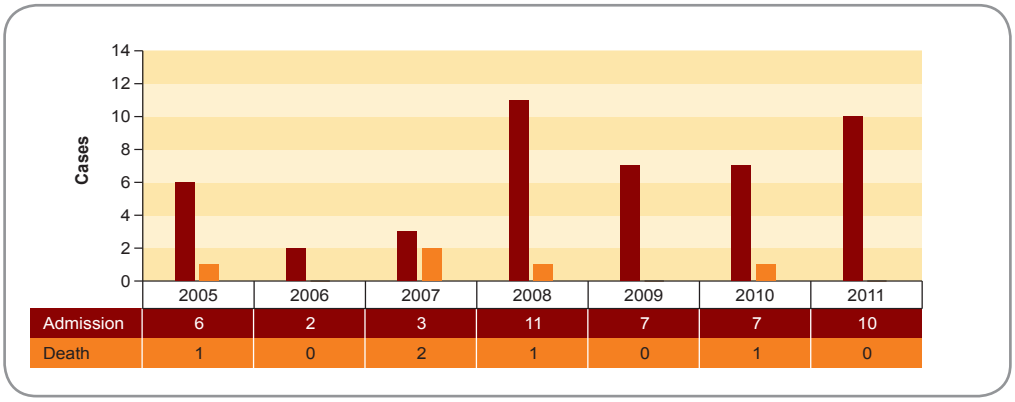
Source: Health Informatics Centre, MoH

FIGURE 30
MOH'S HOSPITAL ADMISSION DUE TO ALCOHOLIC LIVER DISEASE, 2006-2011



Source: Health Informatics Centre, MoH

FIGURE 31
MOH'S HOSPITAL ADMISSION DUE TO METHANOL POISONING, 2005-2011



	2005	2006	2007	2008	2009	2010	2011
Admission	6	2	3	11	7	7	10
Death	1	0	2	1	0	1	0

Source: Health Informatics Centre, MoH

Occupational and Environmental Health (OEH) Program

- **Occupational Health Programme**

The occupational health activities carried out by The Occupational Health Unit, Ministry of Health (OHU-MOH) throughout 2012 are as follows:

i) Occupational Disease and Injury Surveillance

a) Sharps Injury Surveillance (SIS) Among MOH Healthcare Workers

There were a total of 1,411 cases of sharps injuries notified to the Occupational Health Unit, MoH from 1 January 2012 until 14 January 2013.

Selangor recorded a higher occurrence of sharps injuries, 270 cases (19.0%), followed by Johor 162 cases (11.5%), Sarawak 149 cases (10.6%), Perak 129 cases (9.1%) and Sabah 122 cases (8.6%). The place of occurrence that contributed the largest proportion of sharps injury was the ward, 696 cases (49.3%), followed by 182 cases (12.9%) in the Operating Theatre, 135 cases (9.6%)at the Accident & Emergency Department, 103 cases (7.3%) at the

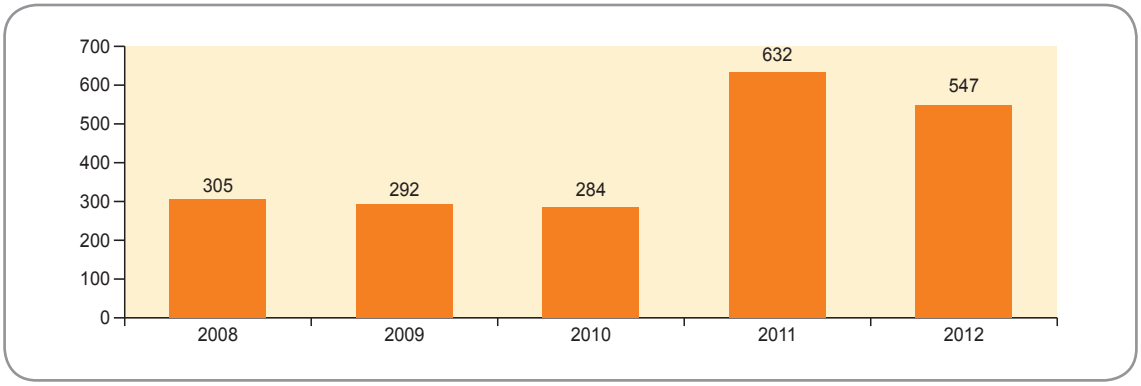
dental clinic and 62 cases (4.4%) at the health clinic or polyclinic.

The highest number of sharps injuries 482 cases (34.2%) was sustained by House Officers, followed by Staff Nurses, 239 cases (16.9%) and Trainees 134 cases (9.2%). The largest proportion of sharps injuries had occurred during Injection – IV/IM/SC with 322 cases (22.8%), followed by drawing venous blood sample 232 cases (16.4%) and suturing 192 cases (13.6%). Majority of the sharps injuries that occurred, involved needles amounting to 1,067 cases (75.6%), followed by 323 cases (22.9%) involving surgical instruments/others items and 21 cases (1.5%) involving glass items. With extensive campaigns on prevention of sharps injuries in MoH, it is hoped that there will be a decrease in the rate of sharps injury in MoH in the future. A comprehensive program that addresses institutional, behavioural, and device-related factors is essential to prevent sharps injuries and its tragic consequences among healthcare workers.

b) Surveillance of Accident and Injuries among Healthcare Workers

The total number cases of accidents and injuries reported among healthcare workers in 2012 were 547. Majority of the injuries occurred in Hospitals; 339 cases (62.0%) followed by 175 cases (32.0%) in the Health Clinics and 32 cases (5.8%) in the Dental facilities. Motor vehicle accident contributed to 196 cases (35.8%) of injuries among the health care workers followed by 79 cases (14.4%) of injuries due to falls or slips and 70 cases (12.7%) due to splash of blood or body fluids.

FIGURE 32
HEALTHCARE WORKERS ACCIDENT AND INJURIES, 2008-2012



Source: Disease Control Division, MOH

c) Surveillance of Pesticide & Chemical Poisoning

In 2012, there were 458 poisoning cases notified which is slightly higher than the figure for 2011 (365 cases). From the total of 458 cases, there were 195 (42.6%) pesticide poisoning cases and 263 (57.4%) chemical poisoning cases. Most of the pesticide poisoning cases were caused by Organophosphates with 91 cases (46.5%) followed by 59 cases (30.2%) due to Paraquat and 21 cases (10.7%) from Glyphosate. For chemical poisoning, majority of the cases were caused by Therapeutic drugs with 97 cases (36.8%), followed by 80 cases (30.4%) due to household products (eg. Clorox) and 8 cases (3.0%) from Industrial Chemicals.

d) Surveillance of Occupational Lung Diseases

They were 195 cases of occupational lung diseases notified in 2012. Majority of the reported cases were of Tuberculosis; 183 cases (93.8%), followed by 7 cases (3.5%) of occupational asthma and 2 cases (1.0%) of bronchitis. The number of TB cases among healthcare has

been increasing over the past 5 years. This could be attributed to an increased awareness in reporting occupational lung diseases due to continuous effort by the state OEH officer conducting awareness and training sessions.

e) Surveillance of Occupational skin diseases

In 2012, 71 cases of occupational skin diseases were notified compared to 76 in the previous year. Majority of the cases were due to allergic contact dermatitis, 26 cases (36.6%) followed by irritant and allergic contact dermatitis 23 cases (32.3%) and irritant contact dermatitis, 17 cases (23.9%). Since 2010 the number of cases has been decreasing. This is probably due to lack of initiative by the treating doctors to report newly diagnosed cases.

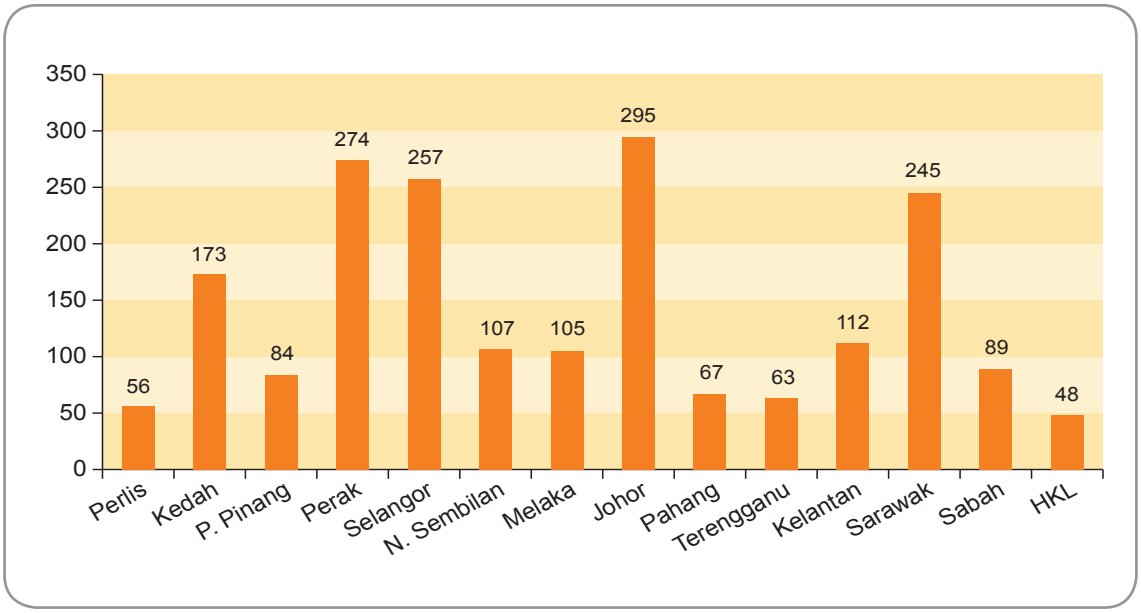
f) Surveillance of Occupational Noise Induced Hearing Loss

The notification of occupational noise induced hearing loss (NIHL) is still low with only 13 cases notified in the year 2012. Majority of the cases were either not provided with personal hearing protection devices or there were constant usage of PPE by the employees, both with 5 cases (38.5%) recorded respectively.

ii) Investigation of workplace accidents and occupational diseases

For 2012, a total of 1,982 (72.5%) cases of accidents and occupational diseases were investigated from a total of 2,735 cases notified. Sharp injury cases contributed 1182 cases (60%) of the total 1,982 cases investigated. This was followed by accidents, 575 cases (29%) and occupational diseases, 225 cases (11%).

FIGURE 33
TOTAL CASES INVESTIGATED BY STATE, 2012



Source: Disease Control Division, MOH

iii) Screening of Tuberculosis among high-risk healthcare workers

In 2012, a total of 137,025 HCW were categorized as high-risk (HR) groups of which 58,308 (42.5%) have been screened across the country through this program. From that total, 3,869 (6.6%) HCW screened showed positive results for Mantoux test. As many as 20 HCW (0.52%) were identified as positive TB from that group with Kelantan registering the highest number of HCW suffering from TB with 8 cases (40%).

TABLE 7
TB SCREENING AMONG HR-HCW, 2012

No. of High-risk HCW	137,025
No. of Screened HCW	58,308 (42.5%)
Total Mantoux Positive	3,869 (6.6%)
Total TB Positive	20 (0.5%)

Source: Disease Control Division, MOH

- **Environmental Health Programme**

i) National Service Training Centres (NS) Risk Assessment and Disease Monitoring Programme

A total of 81 National Service Training Centres (NS) camps were operational in the first session for 2012. JLKN has closed 3 camps for the 2nd and 3rd session. 2 new camps were start operating in Terengganu during the 3rd session. MOH implemented several healthcare services to ensure the health of the trainees while in the camps. The services comprised of health risk assessments of the camps, medical services and health education on HIV/AIDS.The health inspection of the NS Camps is a routine activity to ensure the sanitation and hygiene of these premises. A total of 480 health risk assessments were conducted in 2012. The number of NS camps that obtained 80% marks during the inspection before and during the training session is as shown in Table 8.

TABLE 8
HEALTH RISK ASSESSMENTS OF NS CAMPS IN 2011

	Session 1		Session 2		Session 3	
	Before	During	Before	During	Before	During
Marks>80%	49 camp (63.6%)	45 camp (64.2%)	56 camp (73.6%)	47 camp (61.8%)	44 camp (67.6%)	52 camp (77.6%)

Source: Disease Control Division, MOH

The health risk assessment objectives are to ensure the environmental sanitation and safety of the camp, in addition to avoid unnecessary incident such as accident and communicable disease outbreak. The assessment includes safety of water supply and recreation environment, vector control, assessment of kitchen camp and the dining hall and building safety and comfort. Water sampling for leptospira detection is carried out in order to ensure the safety of the pool for trainees activities.

ii) Disease Outbreaks in NS Camps in Malaysia 2012

There were 43 episodes of disease outbreaks reported from the NS camps in 2012. The highest number of outbreaks was due to Rubella (13) and followed by Influenza (12). Other disease outbreaks were food poisoning (9), Influenza Like Illness (6), Conjunctivitis (2), URTI (1) and Leptospirosis (1).

iii) Special Programs between Ministry of Health Malaysia and NS Camp Operators

On 21 June 2012, a special program between NS camp operators and MoH was held. The programs include briefing on prevention and control measure for leptospirosis disease, water treatment method for drinking water and other used such as for bathe and water for swimming activities, method for a safe pond construction, vector control (LILATI and mosquitoes), provision of food safety and kitchen, food poisoning and preparation of healthy menu.

- **Natural Disaster – Flood**

During 2012, Malaysia has been affected by flood for several times. The first episode of the floods which affected Terengganu, Kelantan, Johor and Perlis began in late 2011 on 22 November and lasted on January 16, 2012. Then the second episode began on March 6 to March 16, 2012 in the state of Selangor, Perak and Perlis. The 3rd episode of floods occurred on Nov 4 2012, on and off until January 6, 2013 in the state of Selangor, Johor, Melaka, Negeri Sembilan, Kelantan, Pahang and Terengganu. A total of 34,869 flood victims in peak time were transferred to 262 evacuation centers during the flood. The MOH had mobilised 256 teams (112 medical teams and 144 health teams) for prevention and control of diseases related to the floods. The activities include vector control activities, monitoring drinking water quality, inspection for food safety and quality and health education to the flood victims in evacuation centers. There are no healths facilities have been affected by floods in 2012. The types of diseases reported amongst the flood victims, were 1,133 infectious diseases, 1,594 non-communicable diseases and 94 injuries. Seven deaths were reported due to the floods last year.

- **Immigration Detention Depot**

There are 13 Temporary Detention Depots throughout the country. Two were temporarily closed, Depot Belantik, Sik and Depot Kemayan, Pahang. Health activities at the depot include environmental health inspection of the depot and medical treatment. Medical Officer attached to the DTS is responsible to treat inmates and cases are referred to a health clinic or Hospital nearby. In addition, the mobile medical teams visit the depot every two weeks to provide treatment and referral as required. The mobile medical team consists of health staff from the District Health Office nearby that conduct environmental health inspection of the Depot.

Out of the 13 Temporary Detention Depot (DTS), only eleven (11) units are in operation for the year 2012. From the total of eleven DTS examined, 6 (54.5%) of them have a high density of occupants i.e exceeding the capacity and congested.

The overall performance of inspection for a total of 13 DTS found out that only six depot comply with all the environmental health standards. There was no depot that fails to meet all the environmental health components. Seven depots have a score above 80% and 4 depots have a score of less than 80% environmental health assessment.

- **Prison**

There were 30 prisons in operation for the year 2012. Out of 26 prisons inspected, five prisons (19.23%) were found to have high occupant density and congested.The overall inspection for 26 prisons found out that 15 (57.7%) prisons comply with all environmental health standards and regulations and 11 prisons (42.3%) did not comply but can operate and need improvement within 3 months. There are no prisons that could not operate in the year 2012. A total of 20 (76.9%) prisons achieved a score of more than 80% while 6 (33.1%) prisons got less than 80%. No prison reported to have sore less than 50%.

- **Involvement Of Environmental Health Unit (EHU) In Lynas Advanced Materials Plant (LAMP) Issues**

Lynas (M) Sdn. Bhd. is a subsidiary of Lynas Corporation Limited (Australia) involving in rare earth extraction by means of chemical process in Gebeng Industrial Area, Kuantan, Pahang. In full operating capacity, the chemical plant would be able to process 80,000 tonne per annum lanthanide concentrate from MountWeld. West Australia. The concentrate will be processed to obtain the rare earth (lanthanide carbonate) for high technology industries such as hybrid cars, powerful magnets for wind turbine dynamo, light emitting diode for smartphones and energy saving light bulbs in the export market. However, a residue from the process contains 0.165% thorium, which is considered having very low radioactivity. The presence of naturally occurring radioactive materials (NORMs) in the

residue raised some concerns among the public, especially after the Fukushima nuclear power plant incident in March 2011. The Environmental Health Unit (EHU) had been involved in meetings chaired by Honourable Minister of Health, as well as high level meetings involving four ministers, namely Honourable Minister of International Trade and Industries (MITI), Honourable Minister of Science, Technology and Innovation (MOSTI), Honourable Minister of Natural Resources and Environment (NRE) and Honourable Minister of Health.

EHU also was involved in various committees such as Panel of Expert Committee Assessment of LAMP Temporary Operating Licence (TOL) application (Atomic Energy Licencing Board, AELB as secretariat), Parliamentary Select Committee (PSC), Radioactive Waste Management Subcommittee (AELB as secretariat), Public Consultation Committee (AELB as secretariat), Enforcement Coordination Committee (Kuantan City Council as secretariat), as well as taking part in the community engagement and meetings with Chinese media and community (MITI as secretariat). The involvement of EHU in LAMP issue will be well continued many years in the future.

HEALTH SURVEILLANCE PROGRAMMES

International Health Surveillance Program

- **Implementation of International Health Regulations (IHR) 2005**

Monitoring of the IHR 2005 implementation at the Points of Entry, District Health Office, State Health Department and Ministry of Health was done throughout the year for 2012 and evaluation on the IHR 2005 implementation status was done on yearly basis. The International Health Sector prepares the annual evaluation report of IHR 2005 implementation status which was based on the World Health Organization (WHO) framework. This evaluation report will be sent to WHO once a year for compilation and analysis, as well as to share this achievement among WHO Member States.

- **Training Course in IHR 2005**

The IHR 2005 course is held twice a year for District Heath Officers, Epidemiologists, Environmental Health Officers and Assistant Environmental Health Officers. For the year 2012, it was held on 2nd to 5th May 2012 and 6th to 8th November 2012.

- **International Health Collaboration**

In 2012, the International Health Sector cooperates with the Policy and International Relations Division, Ministry of Health, Malaysia as Secretariat for several meetings, such as;

i. The 4th Bilateral Technical Working Group Meeting in Health Between Brunei Darussalam and Malaysia on 13-14 March 2012 at Centrepoint Hotel, Brunei Darussalam;
ii. The 7th Senior Officials Meeting on Health Development (SOHMD) on 26-28 March 2012 at Cebu,Philippines;
iii. The 2nd ASEAN Plus Three Senior Officials Meeting on Health Development (ASEAN Plus Three SOMHD) on 26-28 March 2012 at Cebu, Philippines;
iv. The 2nd ASEAN-China Senior Officials Meeting on Health Development (ASEAN China SOMHD) on 30 March 2012 at Cebu, Philippines;
v. The 65th World Health Assembly on 21-26 May 2012, Geneva Switzerland;
vi. The 6th Bilateral Health Minister Meeting between Brunei Darussalam and Malaysia on 25-26 June 2012;
vii. The 63rd Session of The World Health Organization Regional Committee Meeting For Western Pacific on 24-28 September 2012 at Hanoi, Vietnam;
viii. The 16th Public Health Conference - Brunei Darussalam, Indonesia, Malaysia, Singapore and Thailand (BIMST) on 18-19 December 2012 at Chiang Mai, Thailand;
ix. Technical Working Group Meeting on Health between Malaysia and Thailand on 20- 21 December 2012 at Chiang Mai,Thailand.

- **Travel Advisory**

The International Health Sector prepares and reviews the **Travel Advisory** information which has been uploaded in the Ministry of Health's **MyHEALTH Portal** at the URL**: myhealth.gov.my.** In addition, the International Health Sector provides technical advice to the public on Travel Health enquiries through the MyHEALTH Portal.

- **Monitoring of International Points of Entry**

The International Health Sector monitors the public health activities that are routinely done at the International Points of Entry in Malaysia. The activities include; i) Communicable Disease Control, ii) Surveillance, Assessment and Response, iii) Public Health Emergency Preparedness, iv) Monitoring on activities of Importation and Exportation of Human Remains, Human Tissues, Microorganism and Pathogenic Substances and etc, v) Vector Control, vi) Food Safety and Quality Control, vii) Environmental Sanitation, viii) Safe water supply, ix) Enforcement of inspectorate and laws, x) Non-communicable Disease Control, xi) Health Promotion, xii) Occupational Safety and Health and xiii) Others.

- **Points of Entry Supervisory Visits**

For 2012, supervisory visits were made to ten (10) Points of Entry to monitor the implementation of IHR 2005 requirements as stated in Table 9.

TABLE 9
SUPERVISORY VISITS TO INTERNATIONAL POINTS OF ENTRY, 2012

No.	Points of Entry	Date of Visit
1.	*Pintu Masuk Darat Rantau Panjang, Kelantan*	19 June 2012
2.	*Pelabuhan Labuan, WP Labuan*	26 June 2012
3.	*Pelabuhan Bintulu, Sarawak*	3July 2012
4.	*Pelabuhan Kuantan, Pahang*	16 July 2012
5.	*Pelabuhan Tanjung Pelepas, Johor*	18-19 July 2012
6.	*Pelabuhan Pasir Gudang, Johor*	
7.	*Pintu Masuk Darat Link Kedua, Johor*	
8.	*Lapangan Terbang Senai, Johor*	
9.	*Lapangan Terbang Pulau Langkawi, Kedah*	29 August 2012
10.	*Lapangan Terbang Subang, Selangor*	14 October 2012

Source: Disease Control Division, MOH

- **Screening of Travellers Arriving from Countries with Risk of Yellow Fever Transmission**

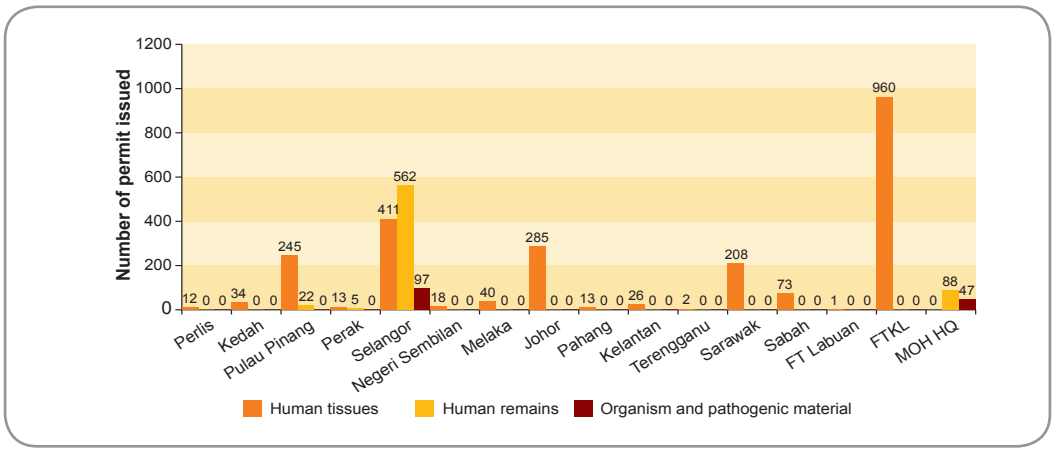
In 2012, 30,093 travellers from countries with risk of yellow fever transmission were screened at Malaysia's International Points of Entry. A total of 29,988 travellers (99.7%) had valid yellow fever certificate, whilst there were 91 (0.3%) whom are quarantined and 12 travellers were put on health surveillance.

- **Importation and Exportation of Human Remains, Human Tissues, Pathogenic Organisms and Substances**

In 2012, 2,973 import/export permits have been issued for human remains or any part of it, human tissues or any part of it and pathogenic organisms and material or any part of it. There were 2,338 import/export permits issued for human remains or any part of it, 506 import/export permits for human tissues or any part of it and 129 import/export permits for organism and pathogenic material or any

part of it. Figure 34 below shows the distribution of import/export permits for human remains, human tissue, pathogenic organisms and material or any part of it for 2012 according to the states in Malaysia.

FIGURE 34
DISTRIBUTION OF IMPORT/EXPORT PERMITS FOR HUMAN REMAINS, HUMAN TISSUE, ORGANISM, PATHOGENIC MATERIAL OR ANY PART OF IT, BY STATE, 2012



Source: Disease Control Division, MOH

- **Pilgrims' Health**

In 2012, there were 25,121 Malaysian pilgrims who went for Hajj to the Holy Land, Mecca. The pilgrims would be in the Holy Land within an average of 40 to 45 days. They then stayed in Madinah and Mecca while waiting for the *wukuf* on 25th October 2012.There were 261 staff from Ministry of Health Malaysia who accompanied the Tabung Haji staff to Madinah, Mecca and Jeddah during the pilgrimage hajj season who were responsible to handle all the health issues of the pilgrims at the Holy Land.

71,593 pilgrims had received outpatient treatment at the medical facilities in the Holy Land during 1433H which showed a decrease of 10,462 (14.61%) compared to the previous year (1432H). The age group of 50 to 59 has the highest outpatient attendances with 25,816 pilgrims (36%), meanwhile the age group of less than 30 has the lowest outpatient attendances with 910 (1.3%) pilgrims. The 5 most common diseases for the outpatient attendances were: chest diseases, 54,055 patients (74.6%), musculo-skeletal diseases, 3,158 patients (4.48%), gastrointestinal diseases, 2,362 patients (3.29%), metabolic disorder 1582 (2.2%), ear,nose & throat diseases, 1,566 patients (2.18%). There were 1112 pilgrims who had been admitted to hospital in 2012.This data shows an increase of 81 pilgrims (107.8%) compared to the previous year (1432H/2012M Hajj). The hospitals/ treatment centers were i) Syisyah Treatment Centre, ii) Madinah Treatment Centre, iii) Aziziah Hospital, iv) Al Janadiriah Clinic, v) Madinatul Hujjaj Clinic.

- **Foreign Workers' Medical Examination**

In 2012, 1,361,228 foreign workers were screened. Table 10 shows distribution of foreign workers by twelve top source countries who underwent FOMEMA screening.

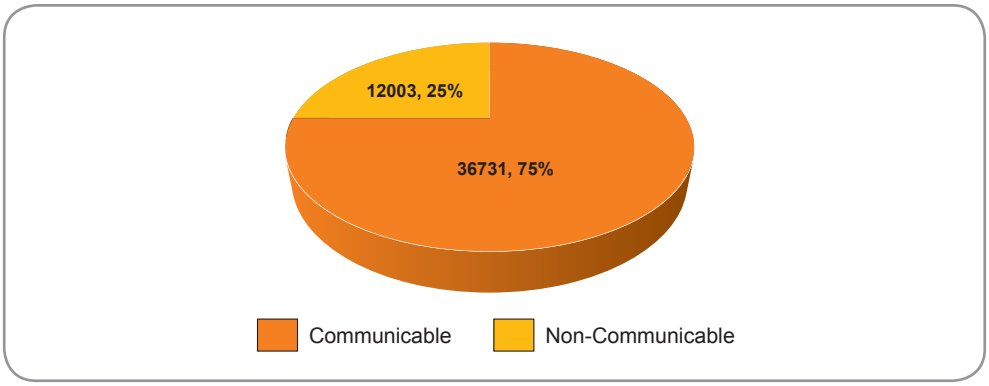
TABLE 10
DISTRIBUTION OF 12 TOP SOURCE COUNTRIES OF FOREIGN WORKERS UNDERWENT MEDICAL EXAMINATION

No	Countries	Number screened	Percentage (%)
1	Indonesia	514,719	37.8
2	Nepal	291,856	21.4
3	Bangladesh	219,710	16.1
4	Myanmar	132,315	9.72
5	India	68,032	4.99
6	Vietnam	47,397	3.48
7	Philippines	28,505	2.09
8	Pakistan	25,722	1.88
9	Cambodia	21,059	1.54
10	Sri Lanka	5,767	0.42
11	Thailand	3,228	0.23
12	China	2,720	0.19

Source: Disease Control Division, MOH

From this screening, 48,734 (3.58%) foreign workers were found to be "unsuitable" to work in Malaysia, with 36,731 cases (75.3%) of communicable diseases and 12,003 (24.6%) of non-communicable diseases. The number of unsuitable cases is higher compared to last year (2011) which was 24,416 (2.16 %).

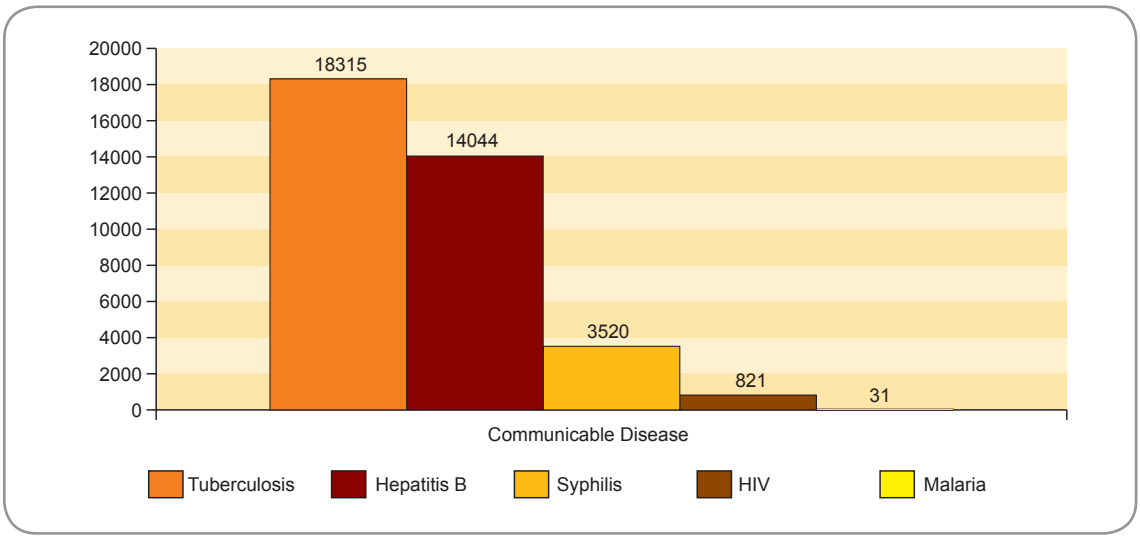
FIGURE 35
DISTRIBUTION OF COMMUNICABLE AND NON COMMUNICABLE DISEASES AMONG FOREIGN WORKERS IN 2012



Source: Disease Control Division, MOH

Tuberculosis (abnormal chest X-ray findings) was the most common disease for communicable disease with 18,315 cases (37.6%), followed by hepatitis B with 14,044 cases (28.8%); syphilis with 3,520 cases (7.22%); HIV with 821 cases (1.68%) and malaria with 31 cases (0.06%).

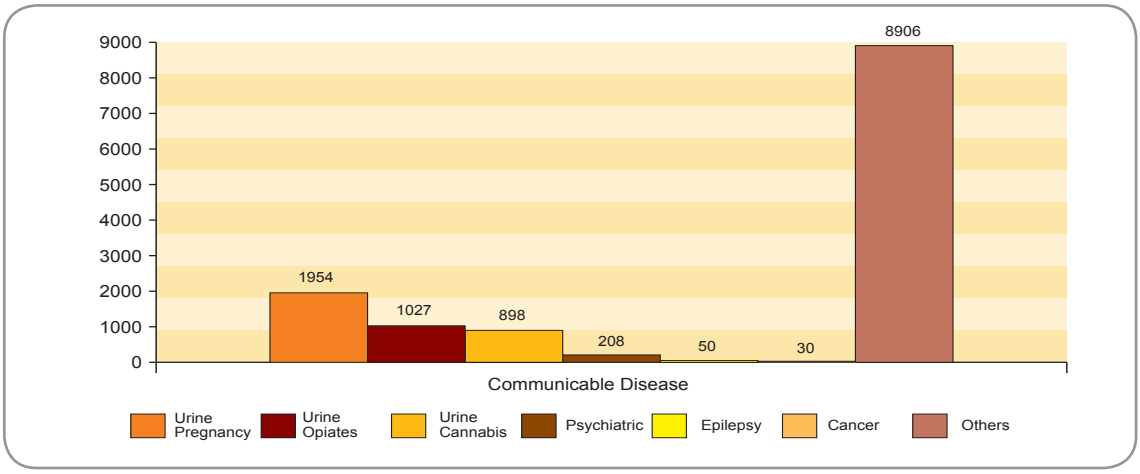
FIGURE 36
DISTRIBUTION OF FIVE MOST COMMON COMMUNICABLE DISEASES AMONG FOREIGN WORKERS IN 2012



Source: Disease Control Division, MOH

As for non-communicable diseases, chronic diseases was the most common disease found with 1,954 (4%) cases positive for urine pregnancy test followed by 1,027 cases (2.1%) positive for urine opiates and 898 cases (1.84%) positive for urine cannabis, 208 cases (0.4%) with psychiatric diseases, 50 cases (0.1%) of epilepsy and 30 cases (0.06%) with cancer.

FIGURE 37
DISTRIBUTION OF FIVE MOST COMMON NON COMMUNICABLE DISEASES AMONG FOREIGN WORKERS IN 2012



Source: Disease Control Division, MOH

Diseases Surveillance Program

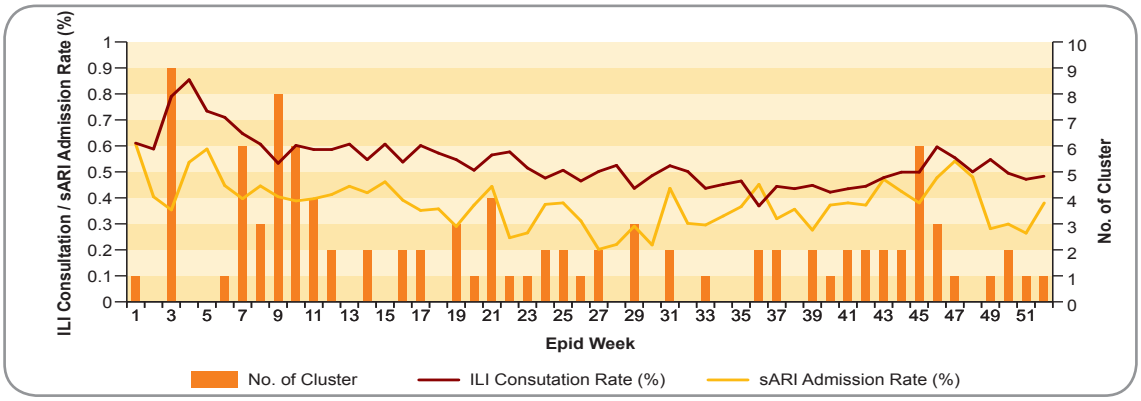
- **Influenza Surveillance Programme**

The Malaysia Influenza Surveillance System (MISS) was started in September 2003 following an influenza outbreak involving a few boarding schools in the same year. Under the Malaysia Influenza

Surveillance System (MISS), the disease-based surveillance collected the influenza-like illness (ILI) data from identified sentinel sites, which mostly consist of outpatient departments of the government health clinics.

In 2012, the baseline activity for ILI consultation rate, range between 0.4 to 0.6% and the peak activity was recorded on 4th Epid Week of 2012 (i.e. 0.86%). Whereas, for sARI admission rate, the baseline activity range between 0.2 to 0.4% with the peak activity recorded on 5th Epid Week of 2012 (i.e. 0.59%). In summary, the ILI consultation rate and the sARI admission rate of 2012 were 0.54% and 0.38%, respectively. Throughout 2012, various peaks were captured for the respiratory-associated outbreaks / clusters reported nationwide. The three (3) main peaks occurred on 3rd, 9th and 45th Epid Week of 2012.

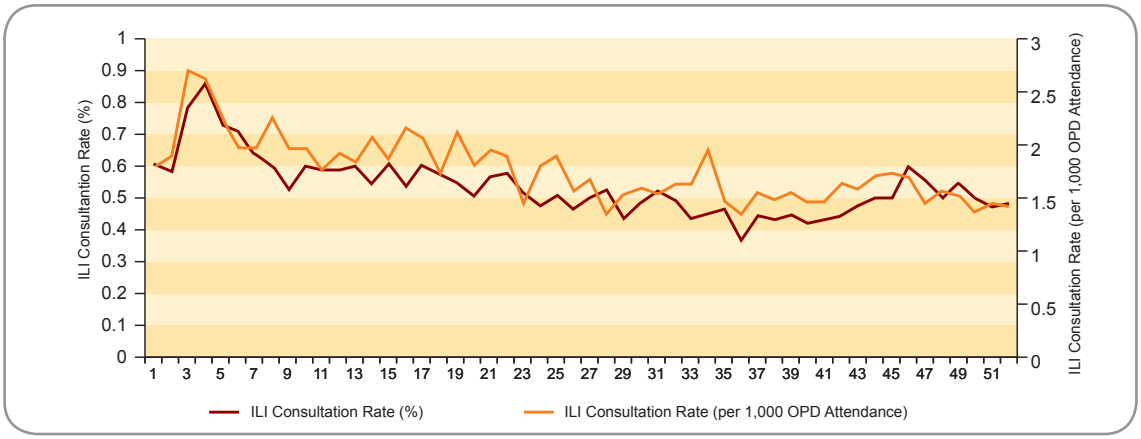
FIGURE 38
INFLUENZA ACTIVITY IN MALAYSIA, BY EPID WEEK, 2012



Source: Disease Control Division, MOH

Clinical-based surveillance for ILI comprises of both the daily data (i.e. reported by the State Health Departments directly to the National H1N1 Operation Room) and the weekly data (i.e. reported by the State Health Departments to the Disease Surveillance Sector). The number of sentinel sites participating in both systems varies. Therefore, different denominator was used. However, data accumulated from both systems were comparable to each other, as shown in Figure 39.

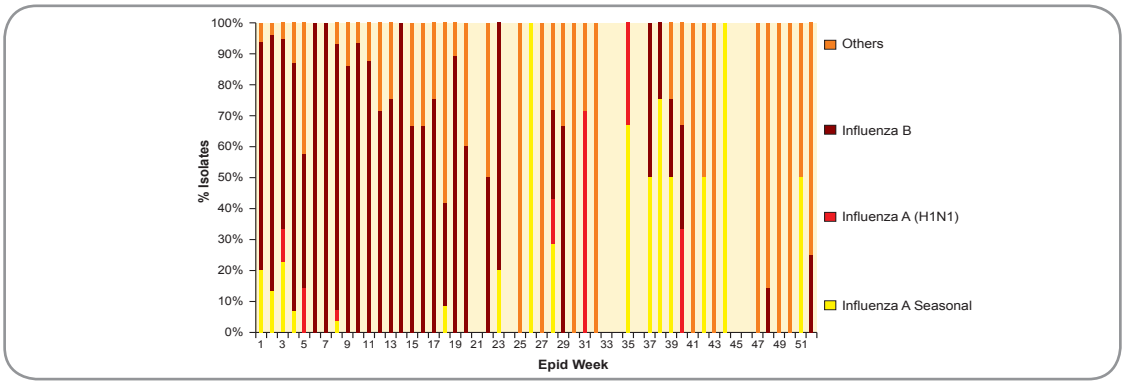
FIGURE 39
ILI CONSULTATION RATE (%) RECORDED BY THE NATIONAL H1N1 OPERATION ROOM DAILY VERSUS ILI CONSULTATION RATE (PER 1,000 OPD ATTENDANCES) REPORTED WEEKLY BY THE SENTINEL SITES, BY EPID WEEK, 2012



Source: Disease Control Division, MOH

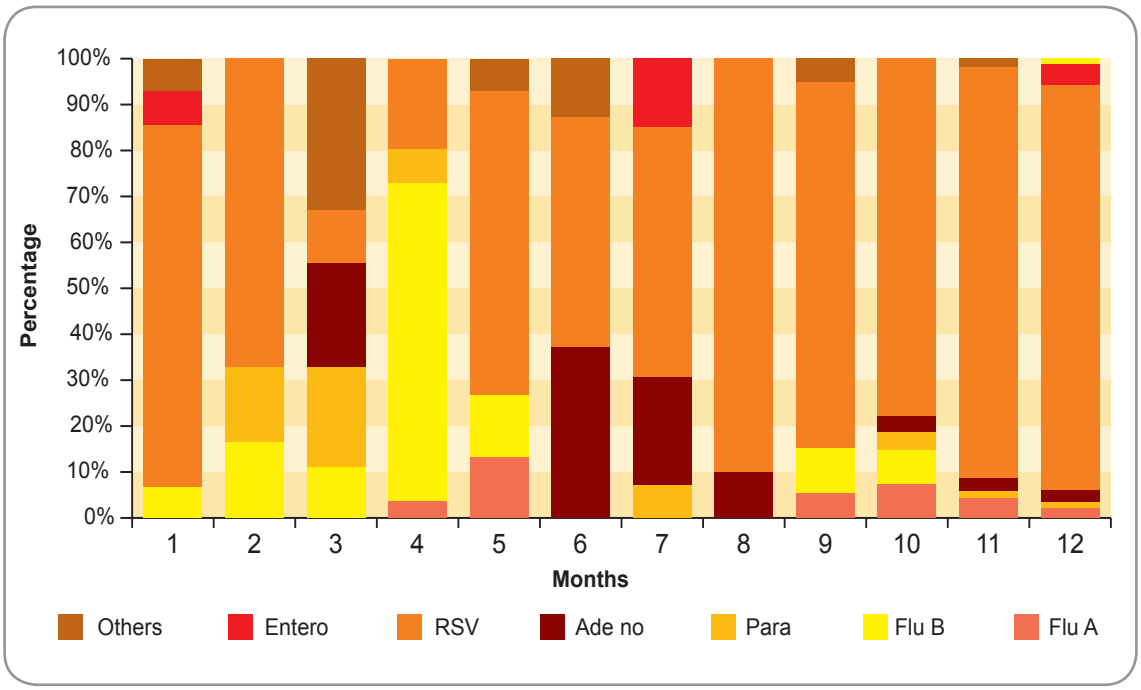
In 2012, a total of 4,265 clinical specimens from ILI cases were collected under the Laboratory-Based Surveillance of MISS and out of this, 310 (3.7%) positive isolates were retrieved (Figure 3). Distributions of the isolated viruses were as follows; 201 isolates for influenza B, 41 isolates for influenza A, 33 isolates for adenovirus, 25 isolates for others (i.e. herpes simplex 1, coxsackie B and coxsackie A16), 6 isolates for enterovirus, 3 isolates for para-influenza and 1 isolate for RSV.

FIGURE 40
LABORATORY-BASED SURVEILLANCE OF ILI IN THE NATIONAL PUBLIC HEALTH LABORATORY (NPHL) SUNGAI BULOH, BY EPID WEEK, 2012



Source: Disease Control Division, MOH

FIGURE 41
LABORATORY-BASED SURVEILLANCE OF SARI IN THE INSTITUTE OF MEDICAL RESEARCH (IMR), BY MONTHS, 2012



Source: Disease Control Division, MOH

In 2012, a total of 1,401 clinical specimens from sARI cases were sent to the Institute of Medical

Research (IMR) and out of this, 294 (21%) positive isolates were retrieved (Figure 41). Distributions of the isolated viruses were as follows; 217 isolate for RSV, 27 isolates for influenza B, 14 isolates for adenovirus, 11 isolates for influenza A, 9 isolates for para-influenza, 9 isolates for others (i.e. herpes simplex 1, coxsackie B3 and coxsackie B5) and 7 isolates for enterovirus. The influenza virus isolated by the Institute of Medical Research (IMR) was then sent to the WHO Collaborating Centre for Reference and Research on Influenza at the Victorian Infectious Diseases Reference Laboratory (VIDRL) in Melbourne for sub-typing. The cumulative result of the sub-typing done in 2012 is shown in Table 11.

TABLE 11
RESULT OF SUB-TYPING OF INFLUENZA VIRUS, BY MONTH, 2012

Month	No. of samples received	Influenza A (H3N2)	Influenza A (H1N1)	Virus Influenza A (Subtyping Result Pending)	Influenza B
January	50			0	1 B/Brisbane/60/2008-like
February	62			0	1 B/Brisbane/60/2008-like
March	69			0	1 B/Brisbane/60/2008-like
April	140		1 A/California /7/2009-like	0	1 B/Brisbane/60/2008-like 1 B/Wisconsin/1/2010-like 11 Pending
May	105	1 A/Victoria/361/2011-like		0	1 B/Brisbane/60/2008-like 1 B/Wisconsin/1/2010-like 1 Pending
June	123			0	0
July	93			0	0
August	94			0	0
September	97		1 A/California /7/2009-like	0	2 Not Recovered
October	103	2 A/Victoria/361/2011-like	1 Not Recovered	0	1 B/Wisconsin/1/2010-like
November	248			0	0
December	217			1	0
Total	**1,401**	**3**	**3**	**1**	**27**

Source: Institute for Medical Research (IMR), MOH

Outbreak and Disaster Management Program

- **Specific Activation of Operations Room in 2012**

In 2012, those two Operations Room [Dengue and Influenza A (H1N1)] remain activated, whereas the Flood Operations Room was activated twice during the year.

- **Dengue Operations Room**

From 10 May 2007 to date, on the instructions of the Director of Disease Control, the Dengue Operations Room under Vector Control was transferred to the Command Centre placed under the national CPRC. Daily activity monitoring is done in collaboration with the Vector Control Sector of the Disease Control Division. Daily activity reports are being issued to date.

- **Influenza A(H1N1) Operations Room**

In 2012, a total of 266 cases of H1N1 with 13 deaths were reported to the CPRC as in shown in Table 12. In 2012, a total of H1N1 case clusters were reported to the CPRC as seen in Table 13.

TABLE 12
DISTRIBUTION OF H1N1 CASES REPORTED TO THE CPRC IN 2012

State	Cases	Percentage (%)	Deaths	Percentage (%)
Perlis	0	0	0	0
Kedah	16	6.02	0	0
Pulau Pinang	68	25.56	2	15.38
Perak	25	9.40	1	7.69
Selangor	67	25.19	4	30.78
FT KL & Putrajaya	2	0.75	1	7.69
Negeri Sembilan	9	3.38	0	0
Melaka	17	6.39	1	7.69
Johor	4	1.50	3	23.08
Pahang	8	3.01	0	0
Terengganu	21	7.89	0	0
Kelantan	14	5.26	0	0
Sarawak	6	2.26	0	0
Sabah	9	3.38	1	7.69
FT Labuan	0	0	0	0
Total	**266**	**100**	**13**	**100**

Source: Disease Control Division, MOH

TABLE 13
H1N1 CASE CLUSTERS REPORTED TO THE CPRC IN 2012

State	Clusters	Percentage (%)
Perlis	0	0
Kedah	4	4.04
Pulau Pinang	5	5.05
Perak	19	19.19

State	Clusters	Percentage (%)
Selangor	9	9.09
FT KL & Putrajaya	0	0
Negeri Sembilan	4	4.04
Melaka	19	19.19
Johor	15	15.15
Pahang	6	6.06
Terengganu	8	8.08
Kelantan	3	3.03
Sarawak	2	2.02
Sabah	5	5.05
FT Labuan	0	0
Total	**99**	**100**

Source: Disease Control Division, MOH

- **Flood Operations Room**

The Flood Operations Room was activated on 2 November 2010 following the directive of the Director of Disease Control following subsequent to the floods occurring in Perlis and Kedah. Several districts were affected and Flood Relief Centres were operational to house the local affected population. This was done in collaboration with the Occupational and Environmental Health Sector of the Disease Control Division. The National Operations Rooms under the CPRC began active to assist in coordinating relief management together with daily counter measures to control and monitor the disease situation.

The Flood Operations Room was activated twice in 2012. The annual flood involved 10 states with 341 flood relief centres and 38,521 victims affected as reported to the CPRC. There were 167 (49.0%) flood relief centres operated in Terengganu with 20,558 (53.37%) victims; Kelantan with 68 (19.9%) centres and 7,396 (19.20%) victims; Johor with 26 (7.6%) centres and 2,023 (5.25 %) victims; Pahang with 22 (6.5%) centres and 3,513 (9.12%) victims; Selangor with 22 centres (6.5%) and 2,970 (7.71%) victims; Malacca with 18 centres (5.2%) and 576 (1.50%) victims; Perak with 10 (2.9%) centres and 737 (1.91%) victims; Perlis with 4 centres (1.1%) and 653 (1.70%) victims; Negeri Sembilan with 3 (0.9%) centres and 90 (0.23%) victims; and Sarawak with 1 (0.3%) centres and 5 (0.01%) victims. These are represented in Table 14.

TABLE 14
TOTAL NUMBER OF FLOOD RELIEF CENTRE AND AFFECTED VICTIMS NATIONWIDE, 2012

State	Flood Relief Centres	Percentage (%)	Victims	Percentage (%)
Terengganu	167	49.0	20,558	53.37
Kelantan	68	19.9	7,396	19.20
Johor	26	7.6	2,023	5.25
Selangor	22	6.5	2,970	7.71
Pahang	22	6.5	3,513	9.12
Melaka	18	5.3	576	1.50
Perak	10	2.9	737	1.91
Perlis	4	1.1	653	1.70

State	Flood Relief Centres	Percentage (%)	Victims	Percentage (%)
Negeri Sembilan	3	0.9	90	0.23
Sarawak	1	0.3	5	0.01
Total	**314**	**100**	**38,521**	**100**

Source: Disease Control Division, MOH

- **Surveillance "On-Call"**

i) Public Health Surveillance On-Call System

The Public Health Surveillance On-Call System at the MOH Headquarters began in 2007 on the initiative of the Infectious Disease Surveillance Unit. The weekly On-Call schedule is based on the CPRC issued Epidemiological Week list and the On-Call duty officer is provided with a dedicated hand phone which is rotated among the identified public health medical officers on duty. The System functions to obtain information and data regarding any event-based case incidents occurring at the district level. The information is gathered by the local investigation conducted which is in turn transmitted to the officers on duty at the State level.

At the State office, all information is verified and validated by the Surveillance On-Call Epidemiological Officer who in turn transmits the information to the National Officer by texting, emails or facsimiles. The CPRC will receive the verified information from the State and send to the related Sector Heads and the Director of Disease Control via salient message. The Director of Disease Control, when necessary will communicate the relevant information to the Deputy Director-General of Health (Public Health) and the Director-General of Health Malaysia.

ii) E-Wabak Incident Report

In 2012, a total of 2,903 infectious disease incidents/outbreaks were reported to the E-Wabak system. Out of the 2,903 reported events, 1,919 (66.10%) related to Hand Food and Mouth Disease (HFMD); 461 (15.88%) were food poisoning events; 127 (4.37%) were that of Measles; Others category accounted for 105 (3.62%); 91 (3.13%) of Influenza-like-illness (ILI) cases; 44 (1.52%) were AGE; 43 (1.48%) of Cholera; 40 (1.38%) of Rubella; 28 (0.96%) of Leptospirosis; 18 (0.62%) of Malaria; 16 (0.55%) of URTI; and 11 (038%) of Hepatitis. There were no incidents or cases reported related to Fire/Landslide, Conjunctivitis, Chicken Pox, Syndromic notification, Adenoviral infection, Meningitis, Chikungunya and Typhoid.

- **Training and Simulation**

i) Training in management of public health crisis/emergency incidents

The Sector coordinated and facilitated the logistical arrangements for MOH participants in the following 15 related training programmes organised by various parties:-

a. ***CBRN First Responder Training Programme Course***, Hotel Renaissance, Kuala Lumpur, 5-8 March 2012 (Funding: SEARCCT, KLN)
b. ***Chemical Biological Radiological And Explosives (CBRN) Forum at 13th Defence Services Asia 2012***, 18 April 2012, PWTC Kuala Lumpur, Malaysia (MOD, Malaysian Armed Forces, Royal Malaysian Police, DSA Exhibition & Conference Sdn Bhd) (Funding: Govt of Malaysia)
c. ***Bengkel dan Forum Kesedaran Rang Undang-Undang Konvensyen Senjata Biologi Dan Toksin (RUU KSBT) Siri I Tahun 2012***, 25 Jun 2012, Stride Main Complex, Kajang (Funding: STRIDE, MOD)
d. ***Symposium On Enhancing Cooperation Of Medical Rapid Response Teams In Case Of International Disaster Responses In APEC Economies***, 30 June-1 July

2012, Siberia, Russia (APEC In Cooperation with Ministry of Public Health & Social Development of The Russian Federation & Federal Medical & Biological Agency (The FMBA Of Russia): (Funding: Initial Self With Later Reimbursement)

e. ***Meeting Of Experts (MXP) Biological Weapons Convention (BWTC)***, 16-20 July 2012, Geneva, Switzerland
f. ***Health Emergencies In Large Populations (HELP) Course In Honolulu***, 16-27 July 2012, Honolulu, Hawaii, USA (Funding: US Embassy / MOH)
g. ***Comprehensive Crisis Management (CCM) Course 12-1***, 16 August - 18 September 2012, Honolulu, Hawaii, USA (Funding: US Embassy)
h. ***Asia-Pacific Multilateral Pandemic Preparedness, Response And Recovery Conference; Optimizing Collaborative Regional Health Responses In Natural Disasters And Complex Emergencies***, 27-31 August 2012, Jakarta, Indonesia (Funding: US Embassy KL)
i. ***ASEAN Regional Forum (ARF): Workshop On Preparedness And Response To A Biological Event,*** 5-7 Sept 2012, Manila, Republic Of The Philippines (Govt Of Philippines, Govt Of Australia/ Govt Of United States) (MOH Funding)
j. ***CBRN First Responder Training Programme Course***, 18-21 September 2012, Hotel Riverside Majestic, Kuching, Sarawak (Funding: SEARCCT, KLN)
k. ***Program Latihan Serantau Crisis Management On Post-Hazmat/Terrorist Attack Situation***, 30 October - 1 November 2012, Hotel Sunway Putra, Kuala Lumpur (Funding: SEARCCT/ MKN / Embassy of France, KL)
l. ***Bengkel Kesedaran Rang Undang-Undang Konvensyen Senjata Biologi Dan Toksin (RUU KSBT) Siri II 2012***, 5 November 2012, Stride Main Complex, Kajang (Funding: STRIDE, MOD)
m. ***Workshop On The Chemical, Biological, Radiological And Nuclear Centre Of Excellence (COE)*** – European Union *(EU) Project,* 21 November 2012, Auditorium Wisma Putra 1, Bangunan WPKL, Kementerian Luar Negeri (Funding: SEARCCT/ MKN / Embassy Of France Kuala Lumpur)
n. ***Terrorism Crime Scene Investigations Course,*** 26-30 November 2012, Hotel Best Western, Kuala Lumpur (Funding: SEARCCT/ High Commission of New Zealand, Kuala Lumpur)
o. ***Eksesais Malaysia-France Humanitarian Assistance And Disaster Relief 2012*** (Malfran Hadr Cpx 2012) 17-21 Disember 2012, Pusat Peperangan Bersama (Pesama), Ministry of Defense, Jalan Padang Tembak Kuala Lumpur (Funding: Markas Angkatan Tentera Malaysia / Angkatan Tentera Perancis)

ii) Simulation Exercises for public health incidents

The Sector has captured 69 simulation exercises nationwide which was conducted at state and district levels.

- **Other Involved or Committed Activities**

i) Chemical-Biological-Radiological-Nuclear-explosives (CBRNe) related activities

a) Compliance to the Biological and Toxin Weapons Convention (BTWC)
   - Malaysian Draft BTWC Bill
   - Confidence-Building Measures (CBMs)
   - Drafting of Biorisk Management Policy (MOH)

b) Strategic Trade Act 2010 - Appointed Member of National Inter Agency Action Committee coordinated by Ministry of International Trade and Industry (MITI) as National Focal Point

c) Chemical Weapons Convention (CWC) coordinated by Wisma Putra as National Focal Point.

d) Issues related to State Party compliance to United Nations Security Council Resolution (UNSCR) 1540
e) Biosurveillance for multi hazard detection and response (Ministry of Science, Technology and Innovation (MOSTI-National Focal Point)
f) Waasenaar Arrangement (coordinated by Wisma Putra-National Focal Point)
g) Discussions with Cooperative Biological Engagement Program (CBEP), Defense Threat Reduction Agency (DTRA), Dept of Defense, United States of America (coordinated by STRIDE, Ministry of Defence-National Focal Point)

i) Malaysia-European Union Negotiations (currently 6th round), coordinated by Ministry of Foreign Affairs (Wisma Putra-National Focal Point)

ii) Convention on Biological Diversity (CBD), coordinated by Ministry of Natural Resources and Environment (NRE-National Focal Point)

a) Biosafety Act coordinated by NRE (related to LMOs)
b) Draf Rang Undang-Undang Akses Kepada Sumber Biologi dan Perkongsian Faedah (RUU ABS)
c) Appointed Member of the Interagency Permanent Committee on Biosafety

- **ASEAN Risk Communication Resource Centre (ASEAN RCRC)**

Malaysia as the lead country in risk communication in ASEAN has succeeded in leading the region towards strengthening risk communication for emerging infectious diseases which is consistent with the International Health Regulations (IHR) 2005 and the Asia Pacific Strategy on Emerging Diseases (APSED) through series of workshops in Year 2008-2009. Following this achievement and in line with the ASEAN Socio-Cultural Community work plan, and in recognition of risk communication as one of the key strategic areas of APSED, the ASEAN Member States made a recommendation requested Malaysia, a proponent of this initiative to establish the ASEAN RCRC. This project is under the purview subsidiary body ASEAN Expert Group on Communicable Disease (AEGCD) and is under ASEAN Medium Term Plan on Emerging Infectious Diseases (2012-2015). The proposal of ASEAN RCRC was endorsed at the 10th ASEAN Health Minister Meeting (AHMM), Singapore, July 2010. ASEAN RCRC is established and mandate defined at 7th Senior Official Meeting on Health Development (SOMHD) Plus Three, Philippines, 26-30 March 2012. The overall goal of ASEAN RCRC is to enable the public of ASEAN Member States to be more informed of the dangers and impacts of potential infectious diseases and empower them to make the appropriate informed decisions. The general objective of the centre is to establish a central capacity within ASEAN to provide leading edge research, training and consultation in Emerging Infectious Disease risk communication.

FAMILY HEALTH DEVELOPMENT

MATERNAL HEALTHCARE AND FAMILY PLANNING SERVICES

Maternal Healthcare

The estimated number of pregnant mothers for Malaysia increased from 565,072 in 2011to 580,536 in 2012 (Table 15). This made the antenatal coverage slightly reduced from 97.3% in 2011 to 96.5% in 2012, although the number of antenatal mother has increased. The improvement of total mother received antenatal care could be due to better compilation of data from non public health facilities. The average number of antenatal visits by a pregnant mother slightly increased from 9.8 in 2011 to 10 in 2012. Tetanus toxoid immunization coverage for antenatal mothers has increased from 91.8% in 2011 to 92.44% in 2012. Postnatal coverage also has slightly improved from 98% in 2011 to 98.8% in 2012. Deliveries conducted by trained health care providers remained at 98.6% since 2009. Majority of deliveries (83.2%) took place in government hospitals (Table 16), followed by private hospitals and maternity homes (14.1%).

TABLE 15
MATERNAL HEALTH COVERAGE IN MALAYSIA, SELECTED YEARS 1990-2012

	1990	2000	2010	2011	2012
Estimated No. of Pregnant Mothers	676,382	691,664	587,479	565,072	580,536
Antenatal Coverage	528,029 78.1%	517,138 74.8%	483,136 82.2%	550,104 97.3%	560,323 96.5%
Average Antenatal Visits per Mother	6.6	8.5	10.4	9.8	10.0
Tetanus Toxoid Immunisation Coverage – (2nd& Booster Dose)	414,445 81.7%	449,608 86.8%	432,581 84.7%	451,323 91.8%	466,666 92.4%
Postnatal Coverage	318,953 67.0%	417,232 82.1%	438,003 99.7%	439,927 98%	450,160 98.8%
Safe Deliveries	92.8%	96.6%	98.6%	99.0%	98.7%

Source: Health Informatics Centre, MoH

TABLE 16
INSTITUTIONAL AND DOMICILIARY DELIVERIES IN MALAYSIA, SELECTED YEARS 1990-2012

	1990	2000	2010	2011	2012
Total Delivery	476,196	507,891	439,447	448,886	455,650
1. Government Hospitals & Alternative Birthing Centre (Hospital)	281,473 59.1%	373,254 73.5%	37,1368 84.5%	375,619 83.7%	379,080 83.2%
2. Private hospitals / Maternity homes	62,675 13.2%	92,280 18.2%	54,400 12.4%	60,035 13.4%	64,553 14.2%
3. Estate hospital	333 0.07%	140 0.03%	NA	NA	NA
4. Alternative Birthing Centre (Health Clinic)	13415 2.8%	14948 2.9%	5,178 1.2%	4,891 1.1%	4,099 0.9%
5. Others	NA	NA	210 0.05%	202 0.05%	159 0.03%
6. Domiciliary deliveries					
a. Government midwives	84,131 17.7%	10,092 2.0%	2,268 0.5%	1945 0.4%	1758 0.4%
b. Private midwives	492 0.10%	867 0.2%	51 0.01%	87 0.02%	140 0.03%
c. Traditional Birth Attendants	1,672 0.4%	4,529 0.9%	941 0.2%	1,198 0.3%	1,147 0.3%
d. BBA	11,606 2.4%	3,675 0.7%	672 0.2%	529 0.1%	494 0.1%
e. Others	20,399 4.3%	8,106 1.6%	4,359 1.0%	4,380 1.0%	4,220 0.9%

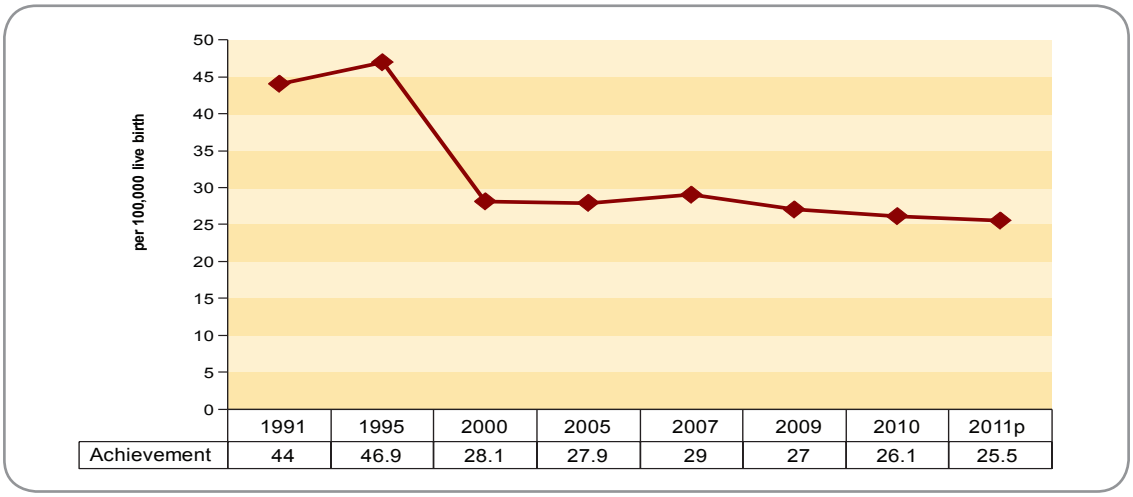
Source: Health Informatics Centre, MoH

- **Maternal mortality**

From 2000 onwards, Malaysia is facing the challenge to sustain or further reduce the relatively low MMR, whereby the MMR shows minuscule decline during recent years. Maternal mortality ratio (MMR) has been stagnant at 27.9 per 100,000 live births (LB) in 2005 and 26.1 in 2010 (Figure 42 & Table 17). The MDG 5 target is for MMR to achieve 11/100,000 LB by 2015. The main causes are Associated

Medical conditions, Postpartum Haemorrhage, Obstetric Embolism and Hypertensive Disorders in pregnancy.

FIGURE 42
MATERNAL MORTALITY RATIO IN MALAYSIA, SELECTED YEARS 1991-2011



Note: Data for 2011 is preliminary.
Source: Department of Statistics Malaysia

TABLE 17
MATERNAL MORTALITY AND RATIOS IN MALAYSIA, BY STATE, 2007-2010

State	2007 No. of deaths (MMR)	2008 No. of deaths (MMR)	2009 No. of deaths (MMR)	2010 No. of deaths (MMR)
Perlis	2 (50)	1 (20)	0	2 (48.6)
Kedah	11 (30)	13 (40)	10 (30)	15 (42.7)
Pulau Pinang	6 (20)	4 (20)	6 (30)	8 (37.8)
Perak	9 (30)	13 (40)	8 (20)	9 (25.0)
Selangor	20 (20)	22 (0.2)	28 (30)	18 (18.3)
FT Kuala Lumpur	3 (10)	5 (20)	4 (20)	6 (24.5)
FT Putrajaya	-	-	-	0
Melaka	2 (20)	6 (40)	1 (10)	2 (15.4)
Negeri Sembilan	5 (30)	7 (40)	3 (20)	6 (35.4)
Johor	29 (50)	10 (20)	18 (30)	12 (21.4)
Pahang	7 (30)	9 (40)	7 (30)	7 (27.0)
Terengganu	4 (20)	1 (0)	7 (30)	8 (33.0)
Kelantan	9 (30)	12 (30)	16 (40)	16 (44.4)
FT Labuan	0	1 (60)	0	1 (61.3)
Sabah	20 (40)	14 (30)	12 (20)	8 (14.8)
Sarawak	11 (30)	15 (30)	14 (30)	10 (24.1)
Malaysia	**137 (30)**	**133 (30)**	**134 (30)**	**128 (26.1)**

Note: Detailed MMR by state for 2011 is not available yet.
Source: Department of Statistics Malaysia

- **Pre-pregnancy care**

This programme primarily focuses upon optimizing the health of a woman before she enters the pregnancy state. Women are screened and counseled appropriately, for early intervention and treatment. It is one of the recent strategies towards reducing maternal and perinatal morbidity and mortality. The programme was introduced in 2003, however full roll-out to include hospitals was in late 2011. It was further strengthened and expanded to health clinics and hospitals with specialists, in tandem with MDG 5 initiatives. In 2012, collection of data on pre-pregnancy health screening was started nationwide. Three (3) main risks identified were diabetes, anemia and hypertension.

Family Planning Programme

There was a total of 112,572 new family planning acceptors registered in the MOH clinics in 2012, slightly higher than the total in 2011 (99,922 new acceptors) (Table 18). The most popular contraceptive method was contraceptive pill (61.0%) followed by progestogen-only injection (25.3%), male condoms (8.9%) and intrauterine device (2.3%).

As part of initiatives for safe motherhood to reduce maternal mortality, an increment of annual target for 2012 by 15% from achievement in 2011 was agreed. Majority of the states have achieved more than 95% against given target. This made overall achievement for 2012 as 97.5% for new acceptors. However, the percentage of high risk women who practiced effective family planning remains low (70.78%).

Highlights

A workshop which involved the relevant expertise was carried out in March 2012 to revise the Perinatal Care Manual 2nd edition.

MOH puts MDG5 on the high national agenda of the country, thus, starting July 2012, the Director General of Health has given due priorities to this, and conducted monthly national maternal death review meeting. Cases were presented and discussed during the meeting, followed by remedial actions to be taken. Amongst remedial actions taken were steps to improve quality of care, central procurement of contraceptive pills, decision on use of misoprostol, medical certification of maternal deaths outside health facilities, development of guidelines and continuum of care.

The formats of maternal death investigation and reports were reviewed during a workshop in October 2012. This was also in preparation to move towards online system of maternal death investigation and reporting system.

CHILD HEALTH

Attendance of Children and Average Visit to Health Facilities Per Children

Coverage of attendances in children (0-6 years old) to health clinics is one of the indicators identified and monitored under the National MDG 4 towards reducing under-5 child mortality. The coverage of new attendances of infants (0 - <1 year old) to the government health clinic in 2012[p] is 123.4%, 52.8% for toddlers (1-4 years old) and 41.7% for pre-school (5-6 years old). This average of visit is less than the expected norm of 8 visits for infants (< 1 year old) and 10 visits for toddler (1-4 years) old. For preschool children 5-6 years old the norms is at 2 visits. The average clinics visits for all age group showed a reduction, when compared between 2012 and the previous five years (Table 19).

National Immunisation Program

The target set for coverage of all immunisation is > 95.0%. The coverage for 2012 was well above the target set for all types of immunisation (Table 20).

TABLE 18
NUMBER OF NEW ACCEPTORS AND ACTIVE USERS BY STATE, 2008-2012

STATE	NEW ACCEPTORS					ACTIVE USERS				
	2008	2009	2010	2011	2012	2008	2009	2010	2011	2012
Perlis	889	867	942	995	1,092	3,766	3,903	3,954	4,037	4,431
Kedah	7,216	8,238	7,453	8,772	9,727	28,504	31,207	29,093	29,751	33,597
Pulau Pinang	4,233	4,480	4,718	5,658	6,735	8,669	8,327	9,633	9,845	10,429
Perak	7,367	7,377	6,383	7,559	7,981	19,293	19,922	16,591	20,048	17,305
FT Kuala Lumpur	163	374	1,510	2,865	3,887	271	637	1,568	2,689	2,848
FT Putrajaya	338	452	442	494	492	249	187	217	500	1,011
Selangor	9,801	8,864	8,321	10,699	12,790	17,353	15,465	17,245	22,902	21,909
Negeri Sembilan	3,253	4,071	4,291	4,685	4,907	9,946	10,402	9,179	10,661	9,530
Melaka	2,950	3,032	2,767	3,091	3,444	5,565	5,855	6,732	7,283	7,164
Johor	9,537	10,655	10,056	10,717	11,399	32,372	36,256	34,597	32,379	32,748
Pahang	6,232	7,650	7,053	7,378	7,861	21,596	23,995	26,110	26,708	27,115
Terengganu	4,494	5,207	6,318	6,325	6,647	13,139	12,858	15,196	14,094	14,429
Kelantan	4,839	5,561	5,861	6,817	7,460	17,169	19,393	17,947	19,398	21,780
FT Labuan	352	424	389	521	759	1,381	1,591	1,207	1,525	1,725
Sabah	7,790	9,270	10,764	12,076	13,780	38,328	50,060	39,219	40,799	39,402
Sarawak	6,454	6,544	8,135	11,270	13,611	25,798	11,165	24,174	26,524	29,600
MALAYSIA	**75,908**	**83,066**	**85,403**	**99,922**	**112,572**	**243,399**	**251,223**	**252,662**	**269,143**	**275,023**

Source: Family Health Development Division, MoH

TABLE 19
NEW AND TOTAL ATTENDANCE OF CHILDREN AND AVERAGE VISIT TO HEALTH FACILITES BY AGE GROUP, MALAYSIA, 2008-2012[P]

Year	Attendance Of Children And Average Visit To Health Facilites Per Children											
	Infant				Toddler				Pre-school			
	New	%	Total	Avg.	New	%	Total	Avg.	New	%	Total	Avg.
2008	519,882	71.8	3,260,019	6.3	684,475	29.3	3,008,019	4.4	137,433	22.5	325,188	2.4
2009	502,285	68.8	3,464,655	6.9	689,448	36.9	3,064,979	4.4	151,588	16.0	350,636	2.3
2010	481,217	74.7	3,580,207	7.4	705,358	37.3	3,138,557	4.4	165,763	16.3	377,035	2.3
2011	517,385	78.8	3,716,704	7.2	777,152	38.9	3,237,696	4.2	183,743	17.9	404,729	2.2
2012[P]	806,143	123.4	3,871,261	4.8	1,053,692	52.8	3,276,484	3.1	209,240	41.7	397,151	1.9

Note: p = preliminary

Source: Health Informatics Centre, MoH

TABLE 20
NATIONAL IMMUNISATION COVERAGE, MALAYSIA, 2008-2012[P]

Year	Immunisation Coverage									
	*DPT (3rd dose)		*Polio (3rd dose)		*Hib (3rd dose)		*Hep. B (3rd dose)		**MMR	
	No.	%	No.	%	No.	%	No.	%	No.	%
2008	453,068	95.75	455,637	96.29	450,989	95.31	449,010	94.89	437,181	94.30
2009	471,649	100.00	476,241	100.98	470,918	99.85	410,022	86.94	456,676	96.86
2010	481,642	94.28	480,886	94.13	479,687	93.90	421,790	82.57	471,752	96.10
2011	489,104	99.54	489,035	99.53	489,083	99.54	477,312	97.14	471,442	95.24
2012[P]	503,351	99.71	503,354	99.71	503,148	99.67	495,048	98.71	478,862	95.47

*Note: Denominator – *Estimated live births*
*** Estimated number of children 1-<2 years*
P = preliminary

Source: Health Informatics Centre, MoH

National Congenital Hypothyroidism Screening Program

In 2012, 117 government hospital and 95 private hospitals reported Congenital Hypothyroidism Screening in which 179 cases were detected (Table 21). 160 (89.4%) were detected by government hospital and 14 (10.6%) were detected by private hospitals. 407,795 new born were screened giving rate of detection at 0.44 per 1,000 new born screened or 1:2278 case detection from screened newborn.

TABLE 21
CONGENITAL HYPOTHYROIDISM SCREENING BY TYPE OF FACILITIES, 2010-2012

Year	No. of Government Hospital doing screening	No. of Private Hospital doing screening	No. of cases detected
2008	104	16	52
2009	90	No data	120
2010	116	42	129
2011	116	34	156
2012	117	95	179

Source: Family Health Development Division, MoH

National G6PD Screening Program

There was a slight increase of newborns detected with G6PD deficiency in 2012 (1.12%) when compared to 2011 (0.95%).

TABLE 22
FREQUENCY AND PERCENTAGE OF G6PD DEFICIENCY, 2008-2012[P]

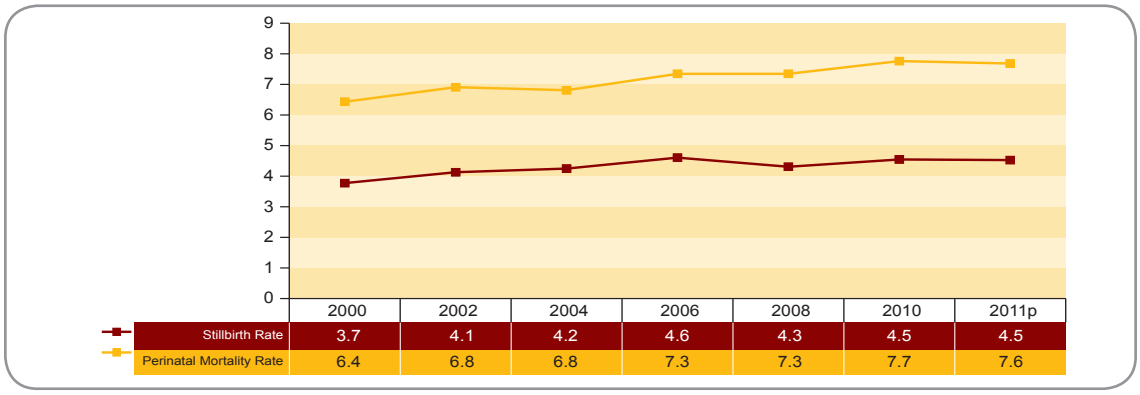
Year	No. of cases screened	No. of G6PD deficiency	% Screened (Screened/Live births)	% of G6PD deficiency
2008	329,490	4,860	73.65	1.48
2009	322,692	3,765	72.83	1.17
2010	333,699	5,632	76.37	1.69
2011	368,387	3,506	82.54	0.95
2012[P]	376,760	4,233	83.18	1.12

Note: p = preliminary
Source: Health Informatics Centre, MoH

Under-5 Mortality, Infant Mortality and Neonatal Mortality

Under-5 mortality, Infant and Neonatal mortality rates have been stagnating since year of 2000. During the same period, perinatal mortality rates increased from 6.4 to 7.6 in 2011[P] per 1000 total births and slight increased from 3.7 to 4.2 per 1000 live births in 2011[P] for neonatal mortality rate. Under-5 mortality rate was at 8.1 per 1000 live births for 2011[P]. State like Perlis, Kedah, P.Pinang, Perak, WP Putrajaya, N.Sembilan, Melaka, Pahang, Terengganu, Kelantan and WP Labuan showed Under-5 Mortality rate above the national level for 2011[P]. Nevertheless, the Under-5 Mortality Rate showed a reduction from 2011 except for Perlis, P.Pinang, WP Putrajaya, Selangor, Melaka, Pahang and Terengganu.

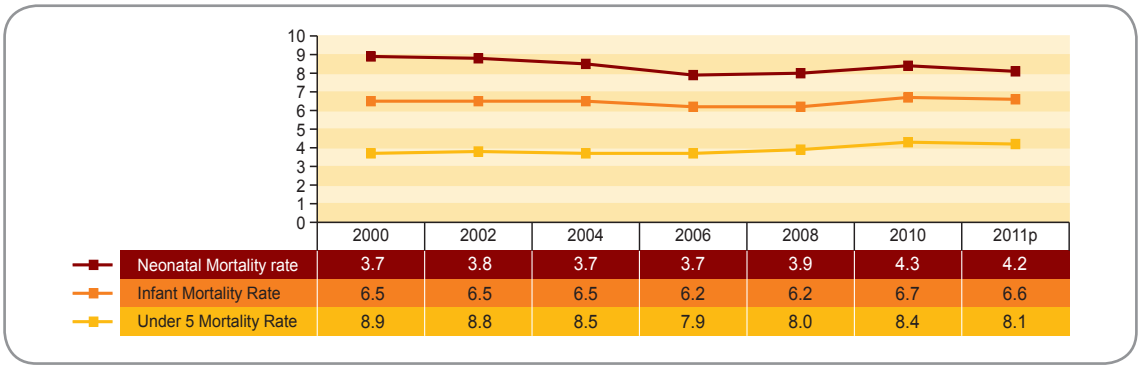
FIGURE 43
STILLBIRTH RATE AND PERINATAL MORTALITY RATE (PER 1000 TOTAL BIRTHS) MALAYSIA, 2000-2011[P]



	2000	2002	2004	2006	2008	2010	2011p
Stillbirth Rate	3.7	4.1	4.2	4.6	4.3	4.5	4.5
Perinatal Mortality Rate	6.4	6.8	6.8	7.3	7.3	7.7	7.6

Source: Department of Statistics Malaysia

FIGURE 44
NEONATAL MORTALITY RATE, INFANT MORTALITY RATE AND UNDER-5 MORTALITY RATE (PER 1000 LIVEBIRTHS) MALAYSIA, 2000-2011[P]



	2000	2002	2004	2006	2008	2010	2011p
Neonatal Mortality rate	3.7	3.8	3.7	3.7	3.9	4.3	4.2
Infant Mortality Rate	6.5	6.5	6.5	6.2	6.2	6.7	6.6
Under 5 Mortality Rate	8.9	8.8	8.5	7.9	8.0	8.4	8.1

Source: Department of Statistics Malaysia

TABLE 23
UNDER-5 MORTALITY BY NUMBER AND RATE (PER 1000 LIVEBIRTHS) BY STATE, 2007-2011[P]

State	Under-5 Mortality									
	2007		2008		2009		2010		2011[P]	
	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate
Perlis	38	9.7	44	10.6	40	9.5	41	10.0	53	13.1
Kedah	327	9.7	344	9.8	335	9.4	324	9.2	277	8.0
P.Pinang	169	7.6	157	6.9	171	7.6	179	8.5	186	8.6
Perak	333	9.3	301	8.2	382	10.4	381	10.6	301	8.3
FT K.Lumpur	181	10.9	155	6.1	168	6.5	176	7.2	186	7.1
FT Putrajaya	Under Selangor						21	8.6	27	9.4
Selangor	600	6.4	662	6.7	712	7.0	688	7.0	708	7.2
N.Sembilan	135	8.0	144	8.4	174	10.1	155	9.2	147	8.6

State	Under-5 Mortality									
	2007		2008		2009		2010		2011[p]	
	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate
Melaka	127	9.6	127	9.4	142	10.7	1213	9.5	140	10.3
Johor	403	7.1	492	8.6	463	8.1	483	8.6	446	7.9
Pahang	268	10.0	261	10.2	306	11.8	263	10.1	308	11.8
Terengganu	268	12.1	261	11.2	252	10.6	251	10.3	266	11.1
Kelantan	374	11.1	380	11.0	435	12.2	384	10.7	358	9.8
FT Labuan	17	10.9	18	10.8	20	12.1	20	12.3	16	9.5
Sabah	170	3.7	212	4.3	241	4.6	273	5.0	247	4.7
Sarawak	331	7.9	329	7.7	381	8.8	346	8.3	335	8.0
MALAYSIA	**3741**	**7.9**	**3887**	**8.0**	**4222**	**8.5**	**4108**	**8.4**	**4001**	**8.1**

Source: Department of Statistics Malaysia

National Quality Assurance Program for Neonatal

In 2012, WP Labuan and Sabah performance is more than the national set target (<100 per 10,000 live births) for the first (Jan-June) and second cycle (July-Dec). In second cycle, Kedah and Melaka performance also is more than the national set target (Table 24).

TABLE 24
SEVERE NEONATAL JAUNDICE RATE (PER 10,000 LB) BY STATE FOR 2012

State	Estimated live births 2011	Estimated mid-year live births 2011	Number of SNNJ Jan-June 2012	Rate (per 10,000 LB)	Number of SNNJ Jul-Dec 2012	Rate (per 10,000 LB)
Perlis	4,413	2,207	7	31.72	6	27.19
Kedah	35,684	17,842	129	72.30	208	116.58
P.Pinang	22,574	11,287	39	34.55	67	59.36
Perak	36,639	18,320	85	46.40	95	51.86
FT KL	25,804	12,902	28	21.70	85	65.63
FT Putrajaya	2,074	1,037	0	-	4	38.57
Selangor	100,472	50,236	66	12.87	223	50.92
N.Sembilan	17,151	8,576	59	68.80	70	81.63
Melaka	13,307	6,654	22	33.07	78	117.23
Johor	55,395	27,702	131	47.29	150	54.15
Pahang	24,030	12,015	69	57.43	63	52.43
Terengganu	23,535	11,768	29	24.64	75	63.73
Kelantan	35,473	17,737	31	17.48	20	11.28
FT Labuan	1,644	822	15	**182.48**	12	**145.99**
Sabah	51,757	25,879	391	**151.09**	362	**139.88**
Sarawak	41,413	20,707	52	25.11	70	33.81
MALAYSIA	**491,365**	**245,691**	**1,153**	**46.7**	**1,588**	**64.6**

Source: Family Health Development Division, MoH

SCHOOL HEALTH

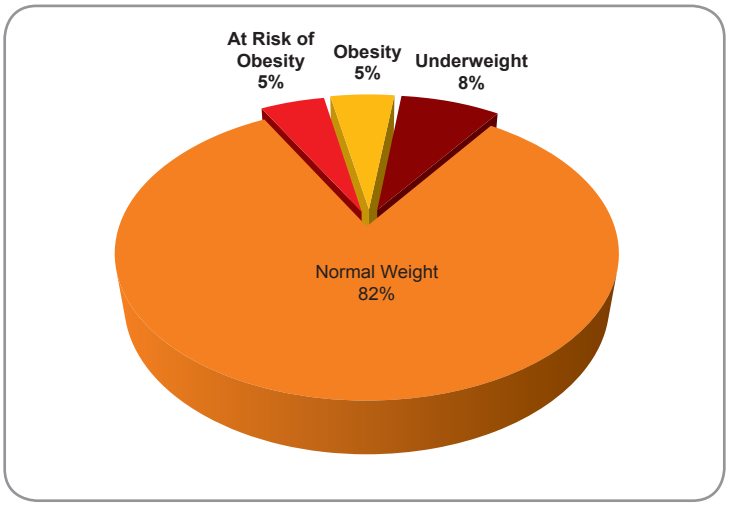
Service Coverage

A total of 1.73 million preschool, primary and secondary school children was screened and examined in 2012. The coverage by nurses in Peninsular and Sabah and Assistant Medical Officer in Sarawak increased to 97.9% for preschool, 99.7% for standard one, 99.6% for standard 6 and 99.5% for Form 3 students compared to 2011.

Students' Health Status

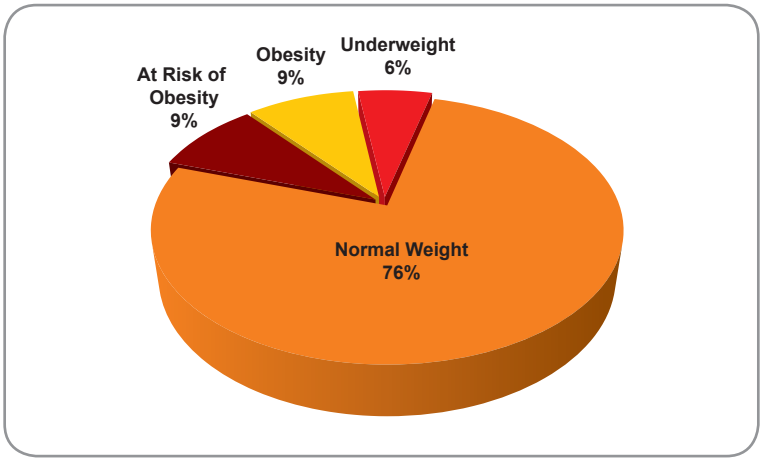
Visual acuity defect is one of the commonest morbidities detected among school children. For 2012, the detection of visual acuity defect was 80.4 per every 1,000 standard 1 students and decline to 61.9 per 1,000 year 6 students and further reduced to 47.8 per 1,000. The Malaysian school children nutritional status is shown in Figures 45, 46 and 47.

FIGURE 45
NUTRITIONAL STATUS OF STANDARD 1 SCHOOL CHILDREN IN 2012



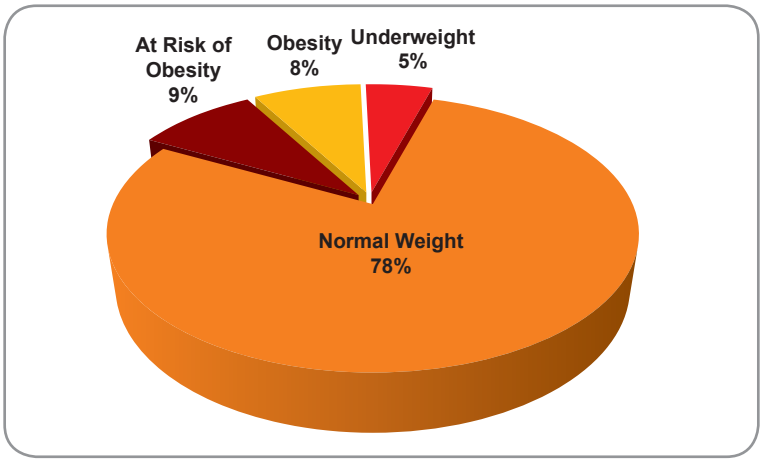
Source: Health Informatics Centre, MoH

FIGURE 46
NUTRITIONAL STATUS OF STANDARD 6 SCHOOL CHILDREN IN 2012



Source: Health Informatics Centre, MoH

FIGURE 47
NUTRITIONAL STATUS OF FORM 3 SCHOOL CHILDREN IN 2012



Source: Health Informatics Centre, MoH

School Health Immunisation

The school health vaccination coverage target was set at 95% and this target was achieved over the last 4 years. The coverage for DT booster, Oral Polio booster and the MMR booster for standard 1 school children showed an increasing trend since 2009. Similarly ATT vaccination coverage for form three students increased from 97.1% in 2009 to 99.2% in 2012 (Figure 48).

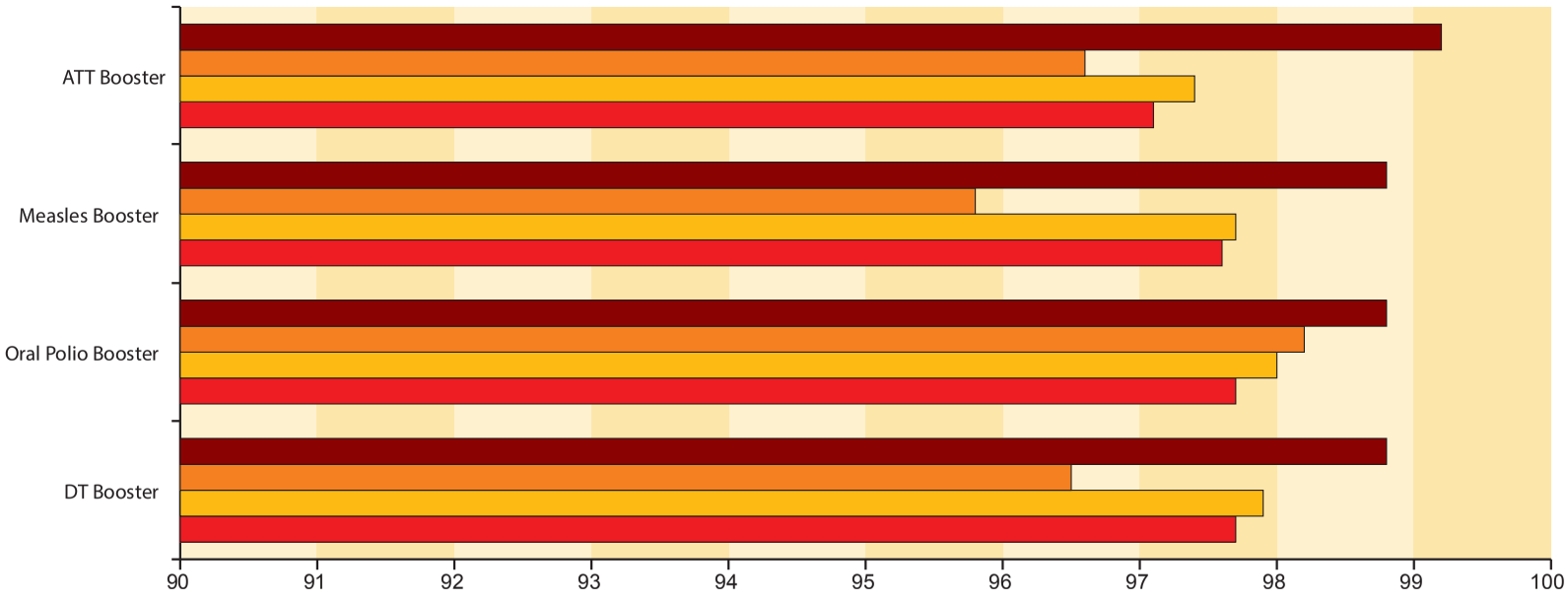
Other morbidities commonly detected were hygiene related morbidities such as head lice and other other skin diseases. Table 25 showed common morbidities detected per 1,000 school children population in 2012.

TABLE 25
DETECTION RATE OF COMMON MORBIDITIES AMONG SCHOOL CHILDREN FOR EVERY 1000 SCHOOL CHILDREN IN 2012

Morbidities	Preschool	Standard 1	Standard 6	Form 3
Eye infection	0.10	0.20	0.30	0.10
Ear infection	0.50	0.30	0.20	0.10
Scabies	2.70	2.30	2.59	1.10
Other skin diseases	16.90	15.10	26.00	20.70
Head Lice	37.10	32.30	25.80	34.00
Pallor	0.20	0.20	0.20	0.10
Goiter	0.02	0.06	0.15	0.21
Asthma	0.90	10.10	8.10	6.10
Heart Condition	0.30	1.00	0.60	0.50
Gastrointestinal Condition	0.00	0.10	0.20	0.20
Genitourinary Condition	0.20	0.60	0.10	0.10
Musculoskeletal	0.20	0.30	0.80	0.20

Source: Health Informatics Centre, MoH

FIGURE 48
SCHOOL HEALTH IMMUNIZATION COVERAGE FOR 2009-2012



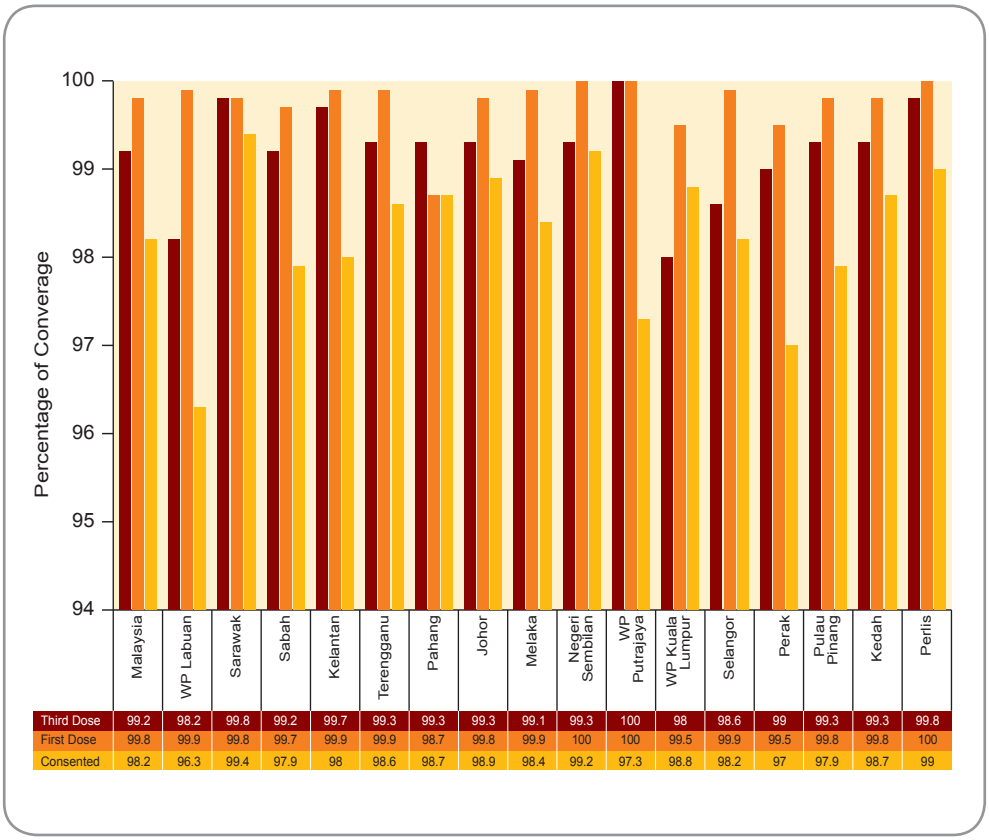
	DT Booster	Oral Polio Booster	Measles Booster	ATT Booster
2012	98.8	98.8	98.8	99.2
2011	96.5	98.2	95.2	96.6
2010	97.9	98.0	97.7	97.4
2009	97.7	97.7	97.6	97.1

Source: Health Informatics Centre, MoH

National HPV Vaccination Program

The Ministry of Health introduced free voluntary HPV immunization as a new preventive strategy in the prevention and control of cervical cancer in 2010. It is expected that the incidence of cervical cancer will reduce remarkably among immunized female population over the next 20 to 30 years. The policy of HPV vaccination recommends that all 13 year old female should receive 3 doses of HPV vaccination within 6 months. The Form one girls should receive their vaccination in schools whilst those out of school was offered their vaccinations at health clinics. The acceptance of receiving HPV vaccine among parents increased from 95.9 % in 2010 to 98.2 percent in 2012. The HPV vaccination 3rd dose completion increased from 97.9% in 2010 to 99.2% in 2012.

FIGURE 49
HPV VACCINATION COVERAGE, 2010-2012



	Malaysia	WP Labuan	Sarawak	Sabah	Kelantan	Terengganu	Pahang	Johor	Melaka	Negeri Sembilan	WP Putrajaya	WP Kuala Lumpur	Selangor	Perak	Pulau Pinang	Kedah	Perlis
Third Dose	99.2	98.2	99.8	99.2	99.7	99.3	99.3	99.3	99.1	99.3	100	98	98.6	99	99.3	99.3	99.8
First Dose	99.8	99.9	99.8	99.7	99.9	99.9	98.7	99.8	99.9	100	100	99.5	99.9	99.5	99.8	99.8	100
Consented	98.2	96.3	99.4	97.9	98	98.6	98.7	98.9	98.4	99.2	97.3	98.8	98.2	97	97.9	98.7	99

Source: Family Health Development Division, MoH

School Health Quality Assurance Program

The visual acuity defect detection rate among standard one was selected as the proxy indicator for monitoring quality of health services in schools. Visual acuity detection rate refers to percentage of standard one school children detected having Visual Acuity or VA 6/9 screened using 6 meter Snellen chart. The standard for the visual acuity detection is set at 5% of standard one student examined. For 2012, all states continue to achieve more than standard set.

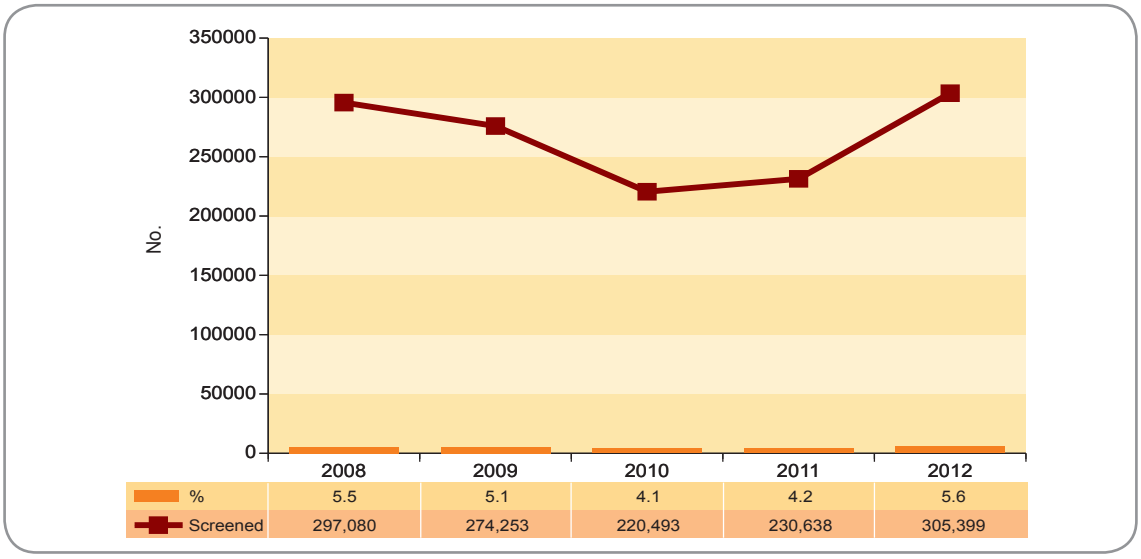
The school health services have achieved the target set for 2012. The program will continue to focus on strengthening and improving the quality of care to the school children population in years to come. In 2012, the school health unit's activities focus on the development of guidelines and training as a means of improving and strengthening the quality of health services for schoolchildren.

ADOLESCENT HEALTH

Service Coverage

In 2012, a total of 305,399 adolescents aged 10 to 19 years were screened. This accounts for 5.6 % of the total adolescents population screened. Among these, 8.6% had nutrition problems, 4.1% physical, 2.8% risk behaviours, 1.4% mental and 1.0% sexual health problems at health clinics nationwide. A total of 49,187 adolescents had been counselled and 29,041 were referred to hospitals or other agencies for further management. The number of health clinics providing adolescent health services has increased from 661 to 769 from 2010 to 2012.

FIGURE 50
ADOLESCENT HEALTH SERVICE SCREENING TREND, 2008-2012



Source: Family Health Development Division, MoH

TABLE 26
TEENAGE PREGNANCY (10-19 YEARS) REGISTERED AT PUBLIC HEALTH FACILITIES IN MALAYSIA, 2012

State	Teenage Pregnancy aged (10-19) years old			Total Number New Cases of Antenatal
	Married	Unmarried	Total	
Perlis	140	18	158	3,944
Kedah	550	158	708	30,563
Pulau Pinang	210	152	362	19,740
Perak	696	372	1,068	32,198
Selangor	1,193	421	1,614	83,116
Negeri Sembilan	152	156	308	17,115
Melaka	127	113	240	13,824
Johor	1,019	631	1,650	57,743
Pahang	886	175	1,061	26,757
Terengganu	426	82	508	22,264

State	Teenage Pregnancy aged (10-19) years old			Total Number New Cases of Antenatal
	Married	Unmarried	Total	
Kelantan	520	95	615	25,108
Sarawak	2,818	1,313	4,131	42,619
Sabah	5,544	372	5,916	66,374
FT Kuala Lumpur	254	105	359	17,695
FT Putrajaya	7	3	10	4,462
FT Labuan	122	17	139	2,401
Total	**14,664 (78%)**	**4,183 (22%)**	**18,847**	**465,923**

Source: Family Health Development Division, MoH

The Family Health Development Division (FHDD) with inputs from varies agencies has developed the National Guidelines on Managing Sexual and Reproductive Health Problems Among Adolescent for primary healthcare personnel, which take into consideration the legal, ethical, religious and sociocultural perspectives. The guideline has been presented in Exco Meeting, *'Mesyuarat KPK Khas'* and Cabinet Meeting on 9th January 2013. Following that, this guideline has been printed and distributed to all the states and also has been uploaded on the FHDD website (http://fh.moh.gov.my) in order to disseminate the information. All State Directors are requested to further discuss with religious leader regarding the sensitive issues in managing sexual and reproductive health especially among unmarried teens.

The National Health Morbidity Survey (NHMS) in Malaysia has shown a rise in psychiatric morbidity among the children and adolescents from 13% (1996), 19.4% (2006) and 20.3% (2011). The FHDD with funding from World Health Organizations (WHO) has developed a Manual on Managing Mental Health Problems Among Adolescents for Primary Health Care Providers. The aims of this manual to improve knowledge and skills required in managing mental health problems among adolescents in primary care setting. Two (2) workshops have been conducted to develop the manual with members and representatives from Child and Adolescent Psychiatrist, Public Health Physician, Family Medicine Specialist, Senior Lecturer in Child and Adolescents Psychiatry, Counselors, Clinical Psychologist and Senior Paramedic.

Networking with other agencies and NGO's

Since 2008, the Ministry of Health has conducted the National Technical Coommittee Meeting on Adolescent Health annually. The objective is to discuss the current adolescent health issues and monitor the implementation of the The National Adolescent Health Policy and Plan of Action. This national technical committee is chaired by Deputy Director General (Public Health) and members are representatives from various government agencies, NGO's and universities. This another commitment by the Ministry of Health to further strengthen the Adolescent Health Programme and Services. MOH continuously forge smart partnerships with other agencies to advocate and implement the above policy and plan of action. A concerted effort by all agencies is essential to empower adolescents with appropriate knowledge, attitude and skills to practice healthy lifestyle in a supportive environment.

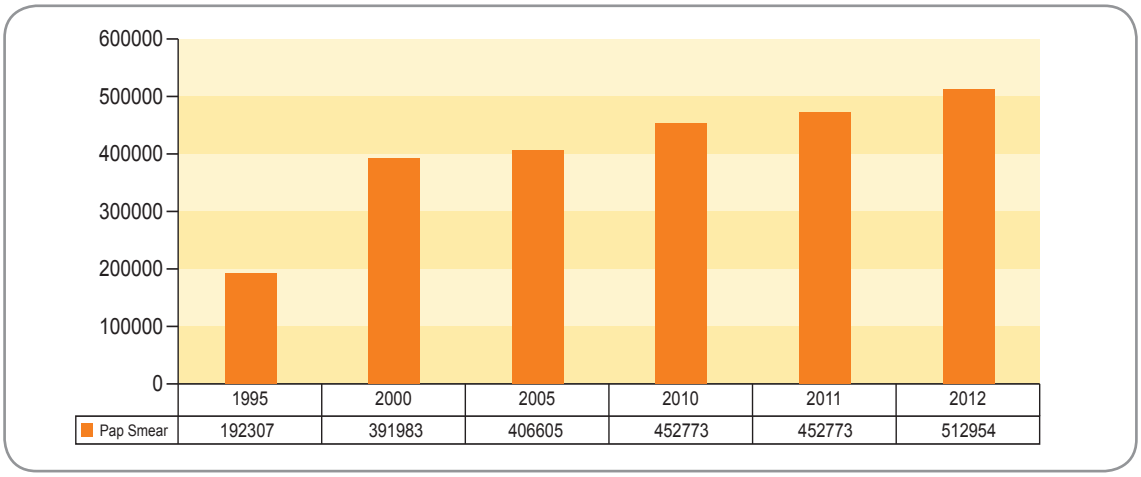
ADULT HEALTH

National Pap Smear Screening Program

Cervical cancer screening services were available in almost all MOH health clinics in Malaysia. The service is offered to all sexually active women between the age of 20 and 65 years. The targeted coverage for cervical cancer screening, for 2012 was 40 percent of the eligible women. The Pap Smear screening coverage by all service providers showed an increasing trend from 406,367 in 2005

to 512,954 in 2012. The number of women screened, accounted for 22.2% coverage of estimated eligible women for a year as compared to 21% in 2011 and 20.1% in 2010. Similarly, the coverage for eligible women aged 50 to 65 years has also increased from 16.6% (2010) and 17.02% (2011) to 19.9% in 2012. The percentage of unsatisfactory slides remains at targeted level, 1.14% in 2012.

FIGURE 51
NUMBER OF PAP SMEAR SLIDES TAKEN, SELECTED YEARS 1995-2012



	1995	2000	2005	2010	2011	2012
Pap Smear	192307	391983	406605	452773	452773	512954

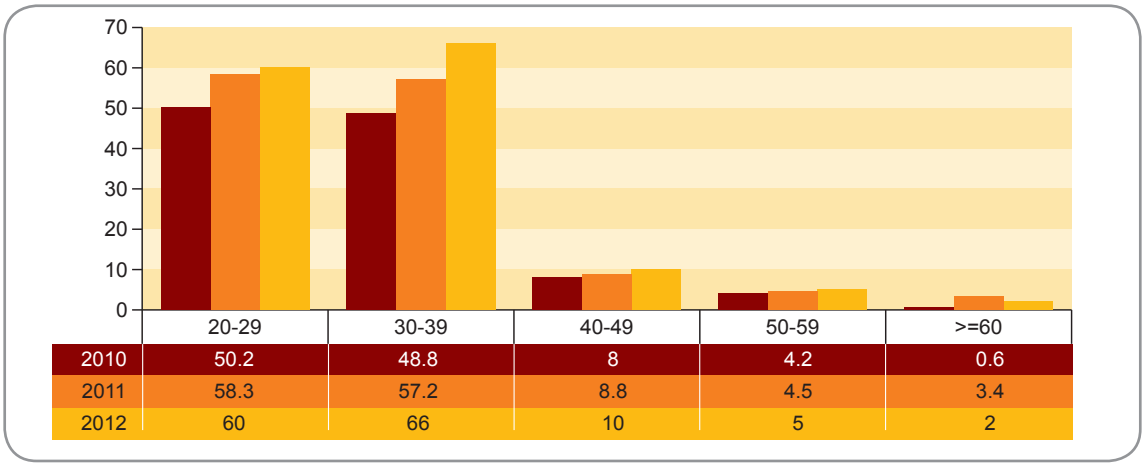
Source: Health Informatics Centre, MoH

The overall positive detection rate in 2012 has increased from 0.58% (2010) and 0.64% (2011) to 0.78%. Positive smears include Low Grade Squamous Intraepithelial Lesion (LGSIL), Atypical Squamous Cells (ASCUS), High Grade Squamous Intraepithelial Lesion (HGSIL), Atypical Glandular Cells (AGC), Endocervical Adenoma in-situ (AIS) and Carcinoma. The break-ups for each classification are LGSIL – 24%, ASCUS – 47.6%, HGSIL – 17.6%, AIS – 3.1%, AGC – 3.4%, Carcinoma – 4.2%.

Breast Cancer Prevention Program

MOH has started breast health awareness campaign since 1995 to encourage women to perform breast self examination (BSE). Starting 2009, it emphasized on clinical breast examination (CBE) as a modality for early detection of breast cancer among general women population. BSE is continuously promoted and recommended for raising awareness and to empower women to take responsibility for their own health. All health providers are to examine female clients attending the clinics, as part of other screening and health services. As the starting year of data collection, the percentage of CBE among clients has increased from 12.5% in 2010 to 21.3% in 2011 and 22.1% in 2012. There was 0.3% abnormality detected and referred for further investigation.

FIGURE 52
PERCENTAGE OF CLINICAL BREAST EXAMINATION COVERAGE BY AGE GROUP, 2010-2012



Source: Family Health Development Division, MoH

A national guideline on screening of high risk women using mammogram was developed in 2012 to ensure standard practice and implementation amongst health care providers. It adopts an integrated approach which involves MOH, LPPKN (through Mammogram Subsidy Programme) and other relevant agencies to facilitate mammogram screening among high risk women. High-risk women are women aged 40 and above which fulfill risk criteria. MOH health clinics act as an entry point for identifying high risk women and referred to nearest facilities that provide mammography.

TABLE 27
HIGH RISK WOMEN REGISTERED AND REFERRED FOR MAMMOGRAPHY FOR 2012

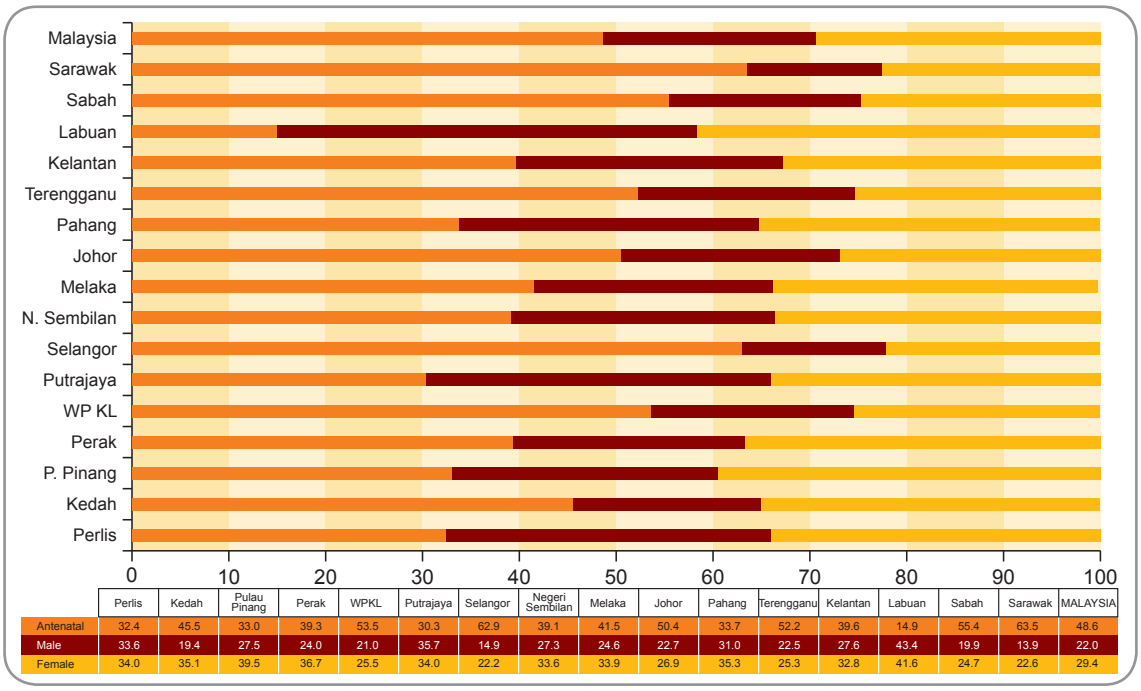
High Risk Women (age ≥ 40 years old)						
No. of women Registered		**No. of women referred for MMG**		**No. of women had MMG**		**No. of women confirmed cancer**
New Case	Total	New Case	Total	New Case	Total	Total
15,653	22,164	13,380 (85.5%)	14,931	8,046 (60.1%)	8,646	55 (0.64%)

Source: Family Health Development Division, MoH

National Thalassaemia Control and Prevention Program

Family Health development Division continues to focus on population Thalassaemia carrier screening in 2012. Total of 654,946 (130%) carrier screening were carried out at health clinics between January to December 2012. Antenatal mothers were the most screened (48.6%) followed by women (29.4 %) and men (22.0%). Breakdown screening distribution by state is shown in Figure 53.

FIGURE 53
DISTRIBUTION OF THALASSAEMIA POPULATION SCREENING ACCORDING TO GENDER AND ANTENATAL MOTHER IN 2012

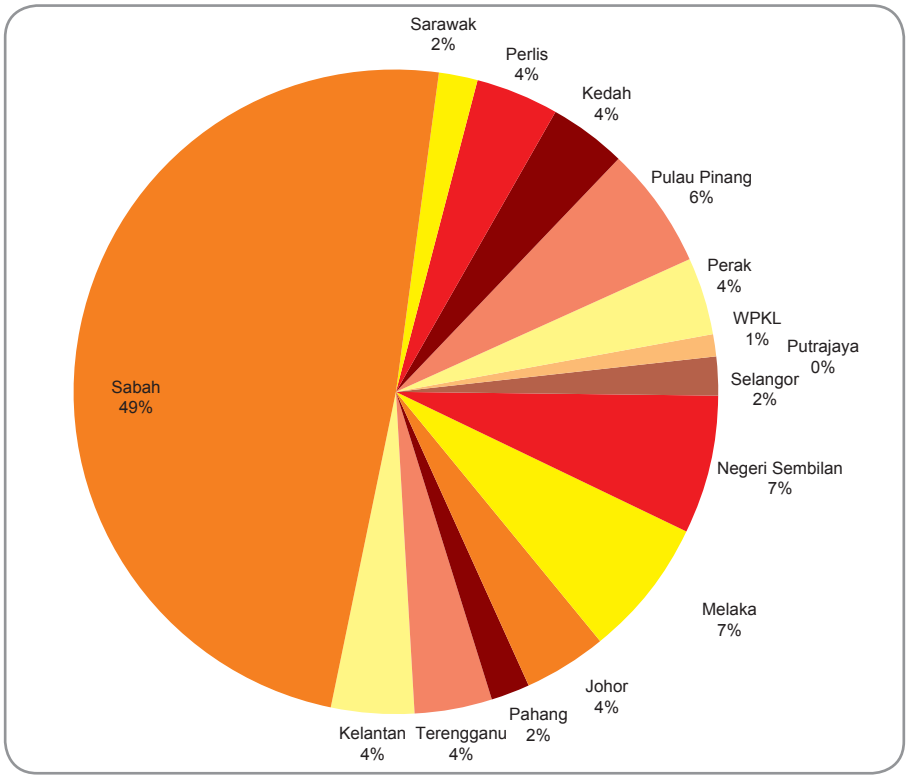


	Perlis	Kedah	Pulau Pinang	Perak	WPKL	Putrajaya	Selangor	Negeri Sembilan	Melaka	Johor	Pahang	Terengganu	Kelantan	Labuan	Sabah	Sarawak	MALAYSIA
Antenatal	32.4	45.5	33.0	39.3	53.5	30.3	62.9	39.1	41.5	50.4	33.7	52.2	39.6	14.9	55.4	63.5	48.6
Male	33.6	19.4	27.5	24.0	21.0	35.7	14.9	27.3	24.6	22.7	31.0	22.5	27.6	43.4	19.9	13.9	22.0
Female	34.0	35.1	39.5	36.7	25.5	34.0	22.2	33.6	33.9	26.9	35.3	25.3	32.8	41.6	24.7	22.6	29.4

Source: Family Health Development Division, MoH

Of total 654,946 screened, 7,106 (1.08%) were confirmed as Thalassemia carrier and 3,595 or 49% of the Thalassemia carrier were detected in Sabah. The breakdown of the Thalassemia carrier by state is shown in Figure 54.

FIGURE 54
BREAKDOWN THALASSAEMIA CARRIER DETECTED ACCORDING TO STATE IN 2012

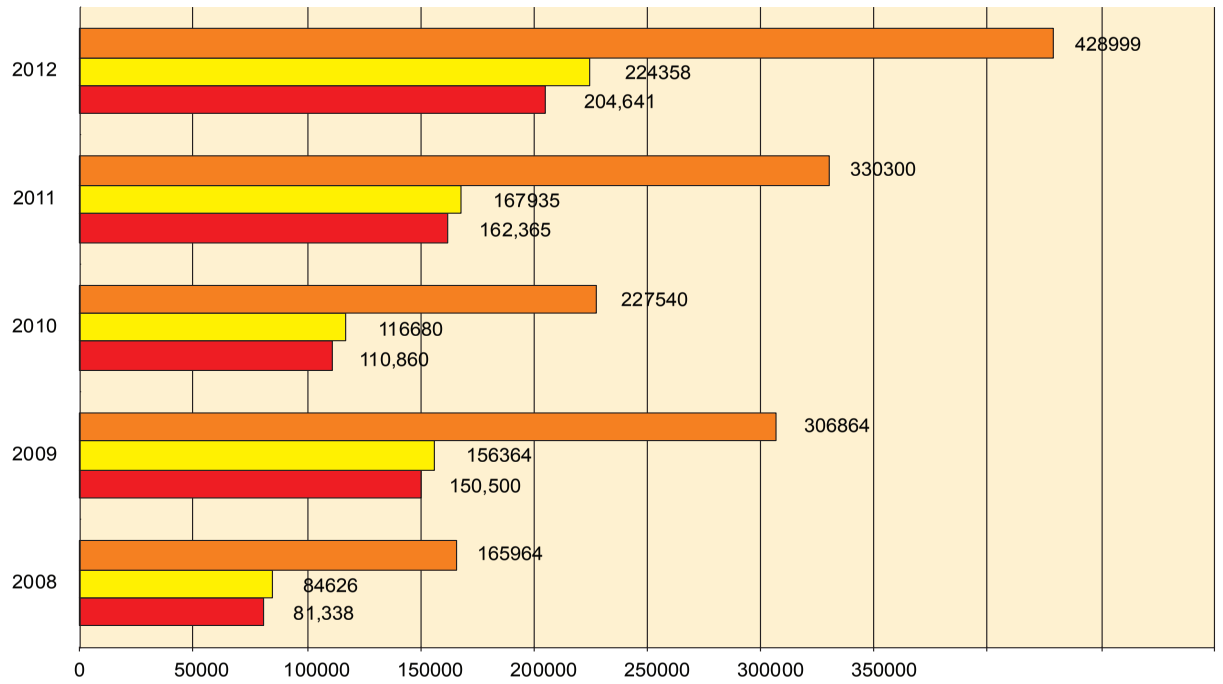


Source: Family Health Development Division, MoH

HEALTHCARE SERVICES FOR THE ELDERLY

From the beginning of the program till December 2012, a total number of 1,302,422 elderly had been registered with our health clinics. This was 55.7 % of total elderly population which was targeted at 75% in the year 2015. The attendance of the elderly to health clinics are shown in Figures 54 and 55. 33.7 % of the newly registered elderly had been screened using *Borang Saringan Status Kesihatan* (*BSSK*). Five most common morbidities among the elderly seen in the health clinics, and same pattern for the past five years, were hypertension, diabetes mellitus, joint, eye and respiratory problems (Figure 57).

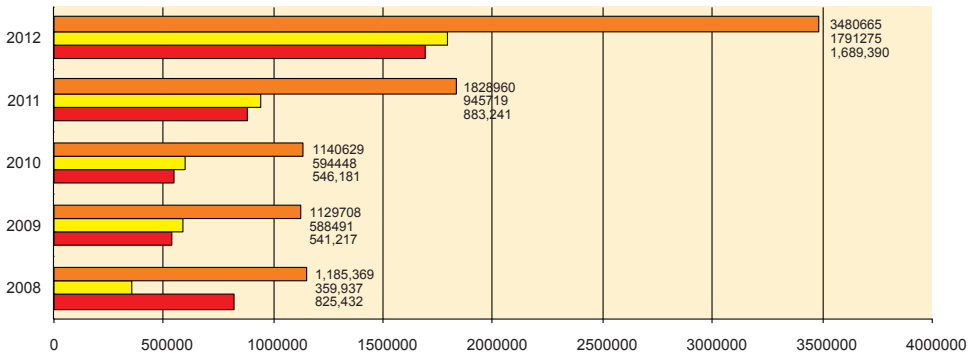
FIGURE 55
ELDERLY ATTENDANCE AT HEALTH CLINICS (NEW CASES BY SEX), 2008-2012



	2008	2009	2010	2011	2012
TOTAL	165964	306864	227540	330300	428999
Female	84626	156364	116680	167935	224358
Male	81338	150500	110860	162365	204641

Source: Health Informatics Centre, MoH

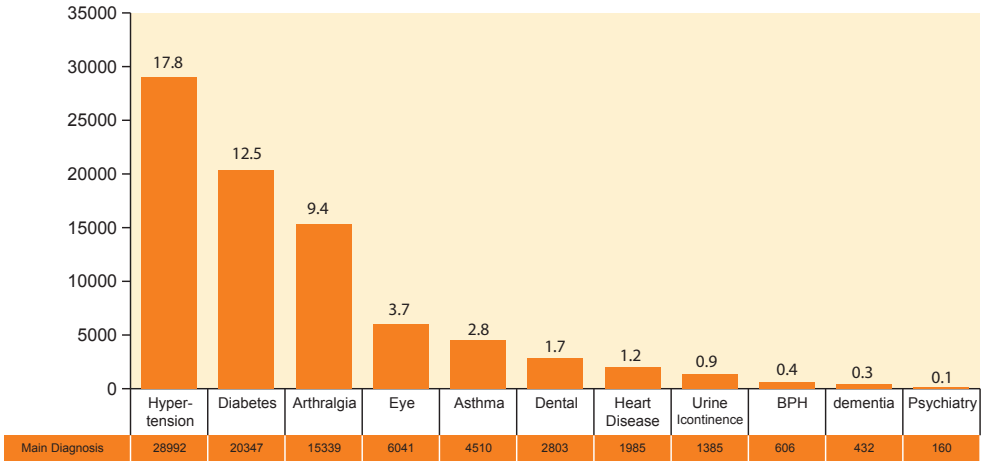
FIGURE 56
ELDERLY ATTENDANCE AT HEALTH CLINICS (NEW AND REPEAT CASES BY SEX), 2008-2012



	2008	2009	2010	2011	2012
TOTAL	1185369	1129708	1140629	1828960	3480665
Female	359937	588491	594448	945719	1791275
Male	825432	541217	546181	883241	1689390

Source: Health Informatics Centre, MoH

FIGURE 57
TOP 10 NEW DIAGNOSES AMONG THE ELDERLY DETECTED IN HEALTH CLINICS, JAN-DEC 2012



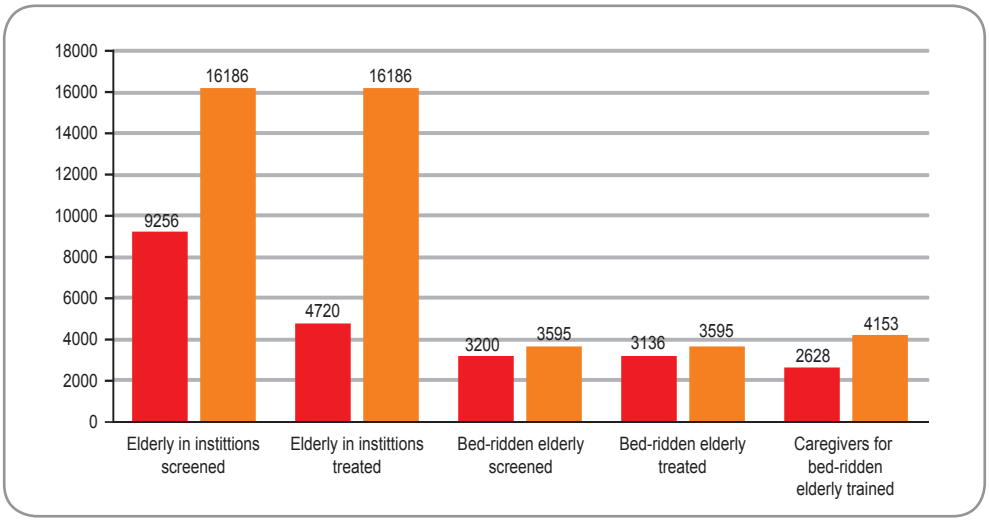
Source: Health Informatics Centre, MoH

Till Disember 2012, About 24,000 health personnel at primary health care level had undergone training for health care for the elderly and about 21,100 health personnel and care givers from institutions, NGOs, voluntary bodies and other agencies had been trained for care for the elderly.

The **National Blue Ocean Strategy (NBOS) 7 – "1Malaysia Family Care";** is an initiative by the government to provide a holistic support for elderly, persons with disabilities and single mothers. For

the elderly, services provided were health screening and appropriate intervention for the elderly in the institutions and bed-ridden at home and training for the care givers of the bed-ridden elderly at home. Till December 2012, the achievement for this program is shown in Figure 58 and Table 28.

FIGURE 58
ACHIEVEMENTS FOR NBOS7-1MALAYSIA FAMILY CARE FOR THE ELDERLY



Source: Family Health Development Division, MoH

TABLE 28
PERCENTAGE ACHIEVEMENTS FOR NBOS7-1MALAYSIA FAMILY CARE FOR THE ELDERLY

	Elderly in institutions screened	Elderly in institutions treated	Bed-ridden elderly screened	Bed-ridden elderly treated	Care givers for bed-ridden elderly trained
% Achievement	57.2	29.2	89.0	87.2	63.3

Source: Family Health Development Division, MoH

HEALTH CARE FOR PERSONS WITH DISABILITIES

Health care programmes for Persons with Disabilities (PWD) include care of children with special needs (CWSN), rehabilitation services for adult PWDs and the prevention and control of blindness and deafness.

Programme Development
The Health Care for PWD Plan of Action (POA) 2011-2020 was developed in line with the National Policy for PWD 2007, Convention on the Rights of PWD7 and the PWD Act 2008. The Technical Committee for Health Care of Persons with Disabilities and the Quality of Life Care for PWD Committee chaired by the Director General of Health Malaysia, oversee the development and implementation of health programmes for PWDs.

On 4th December 2012 in conjunction with the "Hari Orang Kurang Upaya" MOH launched the "Clearinghouse for Research on Disability" (http://chdisability.moh.gov.my) developed in collaboration with Institute of Public Health.

IMAGE 1
CLEARINGHOUSE FOR RESEARCH ON DISABILITY

Source: Institute for Public Health, MOH

The clearinghouse collates, organizes and disseminates information such as published research, articles, written policies, guidelines, thesis/dissertation and other articles related to health, education and social aspects for policy makers, researchers and lay persons. The main focus is on local information i.e. both published and unpublished information. The mission of the clearinghouse is to provide reference to stakeholders for decision making to improve the quality of life of the PWD.

MOH together with BAKTI developed the "PDK Ku SIHAT" guideline and manual on healthy life style, launched by the Prime Minister on 23rd June 2011, to empower PWD and caregivers in Community based Rehabilitation (CBR) Centers. The programme was further enhanced under the National Blue Ocean Strategy (NBOS7) initiative: 1Malaysia Family Care where health and social services is provided in a holistic manner through sharing of resources.

In 2012, MOH collaborated with Malaysian Council Rehabilitation to develop a *Disability Awareness Training Manual* aimed at increasing awareness on the needs of PWD, skills in handling PWD with different disabilities and soft skills development. The manual was field tested on 30 health personnel where practical training was conducted in the health facilities setting.

IMAGES 2
DISABILITY AWARENESS TRAINING

Source: Family Health Development Division, MoH

Better Hearing Month Campaign to promote ear care and prevention of deafness was carried out in Tunku Kurshiah College Seremban on 19th May 2013 in partnership with Hospital Tuanku Ja'afar Seremban and Hospital Tuanku Ampuan Najihah, Kuala Pilah. Ear examination and hearing assessment involved 112 students and 600 students attended a seminar on prevention of deafness.

IMAGES 3
BETTER HEARING MONTH CAMPAIGN AT TUNKU KURSHIAH COLLEGE

Source: Family Health Development Division, MoH

Services at the Health Clinic and Community

In 2012, a total of 2,766 new cases with disabilities were detected among children aged 0-18 years. Early detection of disabilities among 0.1% of children 0-1 years was made the KPI for the programme to ensure early detection and early intervention for better outcomes. Detection rate has improved over past 5 years (Table 29).

Overall 28,222 children had regular follow up at the clinics with 46,039 attendances for rehabilitation services. A total of 18,140 home visits were made where health personnel advised parents and caregivers on care and hygiene, immunization, nutrition and rehabilitation activities that can be carried out in the home.

TABLE 29
PERCENTAGE OF CHILDREN AGED 0-1 YEARS DETECTED WITH DISABILITIES

Year	Estimated Live birth	No. of CWSN 0- 1 years detected with dsabilities	Achievement
2008	449,939	387	0.08
2009	445,051	371	0.08
2010	510,853	423	0.08
2011	491,365	434	0.09
2012	504,814	622	0.12

Source: Family Health Development Division, MoH

In 2012, health personnel visited 447 CBRs within their operational areas and assessed health status of 10,010 (75%) PWDs. A total 447 (4.5%) PWDs were detected to be underweight and 635 (6.3%) were found to be obese. CBR workers were advised on management of CWSNs with focus on healthy eating and safe physical activity.

IMAGES 4
SERVICES TO THE COMMUNITY



Source: Family Health Development Division, MoH

TABLE 30
NUMBER OF CHILDREN AGED 0-18 YEARS DETECTED ACCORDING TO TYPES OF DISABILITIES, 2012

STATE	TYPES OF DISABILITIES												
	Deaf	Blind	Physical	Cerebral Palsy	Delayed Milestone	Down Syndrome	Autism	ADHD	Mental Retardation	Specific Learning Disability	Slow Learner	Others	TOTAL
Perlis	0	1	1	3	1	7	2	2	0	9	28	7	61
Kedah	3	6	16	7	23	41	5	6	3	8	4	29	151
Pulau Pinang	9	3	11	26	32	30	21	17	11	44	24	20	248
Perak	6	11	23	19	32	30	24	6	17	69	22	14	275
Selangor	8	2	13	13	71	50	19	6	0	16	27	76	301
FT K.Lumpur	0	0	2	4	4	13	2	0	0	2	10	0	37
FT Putrajaya	0	4	2	1	0	3	5	0	0	5	0	1	21
Negeri Sembilan	2	0	1	6	3	7	9	1	0	22	20	12	83
Melaka	3	1	6	4	1	9	3	2	0	3	0	3	35
Johor	5	2	17	30	35	59	18	6	0	21	49	11	253
Pahang	3	3	8	9	27	18	6	2	0	6	10	28	120
Terengganu	4	3	7	19	28	35	3	2	1	22	39	20	183
Kelantan	1	1	14	10	22	37	5	3	1	0	5	19	118
Sabah	16	13	17	27	38	66	11	9	3	41	19	29	289
FT Labuan	0	2	0	2	3	2	1	2	0	5	12	4	33
Sarawak	9	3	28	35	80	63	36	30	51	113	39	71	558
MALAYSIA	**69**	**55**	**215**	**400**	**470**	**470**	**170**	**96**	**87**	**386**	**308**	**344**	**2766**

Source: Family Health Development Division, MoH

PRIMARY MEDICAL CARE

Primary Medical Care section is responsible in ensuring medical care at the Health Clinics are delivered in an integrated manner encompassing wellness, illness and emergency services. Working together with the various sectors of Disease Control Division and other Divisions, it oversees the implementation and monitoring of the quality of clinical programs at health clinics.

Health Facilities

The total number of primary healthcare facilities in 2012 was 2855, which included 918 health clinics, 106 maternal and child health clinics and 1831 community clinics (Table 31).

TABLE 31
NUMBER OF HEALTH FACILITIES, BY STATE, 2012

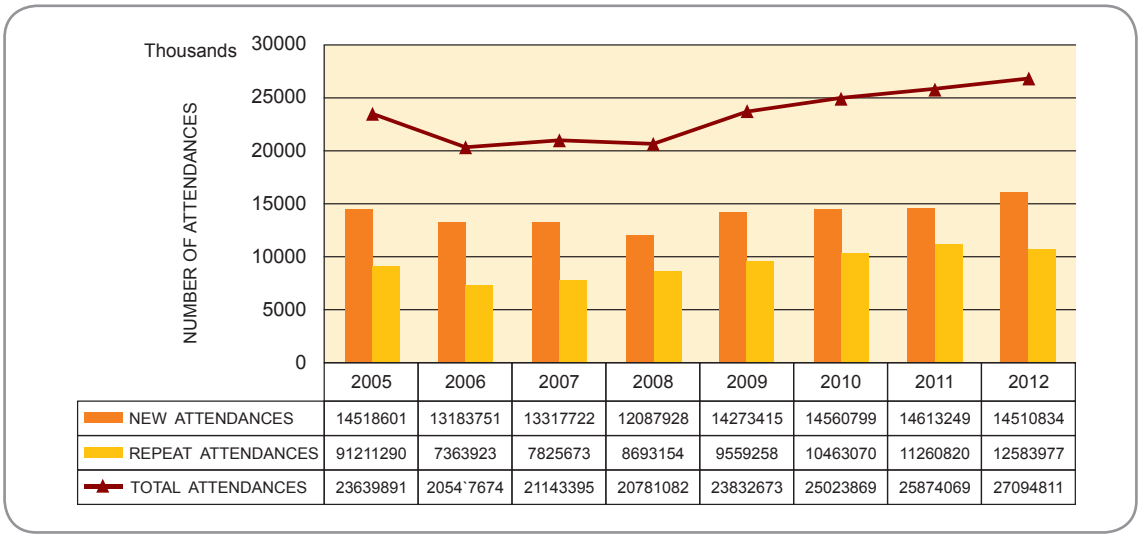
State	Total no. of Districts	Type of Health Clinics according to Daily Work-load (Attendances)						Total no. of Health Clinics	Total no. of MCH Clinics	Total no. of Community Clinics
		TYPE 1	TYPE 2	TYPE 3	TYPE 4	TYPE 5	TYPE 6			
		>800	500-800	300-500	150-300	<150	<50			
Perlis	1	0	1	3	3	2	0	9	0	30
Kedah	11	1	1	8	18	27	1	56	6	220
Penang	5	0	4	9	9	3	4	29	6	60
Perak	10	2	1	13	23	33	11	83	9	239
Selangor	9	3	13	9	23	18	7	73	5	116
FT KL & Putrajaya	1	2	0	4	8	3	0	17	17	0
Negeri Sembilan	7	1	3	6	11	18	7	46	1	98
Melaka	3	1	2	3	11	9	3	29	1	58
Johor	10	3	4	7	17	43	20	94	3	262
Pahang	11	1	0	2	19	42	15	79	6	241
Terengganu	7	0	1	4	14	21	5	45	1	128
Kelantan	10	1	2	6	33	15	12	69	3	186
Sabah	24	3	3	2	11	41	33	93	23	176
Sarawak	31	3	6	5	8	41	133	196	25	7
FT Labuan	1	0	0	1	0	0	0	1	0	10
Total	**141**	**21**	**41**	**82**	**208**	**316**	**251**	**919**	**106**	**1831**

Source: Family Health Development Division, MoH

Outpatient Attendances

Figure 59 shows the increasing trend of outpatient attendance to the health clinics from 2008. Compared to 2011, the attendance in 2012 has increased by 4.4%. The trend is similar for both new and repeat attendances.

FIGURE 59
OUTPATIENT ATTENDANCE IN HEALTH CLINICS (NEW AND REPEAT ATTENDANCE), 2005-2012



	2005	2006	2007	2008	2009	2010	2011	2012
NEW ATTENDANCES	14518601	13183751	13317722	12087928	14273415	14560799	14613249	14510834
REPEAT ATTENDANCES	91211290	7363923	7825673	8693154	9559258	10463070	11260820	12583977
TOTAL ATTENDANCES	23639891	2054`7674	21143395	20781082	23832673	25023869	25874069	27094811

Source: Health Informatics Centre, MOH

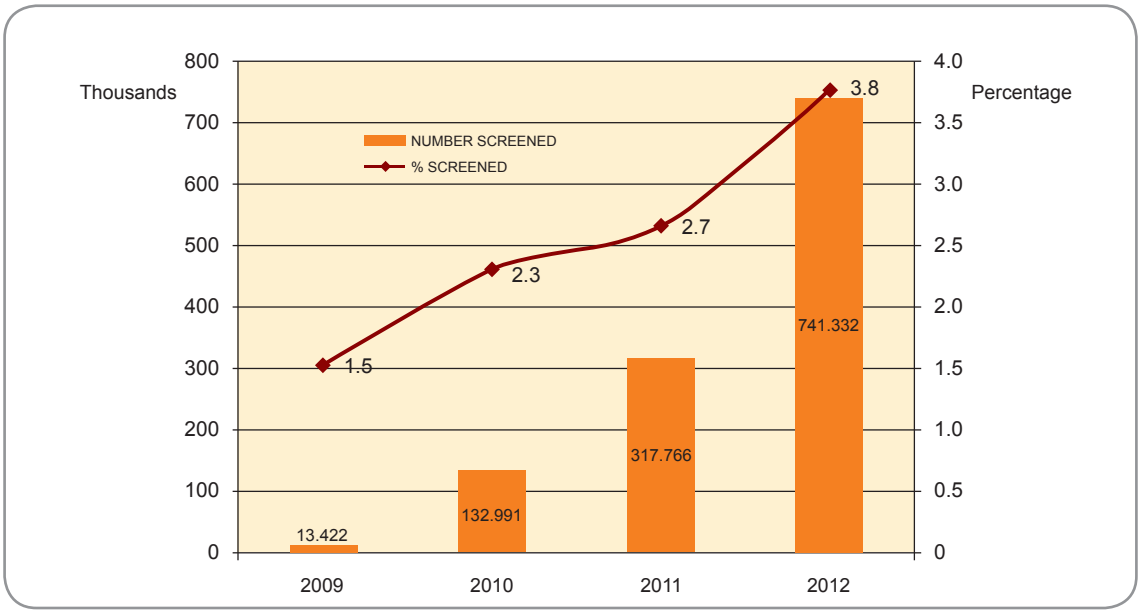
- **Integrated Health Risks Screening**

Integrated health screening was started in 2008, intended for holistic care of outpatients in the health clinics and ultimately to reduce the disease burden of the community. Health risks are prioritized according to age groups. The strategy is to identify and manage risks early and accordingly in order to prevent progression to disease. 5% of outpatient attendance has been targeted to be screened. This target has been chosen as a Key Performance Indicator (KPI) for the Health Minister in 2012, with the target set for 400,000 screenings to be done.

Figure 60 shows the increasing trend of screening done with an increase of 1.1% as compared to 2011. Although the target in absolute numbers had been achieved, the 3.8% attendance coverage falls short of the targeted 5%.

Almost half of those screened were detected to have health risk. The three (3) most common health risks detected from those screened were overweight, physically inactive and smoking, comprising 2.2%. 2.0% and 1.4% respectively. The commonest intervention given was health promotion & education followed by health advice and counseling.

FIGURE 60
NUMBER OF PATIENTS SCREENED BY YEAR IN HEALTH CLINICS, 2009-2012



Source: BSSK Screening, Family Health Development Division, MOH

- **Screening of Civil Servants**

In 2012, 34,554 civil servants aged 40 years and above underwent Routine Medical Examination (RME). Table 32 shows in detail the RME carried out, by states.

TABLE 32
TOTAL RME CONDUCTED ACCORDING TO STATE, 2012

STATE	TOTAL EXAMINED	NO. WITH RISK FACTORS/ MORBIDITIES	% WITH RISK FACTORS/ MORBIDITIES
Perlis	306	185	60.5
Kedah	391	110	28.1
Perak	4332	849	19.6
Selangor	2982	722	24.2
N. Sembilan	5436	465	8.6
Melaka	384	104	27.0
Johor	3131	468	14.9
Pahang	5795	1052	18.2
Terengganu	1542	453	29.4
Kelantan	3025	767	25.4
Sabah	2015	107	5.3
Sarawak	5215	573	11.0
FT Labuan	94	28	29.8
TOTAL	**34,554**	**5,885**	**16.9**

Source: Family Health Development Division, MoH

- **Self-Monitoring for Blood Pressure, Height and Body Weight**

Patients can do their own self assessment at the self-monitoring corner to take their own blood pressure monitoring, measure their own height and weight for the measurement of body mass index of BMI. This service was introduced in 2009 to provide tools for patients or clients in health clinics to assess, their health risks which includes measuring on their own, blood pressure and body mass index. The smoking status is also included for patients to declare as it greatly affects health.

In 2012, self-monitoring was provided by 481 health clinics nationwide and utilized by 153,525 clients, the majority of whom (60%) were adults between the ages of 20 to 59. The number of clients has doubled compared to 2011 with usage by 72,921 clients. The commonest risk identified was hypertension followed by overweight and smoking. In terms of body weight, about 6% of those who screened were underweight, 22% were overweight and 10% were obese. 20% who screened are smoking and 30% were measured to have blood pressure more than 140/90 mmHg.

- **Quit Smoking Services in Health Clinics**

Quit Smoking services had been developed in the health clinics since the year 2000. Initial capacity and capability was developed with training of Doctors, Assistant Medical Officers and Nurses. Interventions offered were counseling and Nicotine Replacement Therapy. Since 2010, Varinicline was made available in the health clinics. From 2000 until 2010 there were 326 clinics which provided the quit smoking services and this had increased to 401 clinics in 2012. Efforts will continue to improve the quality and accessibility of Quit Smoking services nationwide.

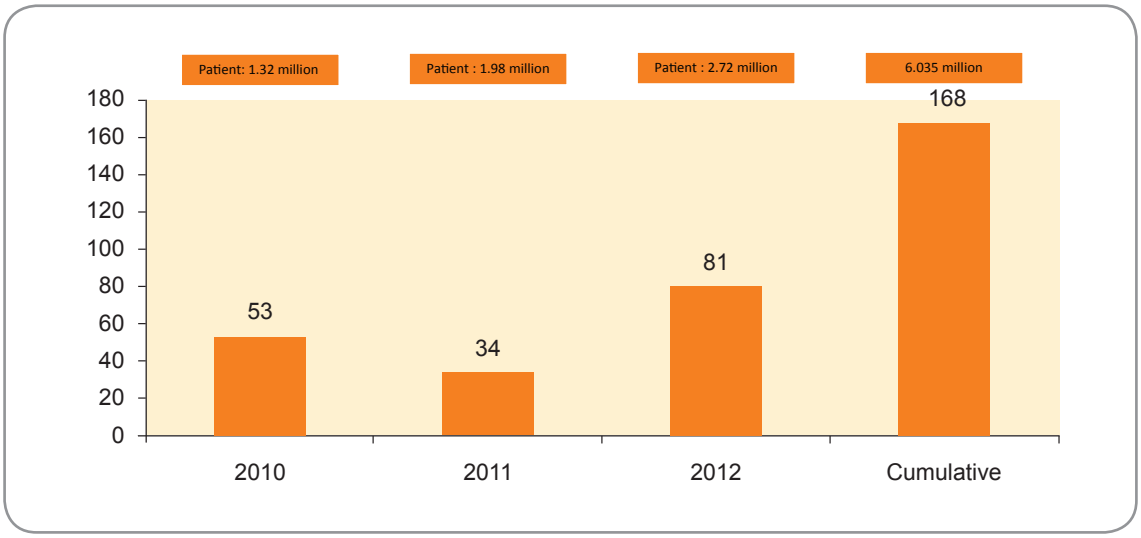
In 2012, a total of 8,946 clients registered to the Quit Smoking services where 4,830 registered in the period between January to June and 4,116 registered in the second half of the year. 781 clients (16.2%) from the earlier cohort succeeded in quitting, meeting the targeted 15% Quit Rate. Evaluation for the second cohort will be carried out in June 2013.

1Malaysia Clinic (1MC)

Since the initiative launched by YAB PM in the 2010 Budget, the number of 1 Malaysia Clinic had increased to reach 168 by 31st December 2012 with a cumulative attendance of 6.03 million as shown in Figure 61. Short waiting time, cheap consultation fees, convenient location and client-friendly services were cited as the main reasons why the 1Malaysia clinics set up by the Government were so well received by the community. Not only had the numbers increased, as shown in Table 33, the scope of services had also been expanded to cater to the demands of the clients. Since September 2011, doctor services had been introduced at 22 1MC and 7 of those had expanded the services to include Maternal and Child Health Services (MCH) as shown in Table 34.

It was noted that the attendance varied among the clinics, ranging from 35 to 200 patients daily, averaging 85 patients daily. As shown in Figure 62, the highly populated states of Perak, Selangor, and Johor showed the highest attendance while the states with lower population density but with lower geographical access to health facilities as well, also showed high attendances as in Sabah and Sarawak.

FIGURE 61
1MALAYSIA CLINIC - NUMBER AND ATTENDANCE, 2010-2012



Source: Family Health Development Division, MoH

TABLE 33
DISTRIBUTION OF 1MALAYSIA CLINIC BY STATE, 2010-2012

State	2010	2011	2012	Cumulative Total
Perlis	1	0	1	2
Kedah	2	3	5	10
Pulau Pinang	5	2	4	11
Perak	4	3	3	10
Kelantan	4	2	4	10
Terengganu	3	2	2	7
Pahang	3	2	5	10
Selangor	6	2	9	17
FT KL	5	1	11	17
Melaka	3	2	7	12
N. Sembilan	3	3	3	9
Johor	6	3	8	17
Sabah	4	4	11	19
Sarawak	4	4	8	16
FT Labuan	0	1	-	1
Total	**53**	**34**	**81**	**168**

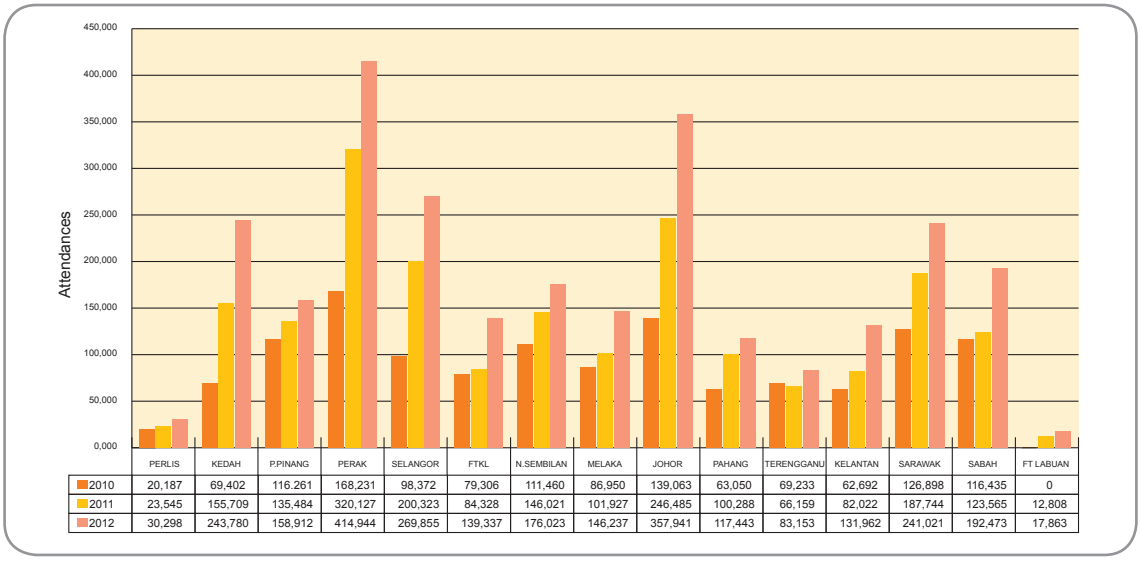
Source: Family Health Development Division, MoH

TABLE 34
1MALAYSIA CLINICS WITH DOCTOR AND MCH SERVICES, 2012

State	1MC with Doctor Service	1MC with MCH Service
Kedah	2	0
Perak	3	0
Selangor	1	1
FT KL	1	0
Negeri Sembilan	2	0
Melaka	1	0
Kelantan	10	6
Sabah	2	0
Malaysia	22	7

Source: Family Health Development Division, MoH

FIGURE 62
ATTENDANCE AT 1MC, BY STATE, 2010-2012



	PERLIS	KEDAH	P.PINANG	PERAK	SELANGOR	FTKL	N.SEMBILAN	MELAKA	JOHOR	PAHANG	TERENGGANU	KELANTAN	SARAWAK	SABAH	FT LABUAN
2010	20,187	69,402	116,261	168,231	98,372	79,306	111,460	86,950	139,063	63,050	69,233	62,692	126,898	116,435	0
2011	23,545	155,709	135,484	320,127	200,323	84,328	146,021	101,927	246,485	100,288	66,159	82,022	187,744	123,565	12,808
2012	30,298	243,780	158,912	414,944	269,855	139,337	176,023	146,237	357,941	117,443	83,153	131,962	241,021	192,473	17,863

Source: Family Health Development Division, MoH

For 2013, another 70 1MC will be built as announced by the Honourable Prime Minister during the Budget Speech on 28 September 2012. Expansion of services in the 1MC is planned with additional point of care testing (POCT) equipment to be made available. An allocation of RM5 million has been earmarked for placement of cholesterol meters in all 1MC throughout the country, thereby improving the screening for non-communicable diseases and follow up of patients.

Mobile Services

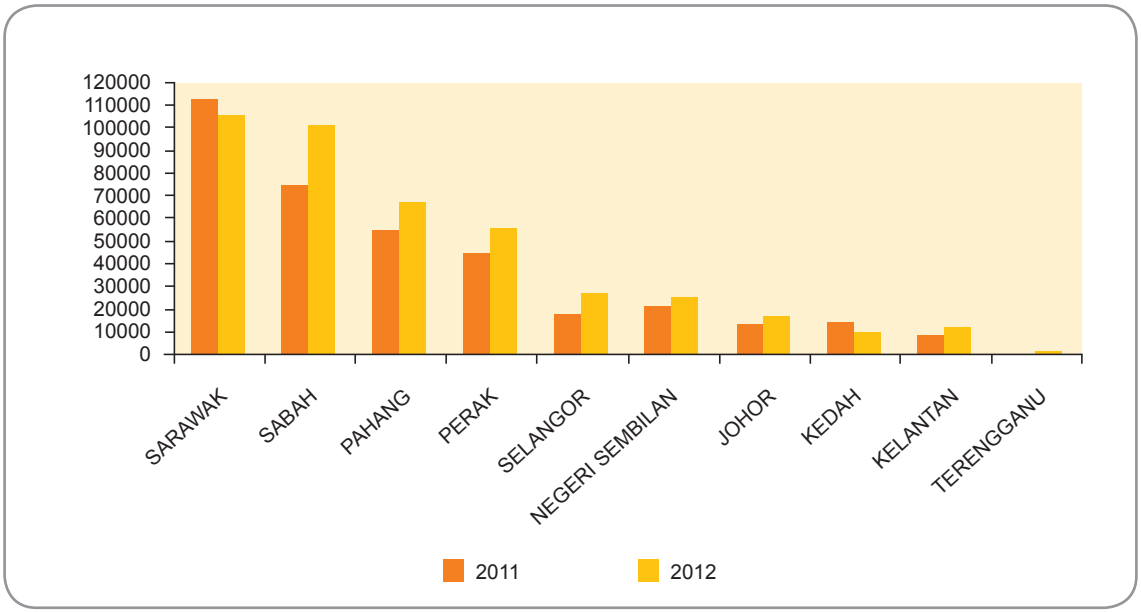
There were 197 mobile teams providing mobile health services in 2012 (Table 35). The basic services provided are maternal and child health including immunization, treatment of minor illnesses, control of communicable diseases, school health services, environmental health and sanitation and emergency care. This service has been chosen as one of the Key Performance Indicator (KPI) for the Health Minister for 2012.

TABLE 35
TOTAL MOBILE HEALTH SERVICES (TEAMS) BY STATE, 2012

NO.	STATE	TEAMS
1.	Perak	15
2.	Selangor	14
3.	N.Sembilan	8
4.	Johor	26
5.	Pahang	20
6.	Kelantan	5
7.	Terengganu	1
8.	Kedah	4
9.	Sabah	19
10.	Sarawak	85
TOTAL		**197**

Source: Family Health Development Division, MoH

FIGURE 63
ATTENDANCE FOR MOBILE HEALTH SERVICES BY STATE, 2011-2012

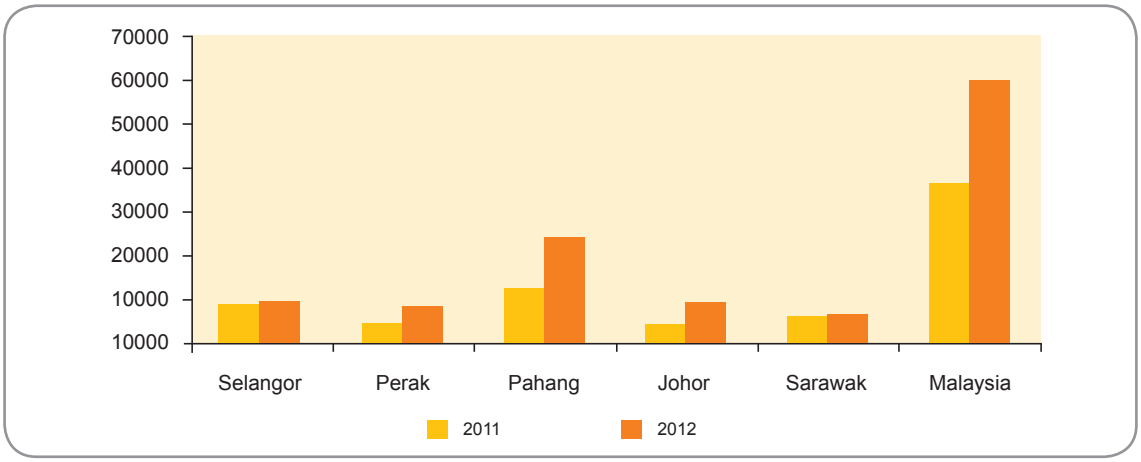


Source: Family Health Development Division, MoH

- **1Malaysia Mobile Clinics**

The 1 Malaysia Mobile Clinic or better known as *Klinik Bergerak 1Malaysia (KB1M),* is a new concept, using vehicles (bus and boat) customized and built to function as on-site clinics to provide fortnightly health services to identifies locations. Currently, five buses are operating in Perak, Selangor, Johor and Pahang while one boat is operating in Sarawak. In 2012, a total of 11,289 clients had been registered to KB1M with population coverage of 11.4%. The average daily attendance is 330 (59,493/180 days) with the target of 100 cases for each session.

FIGURE 64
ATTENDANCE FOR KB1M BY STATE, 2011 & 2012



Source: Family Health Development Division, MoH

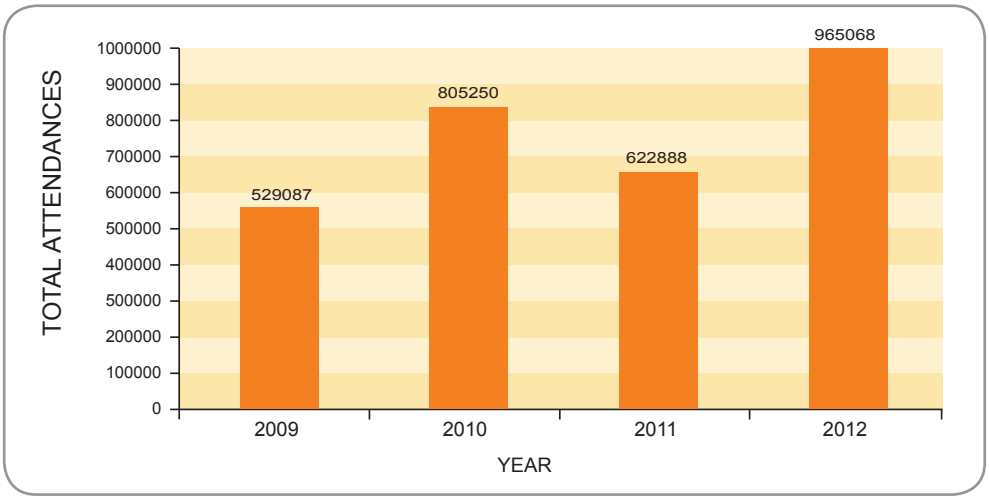
Emergency and Ambulance Services

In the year 2012, a total of 68 new ambulances was procured and distributed. According to norms, each health clinic must have a minimum of one ambulance unit; additional requirement is according to the workload and distance of the facility. In accordance with the target set by Ministry of Health, 100% response was recorded for emergency cases during office hours. The target for emergency response after office hours was set at 95% while the achieved rate was 99.6%. As of 2012, every state was required to run at least 1 training programme for the ambulance drivers and this target was also achieved successfully.

Extended Hours Service In Health Cinics

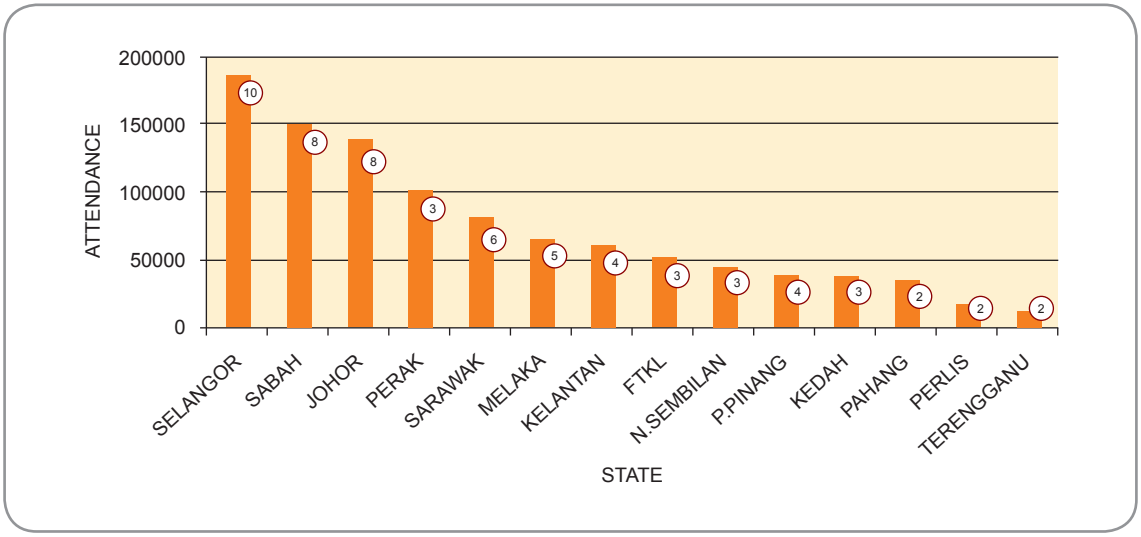
As of 2012, there were 64 health clinics that operated at extended hours. There was an increase in the total attendance of patients for the extended hour services in 2012.

FIGURE 65
TOTAL ATTENDANCE FOR THE EXTENDED HOUR SERVICES FROM 2009-2012



Source: Family Health Development Division, MoH

FIGURE 66
TOTAL ATTENDANCE TO EXTENDED HOURS CLINICS BY STATE, 2012



Note:●Number of Extended Hours clinics by state
Source: Family Health Development Division, MoH

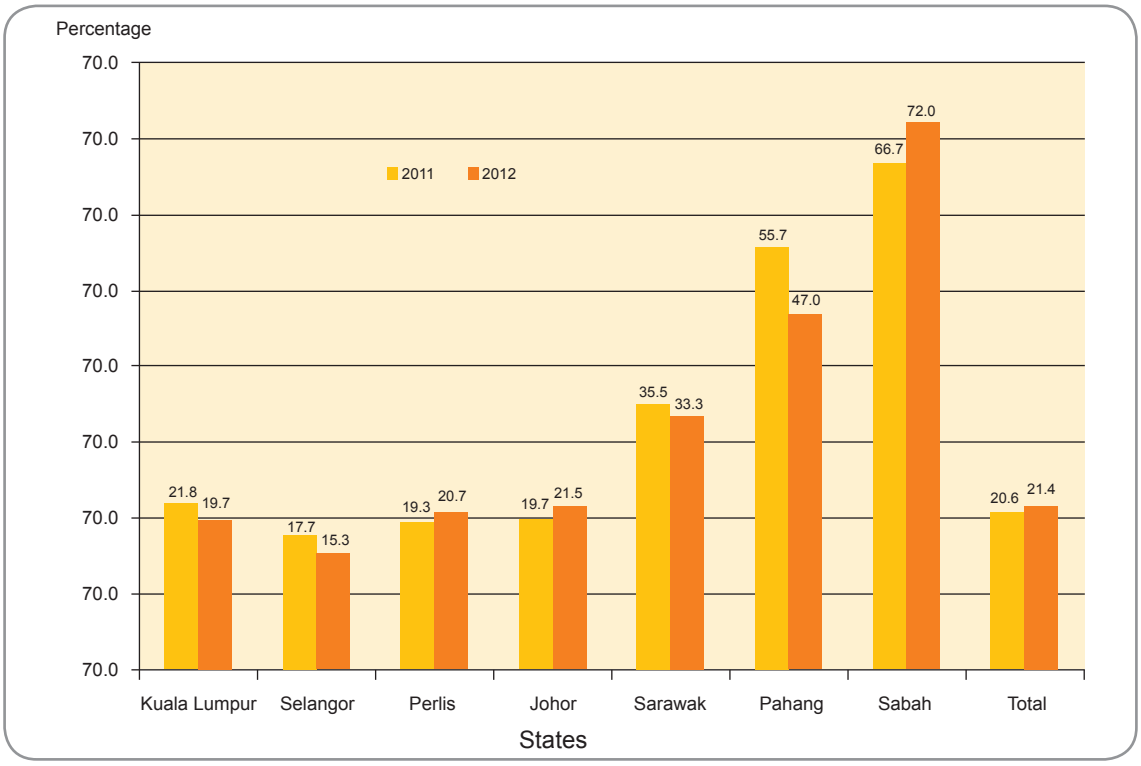
NON COMMUNICABLE DISEASE MANAGEMENT IN PRIMARY HEALTH CARE

Diabetes

The quality of Diabetic care in MOH health care facilities is indicated by the proportion of patients achieving blood level of HbA1c less than 6.5%. The target is set for at least 30% of diabetes patients in health clinics to achieve this. This is monitored using the data from clinics with Tele Primary Care (TPC) electronic information system and is greatly influenced by the rate of data entry by these clinics.

In 2012, 1,251 (21.4%) of Diabetics attending 73 TPC clinics achieved glycaemic control as compared to 802 (20.6%) in 2011. As shown in Figure 67, the Diabetic control varied between states however these data is limited by the number of HbA1c tests results entered in TPC system.

FIGURE 67
PERCENTAGE OF CONTROLLED DIABETES PATIENTS IN HEALTH CLINIC USING TPC DATA, 2011-2012



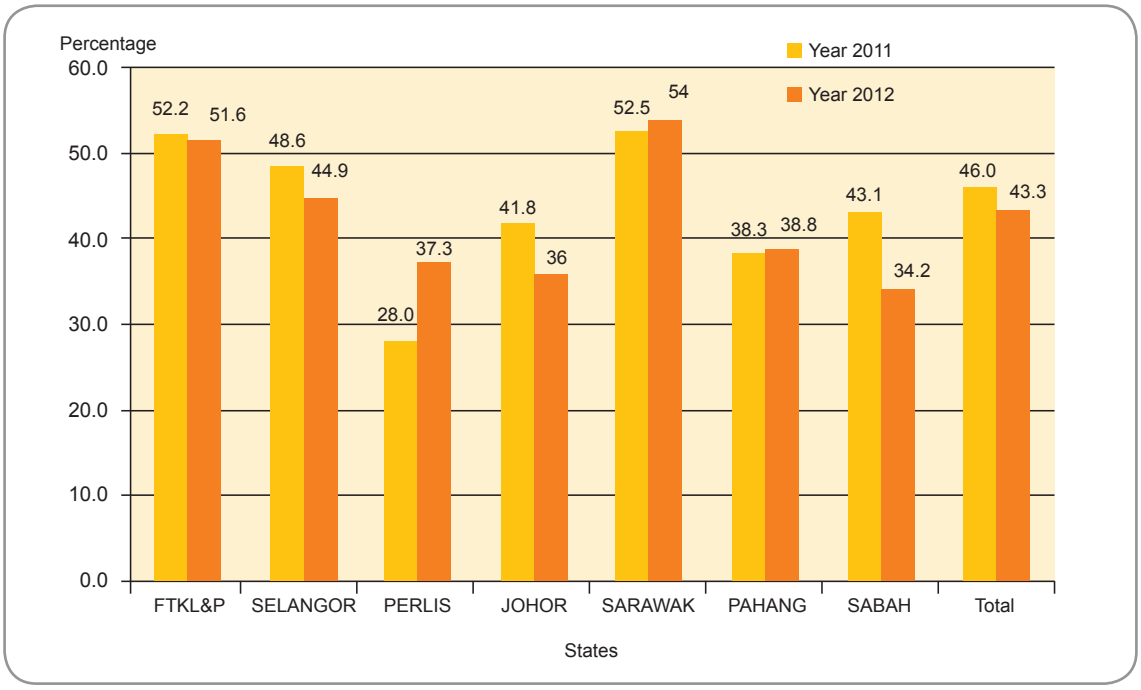
Source: Health Informatics Unit, Family Health Development Division, MOH

Hypertension

Hypertension is the commonest Non-Communicable Disease being treated at the health clinics. The quality of care for hypertension is indicated by proportion of patients with blood pressure of less than 140/90 mmHg. The target is for at least 50% of the hypertensive to achieve control.

As shown in Figure 68, in 2012, 43.3% of hypertensive in 73 TPC clinics achieved blood pressure control as compared to 46% in 2011. Generally, blood pressure control in 2012 was reduced in most states. Perlis however, showed marked increased performance. This data, similar to glycaemic control in Diabetic patients was also influenced by the rate of data entry in TPC clinics.

FIGURE 68
PERCENTAGE OF CONTROLLED HYPERTENSIVE PATIENTS IN TPC DATA, 2011-2012



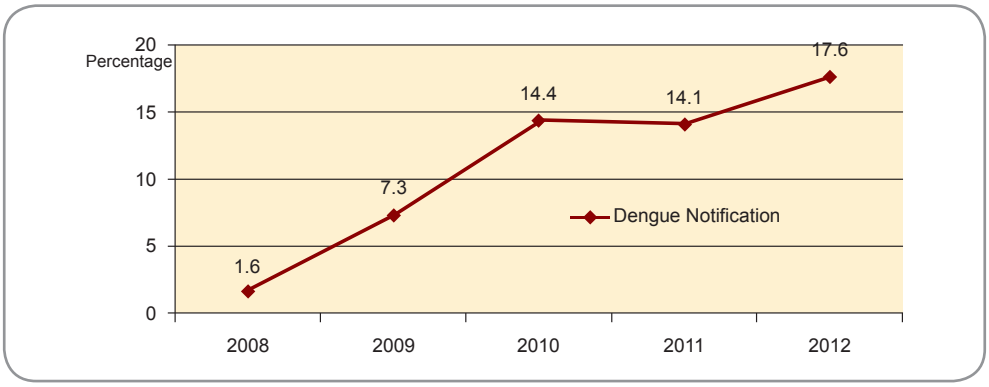
Source: Health Informatics Unit, Family Health Development Division, MOH

COMMUNICABLE DISEASE MANAGEMENT IN PRIMARY HEALTH CARE

Vector Borne Diseases

The rate of Dengue notification from health clinics had increased to 17.6% in 2012 as compared to 14.1% in 2011, as shown in Figure 69.

FIGURE 69
PERCENTAGE OF DENGUE NOTIFICATION IN HEALTH CLINICS, 2008-2012



Source: Family Health Development Division, MoH

Sexually Transmitted Diseases

HIV management in primary health care includes health education, screening, anti-retroviral therapy, opportunistic infection screening and treatment; and long term follow up. The screening program

comprises of anonymous screening, premarital screening and antenatal screening. In 2012,196,025 premarital screening and 15,508 anonymous screening were done. 92.7% of Tuberculosis infected patients were screened for HIV.

Anti-Retroviral therapy (ARV) for HIV patients was started in 2000 at the health clinics and these cases are managed by trained Family Medicine Specialist (FMS). In 2012, 165 FMS were trained by Infectious Disease Specialists and 83% (137) of them had actually initiate ARV treatment. 91% out of 250 targeted clinics are providing ARV treatment. In 2012, 1,322 patients were on ARV treatment as compared to 1,219 patients in 2011.

Harm Reduction Programme

The Methadone Maintenance Therapy (MMT) and The Needle Syringe Exchange Programme (NSEP) were started in health clinics in 2005 and 2008 respectively. In 2012, 195 health clinics provided MMT where 2,759 new clients were registered and the retention rate for therapy was at 62.6%. The Needle Syringe Exchange Programme (NSEP) was done at 90 health clinics and the exchange rate was at 73%.

MENTAL HEALTH SERVICES IN PRIMARY CARE (HEALTH CLINICS)

Mental health is an essential component of health and mental health services had been integrated into primary health care services since late 1990s. Services include promotion of well-being, prevention of mental disorders, mental health screening, treatment and rehabilitation of people affected by mental disorders.

Promotional activities had been carried out as part of the Healthy Lifestyle Campaign. Screening for mental health disorders had been carried out as part of the integrated health screening in the health clinics, using a standardized screening form, BSSK (Borang Saringan Status Kesihatan), for adolescent, adult and elderly. Healthy Mind Services are also being carried in health clinics to screen for stress, anxiety and depression. Twenty seven (27) health clinics provided psychosocial rehabilitation for people affected by mental disorders.

Mental Health Screening

For the year 2012, a total of 741,332 of outpatient attendance had been screened for risk of mental health problems using the BSSK screening format. Out of this, 6,576 (0.9%) were identified to have risk of mental health problems (Table 36). The adolescents had the highest proportion of those detected at risk for mental health problems.

TABLE 36
NUMBER OF PEOPLE SCREENED AND PERCENTAGE OF MENTAL HEALTH RISKS BY AGE GROUP, 2012

Age Group	No. Screened	No. with Mental Health Risks	Percentage
Adolescent	242561	3971	1.6%
Adult (Male)	160126	842	0.5%
Adult (Female)	195114	1247	0.6%
Elderly	144476	516	0.4%
TOTAL	**741332**	**6576**	**0.9%**

Source: BSSK Screening, Family Health Development Division, MoH

Treatment of Stable Mental Health Patients in Health Clinics
For the year 2012, a total of 24,182 cases received treatment at health clinics, of whom, 10% (2,403) were new cases. Majority of the new cases (64%) were diagnosed in the hospitals and referred to for subsequent treatment while 36% (870) were diagnosed in the health clinics themselves.

Stable cases that were on follow-up in health clinics were given pharmacological treatment, counseling and in selected health clinics, psychosocial rehabilitation. Their compliance to treatment was monitored to prevent relapses and in 2012, the defaulter rate of 16.2% was noted, exceeding the WHO standard of not more than 10%

Psychosocial Rehabilitation Centre in Health Clinics
There were 27 psychosocial rehabilitation centres established in health clinics. The main objective of these centres is to assist mentally ill patients to understand and control their illness, to achieve optimal level of function and to integrate them back into the community. A total of 212 clients attended rehabilitation at these centres.

With the recent Mental Health Act 2001 and Mental Health Regulation 2010 taking effect, these psychosocial rehabilitation centres will be upgraded into community mental health centres, run by the psychiatric services under the purview of Hospital Development Division, which will provide a more comprehensive services (screening, intervention, treatment and rehabilitation) for people with mental health problems.

HAEMODIALYSIS SERVICE IN PRIMARY CARE (HEALTH CLINICS)

Hemodialysis service is usually provided as a secondary or tertiary level of care. However, renal failure patients living in remote areas have no access to haemodialysis centres and therefore the Ministry of Health provides dialysis service at the health clinics.

Currently there are four (4) health clinics providing hemodialysis services which are situated in Pulau Pangkor Health Clinic, Perak; Simpang Renggam Health Clinic, Johor; Kodiang Health Clinic, Kedah and Tanglin Health Clinic, Kuala Lumpur. However, hemodialysis service at Tanglin Health Clinic is only for government servant. It is an extension of service of Dialysis Unit Hospital Kuala Lumpur.

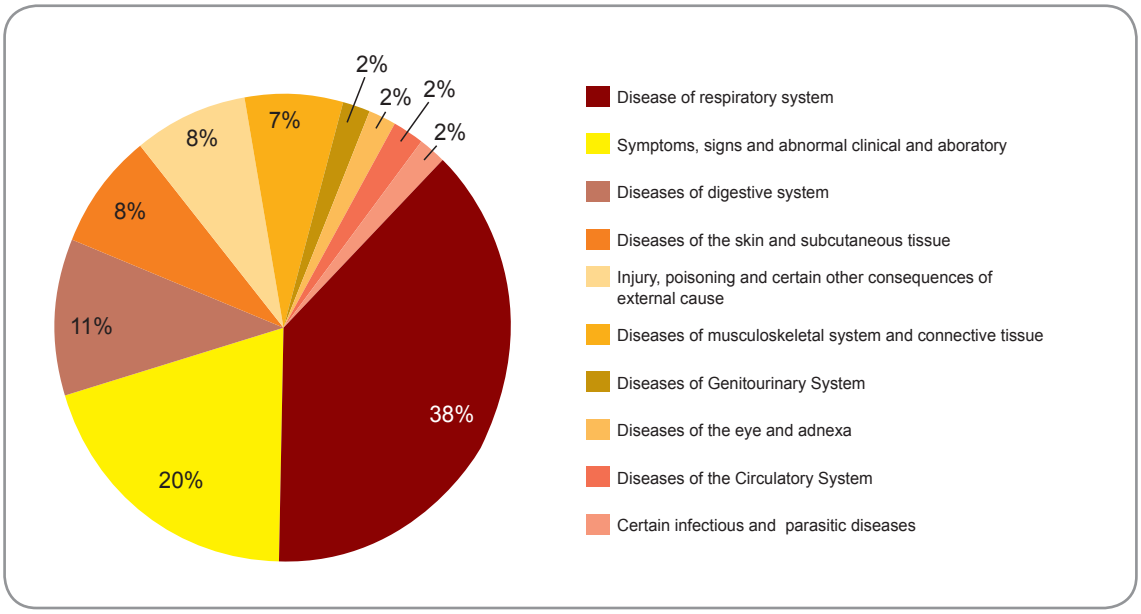
The health clinic is only housing the hemodialysis service which is actually an extension service of the nearby hospital. The health clinic is equipped with three (3) machines which run in 2 shifts providing service for 12 patients 3 times a week.

INSTITUTIONAL CARE

Health Services at The National Service Training Program (NSTP)
A total of 73,800 trainees enrolled into NSTP at 81 camps in 2012. Figure 70 shows the commonest causes for clinic visits in the camps.

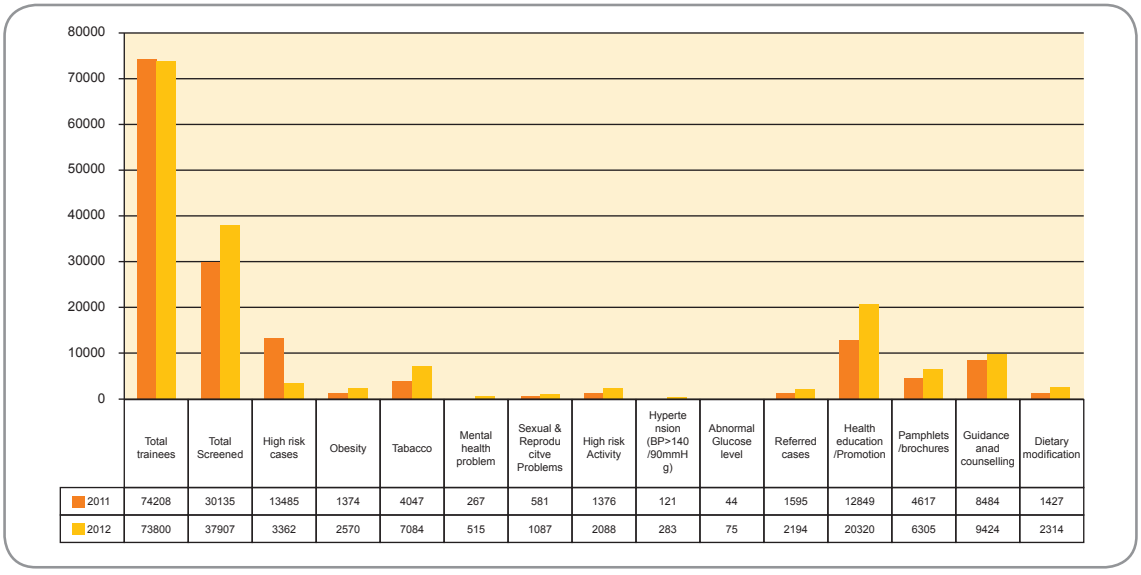
The health team also provided adolescent health risk screening. Figure 71 shows a comparison between years 2011 and 2012 of the total number of trainees screened, the high risk factors detected and the interventions carried out.

FIGURE 70
10 MOST COMMON CAUSES FOR VISITS TO NSTP CLINIC CAMPS



Source: Family Health Development Division, MoH

FIGURE 71
TOTAL TRAINEES SCREENED, HIGH RISKS DETECTED AND INTERVENTIONS 2011-2012



	Total trainees	Total Screened	High risk cases	Obesity	Tabacco	Mental health problem	Sexual & Reproducitve Problems	High risk Activity	Hypertension (BP>140/90mmHg)	Abnormal Glucose level	Referred cases	Health education /Promotion	Pamphlets /brochures	Guidance anad counselling	Dietary modification
2011	74208	30135	13485	1374	4047	267	581	1376	121	44	1595	12849	4617	8484	1427
2012	73800	37907	3362	2570	7084	515	1087	2088	283	75	2194	20320	6305	9424	2314

Source: Family Health Development Division, MoH

The health services at NSTP camps are supervised by the nearest health clinic as well as the district health office and each camp should receive a minimum of 36 MO visits annually. Table 38 details the supervisory visits by state.

TABLE 37
NSTP CAMPS SUPERVISORY VISITS BY STATE, 2012

No.	States	Total No. of camps	% of MO visits achieved	No. of visits by District Coordinator	No. of visits by State Coordinator
1.	Melaka	4	18.1	10	5
2.	Kelantan	3	42.6	24	1
3.	Selangor	7	57.1	70	1
4.	Terengganu	5	10.6	10	6
5.	Sarawak	8	5.6	26	3
6.	N.Sembilan	6	25.5	49	7
7	Perak	10	48.1	50	1
8.	Kedah	8	52.8	50	11
9.	Pahang	9	16.4	52	5
10.	Perlis	3	66.7	34	9
11.	Johor	7	59.5	31	15
12.	Sabah	7	11.1	19	5
13.	P.Pinang	4	56.3	15	2
	Total	**81**		**406**	**65**

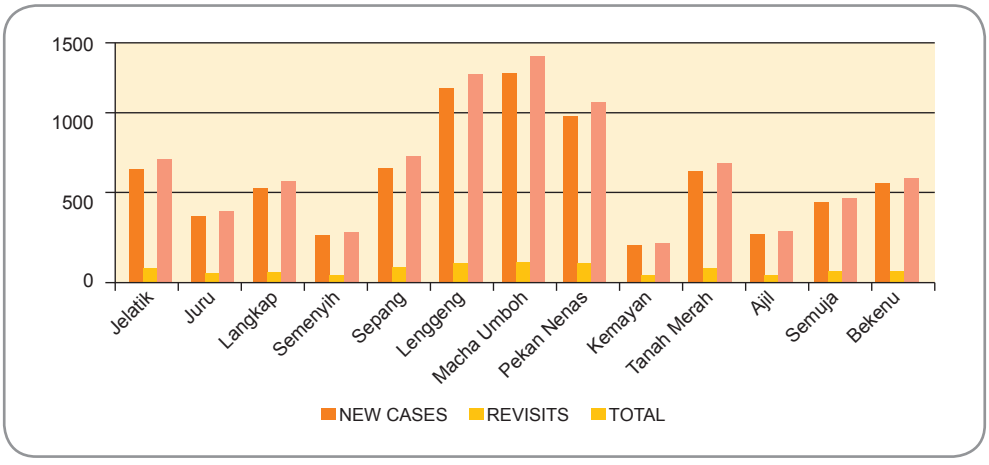
Source: Family Health Development Division, MoH

Temporary Detention Depots

The Ministry of Health team visits the Temporary Detention Depots fortnightly to provide health care for the detained immigrants, in a bid to curb spread of communicable diseases and to reduce morbidity and mortality at such detention centres. In 2012, 100% of Temporary Detention Depots were visited. However, only 61.5% (8/13) of Temporary Detention Depots achieved the target of 24 visits/year.

The Detention Depots at Machap Umboh, Lenggeng and Pekan Nenas recorded the largest number of detainees requiring medical aid. The Detention ports with the least total of patients were at Kemayan, Ajil and Semenyih.

FIGURE 72
TOTAL NUMBER OF PATIENTS SEEN AT TEMPORARY DETENTION PORTS, 2012



Source: Family Health Development Division, MoH

TABLE 38
10 MOST COMMON CAUSES FOR VISIT TO CLINICS IN THE DEPOTS, 2012

No.	Causes	% of total detainees treated
1.	Diseases of Respiratory System	40%
2.	Abnormal symptoms/signs/clinical or laboratory findings	18%
3.	Diseases of Skin and Subcutaneous tissue	14%
4.	Diseases of Digestive System	9%
5.	Certain Infectious and parasitic diseases	5%
6.	Factors influencing health status and contact with health services	5%
7.	Diseases of Musculoskeletal system and Connective tissue	3%
8.	Injury, Poisoning and certain other consequences	2%
9.	Diseases of Ear and Mastoid process	2%
10.	Diseases of Eye and Adnexa	2%

Source: Health Informatics Unit, Family Health Development Division, MOH

CLINICAL SUPPORT SERVICES

Human Resource Development in Primary Health Care

- **Professionals**

In striving for the improvement of healthcare delivery to the community, the year 2012 saw an increase in the filling of healthcare professionals' posts in comparison to previous years. Vacancies in the various posts i.e. Family Medicine Specialist (FMS) currently stands at 6.0% (14), Medical & Health Officer at 16 % (502) and Pharmacists at 22.5% (329). The filling of posts is as shown in Table 39.

- **Paramedics**

Overall, there were significant changes in the filling of posts for all categories of assistant medical officers, medical lab assistants and radiographers in 2012 as compared to 2011. However, for nurses and community nurses, this had remained the same (Table 39).

TABLE 39
FILLING OF POSTS BY CATEGORY IN 2011-2012

Category	2011	2012
Family Medicine Specialists	196 (84.5%)	218 (94%)
Medical and Health Officers	1867 (61.5%)	2693 (84%)
Pharmacists	942 (88.2%)	1131 (77.5%)
Assistant Medical Officers	2993 (90.4%)	3055 (84.7%)
Nurses	6702 (87.8%)	6629 (87.5%)
Assistant Pharmacists	1587 (95.0%)	1772 (95.9%)
Medical Lab Technicians	1297 (96.0%)	1525 (94.6%)

Category	2011	2012
Radiographers	280 (94.9%)	334 (98.2%)
Community Health Nurses	11874 (92.4%)	13084 (93.6%)

Source: Family Health Development Division, MoH

Radiology Services

In 2012, there were 166 clinics providing radiology services, an increase of 9.9% as compared to 151 clinics in 2011. Almost all the radiographer posts in health clinics have been filled (99%). In terms of workload, the number of X-ray examinations performed was 572,532 in 2012, an increase of 22.7% as compared to 2011.

TABLE 40
WORKLOAD OF RADIOLOGY SERVICES IN PRIMARY CARE, 2011-2012

NO	STATES	HEALTH CLINIC WITH XRAY	NO. OF X-RAY 2011	NO. OF X-RAY 2012
1	JKN Johor	17	73876	90400
2	JKN Melaka	10	22807	27713
3	JKN Negeri Sembilan	13	39647	41939
4	JKN Selangor	20	56541	73646
5	JKN Perak	21	51713	59131
6	JKN P. Pinang	9	19725	25422
7	JKN Kedah	16	37970	46978
8	JKN Perlis	1	5163	7506
9	JKN Kelantan	13	33504	43356
10	JKN Terengganu	8	5326	8771
11	JKN Pahang	12	20567	29432
12	JKN Sarawak	17	48378	59665
13	JKN Sabah	5	32224	39664
14	JKN FT Labuan	1	3033	2789
15	JKN FT Kuala Lumpur	2	5287	7059
16	JKN FT Putrajaya	1	7939	9061
TOTAL		**166**	**466,583**	**572,532**

Source: Family Health Development Division, MoH

The national target for the quality indicator of X-ray services in primary care facilities was reduced in 2012 from 5% to less than 2.5% of X-ray films rejected. All health clinics with X-ray services had participated in the monitoring of this indicator as compared to only 98.7% in 2011. However, the increase seen in the percentage of clinics not achieving the new target may be due to the higher standard set.

TABLE 41
QAP OF RADIOLOGY SERVICES IN PRIMARY CARE, 2011-2012

Indicator	Year	
	2011	2012
Standard	<5%	<2.5 %
No. of participating clinics	149 / 151	166 / 166
Percentage	98.7 %	100 %
No. of clinics achieving standards	146 / 149	143 / 166
Percentage	98 %	86 %
Total % Proportion of x-ray film rejected	1.25 %	1.54 %

Source: Family Health Development Division, MoH

Pharmacy Services

There was an increase of 10.26% in the prescriptions handled at the pharmacy counters in the primary healthcare facilities in 2012 as compared to 2011. Out of 28,438,975 prescriptions received in 2012, 95.44% (27,141,083) were received during office hours while the remaining was received after office hours. There were 652 health clinics providing Appointment Based Dispensing System, which offered convenient, safe, and less time consuming services for the clients.

TABLE 42
WORKLOAD OF PHARMACY SERVICES IN PRIMARY CARE, 2012

States	Total number of prescriptions received in health clinics		
	Office hour	After office hour	Total
Johor	3,851,376	159,352	4,010,728
Kedah	2,031,409	91,890	2,123,299
Kelantan	1,654,282	61,347	1,715,629
Melaka	1,253,019	80,716	1,333,735
N. Sembilan	1,770,397	82,106	1,852,503
Pahang	1,683,265	57,252	1,740,517
Perak	3,096,744	154,888	3,251,632
Perlis	306,279	28,353	334,632
P. Pinang	1,513,608	19,300	1,532,908
Sabah	2,143,741	103,521	2,247,262
Sarawak	1,795,507	84,101	1,879,608
Selangor	3,823,564	265,724	4,089,288
Terengganu	990,468	48,391	1,038,859
FT KL & Putrajaya	1,168,590	60,951	1,229,541
FT Labuan	58,834	-	58,834
Grand total	**27,141,083**	**1,297,892**	**28,438,975**

Source: Family Health Development Division, MoH

The QAP program for pharmacy services in health clinics monitors the percentage of prescription wrongly filled and detected before dispensing. Despite the increasing trend in the national achieve-

ment for this indicator since 2009, there was a 1.99% decrease for 2012. However, it was noted that the number of clinics participated in the monitoring of the QAP was increasing every year.

TABLE 43
QAP OF PHARMACY SERVICES IN PRIMARY HEALTH CARE, 2008-2012

Year	2009	2010	2011	2012
Standard				
Prescriptions Counterchecked (%)	56.58%	82.45%	87.17%	85.18%
National Achievement (%)	0.054%	0.106%	0.087%	0.112%
Numbers of health clinics Involved in QAP monitoring	387	445	472	556
	48%	55%	54%	61%
Numbers of health clinics achieving standard	331	326	306	301
	86%	73%	65%	54%

Source: Family Health Development Division, MoH

Pathology Services

- **Workload**

The number of tests done in the pathology laboratories at the health clinics had increased by 13.5% in year 2012 (75,062,884 tests, Table 44) as compared to 2011 (66,137,984 tests). The most frequently requested analytical tests were biochemistry (65.9%) followed by hematology (17.7%) and microbiology (8.6%). At the end of 2012, there were 617 hematology analyzers, 224 chemistry analyzers and 295 HbA1c analyzers in the health clinics.

- **External Quality Control**

The quality initiatives were strengthened especially in the analytical process of the pathology tests. Besides the existing Internal Quality control activities, External Quality Control or Proficiency Testing (PT) for the routine biochemistry and HbA1C tests were continued. The external quality control or proficiency testing for routine biochemistry tests was first introduced in year 2005 involving 35 laboratories nationwide. As of December 2012, the number of participating laboratories had increased to 140.

- **Quality Assurance Program**

In general, the number of laboratories involved in the QAP program for pathology services in the health clinics had increased in 2012 as shown in Table 45. There was no significant difference in the overall performance for 2012 as compared to the year before.

TABLE 44
WORKLOAD OF PATHOLOGY SERVICES IN PRIMARY CARE, 2012

NO	STATES	HEALTH CLINICS	MCH CLINICS	HEALTH CLINIC WITH LAB	HEALTH CLINIC WITHOUT LAB	MCH CLINIC WITH LAB	MCH CLINIC WITHOUT LAB	WORKLOAD @ HEALTH CLINICS	WORKLOAD @ MCH CLINICS
1	Perlis	9	0	9	0	0	0	1,777,246	0
2	Kedah	56	6	56	0	6	0	6,148,053	254,541
3	Pulau Pinang	29	6	28	1	3	3	3,802,981	65,857
4	Perak	83	9	83	0	9	0	7,648,042	250,180
5	Selangor	73	5	73	0	3	2	12,040,064	68,341
6	FT Putrajaya	17	17	16	1	3	14	2,200,037	385,932
7	Negeri Sembilan	46	1	46	0	1	0	3,294,532	0
8	Melaka	29	1	29	0	1	0	4,012,531	34,293
9	Johor	94	3	92	2	2	1	9,830,996	103,729
10	Pahang	79	6	77	2	6	0	4,979,456	346,735
11	Terengganu	45	1	45	0	1	0	4,028,602	113,433
12	Kelantan	68	3	67	1	3	0	4,279,262	0
13	Sarawak	93	23	41	52	3	20	4,463,806	178,975
14	Sabah	196	25	91	105	23	2	3,566,840	946,145
15	FT Labuan	1	0	1	0	0	0	242,275	0
TOTAL		**918**	**106**	**754**	**164**	**64**	**42**	**72,314,723**	**2,748,161**

Source: Family Health Development Division, MoH

TABLE 45
QAP OF PATHOLOGY SERVICES IN PRIMARY CARE, 2011-2012

Item	2011 Performance	2012 Performance
Total number of labs reported	448	526
Number of health clinics that achieved 95% LTAT FBC (automation) <30 minute (%)	433/448 (96.2%)	526/551 (95.8)

Source: Family Health Development Division, MoH

TELEPRIMARY CARE (TPC)

Teleprimary Care (TPC) is a Health Information System that allows the sharing of information and teleconsultation between primary and secondary healthcare facilities. TPC was launched in 2005 and the backbone for this system is the TPC application developed by MOH who also owns the copyright. TPC system has been implemented in 7 States namely, Johor, Sarawak, Perlis, Selangor, Wilayah Persekutuan Kuala Lumpur (WPKL), Pahang and Sabah. By 2012, 88 primary health care facilities and specialist outpatient clinics in 7 hospitals were using TPC, linking government health clinics, District Health Offices as well as selected hospitals.

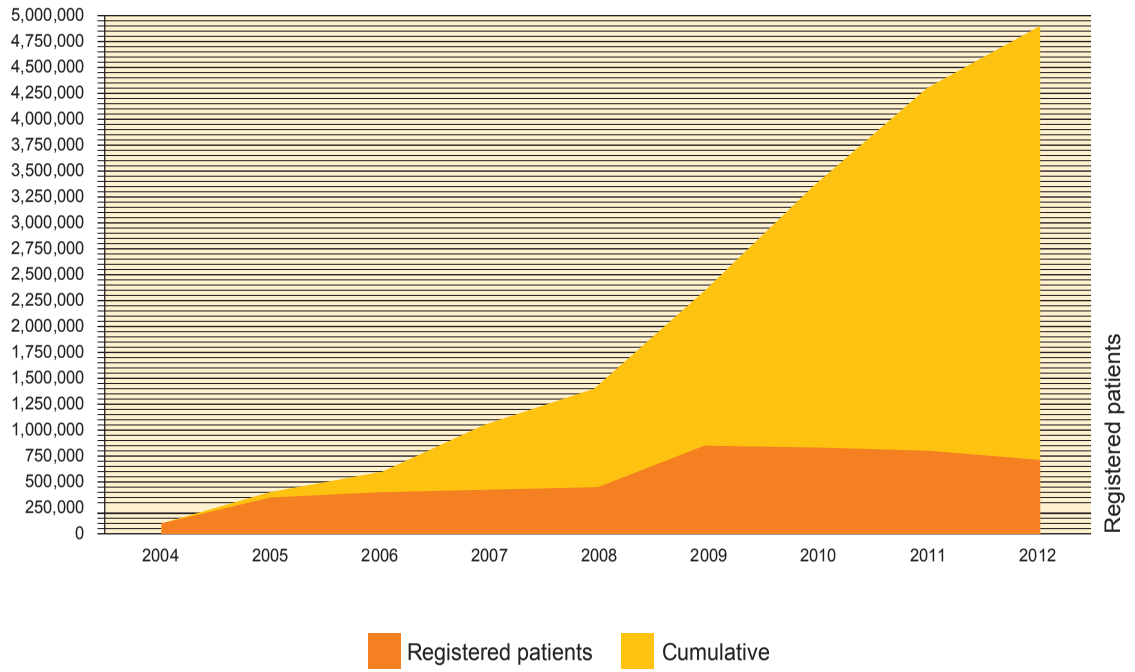
Registration of Patients

The number of patients registered in TPC showed an increasing trend from 75,959 when it first started in 2004 to reach 4,793,66 in 2012, in line with the expansion of TPC sites. This information is vital to get a snapshot of individuals accessing health care within the facility's operational area.

In 2012, there was equal sex distribution of patients registered at the TPC clinics. The Malays constituted a bigger proportion of those registered, at 52%, following the population distribution of the operational areas of the TPC clinics.

Half of those registered were young adults, aged between 20-59 years old, while the children aged from 0-9 years old, comprised 28%. The elderly (> 60 years old) formed the smallest proportion at 7%.

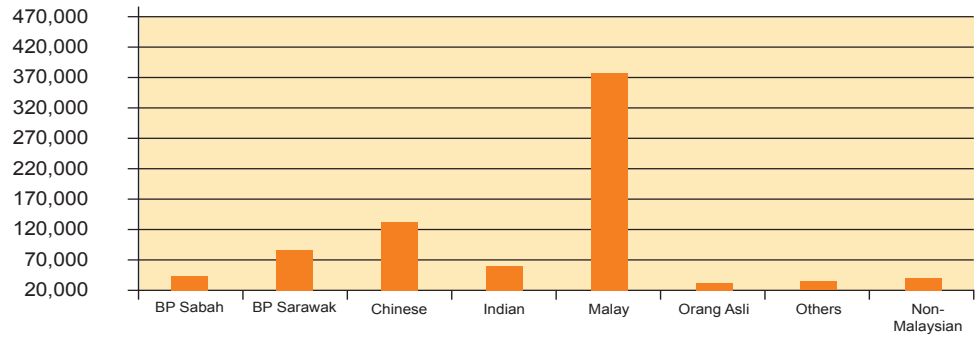
FIGURE 73
NUMBER OF PATIENTS REGISTERED IN TPC, 2004–2012



	2004	2005	2006	2007	2008	2009	2010	2011	2012
Registered patients	75,959	248,949	333,947	352,415	430,208	933,870	808,785	860,415	749,116
Cumulative	75,959	324,908	658,855	1,011,270	1,441,478	2,375,348	3,184,133	4,044,548	4,793,664

Source: Family Health Development Division, MoH

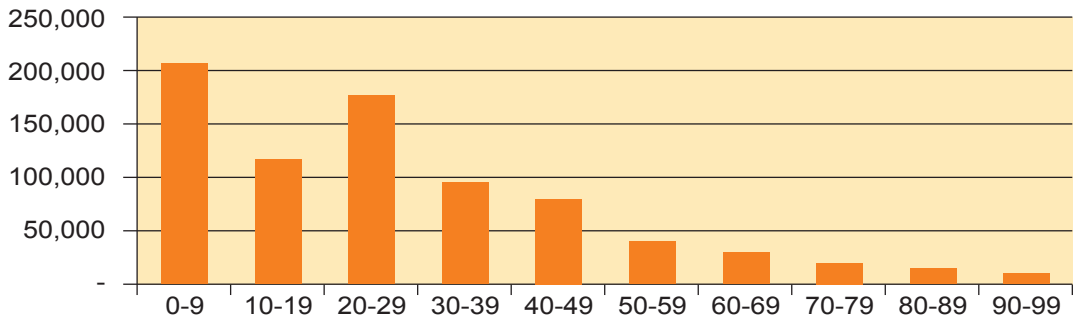
FIGURE 74
ETHNIC DISTRIBUTION OF PATIENTS IN TPC SYSTEM



	BP Sabah	BP Sarawak	Chinese	Indian	Malay	Orang Asli	Others	Non-Malaysian
Number	39,484	75,522	110,357	62,044	387,975	2,834	25,659	47,777

Source: Family Health Development Division, MoH

FIGURE 75
AGE DISTRIBUTION OF PATIENTS IN TPC SYSTEM



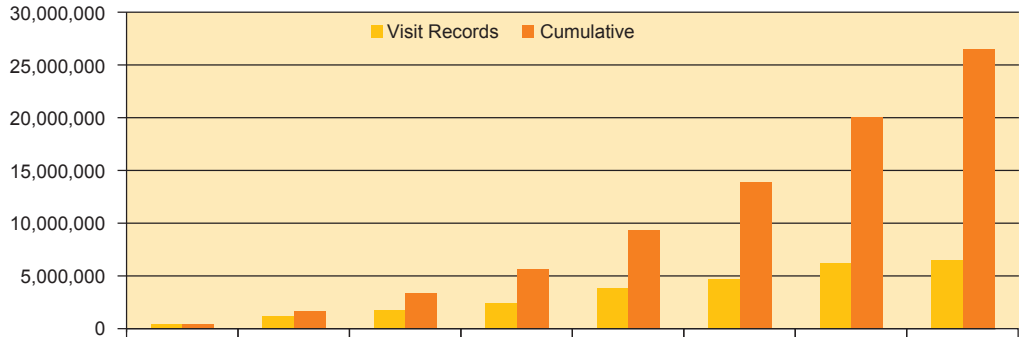
	0-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99
Number	214,090	114,599	164,529	99,578	61,423	48,683	30,056	14,817	3,934	430

Source: Family Health Development Division, MoH

Visit Record

Visit records had increased from 415,422 in 2005 to 6,356,628 in 2012, with a cumulative total of 26,432,158 in the 8 years of TPC implementation. In 2012, 76% of visits made to the health facilities were for outpatients' services and 24% were for wellness services such as antenatal care and child health.

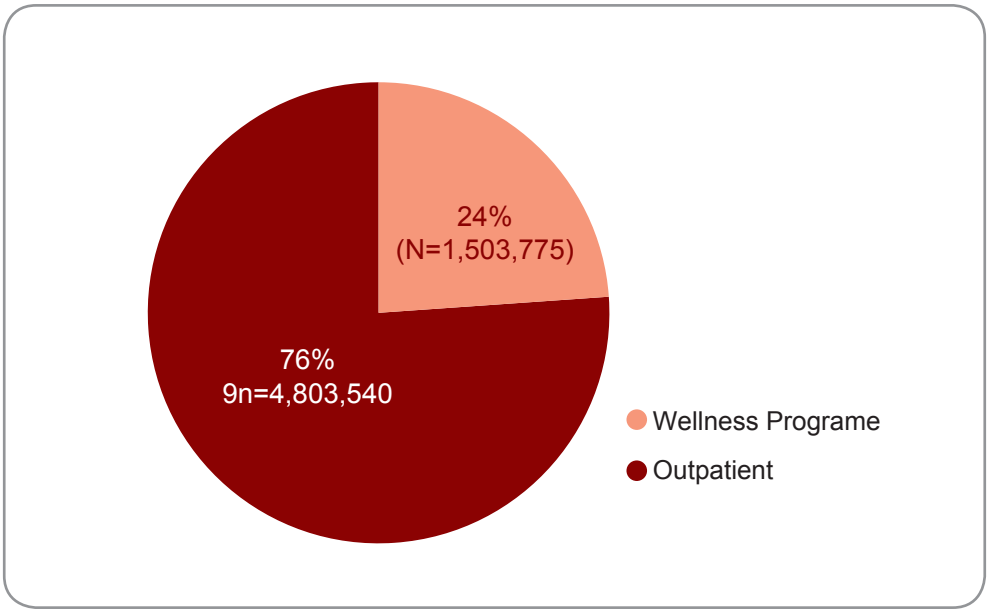
FIGURE 76
VISIT RECORDS IN TPC, 2005-2012



	2005	2006	2007	2008	2009	2010	2011	2012
Visit Record	415,422	1,139,357	1,677,656	2,304,845	3,720,300	4,702,686	6,115,264	6,356,628
Cumulative	415,422	1,554,779	3,232,435	5,537,280	9,257,580	13,960,26	20,075,530	26,432,158

Source: Family Health Development Division, MoH

FIGURE 77
VISITS BY SERVICE TYPE

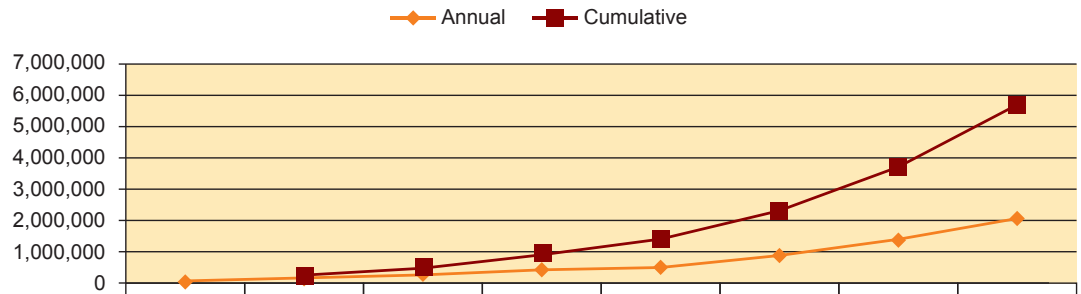


Source: Family Health Development Division, MoH

Clinical Notes (Careplan)

Careplans indicate the comprehensiveness of data entered into the TPC system as they contain patients' clinical information including presenting complaints, clinical histories, clinical interventions, orderables and management plans. The build-up to the use of careplan was slow initially with 38,737 in 2005, followed by a rapid escalation to 2,043,262 in 2012, with a cumulative total of 5,734,499 throughout the 8 years. Generally, the older TPC sites with their older hardware do not fare as well as the newer sites in comprehensiveness of data entry.

FIGURE 78
NUMBER OF CAREPLANS IN TPC, 2005-2012



	2005	2006	2007	2008	2009	2010	2011	2012
Annual	38,737	166,068	281,976	427,370	505,712	881,162	1,390,212	2,043,262
Cumulative	-	204,805	486,781	914,151	1,419,863	2,301,025	3,691,237	5,734,499

Source: Family Health Development Division, MoH

e-Appointment

This service was piloted in 2009 under the e-KL project for Kuala Lumpur and Selangor to reduce defaultation, with reminders sent via SMS sent 3 days prior to the scheduled appointment. However, the SMS service was discontinued from January to May 2012 for lack of funding, with a resultant reduction to 95371 SMS reminders posted.

TABLE 46
APPOINTMENT REMINDERS VIA SMS FOR SELANGOR AND KUALA LUMPUR, 2009-2012

No.	State	2009	2010	2011	2012 (June–Dec)
1.	Selangor	6540	321259	434949	78823
2.	Kuala Lumpur	295	47897	83322	16548
TOTAL		**6835**	**369156**	**518271**	**95371**

Source: Family Health Development Division, MoH

Teleprimary Care Users Conference

The 3rd Teleprimary Care Users Conference was held in Pulau Langkawi, Kedah from 25-27 June 2012 to recognize TPC users in winning *Anugerah Inovasi Sektor Awam 2010*. The theme chosen was ***"Taking TPC further"***. A total of 220 participants from TPC sites attended the conference with 42 paper presentations, comprising plenaries, symposia and sharing sessions.

Way Forward for TPC

In aspiring to the goal of an electronic health records for each member of the population, enhancing TPC to embrace the rapid global ICT technological advances is the way forward before TPC can be rolled-out nationwide. This is explicitly a part of the Ministry of Health's ICT Strategic Plan 2011-2015.

QUALITY ASSURANCE PROGRAMME IN PRIMARY HEALTH CARE

The "Appropriate Management of Asthma" and "Client friendly Clinic" indicators are monitored through

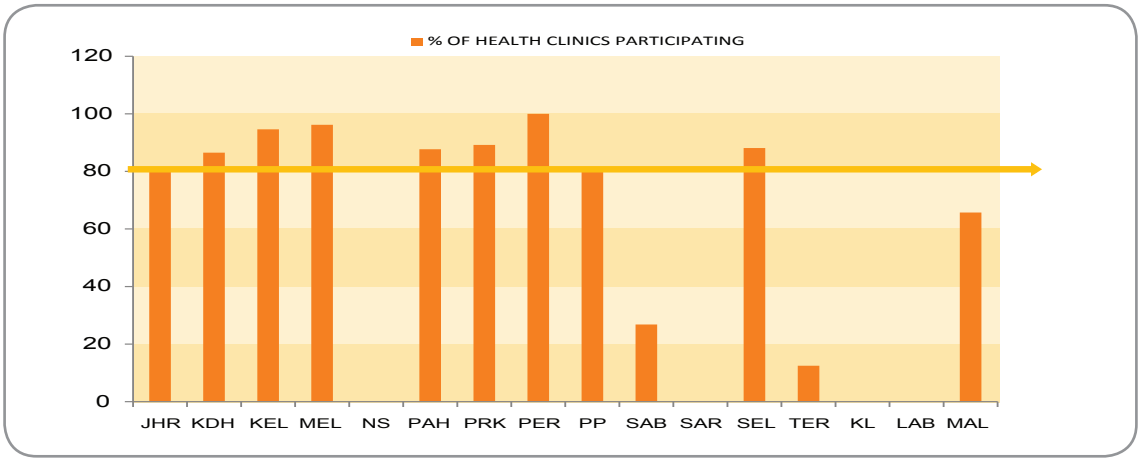
the median achieved for each indicator. Table 47 shows a continuous comparison from 2008 to 2012 of both the indicators.

TABLE 47
QUALITY ASSURANCE PROGRAMME (QAP) IN PRIMARY HEALTH CARE, 2012

Performance	Asthma					Client Friendly				
	2008	2009	2010	2011	2012	2008	2009	2010	2011	2012
No. of participating clinic	412	465	424	598	400	595	543	740	762	777
Percentage (%)	55.4	58.0	91.0	108.3	62.5	78.0	67.7	91.8	93.7	88.4
Median	30.0	11.2	10.0	25.4	61.6	84.0	86.0	87.0	91.1	94.2

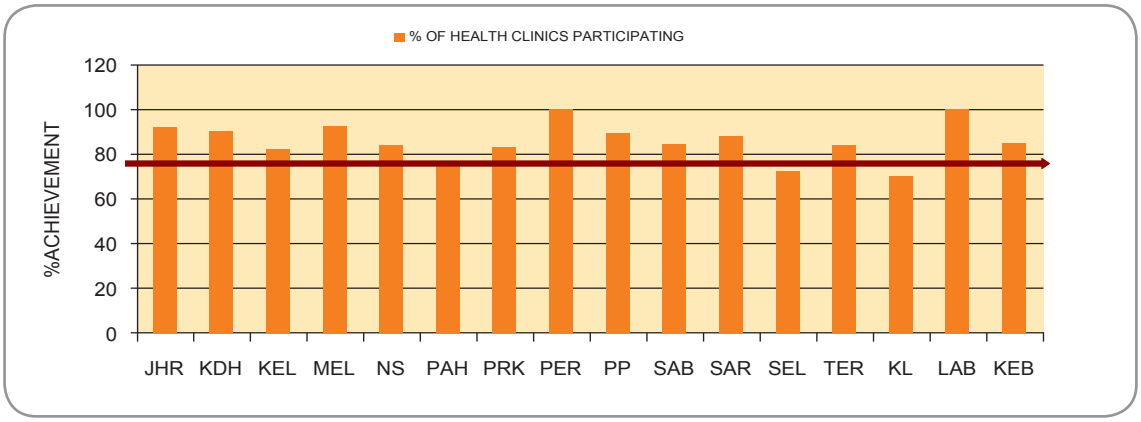
Source: Family Health Development Division, MoH

FIGURE 79
APPROPRIATE MANAGEMENT OF ASTHMA INDICATOR



Source: Family Health Development Division, MoH

FIGURE 80
CLIENT FRIENDLY CLINIC INDICATOR

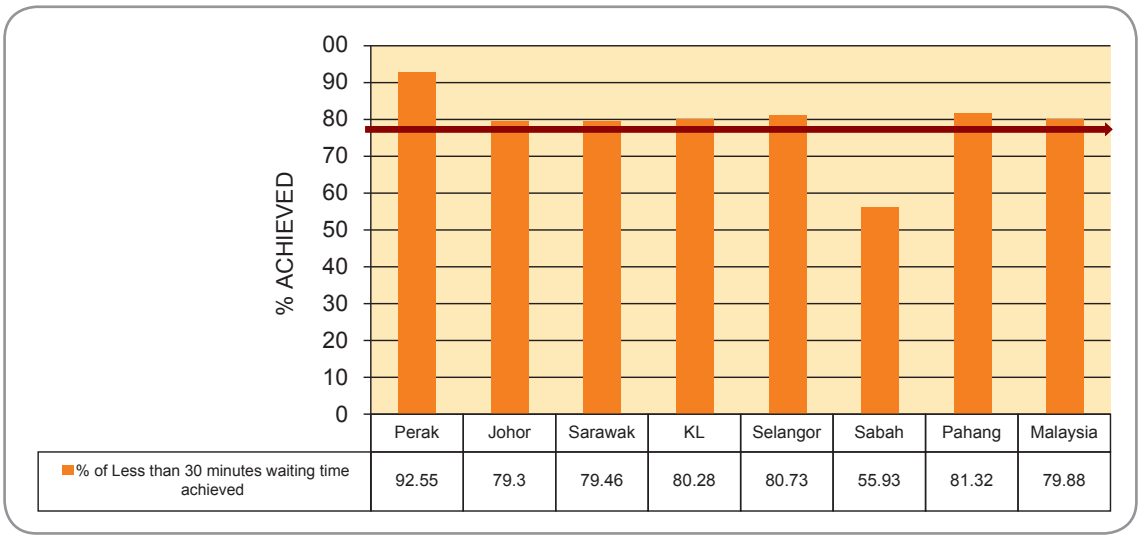


Source: Family Health Development Division, MoH

Monitoring of Waiting Time in Health Clinics

Monitoring of waiting time was done at 70 clinics with TPC, by using the eTIME data. The standard set was 80%. Overall, 79.88% clients waited less than 30 minutes to be seen by the first provider.

FIGURE 81
PERCENTAGE OF CLIENTS ACHIEVED WAITING TIME <30 MINUTES



	Perak	Johor	Sarawak	KL	Selangor	Sabah	Pahang	Malaysia
% of Less than 30 minutes waiting time achieved	92.55	79.3	79.46	80.28	80.73	55.93	81.32	79.88

Source: Family Health Development Division, MoH

Strengthening Infection Control In Primary Health Care

Infection Control in Primary Health Facility Guidelines has been finalized after a series of discussions and will be distributed to all State Health Departments in 2013. One briefing session on the implementation of the facility audit, the appointment of a link nurse at the health clinic, training needs and the use of standards audit tool that were developed had also been implemented, involving 58 participants from all State Health Department excluding Pahang, Melaka and Labuan. Facility audit will be carried out twice a year, involving a minimum of seven facilities, for each cycle, focusing on health clinics, 1Malaysia Clinics and 1Malaysia Mobile Clinics, starting in 2013. The first outcome of the audit is expected to be available in July 2013.

Incident Reporting In Primary Health Care

All health clinics have been directed to implement incident reporting through the Director General of Health Malaysia Circular, dated 31st December 2012, effective 1 January 2013. The reference guideline is Incident Reporting and Learning System from Information to Action Manual. Four briefing sessions had been carried out in 2012 involving 122 participants from all State Health Departments. The first three quarter monitoring outcome of the reporting system is expected to be available in April 2013.

FAMILY MEDICINE SPECIALIST (FMS) SERVICES

FMS was started in health clinics in 1997 to improve quality of care at the primary care facilities. Table 48 shows the distribution of FMS among the states, until year 2012. Since the recognition of MAFP/FRACGP as a specialist qualification at the end of December 2011, the program has attracted doctors to pursue family medicine training program conducted by the Academy of Family Physician Malaysia. In 2012, 15 candidates of MAFP/FRACGP underwent credentialing under supervision of senior FMS.

TABLE 48
DISTRIBUTION OF FMS AMONG STATES

No.	State	No of FMS	No of Health Clinics	Ratio FMS to population
1.	Perlis	2	9	1 : 81879
2.	Kedah	19	56	1 : 143540
3.	Pulau Pinang	11	29	1 : 201241
4.	Perak	17	83	1 : 203406
5.	Selangor	30	73	1 : 203380
6.	FT Kuala Lumpur	12	17	1 : 120114
7.	Negeri Sembilan	14	46	1 : 93910
8.	Melaka	9	29	1 : 128217
9.	Johor	17	94	1 : 192188
10.	Pahang	17	79	1 : 104951
11.	Terengganu	17	45	1 : 71781
12.	Kelantan	17	68	1 : 119857
13.	Sarawak	19	196	1 : 852367
14.	Sabah	16	93	1 : 408990
15.	FT Labuan	1	1	1 : 90316
TOTAL		218	918	

Source: Family Health Development Division, MoH

HEALTH CLINICS ADVISORY PANEL

Health Clinic Advisory Panels play an important role in advocating health promotion and prevention within the community. A total of 9,883 health clinic advisory panel were serving in 745 health clinics (84.8%). Among the activities organised were health screening, training sessions for members, geriatric health, adolescent health, dengue prevention campaign, methadone program, etc. Each health clinic with an advisory panel received an allocation of RM 5000 for their activities with a focus on promotion and prevention of Non Communicable Diseases. Training for health clinic advisory panels was also conducted at the state level, the details of which are shown in Table 49.

TABLE 49
ACHIEVEMENT OF ADVISORY PANEL, BY STATE, 2012

No.	States	Health Clinic with Advisory Panels	No of Health Clinic Advisory Panels trained	Allocation received
1.	Perlis	9	128	45,000.00
2.	Kedah	56	318	280,000.00
3.	Pulau Pinang	31	174	150,000.00
4.	Perak	80	262	400,000.00
5.	Selangor	61	270	306,820.00
6.	Negeri Sembilan	31	47	200,000.00
7.	Melaka	26	32	130,000.00
8.	Johor	92	290	465,000.00
9.	Pahang	72	306	355,000.00
10.	Kelantan	56	289	280,000.00
11.	Terengganu	40	330	200,000.00
12.	Sabah	88	686	440,000.00
13.	Sarawak	88	792	440,000.00
14.	FT KL	14	107	70,000.00
15	FT Labuan	1	11	5,000.00
Total		**745 (84.8%)**	**4042 (40.9%)**	**3,766,820.00**

Source: Family Health Development Division, MoH

HEALTH EDUCATION

Doktor Muda Program

A total of 1,653 (21%) primary schools throughout the country had implemented *Doktor Muda* Club by end of 2012. A significant increased of primary schools implemented the program in 2012 where an additional 261 schools participated as a result of intensive promotional efforts.
There are 7,706 newly elected *Doktor Muda* in 2012 and cumulatively there are 44,436 *Doktor Muda* in the country. Comparatively, the number of students attended schools with *Doktor Muda* Program is estimated at 842,780 and the total number of primary school students in Malaysia is at 2,804,405. This signify that if the program is very effective and impactful to the students, almost 30% of primary school students in Malaysia will be benefited through the attainment of essential knowledge and skills from the program.

ZOOMERS *Doktor Muda* Club was introduced in 2012 to further promote the *Doktor Muda* program to non participating primary schools. The event was launched on the 21st April, 2012 in Sekolah Kebangsaan Wawasan, Seremban 2, Negeri Sembilan and was officiated by YB Datuk Rosnah bt. Hj. Abdul Rashid Shirlin, Deputy Health Minister of Malaysia. To date, 8 states had also carried out such activities.

IMAGE 5
LAUNCHING OF ZOOMERS DOKTOR MUDA CLUB BY THE DEPUTY HEALTH MINISTER

Source: Health Education Division, MoH

1st to 7th of July has been declared as the Healthy Week for *Doktor Muda* program. The objective of the declaration was for the *Doktor Muda* club members to promote healthy lifestyles activities to their peers and also as a platform for other health related programs to be performed in schools. The Sekolah Kebangsaan Putrajaya Presint 9 (2) was the national host for the week in 2012.

IMAGE 6
SCHOOL STUDENTS PARADE ACTIVITY IN HEALTHY WEEK FOR *DOKTOR MUDA*

Source: Health Education Division, MoH

Promotion of Healthy Lifestyles Program

Various activities for the communities had been carried out in 2012. One such program was Karnival Jelajah Sihat, held at 85 locations throughout the country that attracted a total of 396,724 visitors. The launching of the program was officiated by the Health Minister of Malaysia, YB Dato' Sri Liow Tiong Lai on the 20th May 2012 in Bentong, Pahang. Among the activities conducted at the health carnivals were interactive exhibition, 10,000 steps walks, health contest, health games, demonstration, health screening, forum, health quizzes, concert and other health related activities.

IMAGE 7
HEALTH FORUM IN KAMPAR, PERAK

Source: Health Education Division, MoH

In support of Healthy Lifestyles Program, Program Siswa Sihat 1Malaysia (PROSIS) continued to be carried out as in 2011. The objective of the program is to inculcate healthy lifestyles among university students. To date, the program is actively running in 11 public universities in Malaysia. For further development of the program, a group of student volunteers called the M10 were trained and they will be the prime movers in planning, implementing and evaluating intervention projects in relation to healthy lifestyles in campus. Currently, there are 260 student volunteers in the universities.

In view that Communication for Behavioral Impact Approach (COMBI) has successfully addressed the issues of Dengue in the community, the concept was extended to the prevention of non communicable diseases (NCD). Two guidelines for the health staffs and community and a training manual were developed to further justify the role of the health staffs and the community members in the program. Trainings were conducted by zones to expose the participant on COMBI in health. Participants were from various professional backgrounds such as Health Education Officers, Public Health Specialist, Nutritionist, Entomologist, Medical Officers, Deputy Health Inspectors, Nurses etc.

Smoking Cessation and Control Program

The media campaign for *Tak Nak Merokok* in 2012 was targeted at children and adolescent to not start smoking. The objective of the campaign was to increase awareness on the bad effect of smoking, to not start smoking and to advocate the right of non smokers. Various media channels were used such as TV, radio, newspaper, cinema advertisement as well as billboards.

IMAGE 8
TAK NAK MEROKOK ADVERTISEMENT

Source: Health Education Division, MoH

In conjunction with Ramadan, Muslims were encouraged to stop smoking. Awareness activities at the community level were conducted during Ramadan as a turning point to stop smoking. Activities conducted were health talks, sermon in mosque and madrasah during Friday prayers, promotion at various health premises such as in hospitals and health clinics among others.

The campaign was advertised in KOSMO and uploaded to myHealth portal and *Tak Nak Merokok* Facebook page. Other than that, it was also advertised on billboards and community boards along Persiaran Sultan Abdul Aziz, Precinct 1 and the surrounding areas in MoH.

A total of 197 calls were received through the Quit Smoking Infoline. 192 of the calls were to enquire on services available to stop smoking and referral to the nearest Quit Smoking Clinics. The remaining calls were complained on the offenders of smoking inside non smoking areas and the calls were being directed to the Non Communicable Disease Control Division for further action.

The collaboration between MoH and Jabatan Kemajuan Islam Malaysia (JAKIM) continues through the organizing of the *Seminar Pendidikan Fatwa Kesihatan Kebangsaan* 2012. The seminar was held at Auditorium D8, Precinct 1, Putrajaya and was officiated by Y.Bhg Dato' Hj Othman bin Mustapha, Head Director of JAKIM on the 27th of September. The attendees were from MoH staffs, Islamic Council staffs, private agencies, the public and students from colleges and schools. Apart from increasing the knowledge on healthy lifestyles, the seminar aimed to create awareness on the fatwa ruling by *Majlis Fatwa Kebangsaan* on smoking at public places.

The national World No Tobacco Day was celebrated on the 31st May, 2013 at the Universiti Teknologi Malaysia, Johor. The Chief Minister of Johor, YAB Dato' Haji Abdul Ghani Othman officiated the event. Themed as "The Influence of Tobacco Industries", it was intended to expose policy makers and the public on the continuous efforts by the tobacco industries in influencing WHO Framework Convention on Tobacco Control (WHO FCTC) and Tobacco Control Policy.

Dengue Prevention and Control Program

Dengue prevention and control promotional advertisement continue to be aired and published on TV, radio and newspapers in 2012. The objective of the campaign is to encourage communities to allocate 10 minutes of their time to search and destroy Aedes breeding grounds in and out of their premises and to seek treatment immediately if they have the sign and symptoms of contracting dengue fever.

As before, COMBI is still the preferred approach to continuously encourage the community to lead

healthy lifestyles. Until December 2012, a total of 2,342 COMBI localities were formed in Malaysia.

To further heightened the effort on Dengue Prevention, MoH started to commemorate ASEAN Dengue Day. In 2012, the event was held on 23 June at the Dataran Majlis Bandaraya, Ipoh, Perak and was officiated by the honorable Health Minister, YB Dato' Sri Liow Tiong Lai. Various activities were conducted such as banner competition, health screening, COMBI projects exhibition and award of appreciation to the private companies that were actively involved in Dengue prevention projects.

Ministry of Health also continues to use iconic figure to drive the campaign. In 2012, 3 local celebrities were chosen as Duta Sihat 1Malaysia. The celebrities namely Aznil Haji Nawawi, Phoebe Yap and Utthaya Kumar were the faces representing 3 main ethnic groups of Malaysia. Their main role is to drive the community in WPKL, Putrajaya and Selangor towards healthier lifestyles which also included Dengue prevention.

IMAGES 9
1MALAYSIA HEALTH AMBASSADORS

Source: Health Education Division, MoH

The highlight for the year was the involvement of several embassies such as Bangladesh, Nepal and Myanmar in the production of dengue leaflets using their native languages. The aimed of the collaboration was to effectively deliver the prevention of Dengue messages to the Bangladeshis, Nepalese and Burmese residing in Malaysia.

CONCLUSION

Throughout 2012, the planning, implementation, monitoring and evaluation of the diseases prevention and control programs and activities were conducted as planned. Even though the achievements for these activities are laudable, there are still areas which can be further improved and strengthened in order to cope with the future challenges posed by the various changing disease scenarios and health problems.

5 MEDICAL

INTRODUCTION

The Medical Programme, headed by the Deputy Director-General of Health (Medical), is responsible for matters pertaining to medical services provided in the hospital. The programme consists of five divisions; the Medical Development Division, the Medical Practices Division, the Allied Health Sciences Division, the Nursing Division, the Traditional & Complimentary Medicine Division and the Telehealth Division.

The Medical Development Division is responsible for policy setting and implementation, planning and development of medical services. Its objective is to provide comprehensive medical services that support primary health care, in accordance with policies and standards of Ministry of Health (MoH), by harnessing appropriate technology towards achieving improved health and quality of life to the population. The functions of the Division are carried out by four sections namely Medical Services Development, Medical Professional Development, Medical Quality Care, and Health Technology Assessment.

The Medical Practices Division's main objectives are drafting, amending and enforcement of any Act and Regulations related to medical services provisions. It also addresses complaints as well as medico-legal issues, and provides technical expertise in liberalising healthcare sector. The Medical Practices Division is divided into sections namely Private Medical Practice Control, Medical Legislation, and Medico-legal Sections. It is also the secretariat for the Malaysian Medical Council, the Malaysian Optical Council, and the Medical Assistant Board.

The Allied Health Sciences Division, established in 2009 under the Medical Programme is mainly responsible for the development of competency and professionalism of 32 categories of allied health professions, to ensure optimal services are provided to patients or clients. The Division is now divided into four units namely Administration Unit, Professional Development Unit, Quality Unit, and Research & Development Unit.

The Nursing Division is a restructured body under Medical Programme, responsible for the governance of the nursing profession in Malaysia through statutory regulation. This is to ensure that nursing services are performed by capable, effective, competent, skillful and highly knowledgeable nurses to provide safe and holistic nursing and midwifery care. The Division has taken measures to improve service delivery by having a well organized structure with optimum number of productive and quality personnel. This will enable the Division to implement its activities efficiently and effectively towards improving the delivery of nursing services in the country. The Division was restructured into 2 sections namely Practice and Regulatory.

The Traditional and Complementary Medicine Division (T&CMD) was gazetted under the Research & Technical Support Programme in February 2004. From December 2004, the division was divided into three sections - Administration & Finance; Policy & Development; and Practise, Registration and Training Sections. In 2007, the division expanded into having a Research Unit and Inspectorate & Enforcement Section to coordinate surveillance activities in traditional and complementary medicine practices. T&CMD concentrated in its activities in regulating and registering TCM services and premises in ensuring that the delivery of T&CM services to the Malaysian public is safe and effective. Beginning 2012, in line with the maturity of the Division, it is now placed under the Medical Programme.

The Telemedicine Unit was initially established under the Medical Development Division in November 2000, to assist in the implementation of the Multimedia Super Corridor (MSC) flagship applications. In October 2004, the Unit was upgraded to a Division upon approval by the Cabinet. The Telehealth Division is responsible to facilitate in the planning, implementation and monitoring of Health ICT initiatives in MoH. Units under the Telehealth Division are specifically designed to enable the division to manage Health ICT projects and systems.

Way Forward

In striving to provide better services to the community, Medical Programme faces the challenges of rapid advancement in medical and information technology, higher patient expectations, epidemiological and socio-demographic shifts towards an aging population and the changing attitude towards lifestyle. Greater expectations and demands are the natural evolution of better education, higher income, and more access to information. Changing trends in socio-demographic and disease patterns present a major challenge in the containment of health care cost.

Understanding these issues, the Programme needs to constantly revise on the planning, implementation, coordination, monitoring of the existing system to ensure smooth interphasing of medical care and to overcome obstacles in the provision of medical services to the population. Despite the challenges, the Medical Programme will stay focus, that is, to ensure quality and safe care to our clients.

TABLE 1
MINISTRY OF HEALTH SPECIALIST HOSPITALS AND INSTITUTIONS, BY TYPE, 2012

Specialist Hospitals and Institutions			
HKL + State Hospitals (14)	**Major Specialist Hospitals (26)**	**Minor Specialist Hospitals (26)**	**Special Medical Institutions (8+1*)**
Up to 45 resident specialties/sub-specialties	*Up to 20 resident specialties/sub-specialties*	*Up to 10 resident specialties*	*Specific resident specialties*
1. Hospital Kuala Lumpur 2. Hospital Tuanku Fauziah, Kangar 3. Hospital Sultanah Bahiyah, Alor Setar 4. Hospital Pulau Pinang 5. Hospital Raja Permaisuri Bainun, Ipoh 6. Hospital Tengku Ampuan Rahimah, Klang 7. Hospital Tuanku Jaafar, Seremban 8. Hospital Melaka 9. Hospital Sultanah Aminah, Johor Bahru 10. Hospital Tengku Ampuan Afzan, Kuantan 11. Hospital Sultanah Nur Zahirah, Kuala Terengganu 12. Hospital Raja Perempuan Zainab II, Kota Bharu 13. Hospital Umum Sarawak (+ Pusat Jantung Sarawak), Kuching 14. Hospital Queen Elizabeth, Kota Kinabalu	1. Hospital Putrajaya 2. Hospital Sultan Abdul Halim, Sungai Petani 3. Hospital Kulim 4. Hospital Seberang Jaya 5. Hospital Taiping 6. Hospital Teluk Intan 7. Hospital Sungai Buloh 8. Hospital Ampang 9. Hospital Selayang 10. Hospital Serdang 11. Hospital Kajang 12. Hospital Tuanku Ampuan Najihah, Kuala Pilah 13. Hospital Pakar Sultanah Fatimah, Muar 14. Hospital Sultan Ismail, Pandan 15. Hospital Sultanah Nora Ismail, Batu Pahat 16. Hospital Segamat 17. Hospital Sultan Haji Ahmad Shah, Temerloh 18. Hospital Kemaman 19. Hospital Kuala Krai 20. Hospital Tanah Merah 21. Hospital Sibu 22. Hospital Miri 23. Hospital Bintulu 24. Hospital Duchess of Kent, Sandakan 25. Hospital Tawau 26. Hospital Queen Elizabeth II, Kota Kinabalu	1. Hospital Labuan 2. Hospital Langkawi 3. Hospital Kepala Batas 4. Hospital Bukit Mertajam 5. Hospital Sri Manjung 6. Hospital Slim River 7. Hospital Grik 8. Hospital Kuala Kangsar 9. Hospital Banting 10. Hospital Port Dickson 11. Hospital Tampin 12. Hospital Enche Besar Hajjah Kalsom, Kluang 13. Hospital Kota Tinggi 14. Hospital Kuala Lipis 15. Hospital Bentong 16. Hospital Pekan 17. Hospital Dungun 18. Hospital Kapit 19. Hospital Limbang 20. Hospital Sarikei 21. Hospital Sri Aman 22. Hospital Mukah 23. Hospital Datin Seri Endon, Lahad Datu 24. Hospital Keningau 25. Hospital Beaufort 26. Hospital Kota Marudu	1. Institut Perubatan Respiratori, Kuala Lumpur 2. Hospital Rehabilitasi Cheras, Kuala Lumpur 3. *Pusat Darah Negara, Kuala Lumpur 4. Hospital Bahagia, Ulu Kinta 5. Pusat Kawalan Kusta Negara, Sungai Buloh 6. Hospital Permai, Johor Bahru 7. Hospital Sentosa, Kuching 8. Hospital Mesra, Kota Kinabalu 9. Hospital Wanita dan Kanak-Kanak, Likas

**Pusat Darah Negara, unlike other facilities, had no inpatient beds*
Source: Medical Development Division, MoH

TABLE 2
MINISTRY OF HEALTH NON-SPECIALIST HOSPITALS, 2012

Non-Specialist Hospitals (66)			
Kedah • Hospital Baling • Hospital Jitra • Hospital Kuala Nerang • Hospital Sik • Hospital Yan Pulau Pinang • Hospital Balik Pulau • Hospital Sungai Bakap Perak • Hospital Batu Gajah • Hospital Changkat Melintang • Hospital Kampar • Hospital Parit Buntar • Hospital Selama • Hospital Sungai Siput • Hospital Tapah Selangor • Hospital Kuala Kubu Baru • Hospital Tanjung Karang • Hospital Tengku Ampuan Jemaah, Sabak Bernam • Hospital Orang Asli, Gombak	Negeri Sembilan • Hospital Jelebu • Hospital Jempol Melaka • Hospital Alor Gajah • Hospital Jasin Johor • Hospital Mersing • Hospital Pontian • Hospital Tangkak • Hospital Temenggong Sri Maharaja Tun Ibrahim, Kulai Pahang • Hospital Jengka • Hospital Jerantut • Hospital Muadzam Shah • Hospital Raub • Hospital Sultanah Hajjah Kalsom, Cameron Highlands	Terengganu • Hospital Besut • Hospital Hulu Terengganu • Hospital Setiu Kelantan • Hospital Gua Musang • Hospital Jeli • Hospital Machang • Hospital Pasir Mas • Hospital Tengku Anis, Pasir Puteh • Hospital Tumpat Sarawak • Hospital Bau • Hospital Betong • Hospital Daro • Hospital Dalat • Hospital Kanowit • Hospital Lawas • Hospital Lundu • Hospital Marudi • Hospital Rajah Charles Brooke Memorial, Kuching • Hospital Saratok • Hospital Serian • Hospital Simunjan	Sabah • Hospital Beluran • Hospital Kinabatangan • Hospital Kota Belud • Hospital Kuala Penyu • Hospital Kudat • Hospital Kunak • Hospital Papar • Hospital Pitas • Hospital Ranau • Hospital Semporna • Hospital Sipitang • Hospital Tambunan • Hospital Tenom • *Hospital Tuaran

**Hospital Tuaran, unlike other hospitals, had no inpatient beds*
Source: Medical Development Division, MoH and State Health Departments

TABLE 3
NUMBER OF INPATIENT BEDS, BED OCCUPANCY RATE AND TOTAL ADMISSION TO MOH HOSPITALS AND INSTITUTION, 2008-2012

Subject	2008	2009	2010	2011	2012
Bed Number (Hospital and Institution)^	37,836	38,057	37,903	36,148	36,959
Bed Occupancy Rate (%)	65.46	65.45	66.26	68.63	72.26
Total Admission	2,072,633	2,115,617	2,130,563	2,139,392	2,314,860
Total Population	27,730,000*	28,306,700*	28,250,500* 28,558,160**	28,964,300**	29,336,800**

Note:
The 2012 data does not include figures from Hospital Limbang, Sarawak.
^ Refers to Operational Beds.
** Based on the Population and Housing Census of Malaysia 2000, adjusted for under enumeration*
*** Based on the adjusted Population and Housing Census of Malaysia 2010.*
Sources: Health Informatics Centre, MoH and Department of Statistics, Malaysia

TABLE 4
PERFORMANCE OF MOH HOSPITALS BY FUNCTIONAL CATEGORIES, 2011-2012

Type of Hospital by Functional Classification	Bed Occupancy Rate (BOR) %		Average Length of Stay (ALOS) days		Turn Over Interval (TOI)		Total Patient Days (TOD) days	
	2011	2012	2011	2012	2011	2012	2011	2012
HKL & State Hospitals	79.71	81.28	4.40	4.3	1.21	0.99	3,574,879	3,876,594
Major Specialists Hospitals	75.61	76.16	2.41	3.79	1.39	1.19	2,679,046	2,996,244
Minor Specialists Hospitals	53.00	57.71	3.10	3.13	3.77	2.3	733,481	727,288
Non Specialists Hospitals	47.30	46.98	2.77	2.73	3.84	3.09	943,377	930,006
Special Medical Institutions	66.08	78.62	204.1	23.9	78.7	6.5	1,124,519	1,244,779

Source: Health Informatics Centre, MoH

TABLE 5
TOTAL NUMBER OF PATIENTS WHO RECEIVED TREATMENT AT MEDICAL SPECIALIST CLINICS BY DISCIPLINE, 2011-2012

Discipline	No. of patients at specialist clinics		% +/- difference between 2011 and 2012
	2011	2012	
General Medicine	914,672	934,117	2.13
Dermatology	287,805	305,853	6.27
Respiratory Medicine	287,920	275,145	-4.44
Psychiatry	494,561	544,108	10.01
Nephrology	196,007	191,203	-2.45
Neurology	32,728	34,447	5.25
Radiotherapy & Oncology	71,794	80,318	11.87
Cardiology	109,781	116,665	6.27

Source: Health Informatics Centre, MoH

TABLE 6
TOTAL ADMISSIONS FOR THE SPECIALIST MEDICAL DISCIPLINES, 2011-2012

Discipline	2011*	2012	% +/- difference between 2011 and 2012
General Medicine	504,087	557,773	10.65
Dermatology	991	1128	13.82
Respiratory Medicine	8,532	9,148	7.22
Psychiatry	18,308	18,230	-0.43
Nephrology	14,005	14,193	1.34
Neurology	4,313	4,117	-4.54
Radiotherapy & Oncology	12,688	17,055	34.42
Cardiology	14,209	13,559	-4.57

** Does not include figures from Hospital Umum Sarawak, Kuching*
Source: Health Informatics Centre, MoH

TABLE 7
NUMBER OF OUTPATIENTS AT SURGICAL (SPECIALTY) CLINICS, 2011-2012

Disciplines	Number of Outpatients		% +/- difference between 2011/2012
	2011	2012	
General Surgery	610,384	652,637	6.92
Orthopaedic	829,472	869,134	4.78
Opthalmology	837,871	878,201	4.81
Otorhinolaryngology	453,655	499,361	10.08
Urology	117,399	119,247	1.57
Neurosurgery	34,931	39,851	14.08
Cardiothoracic Surgery	17,344	22,522	29.85
Plastic Surgery	45,653	49,855	9.20
Hand & Microsurgery	8,982	9,621	7.11
Total	**2,936,713**	**3,140,429**	**6.94**

Source: Health Informatics Centre, MoH

TABLE 8
NUMBER OF ELECTIVE AND EMERGENCY OPERATION PERFORMED, 2010-2012

Disciplines	Number of Operation Performed					
	Elective			Emergency		
	2010	2011	2012	2010	2011	2012
General Surgery	82,550	78,843	86,030	209,975	214,801	241,767
Orthopaedic	68,232	68,694	71,976	213,197	204,005	247,396
Opthalmology	45,383	48,544	55,418	7,476	8,224	8,601
Otorhinolaryngology	32,555	36,238	38,234	12,578	14,201	16,605
Urology	15,876	16,785	16,219	5,076	5,747	7,032
Neurosurgery	1,386	2,382	2,438	7,717	8,644	9,750
Cardiothoracic Surgery	1,147	1,201	2,602	462	548	647
Plastic Surgery	5,458	5,814	6,341	3,213	3,304	3,678
Others	32,431	34,183	87,382	44,080	52,080	136,676
Total	**323,520**	**292,684**	**366,640**	**589,736**	**508,250**	**672,152**

Source: Health Informatics Centre, MoH

TABLE 9
TOTAL NUMBER OF PAEDIATRIC INPATIENTS AND BOR, BY STATE, 2010-2012

State	Total No. of Inpatients			*% +/- Differences*		Bed Occupancy Rate (BOR), %		
	2010	2011	2012	2010/2011	2011/2012	2010	2011	2012
Perlis	5,786	8,041	6,482	38.97	-19.39	109.47	121.93	119.77
Kedah	39,492	46,584	45,860	17.96	-1.94	84.42	91.99	88.04
Pulau Pinang	22,366	27,635	27,208	23.56	-1.55	80.6	81.28	89.29
Perak	28,101	50,470	44,651	79.60	-11.53	56.91	70.68	74.02
Selangor	41,326	53,054	57,101	28.38	7.63	80.38	80.98	96.84
FT KL	25,237	30,979	28,013	22.75	-9.57	85.2	91.42	92.06
FT Putrajaya	3,336	3,913	6,019	17.30	53.82	118.1	112.61	79.68
FT Labuan	689	1,419	1,218	105.95	-14.16	35.73	49.71	62.0
N. Sembilan	16,665	19,862	18,943	19.18	-4.63	76.31	76.02	74.22
Melaka	13,334	15,883	13,168	19.12	-17.09	101.69	95.04	84.91
Johor	30,561	59,418	55,866	94.42	-5.98	58.54	62.19	73.89
Pahang	16,222	30,290	28,848	86.72	-4.76	68.35	73.18	101.84
Terengganu	15,447	27,988	28,189	81.19	0.72	65.07	75.44	91.57
Kelantan	16,768	22,433	19,585	33.78	-12.70	71.59	72.46	78.50
Sabah	20,868	44,021	25,951	110.95	-41.05	58.25	60.28	66.35
Sarawak	23,225	25,925	40,204	11.63	55.08	51.9	61.66	63.47
Total	**319,423**	**467,915**	**447,306**	**46.49**	**-4.40**			

Source: Health Informatics Centre, MoH

TABLE 10
NUMBER OF BEDS, INPATIENT AND BED OCCUPANCY RATE OF SURGICAL (SPECIALTY) WARD, 2010-2012

Discipline	Number of Beds			Number of Inpatients			Percentage (%) ± Inpatient Difference Between		Bed Occupancy Rate (BOR), %		
	2010	2011	2012	2010	2011	2012	2010/2011	2011/2012	2010	2011	2012
General Surgery	3,802	3,695	3,674	233,993	230,430	237,207	-1.52	2.94	69.00	58.95	62.56
Orthopaedic	2,763	2,849	2,989	122,736	130,469	136,775	6.30	4.83	69.00	70.15	74.05
Opthalmology	638	630	620	37,562	35,957	36,819	-4.27	2.40	47.85	42.87	48.84
Otorhinolaryngology	362	367	374	16,011	17,675	20,529	10.39	16.15	49.47	52.76	57.10
Urology	203	221	247	9,700	10,774	14,795	11.07	37.32	67.26	68.48	88.99
Neurosurgery	247	236	270	6,249	6,932	9,536	10.93	37.56	68.50	76.51	85.15
Cardiothoracic	60	72	79	892	1,088	1,465	21.97	34.65	55.69	66.02	72.49
Plastic Surgery	122	108	130	2,433	3,066	3,601	26.02	17.45	48.56	60.92	62.84
Hand & Microsurgery	18	18	18	580	488	403	-15.86	-17.42	40.68	33.09	32.09
Hepatopancreaticobiliary	64	N/A	28	3,032	N/A	3,251	N/A	N/A	70.06	N/A	173.52
Total	**8,279**	**8,196**	**8,429**	**433,188**	**436,879**	**464,381**	**0.84**	**6.30**			

Note: N/A = not available
Source: Health Informatics Centre, MoH

TABLE 11
TOTAL NUMBER OF CASES SEEN IN THE EMERGENCY DEPARTMENTS, 2012

State	Attendances by Zone Category			Attendances by Type of Cases									TOTAL	Daily Average
	Red	Yellow	Green	Operation	Paediatric	Trauma	Medical	Local Crisis Centre				Non-emergency		
								Rape	Sodomy	Abuse	Others			
Perlis	1,735	11,948	51,610	16,713	5,610	7,722	35,119	34	6	7	82	27,117	**92,410**	253.18
Kedah	21,944	111,023	364,172	68,605	85,616	108,617	232,431	398	39	778	655	108,374	**605,513**	1,658.9
Pulau Pinang	5,955	85,731	235,245	18,519	84,425	61,110	162,134	182	6	526	29	123,955	**450,886**	1,235.3
Perak	62,276	183,383	384,668	81,879	125,237	101,631	318,832	309	33	1,479	927	130,143	**760,470**	2,083.47
Selangor	34,218	192,077	611,360	64,009	191,206	119,714	460,393	452	30	1,441	410	246,325	**1,083,980**	2,969.8
Federal Territories	13,527	38,067	190,893	9,173	71,898	50,219	109,910	344	18	810	115	181,883	**424,370**	1,162.65
Negeri Sembilan	14,251	89,927	184,810	36,619	66,686	37,428	144,318	240	17	481	3,199	39,321	**328,309**	899.47
Melaka	9,012	36,611	165,188	10,697	48,464	25,260	125,825	129	12	390	34	18,146	**228,957**	627.27
Johor	18,310	124,652	399,078	59,621	91,732	111,003	275,442	578	58	829	2,777	273,418	**815,458**	2,234.13
Pahang	10,717	71,355	263,859	35,825	71,953	32,140	163,973	261	7	278	2,142	66,071	**372,650**	1,020.95
Terengganu	11,059	81,370	132,203	30,083	58,941	27,144	107,804	165	9	182	304	31,012	**255,644**	700.39
Kelantan	11,693	94,168	202,153	40,657	68,291	45,761	152,192	295	25	315	478	78,996	**387,010**	1,060.3
Sabah	16,823	155,645	556,864	47,654	197,278	50,247	423,162	138	6	437	10,410	184,080	**913,412**	2,502.49
Sarawak	14,941	133,823	330,679	44,699	136,436	56,465	240,067	494	9	443	830	97,958	**577,401**	1,581.92
Institution	443	10,402	61,813	4,086	34,820	3,051	30,463	168	9	16	45	0	**72,658**	199.06
TOTAL	**246,904**	**1,420,182**	**4,134,595**	**568839**	**1,338,593**	**837,512**	**2,982,065**	**4,187**	**284**	**8,412**	**22,437**	**1,606,799**	**7,369,128**	**20,189.39**

Sources: Health Informatics Centre, MoH

TABLE 12
ACHIEVEMENT IN BLOOD TRANSFUSION SERVICES, 2011-2011

ACTIVITY	2011	2012
Blood Collected At Centre/Blood Bank	137,433	144,427
Blood Collected At Mobile	490,085	503,424
Total	**627,518**	**647,851**
New Donation	233,567	229,725
Regular (Repeat) Donation	393,951	417,120

Source: Health Informatics Centre, MoH

ALLIED HEALTH SCIENCES

The Allied Health Sciences Division of MoH strive to achieve the Vision and Mission of the Ministry of Health and Vision 2020 by focusing on human capital development (subject matter expert/high skills) of each of the 32 types of Allied Health Professions (AHP). Training and continuing professional development are vital to ensure they are competent to provide safe and quality practice based on scientific findings and compliance to standards of practice. This Division has established networking with organizations in government, academia, private, professional associations and NGOs, both local and abroad to accomplish its plans and activities targeted for 2012.

The Division comprise of 4 Units: Administration Unit, Professional Development Unit, Quality Unit, and Research & Development Unit. The 32 types of Allied Health Professionals are categorized into 3 groups: Clinical Group, Public Health Group and Laboratory Group. As of 31st December 2012, the total number of Allied Health Professionals posts, both the Professional & Management Group and Support Group under the Ministry of Health is 39,316 (Table 13). The Head of Profession for each profession of AHP profession has been appointed for a two-year term of Office by the Director-General of Health and they work closely with the Allied Health Sciences Division.

TABLE 13
NUMBER OF ALLIED HEALTH PROFESSIONAL POSTS, BY DESCENDING COUNT, AS OF 31 DECEMBER 2012

No.	Profession	No. of Posts
1	Medical Assistant	11,015
2	Medical Laboratory Technologist	5,900
3	Environmental Health Officer/Assistant	4,113
4	Assist Pharmacist	3,961
5	Dental Nurse	2,816
6	Diagnostic Radiographer/Assistant	2,445
7	Tutor	1,358
8	Physiotherapist/Assistant	1,156
9	Dental Technologist	943
10	Occupational Therapist/Assistant	867
11	Food Technologist	452

No.	Profession	No. of Posts
12	Biochemist	429
13	Record Officer/Assistant	417
14	Microbiologist	364
15	Nutritionist	337
16	Food Service Officer/Assistant	335
17	Dietitian	317
18	Radiation Therapist/Assistant	283
19	Optometrist	256
20	Health Education Officer	233
21	Medical Social Officer	220
22	Assistant Food Technologist	191
23	Medical Physicist	182
24	Speech-Language Therapist	162
25	Audiologist	161
26	Psychologist (Counseling)	142
27	Entomologist	124
28	Biomedical Scientist	67
29	Forensic Scientist	39
30	Geneticist Scientist	14
31	Embryologist	11
32	Clinical Psychologist	6
TOTAL		**39,316**

Source: Allied Health Sciences Division, MoH

AHPs work closely with doctor/specialist in each area of clinical discipline in a multidisciplinary approach and provide holistic care. Effort was made to support the integration of primary, secondary and tertiary care. In 2012, with the direction of primary care as the gatekeepers of healthcare, certain types of AHPs (clinical group) were located at the Community Clinics besides at the hospitals.

This Division organized training in human resource complimenting technical capacity building, research, innovation, leadership, communication skills, etc. Their services encompass the scope of promotion, prevention, curative and rehabilitation.

Much was achieved in 2012 and some of the highlights included:

1. Administration Unit
   (i) This Division obtained certification of MS ISO 9001:2008 on 21 December 2012.
   (ii) The 9th Allied Health Scientific Conference was held from 9-10 September 2012 at The Renaissance Hotel with the theme: Towards Better Health, officiated by the Health Minister, YB Dato' Sri Liow Tiong Lai, and was attended by 630 delegates from local and abroad.

2. Professional Development Unit
   (i) This Unit has worked closely with Human Resource Division at MoH, JPA and SPA to

facilitate recruitment process, filling of vacant posts, promotional posts and addressed issues about manpower needs of the various programs under MoH. The unit has also provided updates to SPA on recognized current academic qualifications for new recruitment of staff. Efforts on updating job description were initiated and manpower 'outfit' as a guide for manpower planning of AHP.

(ii) The Allied Health Professionals (Management & Professional Group) have complied with the Director-General of Health's directive to achieve at least 40 CPD points per year online with plans to initiate this CPD system for the AHPs in the Support Group in 2013.

(iii) Several workshop sessions were held to discuss and chart "Career pathway development" and identify training needs for AHP.

(iv) The Allied Health Professions Bill was posted on MoH website for public engagement on 1-21 Oct 2012 and feedback on comments was noted by the committee. The Allied Health Professions Information System (AHPiS) for online registration was being developed. The Regulation for the Act was being drafted.

(v) This Division work closely with Immigration Department for the vetting of academic qualifications of foreign AHP workers applying for work permit.

3. Quality Unit

(i) A total of 20 Memorandum of Agreement (MoA) were processed for IPTA/ IPTS to use MOH facilities for training of students.

(ii) The 32 types of AHP profession have established a KPI each to monitor their profession's quality performance. The results achieved for KPI was in the range of 92 to 100% for 2013.

(iii) Work on establishing Standards of Practice for a few procedures under each profession was initiated for Physiotherapist, Occupational Therapist, Dietitian, Audiologist and Speech - Language Therapist.

(iv) Credentialing for certain procedures of practice was initiated for Physiotherapist, Occupational Therapist, Diagnostic Radiographer, Radiation Therapist and Dental Technologist.

4. Research & Development Unit

(i) This Unit conducted a 3-part series of training (Methodology, Data Analysis and Research paper writing) for AHPs, to provide them with the knowledge and capability to conduct research. Course participants were required to write their research papers and encouraged to present or submit for publication at conferences.

(ii) A Research Seminar with the theme: Mencetus Budaya Penyelidikan, NIH – BSKB was conducted from 1-2 March 2012 and was officiated by YB Dato' Sri Dr Hasan bin Abdul Rahman.

In conclusion, 2012 has been a fruitful and challenging in developing the career pathway for AHPs and bridging scientific theories with quality practice. Despite the limited budget and resources, the Division is appreciative of all the networking and teamwork with all the Departments concerned within and outside MoH in implementing the activities in 2012.

6 RESEARCH AND TECHNICAL SUPPORT

INTRODUCTION

The Research and Technical Support (R&TS) Programme, headed by the Deputy Director General of Health (R&TS), carries out activities that are aimed at providing technical and support services to the other Programmes within the Ministry of Health (MoH). The Programme now consists of the following Divisions; Planning & Development, Engineering Services, and the National Institutes of Health (NIH).

ACTIVITIES AND ACHIEVEMENTS

PLANNING AND DEVELOPMENT

The Planning and Development Division focuses on several crucial activities such as the formulation of the Health Sector Transformation Plan, improving the quality of health data, setting up the Health Informatics Standards for Malaysia, and planning, development, monitoring and evaluation of programs and projects as planned in the Tenth Malaysian Plan (10MP).

Health Policy and Planning
Health Policy and Planning involves planning, monitoring and evaluating the health sector plans.

a) 10th Malaysia Health Plan and Monitoring the 10MP Indicators
2012 is the second year of the Tenth Malaysia Health Plan implementation. At the same time, the 10MP is monitored via 85 initiatives, in which 6 involved MoH as follows:
Four MoH-initiated initiatives:

- Initiative 56 : Transforming delivery of the healthcare system
- Initiative 57 : Increasing quality, capacity and coverage of the healthcare infrastructure
- Initiative 58 : Shifting towards wellness and disease prevention, rather than treatment
- Initiative 59 : Increasing the quality of human resources for health

Two MoH-supported initiatives:

- Initiative 27 : Strengthening Social Security Net to reduce the vulnerability of the disadvantaged groups
- Initiative 2 : Liberalisation of the Service Sector

As of August 2012, the initiative achievements were presented every month at the MoH Development Project Implementation Monitoring Special Committee Meetings to ensure the action plans were running smoothly in accordance to the target. MoH's achievement for 10MP Initiatives in 2012 was 86%, an improvement as compared to 80.67% in 2011.

b) Ministry of Health Strategic Plan 2011-2015
The MoH Strategic Plan document was used as a reference for improving the current health system and to monitor the achievements status of each organisation within the Ministry. This Plan is monitored periodically to ensure the way forward in health for Vision 2020 is achieved.

In 2012, the Strategic Plan implementation was monitored through identified indicators that can be categorised as Core and Programme-Specific Indicators. In all, there were 13 (10.7%) Core Indicators and 108 (89.3%) Programme-Specific Indicators. 88 (72.7%) indicators achieved the target with a variance of ±5%, 20 (16.5%) did not meet the target, 2 (2.5%) were proposed to dropped and 10 (8.3%) indicators had no data.

In the fourth quarter of 2012, the Division collaborated with the Information Management Division to develop the MyPrestasi application to aid in proper monitoring of the MoH Strategic Plan. Efforts to upload 2011 and 2012 data are being done simultaneously and to be continued in 2013.

c) *Jawatankuasa Dasar Pembangunan Kementerian Kesihatan* (JDPKK)

In 2012, membership and terms of reference for the committee were reviewed to be in accordance with its role as the highest committee in approving policies at the MoH level. With the appointment of the Director for Food Safety and Quality Division, the membership now stands at 16. Two meetings were held in 2012 while 3 papers were presented and approved (Table 1).

TABLE 1
PAPERS PRESENTED AND APPROVED BY JDPKK, 2012

Meeting	Policy	Status	Programme/Activity
1/2012	Amendment recommendations for the Terms of Reference (JDPKK)	Approved	Planning and Development Division
2/2012	Proposal to establish a Semporna District Health Office Responsibility Centre under the Sabah State Health Department.	Approved as a Cost-Centre	Sabah State Health Department
2/2012	Proposal to officially establish a Law and Inspectorate Unit	Approved	Public Health Programme

Source: Health Policy and Planning Unit, Planning & Development Division, MoH

d) Planning for the *Outcome-Based Budgeting* (OBB) Monitoring Mechanism

The Government has developed an OBB system to strengthen the governance system as part of the Government Transformation Plan towards developing a high-income developed nation by 2020, replacing the current Modified Budgeting System (MBS). The OBB concept links the National Missions Thrust and the 10MP Key Results Areas planned at the central agency to the planning at ministerial, agency or local organization levels. MyResults is an application for the periodic monitoring of OBB by each organisation within the MoH, and is expected to be fully implemented by 2013.

e) Country Human Resources for Health (HRH) Profile for Malaysia

MoH has accepted the WHO Western Pacific Region's invitation to prepare a Country Human Resources for Health (HRH) Profiles report. Malaysia is among the countries that were given priority by the WHO Western Pacific Region in preparing this report. With this regard, the Director General of Health, Malaysia has agreed and expressed commitment to foster collaboration between the MoH and WHO in preparing the report, aimed at helping the country to systematically monitor the stock and supply of human resources as well as related health trends and policies. This report can then be used in future health HR planning for the country. A project team was established with members from the Health Policy and Planning unit, Institute for Health Management, and a WHO-appointed consultant. This report is expected to be completed by mid-March 2013.

f) Technical Input for Star Rating System (*Sistem Star Rating*, SSR) 2011

The MoH Innovation Steering Committee Meeting No. 3/2012 has decided that coordination of the Core Services Components involving MoH Strategic Plan 'Planning, Implementation, Monitoring and Evaluation' are to be implemented by the Planning Division. This is due to the fact that many of Core Services Components involves activities related to the implementation of the MoH 2011-2015 Strategic Plan. The Division was later involved in the 2012 SSR implementation evidence preparation for MoH. Evidence obtained will also be used to further improve health policy and planning within the MoH.

Health Sector Transformation

Health Sector Transformation is one of the Ministry's Key Result Areas identified for the 10MP. Throughout 2012, the MoH organized public engagement roadshows to seek views, opinions, suggestions and ideas from the Malaysian citizens regarding the health delivery system.

The Malaysian Health System Public Engagement Roadshow was launched by the Health Minister on 31st March 2012. By end of the year, the study had covered 10 states with an attendance of 3853. Other than obtaining public feedbacks through the roadshows, MoH also obtained inputs from professional bodies, employer and employee groups, and NGOs. 38 meetings, talks and discussions were held in 2012.

IMAGES 1
THE MALAYSIAN HEALTH SYSTEM PUBLIC ENGAGEMENT ROADSHOW, 2012

Source: Health Policy and Planning Unit, Planning & Development Division, MoH

In continuing efforts to enhance human capital development among MoH officers, the Division, in collaboration with the Institute for Health Management and the United Nations Development Programme (UNDP) organized a seminar on Universal Health Coverage on 7th November 2012. The purpose of this seminar is to enhance the understanding and knowledge of universal health coverage including the planning component.

IMAGES 2
UNIVERSAL HEALTH COVERAGE SEMINAR, 7 NOVEMBER 2012

Source: Health Policy and Planning Unit, Planning & Development Division, MoH

To create acceptance among health personnel in particular, several officers from each state were selected and trained as *Kajian Sistem Kesihatan Malaysia* (KSKM) advocators. These officers will act as agents of change in delivering KSKM information to health personnel in their respective states. A total of 2 KSKM Advocator courses were conducted successfully in 2012. A total of 70 Advocators attended the course, consisting of Clinical Specialists, Family Physicians, Public Health Specialist and other positions.

IMAGES 3
KSKM ADVOCATOR COURSES, 2012

Source: Health Policy and Planning Unit, Planning & Development Division, MoH

A High Level Consultation on Health Sector Transformation Workshop was organized for the top level MoH officials with two professors from the Harvard School of Public Health (HSPH), Harvard University as facilitators to discuss elements on health system transformation particularly for Malaysia's requirement.

The appointment of a core consultancy team with vast international experience in advising various governments and implementing health sector reform had been identified and approved, in order to assist the planning and development of the blueprint for health system transformation in Malaysia. Working together with relevant MoH Divisions and central agencies, appointment of the consultancy team is an on-going process.

National Health Financing (NHF)

In 2012, many activities were conducted towards studying and planning the health system transformation for Malaysia particularly in the area of health financing.

a) Meetings and Workshops

A total of 31 meetings and workshops were held involving senior MoH officials (both technical and management), MoH officers from relevant Divisions, clinicians, technical working groups (TWGs), central agencies, academia and other stakeholders to disseminate information, discuss and obtain input for health system transformation plan.

Another 10 workshops were conducted involving relevant MoH Divisions and clinicians to review and consolidate output from workshops conducted in 2011 and discuss issues and way forward in the development of the blueprint specifically in the financing component. The workshop conducted were 1

Financial Management workshop, 1 Premium Calculation workshop, 5 Benefits Package workshops, 1 Population Coverage and Premium Calculation workshop and 3 Provider Payment Mechanism (PPM) workshops.

IMAGE 4
FINANCIAL MANAGEMENT WORKSHOP

Source: NHF, Planning & Development Division, MoH

IMAGE 5
PPM & BENEFITS PACKAGE FOR PRIMARY HEALTH CARE WORKSHOP

Source: NHF, Planning & Development Division, MoH

b) Collaborative Efforts

Close collaboration was established with international agencies such as the World Health Organization (WHO), Joint Learning Network (JLN) and United Nations Development Programme (UNDP) to support capacity building and research for the purpose of evidence-based policy-making in health system transformation planning.

A Joint Learning Network (JLN) Health Services Costing Collaborative Core Working Group (CWG) Meeting 2012 and a Regional Experiences on Costing Healthcare Services Seminar were conducted and bringing together participants from countries such as India, Indonesia, Kazakhstan, Philippine, Vietnam and Malaysia to share costing experiences, lessons learned and recommendations in health services.

There were 5 on-going researches supported by UNDP and WHO. These 5 researches were the continuation from the previous year (2011) and funded by UNDP. WHO, the technical partner for the researches provided the required technical advisory in the technical meetings.

Collaborative work with the Public Health Department and Federal Territory Health Department for Kuala Lumpur and Putrajaya in planning the Public-Private Collaborative Model for Management of Hypertension and Diabetes study was also underway, and was expected for implementation in 2013.

IMAGE 6
JOINT LEARNING NETWORK (JLN) HEALTH SERVICES COSTING COLLABORATIVE CORE WORKING GROUP (CWG)

Source: NHF, Planning & Development Division, MoH

c) Capacity Building

In the interest of expanding knowledge, increasing capabilities to contribute input to the health system transformation blueprint development, NHF staff as well as other relevant officers attended international conferences, courses and workshops such as the Prince Mahidol Conference in Bangkok, Thailand; Social Health Protection: addressing Inequities in Access to Health Care in Turin, Italy; Workshop on Experience of Provider Payment Mechanism in Hanoi, Vietnam; Conference on Health Care Financing for All in Asia Pacific in Taipei, Taiwan; Moving Towards Universal Health Coverage – Learning Through South-South Partnerships in Kathmandu, Nepal; Workshop on Cross-Learning Exchange on Expanding Coverage conducted by JLN in Beijing, China; Second Global Symposium on Health Systems Research in Beijing, China and ASEAN Countries' Pro-Poor Health System Reform and Health Policy Workshop and Field Investigation Program in China.

Whereas locally, conferences, courses and workshops attended, among others, included 15th National Institutes of Health (NIH) Scientific Meeting Incorporating National Health & Morbidity Survey (NHMS) and Global Adult Tobacco Survey (GATS) Malaysia 2012; 6th International Casemix Conference 2012; Seminar on Universal Health Coverage; Public Course – Simple Steps to Leadership; Excellence and Office Management Skills for Administrative Professional Workshop and Technology Update No. 1/2012: Leveraging Open Technology for Enterprise Seminar. Courses for capacity building such as Quality Letter and Memo Writing, Protocol and Social Etiquette and Team Building were also conducted.

Malaysia National Health Accounts (MNHA)
In the previous year, several milestones were successfully achieved by creating new databases that resulted in publications such as the Revised Time Series (1997–2008), Health Expenditure Report 2009, MOH Sub-account (1997-2009) and Out-of-Pocket (OOP) Sub-accounts (1997-2009). As a continuation, activities in 2012 mainly concentrated on the production of National Health Accounts (NHA) 2010 and 2011 using the same internationally acceptable standardized method.

a) MNHA Data Collection and Analysis
At the beginning of the year, Health Expenditure 2010 and 2011 data collection began by updating all data sources which includes several agencies at federal or state levels from both public and private sectors. Depending on availability and quality of data, these data were processed separately to code by MNHA framework. The three sets of codes are sources of funding, providers of healthcare and functions of healthcare. These analysis are based on international references namely, System Health Accounts (SHA) Manual and the Guide to Producing National Health Accounts in Low and Middle Income Countries. Related activities continued until the end of 2012 and data endorsement by the MNHA Steering Committee was scheduled in February 2013.The health expenditure 2010 and 2011 report will be published in 2013.

b) National and International Collaborations

i. National Collaborations
The MNHA unit, on behalf of the Division had active collaborations with other projects related to National Health Accounts and financial policy decision at national, regional and international levels; as well as involvement in several national projects such as National Health & Morbidity Survey (NHMS) 2011, Health Care Demand Analysis, and Department of Statistic Malaysia (DOSM) in their Household Expenditure & Income Survey. Annual data submission for documents such as MoH Health Facts, health sector transformation planning, pharmaceutical database updates (DUNAS) and ad hoc data request continued throughout the year.

ii. International Collaborations
As in previous years, MoH was involved internationally in regular data submission for World Health Statistics (WHO mini-tech), Asia Pacific National Health Accounts Network (APNHAN) (JAPHAQ), Health at a Glance (HAG) and Costing Study by Joint Learning Network (JLN).

c) Capacity Building
Five courses were conducted in 2012 related to National Health Accounts and software skill capacity building, which were Refresher Microsoft Excel, Filling Data Gap MNHA, MNHA Survey Methodology & Documentation, NHA Framework & Classification and MNHA Survey Methodology & Documentation.

IMAGE 7
MNHA SURVEY METHODOLOGY AND DOCUMENTATION PART II WORKSHOP

Source: MNHA, Planning & Development Division, MoH

IMAGES 8
MNHA CAPACITY BUILDING COURSES, 2012

Filing Course

Data Gap Filling MNHA Course

Excel Course

NHA Framework Course

Source: MNHA, Planning & Development Division, MoH

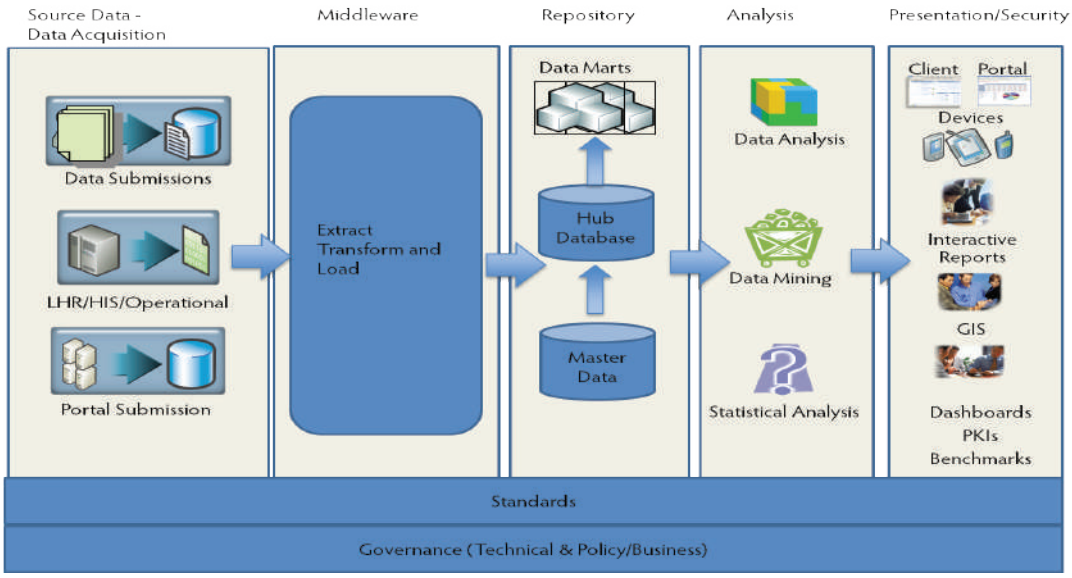
Health Informatics

Health informatics is a discipline at the intersection of information science, computer science, and health care. It deals with the resources, devices, and methods required in optimizing the acquisition, storage, retrieval, and use of information in health and biomedicine. In its simplest term, health informatics is about getting the right information from the right source to the right person at the right time. It is critical to the delivery of information to healthcare professionals so they can deliver the most appropriate care.

a) **Malaysian Health Data Warehouse (MyHDW)**

The HIMS Blueprint (2005) outlined the importance of having a comprehensive health database in MoH, which later translated into the MyHDW project. The working definition for MyHDW is ***a trusted source of truth of comprehensive healthcare data structured for query and analysis purposes***. The schematic in Figure 1 represents the flow of data from source to presentation of information to an end user; which represents the concept of MyHDW and each of its major components.

FIGURE 1
PROPOSED HEALTH DATA WAREHOUSE REFERENCE MODEL



Source: Malaysian Health Data Warehouse - Guidelines and Blueprint (May 2011)

The process to turn the concept into a reality began in 2010 when HIC, on behalf of MoH, submitted a budget proposal to WHO to initiate the Health Data Warehouse project. The proposal was approved and works on MyHDW commenced, under the supervision of the appointed WHO consultant. Since then, three MyHDW documents were produced:

i. Malaysian Health Data Warehouse (MyHDW) Guidelines and Blueprint (May 2011)
ii. Malaysian Health Data Warehouse (MyHDW) Start-up Phase 1: Initiation (May 2012)
iii. Malaysian Health Data Warehouse (MyHDW) Information Framework & Reference Data Model (December 2012)

Using the aforementioned documents as reference, a Proof of Concept session was held in December 2012, where vendors interested to be a part of this project showcased their technologies' capabilities. The session was attended by various stakeholders in MoH. Apart from this session, a total of 2 workshops and 7 Continuous Medical/Technology Education (CME/CTE) sessions related to MyHDW development were also held throughout 2012.

IMAGES 9
MyHDW PROOF OF CONCEPT SESSION

Source: Health Informatics Centre, Planning & Development Division, MoH

b) **Launching of the Web-Based SMRP**

The Medical Care Information System (*Sistem Maklumat Rawatan Perubatan*, SMRP) was initially a standalone application implemented in all hospitals since 1999 to capture hospital-based health information. In line with technology advancements, and the arising issue of data confidentiality at stake, the decision to convert into a web-based system was made way back in 2005.

The web-based system was developed in-house by MoH's Information Management Division. After years of challenging experiences, the system was finally launched in early February 2012. The adaptation and change management process was another challenge for both users and system managers. However, this later turned into a blessing in disguise; (1) the bandwidth-dependent nature of a web-based system pushes for an earlier schedule for network migration from MOHNet to 1Gov*Net, and (2) the in-house developed Web-Based SMRP attracted interest from the Malaysian Institute of Microelectronic Systems (MIMOS) who subsequently provided technical input for system enhancements and also attachments for MoH officers for transfer of knowledge purposes.

IMAGE 10
WEB-BASED SMRP INTERFACE

Source: Health Informatics Centre, Planning & Development Division, MoH

As a result, the system became more stable for official nationwide use beginning on July 2012. The partnership with MIMOS later also resulted in Version 1.1 of the Web-Based SMRP. This was the stepping stone for a wider future collaboration between MoH and MIMOS.

The implementation of the Web-Based SMRP also attracted interest from the Honourable Minister of Internal Affairs in order to improve the National Registration Department (*Jabatan Pendaftaran Negara*, JPN)'s quality for birth registration in Malaysia. The two system were integrated, in which SMRP acted as a feeder into the JPN's system. This collaboration enabled a faster mechanism for certification during the birth registration process at the JPN level.

The SMRP was also envisioned to be a centralized data collection platform for all hospitals within the ministries in Malaysia (Ministry of Higher Education, Ministry of Defense). Hence, negotiations with the non-MoH hospitals to use the system were being work upon.

c) Health Informatics Standards

Health informatics is applied to the areas of health and health-related fields such as nursing, clinical care, dentistry, pharmacy, public health and research. Ultimately, the standards for health informatics allow integration and interoperability between systems. Health Informatics Standards in HIC can be further divided into classification, system messaging, data definition, and terminology standards.

i. International Statistical Classification of Disease (ICD)

ICD is an international disease classification endorsed by the World Health Organisation (WHO). In Malaysia, the policy was to use the ICD10 for diagnosis classification and the ICD9CM for procedure classification. As the program coordinator for ICD, these activities were held throughout 2012 to improve the quality of ICD coding in Malaysia:

1. ICD Committee, to endorse all ICD activities and resolve ICD issues
2. Activities to improve coding quality:
   2.1. ICD10 ECHO Training and ICD10 Coder Certification Courses
   2.2. Coding Error Rate Validation Study, which is further deliberated to be a National Indicator Approach (NIA) for the Quality Assurance Program (QAP)

2.3. Promoting Proper Diagnosis Documentation to Doctors, a 1-hour slot was provided by the Training Management Division during the pre-service course for all new doctors

ii. Health Level Seven (HL7)

HL7 is a structured 'system messaging' standard which is governed by Health Level Seven International, a non-profit organisation on standards for interoperability of health information technology, with members in over 55 countries. In view of the fact that MoH is facing interoperability issues within existing IT hospitals, the decision to be actively involved in this particular Health Informatics Standard was made to prevent future interoperability issues in hospitals currently being developed. The *Pertubuhan Tahap Kesihatan Tujuh* was officially registered with the Registration of Society (ROS) on 1st August 2011. The HL7 Protem Committee was later dissolved upon the establishment of the official committee members during the first Annual General Meeting on 29th August 2012.

iii. Malaysian Health Data Dictionary (MyHDD)

MyHDD is a data definition standard, which outlines the description of data elements within the following categories applicable to healthcare industry. MoH adopts the consensus-driven methodology which actively involved the related stakeholder in developing MyHDD. This methodology was later approved by the Healthcare Information Technology Standards Panel (HITSP) of USA and the Joint Learning Network for Universal Health Coverage (JLN) representatives who were present as observers. By end of 2012, a total of 11 datasets were produced (Table 2), and more datasets were in plans to be developed in 2013.

IMAGES 11
MyHDD WORKSHOPS, 2012

1/2012

2/2012

Source: Health Informatics Centre, Planning & Development Division, MoH

TABLE 2: LIST OF MyHDD DATASETS, AS OF 31ST DECEMBER 2012

1.	Person Record Dataset
2.	Discharge Summary Dataset
3.	Emergency Dataset
4.	Cancer Dataset
5.	Radiotherapy & Oncology Dataset
6.	Nuclear Medicine Dataset
7.	Obstetric & Newborn Dataset

8.	Oral Health Dataset
9.	Pharmacy Dataset
10.	Forensic Dataset
11.	Mental Health/Psychiatry Dataset

Source: Health Informatics Centre, Planning & Development Division, MoH

iv. Systematized Nomenclature of Medicine – Clinical Terms (SNOMED CT)

SNOMED CT is a clinical terminology standard. The primary purpose of SNOMED CT is to support the effective clinical recording of data with the aim of improving patient care by providing effective access to information required for decision support and consistent reporting and analysis. SNOMED CT is owned and maintained by the International Health Terminology Standards Development Organisation (ITHSDO), with members from 22 countries. MoH, on behalf of Malaysia, became the 22nd member after the Cabinet Meeting approval on 12th December 2012.

d) Publication

In 2012, HIC continues to produce several reports and annual publications such as the MoH Annual Report, Health Facts, Indicators for Monitoring and Evaluation for Strategy for Health for All (Health Indicators), and the HIMS Subsystem Reports. By end of 2012, all publication backlogs were cleared.

Health Facility Planning & Development

The functions of Health Facility Planning & Development is to ensure that health facility development is in line with government policies and adopting appropriate technology based on health needs and available resources. It is also responsible in planning of medical and non-medical equipment systems and their constituents for development projects appropriate for the function and level of service of the facility, selecting appropriate technology and ensuring that the equipment chosen is safe, efficient and cost effective.

a) Allocation and Expenditure

The Rolling Plan Concept was introduced in 10MP and is currently used in planning and implementation of health projects/programs. It is implemented every two years with annual review of projects/programs. This allows more flexibility to manoeuvre the economy as compared to a five-year plan, and allows commitment to be made based on the government's financial status and provides flexibility to respond to new priorities and government spending. In this approach, each Ministry will be given an allocation ceiling for two years in which the government are committed to implement all certified programmes within that period. Based on the allocation ceiling given to the ministries, the Treasury will then provide yearly allocation for implementation of projects.

A development allocation of RM 3.857 billion was approved to carry out 407 health projects for the second Rolling Plan in the 10MP (Table 3). In 2012, a total of RM1.984 billion was allocated which is 51.45% of the second Rolling Plan allocation. Expenditure performance of development projects as of December 31st, 2012 was RM1.785 billion which is 89.95% of the 2012's allocation (Table 4).

TABLE 3
HEALTH FACILITY PROJECT AND DEVELOPMENT ALLOCATION FOR 2nd ROLLING PLAN OF 10MP

Project Detail	Facilities	No. of Projects	Allocation (RM '000)	%	Expenditure (RM '000)	%
001	Training	14	295,641	7.66	283,986	96.06
002	Public Health	228	568,016	14.73	548,098	96.49
003	Upgrading of Hospital Facilities	104	1,257,165	32.59	1,254,423	99.78
004	New Hospitals	16	691,338	17.92	675,946	97.77
005	Research & Development (R&D)	1	36,546	0.95	35,882	98.18
006	Upgrading & Maintenance	1	231,000	5.99	214,922	93.04
007	Land Acquisition & Maintenance	1	21,542	0.56	21,542	100.00
008	ICT	1	76,086	1.97	72,579	95.39
009	Staff Facilities / Quarters	37	186,795	4.84	181,140	96.97
010	Promotion	0	0	0.00	0	0.00
011	Equipment & Vehicles	4	465,234	12.06	545,254	97.64
940	NKEA	-	27,740	0.72	0	0.00
Total		**407**	**3,857,103**	**100.00**	**3,742,772**	**97.04**

Source: Finance Unit, Planning and Development Division, MoH

TABLE 4
DEVELOPMENT ALLOCATION AND EXPENDITURE FOR HEALTH FACILITIES PROJECT, 2012

Project Detail	Facilities	Allocation (RM '000)	%	Expenditure (RM '000)	%
001	Training	113,125	6.04	112,047	99.05
002	Public Health	284,354	15.18	266,789	93.82
003	Upgrading of Hospital Facilities	615,592	32.87	613,629	99.68
004	New Hospitals	250,614	13.38	235,229	93.86
005	Research & Development (R&D)	15,000	0.80	14,738	98.25
006	Upgrading & Maintenance	145,000	7.74	139,537	96.23
007	Land Acquisition & Maintenance	10,041	0.54	10,041	100.00
008	ICT	30,000	1.60	26,494	88.31
009	Staff Facilities/Quarters	59,681	3.19	54,454	91.24
010	Promotion	0	0.00	0	0.00
011	Equipment & Vehicles	321,500	17.17	312,051	97.06
940	NKEA	27,740	0.00	0	0.00
Total		**1,984,456**	**100.00**	**1,785,009**	**95.32**

Source: Finance Unit, Planning and Development Division, MoH

b) Standard Plan of Health Clinic

In 2012, the Division together with the Public Works Department (*Jabatan Kerja Raya*, JKR) has successfully completed the new standard plan design for health clinic type 7. This new design will be used in rural areas, particularly in Sabah and Sarawak. The design targeted an attendance of patients between 20- 50 people/day. It is planned to be used for KK Pulau Mantanani, Sabah in 2014.

The old KK Cermai Type 3 design has also been revised together with JKR to improve the clinical workflow and to be more patient friendly. It was equipped with lift for the beneficial of patients and staff of the Dental Clinic. This new plan was named as KK3 Teja, and was planned for implementation in Yong Peng, Johor.

c) Project Handover

Table 5 lists out the project that were handed over in 2012 and went into operation. With these facilities in place, it is expected that the health services within the areas will be upgraded to a better level.

TABLE 5
PROJECT HANDOVERS IN 2012

Project Name	Handover Date
Hospital Rehabilitasi Cheras, Kuala Lumpur	27th April 2012
Ambulatory Care Centre (ACC), Hospital Kuala Lumpur	1st November 2012
Hospital Alor Gajah, Melaka	3rd December 2012

Source: Health Facility Planning, Planning & Development Division, MoH

IMAGE 12
HANDOVER OF HOSPITAL ALOR GAJAH, 3RD DECEMBER 2012

Source: Health Facility Planning, Planning & Development Division, MoH

d) Outcome-based Evaluation of MoH Development Projects

Due to poor performance of outcome-based evaluation study in 2011, the Monitoring and Evaluation Unit has conducted a series of lectures to all state health department officers on the importance of undertaking the right ways to conduct the outcome based evaluation study and its importance for future planning.

Therefore, in 2012, drastic measures were taken by the Monitoring and Evaluation Unit to further improve the quality of outcome-based evaluation. A total of 33 outcome-based evaluation papers

were prepared and presented in 2 evaluation workshops held on 3-5th April 2012 and 10-12th July 2012 respectively. The study covered various projects and programmes which have been completed namely:

1. **Training Division**: Training In-service Programmes
2. **Oral Health Division**: Water Flouridation in Perak
3. **Family Health Division**: Mobile Clinic
4. **Kuala Lumpur/Putrajaya Federal Territory Health Department**: Health Clinic (Type 2), Jinjang, Kepong and Health Clinic at Presint 9, Putrajaya.
5. **Perlis Health Department**: BAKAS Project and Jejawi Rural Clinic.
6. **Kedah Health Department**: Hospital Sultanah Bahiyah, Alor Setar and Baling Dental Clinic.
7. **Penang Health Department**: Bandar Baru Air Itam Health Clinic and Mobile Dental Clinic, Penang.
8. **Perak Health Department**: Health Clinic (Type 2), Taiping and Kampung Bawong Rural Clinic, Kuala Kangsar.
9. **Selangor Health Department**: Health Clinic (Type 3), Bandar Seri Putra and Rural Clinic at Pasir Penambang Kuala Selangor.
10. **Negeri Sembilan Health Department**: Emergency and Trauma Department, Jempol Hospital and Health Clinic in Senawang.
11. **Malacca Health Department**: Multi Storey Parking Bays at Malacca Hospital and Tengkera Health Clinic (Type 3), Malacca.
12. **Kelantan Health Department**: 1Malaysia Clinic, Kelantan and Perol Public Health Laboratory, Kota Bahru.
13. **Johor Health Department**: Mahmodiah Health Clinic, Johor Bahru and Maharani Health Clinic (Type 3), Muar.
14. **Terengganu Health Department**: Rural Clinic Besut and Gelugor Kedai and Setiu Hospital.
15. **Pahang Health Department**: Beserah Health Clinic (Type 2) and Jerangsang Rural Clinic, Lipis.
16. **Sabah Health Department**: KSKB Phase 2, Kota Kinabalu and Flying Services Doctor.
17. **Sarawak Health Department**: Infectious Diseases Ward of Kuching General Hospital, Sarawak and Public Health College, Kuching.
18. **Labuan Federal Territory Health Department**: 5 Rural Clinic Projects and Procurement of Health Instruments for Blood Transfusion, Hospital Labuan.

All the Papers were rigorously discussed by the participants and representatives from the Central agencies to ensure its quality and most importantly the outcome based evaluation papers should fulfilled all requirements needed in accordance with the circular No.3, 2005 (Now known as circular No.1, 2012).

Five outcome-based evaluation papers were selected and presented to the Outcome-Based Evaluation Committee in the Implementation and Coordination Unit (ICU), Prime Minister Department on 6th September 2012. The five papers selected are as follows:-

1. Hospital Sultanah Bahiyah, Alor Setar
2. Health Clinic (Type 2), Jinjang, Kuala Lumpur
3. Water Fluoridation in Perak
4. BAKAS, Perlis
5. 1 Malaysia Clinic, Kelantan

All the papers were thoroughly evaluated most papers passed with flying colors as the scores are more than 70%, which fall under the ST category (Significantly Exceed Target) with an average of 87.23% for the paper-based score and 86.50% for the outcome-based achievement score. With these scores, the Ministry of Health was ranked at 2nd place among 26 Ministries as compared to 2011 in

which the Ministry was ranked second last form bottom.

Various measures should be taken in the future to ensure the standard set by ICU is complied on the outcome-based evaluation are:

a) A continuous workshop to further discuss, monitor and produce standard and consistent papers; and
b) Continuous engagement of ICU, EPU and state Health Departments.

IMAGES 13
OUTCOME EVALUATION WORKSHOP, 2012

Source: Project Evaluation & Monitoring, Planning & Development Division, MoH

e) Integrated Health Research Institute *(Institut Penyelidikan Kesihatan Bersepadu*, IPKB)

In 2012, the Division was also involved in the development of an Integrated Health Research Institute (IPKB) for MoH. This is the first major MoH project to be developed through the concept of Public-Private Partnership (PPP), in which the private consortium will develop the IPKB Complex for MoH on their land in Setia Alam, Selangor. In return, the government will surrender a piece of the government land in Jalan Bangsar, Kuala Lumpur (currently being occupied by the Institute for Public Health, Institute for Health Management and Institute for Health System Research) to the private consortium for commercial development. The contract agreement for this project was signed on 29th November 2012 and the project expected for completion in 2016.

f) 8th World Congress of Design and Health 2012

The Division, on behalf of MoH, in partnership with the International Academy for Design & Health (IADH), had successfully organised the 8th World Congress of Design and Health at the Kuala Lumpur Convention Centre from 27th June to 1st July 2012. Participants consisted of 650 architects, doctors, engineers, quantity surveyors; the four expert groups which are the core role players in the health facility planning. The congress has enlightened the participants from both international and local with knowledge updates and recent technologies advancements from all over the world.

IMAGE 14
LAUNCHING OF THE 8TH WORLD CONGRESS OF DESIGN AND HEALTH, 2012

Source: Health Facility Planning, Planning & Development Division, MoH

Way Forward For Planning and Development

In the second half of 10MP, the Planning and Development Division will continue its effort to transform the Health Sector in with the Nation's Mission Thrust and Vision 2020. The plans for health sector transformation shall be further deliberated to cater for both the public and private needs. Facility planning and development activities will be enhanced, as well as continuation of efforts to improve the quality of health data for a reliable and trusted source of information. Human resource development and capacity building activities will also be the focus, in line with the proposed separation of the planning and development aspects to obtain a more focused function. The 10MP midterm review will also commence in 2013.

ENGINEERING SERVICES

The Engineering Services Division (ESD) comprises of:

i. Regulatory Branch consisting of Environmental Health Control Section, Radiation Health & Safety Section; and Private Healthcare Facilities and Services Unit.
ii. Services Branch consisting of Project Implementation Section, Hospital Operations Section and Clinic Operations Section
iii. Planning Branch consisting of the Healthcare Facility Engineering Unit, Biomedical Engineering Unit, Public Health Engineering Unit and Medical Physics Unit.

ESD provides:

i. Engineering and technical support services for medical & health programs,
ii. Preventive health programs to ensure all public water supply is safe and protect public health from adverse air quality and indoor environment conditions,
iii. Environmental Health Engineering programs to improve environmental sanitation, proper management of solid, clinical and toxic waste and proper wastewater management systems,
iv. Healthcare Facility and Biomedical Engineering support for effective & proper functioning of building, medical equipment & engineering system,

v. Engineering support for proper maintenance for healthcare facilities to ensure reliability & efficiency of engineering installation facilities,
vi. Legislative control and medical physics services to ensure safe and efficacious use of ionizing radiation (IR); and
vii. Technical advice on issues pertaining to health effects of non-ionizing radiation (NIR).

Project Implementation
In 2012, under the 10th Malaysia Plan (10 MP), the Engineering Division has implemented several project i.e. construction of new hospital, clinics and quarters, upgrading of old hospitals and clinics, renovation and refurbishment of hospitals and also upgrading and replacing engineering systems in healthcare facilities. In total, there were 164 projects which were included in the Rolling Plan 2, from which 62 projects have been completed, 82 projects are ongoing and 20 projects are in the planning stage.

Among the major projects managed by ESD are the construction of Queen Elizabeth Hospital (Package 4), Permai Psychiatric Hospital, new Central Services Block of Taiping Hospital, upgrading of new block consisting of operating theatre (OT), specialists clinic & wards in Mersing Hospital and Quarters of Sungai Buloh Hospital. **Images 15** show various projects that have been managed and also completed which include the relevant pictures.

IMAGES 15
PROJECTS IMPLEMENTED IN 2012


Hospital Permai, Johor


Hospital Queen Elizabeth


Hospital Sg. Buloh Integrated Quarters


Mortuary Sarawak General Hospital

Emergency & Trauma Unit Hospital Kuala Nerang

Upgrading of Medical Assistant's College

Source: Engineering Services Division, MOH

Hospital Support Services (HSS)

The Hospital Support Services (HSS) consists of five services, namely, Facility Engineering Maintenance Services (FEMS), Biomedical Engineering Maintenance Services (BEMS), Clinical Waste Management Services (CWMS), Cleansing Services (CLS) and Linen & Laundry Services (LLS). The HSS has been privatised in the hospitals and institutions of the Ministry of Health since 1st January 1997. **Table 6** shows the increased of asset for HSS and the fee increased from RM500 million in 1997 to RM1.1 Billion in 2011. The three Concession Companies are Faber Medi-Serve (Perlis, Kedah, Pulau Pinang, Perak, Sabah and Sarawak), Radicare (Kuala Lumpur, Selangor, Kelantan, Terengganu and Pahang) and Medivest (Johor, Melaka and Negeri Sembilan).

TABLE 6
NUMBER OF ASSETS FOR HSS 1997, 2009, 2010 & 2011

Item	1997	2009	2010	Jan-Jun 2011
No. of Hospital & Institution	127	148	148	148
Number of Beds	36,319	41,778	40,608	41,826
Floor Area (m^2)	4,297,523	5,627,670	4,641,824 *	4,692,089
FEMS Asset	Estimate 250,000	405,848	357,285 *	420,327
BEMS Asset	81,254	196,561	169,404 *	210,454

** Exclude Old Hospital which has been replaced, assets are functioning*

**Source: Engineering Services Division, MoH*

Clinics Support Services

ESD has implemented a Clinic Support Service pilot project in 10 Health Clinics in the state of Pahang and 17 Health Clinics in the state of Sarawak. The project involves Planned Preventive Maintenance (PPM) of healthcare Facility Engineering Maintenance Services (FEMS), Biomedical Engineering Maintenance Services (BEMS), Cleansing Services (CLS) and Clinical Waste Management Services (CWMS), and also Corrective Maintenance (CM). **Table 7** provides summary information on the above projects. CSS have been planned by the Ministry to be implemented throughout the country in phases subject to the provision of allocation.

TABLE 7
SUMMARY INFORMATION ON CLINIC SUPPORT SERVICES PILOT PROJECTS (CSS)

State	Scope Of Services	Contract Value (Million)	Contract Period	No. of Selected Clinics
PAHANG	FEMS, BEMS, CWMS & CLS	RM9.4	1 July 2010 – 30 June 2011 (Pilot)	10
		RM6.7	18 June 2012 – 17 June 2013 (Extension)	10
SARAWAK	FEMS, BEMS, CWMS & CLS	RM14.7	15 March 2012 – 14 March 2013 (Pilot)	17

**Source: Engineering Services Division, MoH*

Rural Water Supply
The oldest programme in Engineering Services Division where it incorporates simple technological principles on design, construction and maintenance for the provision of rural water supply. The requirement for the systems is to deliver sufficient quantities of water that meets the basic health and hygiene requirement at minimum cost. These systems produce untreated but wholesome water and therefore the rural people are advised to boil their drinking water. The types of systems installed under this programme throughout rural area in Malaysia are the gravity-feed system, sanitary well, sanitary well with house connection and rainwater collection system.

The development of rural water supply component in the water supply and rural environmental sanitation programme is planned according to 5-year Malaysia development plan. In 2012, a total of **1,045** of various types of water supply systems were installed and provided service to **16,482** houses. At the end of 2012, the overall status of rural water supply coverage is at **96.29 %**, which represents **1,769,262** rural houses (**Table 8**).

Sanitary Latrines
Initiated together with Rural Water Supply, the target for the programme is that for each household in rural area is equip with at least one Sanitary Latrine. The most effective and cheapest method for disposal of excreta in rural areas is by using 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 when providing this system to the rural population. The systems given to these people should eliminate odours, flies and generally provides a more aesthetic environment.

The construction of sanitary latrines also provides the means to initiate the effort to educate rural people on the use of more comfortable and hygienic method for disposal of excreta. In 2012 MOH has constructed a total of **280** pour flush latrines. The coverage of sanitary latrines at the end of 2012 was at **97.08 %** that represents **1,783,817** rural houses (**Table 9).**

Sullage and Solid waste Disposal
Although the coverage for rural water supply and sanitary latrines is still high on the government's agenda for many years to come, priority also has to be given to the implementation of proper sullage and solid waste disposal management in rural areas. In 2012, a total of **126** sullage disposal systems and **57** solid waste disposal systems were constructed. Started only in 1996, the addition of these systems manages to contribute to the total household coverage of sullage disposal systems and solid waste disposal systems of **66.75% (1,226,436)** and **71.15% (1,307,371)** respectively **(Table 9)**.

National Drinking Water Quality Surveillance Programme (NDWQSP)
The principal objective of NDWQSP is to raise the standards of health by ensuring the safety and acceptability of drinking water provided to the public is 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 program ensures that public health and water work personnel will be alerted in time if the quality of drinking water deteriorates. This will enable them to take preventive or remedial measures before occurrence of any major outbreak of disease or poisoning.

To further enhance the effectiveness of the program, a Quality Assurance Program (QAP) has been implemented by all states in Malaysia since January 1993. The QAP standards are set based on five performance indicators; i.e. Combined Residual Chlorine & Faecal Coliform, Faecal Coliform, Turbidity, Residual Chlorine and, Aluminium content.

For 2012, a total of 178,245 water samples were analyzed and to which it is divided into Group 1 of 131,200 samples, Group 2 of 28,139 samples, Group 3 amounted to 11,225 and total of 7,681 water samples for Group 4.

This involves monitoring water samples of 467 water treatment plants and 508 watercourses, while 86 sanitary survey has been implemented throughout the whole of Malaysia. The water sampling performance for 2012 is shown in **Table 10**, while **Table 11** indicates the performance of QAP in 2012.

TABLE 8
CONSTRUCTION OF RURAL WATER SUPPLY PROJECT BY MINISTRY OF HEALTH IN 2012

STATE	TOTAL 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	37,423	0	0	0	0	0	0	0	0	10	369	10	10	34,665	98.43%
Kedah	190,567	24	38	0	0	11	1,076	0	0	25	754	60	1,870	187,901	98.18%
P.Pinang	73,272	0	0	0	0	2	2	0	0	4	140	6	142	71,382	99.80%
Perak	153,381	4	4	0	0	21	976	0	0	37	341	62	1,320	151,126	97.74%
Selangor	111,058	0	0	0	0	1	18	0	0	0	0	1	18	113,647	99.56%
N.Sembilan	67,387	9	15	0	0	3	78	0	0	7	115	19	208	59,013	98.92%
Melaka	72,334	0	0	0	0	1	9	0	0	10	10	11	19	74,576	99.94%
Johor	151,679	6	22	2	1	1	39	0	0	14	85	23	147	158,979	99.57%
Pahang	130,954	18	102	0	0	13	473	4	4	40	178	71	757	124,641	95.63%
Terengganu	140,307	9	9	0	0	0	0	0	0	125	669	134	678	140,370	99.20%
Kelantan	277,149	0	0	361	440	5	22	0	0	88	4,162	454	4,624	256,432	88.17%
Sarawak	205,302	1	1	0	0	73	2,931	64	957	2	73	128	3,962	200,184	97.48%
Sabah	203,551	5	115	0	0	29	1,271	29	1,292	3	49	66	2,727	196,316	94.28%
MALAYSIA	**1,814,364**	**76**	**306**	**363**	**441**	**160**	**6,895**	**97**	**2,253**	**365**	**6,945**	**1,045**	**16,482**	**1,769,232**	**96.30%**

Source: Engineering Services Division, MoH

TABLE 9
CONSTRUCTION OF LATRINES, SULLAGE AND SOLID WASTE DISPOSAL SYSTEM BY MINISTRY OF HEALTH IN 2012

STATE	TOTAL 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	35,219	5	34,843	98.93%	4	22,605	64.18%	4	21,484	61.00%
Kedah	191,739	11	190,372	99.29%	21	129,446	67.51%	6	155,433	81.06%
P.Pinang	71,522	14	71,425	99.86%	3	56,847	79.48%	10	65,977	92.25%
Perak	154,616	94	150,484	97.33%	0	86,078	55.67%	0	89,896	58.14%
Selangor	114,149	0	112,642	98.68%	0	107,551	94.22%	0	105,874	92.75%
N.Sembilan	59,655	2	58,502	98.07%	0	50,820	85.19%	0	43,010	72.10%
Melaka	74,624	26	74,621	100.00%	22	69,947	93.73%	24	68,485	91.77%
Johor	159,659	0	158,964	99.56%	18	150,147	94.04%	0	151,175	94.69%
Pahang	130,343	26	123,760	94.95%	26	87,577	67.19%	0	84,913	65.15%
Terengganu	141,501	14	140,853	99.54%	17	74,326	52.53%	5	89,980	63.59%
Kelantan	290,854	76	285,524	98.17%	15	147,944	50.87%	8	180,272	61.98%
Sarawak	205,367	12	196,363	95.62%	0	121,919	59.37%	0	119,971	58.42%
Sabah	208,227	0	185,464	89.07%	0	121,229	58.22%	0	130,901	62.86%
MALAYSIA	**1,837,475**	**280**	**1,783,817**	**97.08%**	**126**	**1,226,436**	**66.75%**	**57**	**1,307,371**	**71.15%**

Source: Engineering Services Division, MoH

TABLE 10
SUMMARY OF SAMPLING PERFORMANCE FOR 2012, MALAYSIA

STATE/ SAMPLING GROUP	GROUP 1			GROUP 2			GROUP 3			GROUP 4		
	A	B	C (%)	A	B	C (%)	A	B	C (%)	A	B	C (%)
Perlis	1,200	1,083	90.25	260	258	99.23	108	101	93.52	82	76	92.68
Kedah	10,568	10,351	97.95	2,238	2,157	96.38	976	937	96.00	647	626	96.75
Pulau Pinang	4,028	4,066	100.94	798	801	100.38	460	465	101.09	317	275	86.75
Perak	12,000	11,779	98.16	2,510	2,474	98.57	1,164	1,157	99.40	766	745	97.26
Selangor	16,604	15,142	91.19	3,514	3,504	99.72	1,592	1,618	101.63	1,114	1,145	102.78
FT Kuala Lumpur	2,980	2,753	92.38	620	586	94.52	260	246	94.62	140	129	92.14
FT Putrajaya	492	480	97.56	102	90	88.24	44	46	104.55	66	39	59.09
Negeri Sembilan	6,904	6,182	89.54	1,434	1,356	94.56	676	638	94.38	430	400	93.02
Melaka	4,260	4,164	97.75	870	858	98.62	422	423	100.24	243	244	100.41
Johor	19,764	18,534	93.78	4,364	4,324	99.08	1,328	1,301	97.97	838	823	98.21
Pahang	18,216	16,074	88.24	3,996	3,964	99.2	1,186	1,183	99.75	1,064	1,062	99.81
Terengganu	6,696	5,628	84.05	1,446	1,247	86.24	510	447	87.65	309	281	90.94
Kelantan	7,476	7,254	97.03	1,620	1,604	99.01	656	620	94.51	458	434	94.76
PEN.MALAYSIA	**111,188**	**103,490**	**93.08**	**23,772**	**23,223**	**97.69**	**9,302**	**9,182**	**98.71**	**6,474**	**6,279**	**96.99**
Sabah	12,608	10,428	82.71	2,668	2,106	78.94	1,184	925	78.12	808	613	75.87
Sarawak	17,992	16,852	93.66	3,892	2,762	70.97	1,581	1,093	69.13	1,160	789	68.02
FT Labuan	604	430	71.19	124	48	38.71	68	25	36.76	48	0	0.00
MALAYSIA	**142,392**	**131,200**	**92.14**	**30,456**	**28,139**	**92.39**	**12,215**	**11,225**	**91.90**	**8,490**	**7,681**	**90.47**

Note: A = Number of samples scheduled (ideal schedule) B = Number of samples taken C = Percentage of samples taken (%)

Source: Engineering Services Division, MoH

TABLE 11
PERFORMANCE OF QAP FOR NATIONAL DRINKING WATER QUALITY SURVEILLANCE PROGRAMMES FOR 2012, MALAYSIA

STATE	COMBINE RESIDUE CHLORINE AND FAECAL COLIFORM (QAP < 0.2)			FAECAL COLIFORM (QAP < 0.4)			TURBIDITY (QAP < 2.0)			RESIDUAL CHLORINE (QAP < 2.3)			ALUMINIUM (QAP < 10.2)		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
PERLIS	767	2	0.26%	767	3	0.39%	767	24	3.13%	767	4	0.52%	175	12	6.86%
KEDAH	8,443	9	0.11%	8,448	34	0.40%	8,450	437	5.17%	8,449	160	1.89%	1,670	191	11.44%
PULAU PINANG	3,260	3	0.09%	3,265	3	0.09%	3,274	11	0.34%	3,269	19	0.58%	594	38	6.40%
PERAK	9,382	4	0.04%	9,401	20	0.21%	9,387	165	1.76%	9,387	22	0.23%	1,917	198	10.33%
SELANGOR	12,053	1	0.01%	12,059	3	0.02%	12,247	30	0.24%	12,243	57	0.47%	2,934	55	1.87%
FT KUALA LUMPUR	2,450	0	0.00%	2,459	0	0.00%	2,452	12	0.49%	2,451	17	0.69%	527	15	2.85%
FT PUTRAJAYA	469	0	0.00%	469	0	0.00%	469	0	0.00%	469	0	0.00%	84	2	2.38%
NEGERI SEMBILAN	4,822	0	0.00%	4,884	9	0.18%	4,839	219	4.53%	4,838	97	2.00%	962	175	18.19%
MELAKA	3,766	2	0.05%	3,766	9	0.24%	3,766	24	0.64%	3,766	26	0.69%	734	57	7.77%
JOHOR	15,807	6	0.04%	15,826	37	0.23%	15,886	103	0.65%	15,871	197	1.24%	3,627	251	6.92%
PAHANG	12,383	17	0.14%	12,383	65	0.52%	12,383	587	4.74%	12,383	121	0.98%	2,927	453	15.48%
TERENGGANU	4,989	1	0.02%	4,989	3	0.06%	5,016	18	0.36%	5,016	12	0.24%	1,095	38	3.47%
KELANTAN	5,756	21	0.36%	5,765	29	0.50%	5,759	1024	17.78%	5,757	228	3.96%	1,249	181	14.49%
PENINSULAR MALAYSIA	84,347	66	0.08%	84,481	215	0.25%	84,695	2654	3.13%	84,666	960	1.13%	18,495	1666	9.01%
SABAH	7,197	11	0.15%	7290	29	0.40%	7,546	672	8.91%	7,609	220	2.89%	1,372	344	25.07%
SARAWAK	9,932	27	0.27%	11,672	72	0.62%	8,699	226	2.60%	10,508	668	6.36%	1,824	354	19.41%
FT LABUAN	226	0	0.00%	295	1	0.34%	257	8	3.11%	257	35	13.62%	30	14	46.67%
MALAYSIA	101,702	104	0.10%	103,738	317	0.31%	101,197	3,560	3.52%	103,040	1,883	1.83%	21,721	2,378	10.95%

Note: A = Number of samples analysed B = Number of samples violated C = Percentage of samples violated (%)
Source: Engineering Services Division, MoH

Environmental Health Protection Program

The term 'environmental health', as defined by WHO, addresses all the physical, chemical, and biological factors external to a person, and all the related factors impacting behaviours. It encompasses the assessment and control of those environmental factors that can potentially affect health. It is targeted towards preventing disease and creating health-supportive environments. This definition excludes behaviour not related to environment, as well as behaviour related to the social and cultural environment, and genetics. To address the major environmental health problems and needs for action, many countries in the world including Malaysia have decided to prepare and implement a NEHAP (National Environmental Health Action Plan) which represents strategies on how to improve environmental health within the country and defines the roles and responsibilities of various stakeholders.

- **Areas of Concern in National Environmental Action Plan (NEHAP) Programme**

The scope of environmental health covers multiple and broad areas of concern. In the Charter of the First Ministerial Regional Forum on Environment and Health in Southeast and East Asian Countries (Bangkok, 2007) and the Second Ministerial Regional Forum on Environment and Health (Jeju, 2010) has agreed according to priority accept to consider seven environmental health areas of concern such as:

i) Air quality
ii) Water, sanitation and hygiene
iii) Solid waste
iv) Toxic chemicals, hazardous substances and hazardous waste
v) Climate change, ozone layer depletion and ecosystem change
vi) Contingency planning, preparedness and response in environmental health emergencies
vii) Health Impact Assessment

The Third Meeting of Ministerial Regional Forum on Environment and Health in Southeast and East Asian Countries for Southeast will be held in Kuala Lumpur on September 2013.

- **Latest Development of NEHAP Programme**

A memorandum on the Development and Implementation of National Environmental Health Action Plan Malaysia (NEHAP) was tabled to the Cabinet on the 5th of December 2012. The Cabinet agreed for Ministry of Health to establish and coordinate NEHAP in addressing issues and requirements pertinent to environmental health following the country's international commitments.

The Cabinet also endorsed the framework and mechanisms stipulated in the memorandum in order to carried out the implementation of NEHAP. The implementation mechanism comprises of a three-tier approach and they are as follows:

i) Steering Committee (SC)
ii) Technical Committee (TC)
iii) Thematic Working Groups (TWG)

This mechanism is to strengthen the collaboration between ministries and related agencies to promulgate the framework and to ensure a consistent approach and the harmonization of policies for environmental health. To implement NEHAP, a guidance document comprises of three parts have been developed for the usage of the stakeholders as stated below:

i) Part 1- Framework on Environmental Health for Malaysia;
ii) Part 2 – Strategic Plan for Environmental Health for Malaysia; and
iii) Part 3 – Action Plan for Environmental Health for Malaysia.

Radiation Health and Safety Programme

The Radiation Health and Safety Section, Engineering Services Division, is responsible for regulating the use of ionizing radiation (for medical purposes) pursuant to the authority of the Director General

of Health as the appropriate authority under the Act 304 and its subsidiary regulations. This regulatory activity comprises licensing, monitoring and enforcement.

Apart from its core business to regulate the use of ionizing radiation, the Radiation Health and Safety Section also plays a role in providing medical physics services, particularly to the hospitals and clinics under the Ministry of Health (MOH). This activity includes technical advice and the development of codes and standards. In addition, it is also involved in the implementation of the Radiation Protection Programme (RPP), Quality Assurance Program (QAP) and Radiation Quality Audit Management in radiology, radiotherapy and nuclear medicine at the national level.

The Radiation Health and Safety Section is also in the process of developing several programmes on radiation safety to ensure that it is in line with current international standards and requirements. In addition, existing activities are continuously reviewed to ensure it is relevant and applicable for future MOH services.

- **Licensing under the Atomic Energy Licensing Act (Act 304) and Subsidiary Regulations**

A total of 918 licenses were issued to private medical institutions in 2012. These comprise 133 new licences and 785 renewals of existing licenses. The total list of 3,550 premises comprising 881 registered government hospitals/clinics and 2,669 licensed private centers are shown in Table 12.

TABLE 12
TOTAL NUMBERS OF PREMISES WITH IRRADIATING APPARATUS UNTIL DECEMBER 2012

Type of Premises	No. of Premises		Total
	Government	Private	
Hospitals	161	142	303
Health Clinics	237	NA	237
Dental Clinics	436	1,165	1,601
Radiotherapy Centers	6	21	27
Nuclear Medicine Centers	5	15	20
Cyclotron Centers	1	1	2
Blood Irradiator Centers	2	4	6
Radiology Clinics	NA	67	67
GP's/Non-X-Ray Sp. Clinics	NA	1,192	1,192
Army Hospitals/ Clinics	31	NA	31
Veterinary Clinics	2	62	64
TOTAL	**881**	**2,669**	**3,550**

Source: Engineering Services Division, MoH

There are a total of 6,961 registered/licensed irradiating apparatus in both the government and private sectors. The total list of irradiating apparatus for the different modalities is shown in Table 13. There are altogether 420 radioactive sources comprising 279 sealed sources and 141 unsealed sources registered/licensed in both the government and private medical institutions as shown in Table 14.

TABLE 13
TOTAL OF IRRADIATING APPARATUS BY TYPE UNTIL DECEMBER 2012

Type of Irradiating Apparatus	No. of Premises		Total
	Government	Private	
General/Mobile X-Ray	1,411	1,655	3,066
Dental (intra oral/OPG)	783	1,700	2,483
Fluoroscopy/C-Arm	306	303	609
Angiography/Cath-Lab	32	82	114
CT Scanner	91	145	236
Mammography	85	146	231
Lithotripter	13	32	45
Bone Densitometer	14	64	78
Linear Accelerator	18	36	54
Simulator	10	22	32
PET-CT	2	9	11
Cyclotron	1	1	2
TOTAL	**2,766**	**4,195**	**6,961**

Source: e-RADIA Database, Engineering Services Division, MOH

TABLE 14
RADIOACTIVE SOURCES UNTIL DECEMBER 2012

Type of Sources	No. of Premises		Total
	Government	Private	
Sealed Sources	44	235	279
Unsealed Sources	19	122	141
TOTAL	**63**	**357**	**420**

Source: Engineering Services Division, MoH

- **Monitoring & Enforcement under Act 304**

The purpose of monitoring and inspection is to ensure the compliance to all regulatory requirements for safety, security and safeguards. During monitoring and inspection, attention is given on the validity of the licence, compliance with licensing conditions, qualifications of personnel, radiation protection program, record-keeping as well as maintenance of equipment to ensure the protection of patients, workers and public.

In 2012, a total of 553 premises were inspected with 181 comprising government clinics and hospitals. A total of 489 (88.4%) premises fully complied with all the necessary requirements while 64 (11.6%) premises did not comply at the time of inspection. Follow-up actions were taken to ensure all premises adhered to regulatory requirements. In 2012, the personal doses of 15,500 registered radiation workers were monitored to ensure that the dose received was within the acceptable limit as required under the Atomic Energy Licensing (Basic Safety Radiation Protection) Regulations 2010.

- **Medical Physics Services**

i. Technical Advice on Radiation Safety in Medicine

In 2012, technical advice on radiation protection aspects was provided for MOH hospitals

and clinics. The total number is as listed below:-

a) 270 vetting and evaluation of plans for radiation facilities.
b) 32 radiation equipment technical specifications meetings.
c) 101 progress meetings, site visits, testing and commissioning related to radiation facilities.

ii. Development of Codes & Standards

Codes & Standards were developed which include the following:

a) Draft Atomic Energy Licensing (Medical, Dental and Veterinary Usage of Radiation) Regulations 201_
b) Quality control (QC) parameters for 10 types of irradiating apparatus in radiology.
c) Quality control (QC) parameters for 6 types of imaging equipment in nuclear medicine.
d) Quality control (QC) parameters for 16 types of irradiating apparatus in radiotherapy.
e) Seven draft Quality Control (QC) Protocols for irradiating apparatus in radiology and radiotherapy (Computed Radiography, Digital Radiography, Positron Emission Tomography, Gamma Camera, Single Photon Emission Computed Tomography, Linear Accelerator and Brachytherapy).
f) Draft "Manual Keperluan Latihan Bagi Personal Dalam Perkhidmatan Perubatan Nuklear di bawah Akta Perlesenan Tenaga Atom 1984" 201_
g) Draft "Garis Panduan Permohonan Lesen dan Pendaftaran Kemudahan Radiologi Diagnostik di Bawah Akta Perlesenan Tenaga Atom 1984" 201_
h) Draft "Garis Panduan Permohonan Lesen dan Pendaftaran Kemudahan Pergigian di Bawah Akta Perlesenan Tenaga Atom 1984" 201_
i) Draft "Garis Panduan Permohonan Lesen dan Pendaftaran Kemudahan Radioterapi di Bawah Akta Perlesenan Tenaga Atom 1984" 201_
j) Draft "Garis Panduan Permohonan Lesen dan Pendaftaran Kemudahan Perubatan Nuklear di Bawah Akta Perlesenan Tenaga Atom 1984" 201_
k) Draft "Garis Panduan Pengendalian Insiden Radiasi Perubatan" 201_
l) Draft "Manual Tatacara Pengujian Prestasi dan Kawalan Mutu Radas Penyinaran Digital Radiography dan Computed Radiography" 201_

Conferences, Symposium, Workshops and Courses

i. Ministry of Health Engineers Conference (MOHEC 2012), 22-24 June 2012.
ii. Course on Physics and Medical Applications of MRI & Ultrasound, 4-6 May 2012.
iii. Quality Control on Gamma Camera Planar Imaging and SPECT Imaging Workshop, 16-19 June 2012.
iv. Workshop on Quality Control for Linear Accelerator and Image Guided Radiation Therapy, 11-14 October 2012.
v. International Conference on Radiation Safety in Healthcare 2012, 3-5 November 2012.
vi. Workshop on QC test parameter for PET/CT, 19-22 Dec 2012.
vii. Collaboration and participation in the International Atomic Energy Agency (IAEA) project i.e. Distance Assisted Training (DAT) Programme for Nuclear Medicine Technologists in Malaysia, session 2011/2013.

Research and Development Projects

i. Study of Radiation Exposure from Computed Radiography (CR)/Digital Radiography (DR) Systems in Malaysia (NMRR-10-439-5430)
ii. Study Of Medical Diagnostic Radiation Dose In Malaysia With A View To Participate In The UNSCEAR Study 2011-2015(NMRR-10-439-5689)
iii. Research on indoor environmental quality (IEQ) for Health Facilities in Malaysia (NMRR-10-208-5382).
iv. Identification of bioactive compounds from Phyllanthus columnaris and molecular effects on Methicillin Resistant Staphylococcus aureus (NMRR-11-59-8309).

Engineering Support and Technical Advice
The Division undertakes to evaluate and assess the conditions of the hospitals and health clinics and identify the need in the Five Year Malaysia Plan for upgrading, refurbishment and replacement of the engineering systems and facilities It also assist in the procurement of new and/or replacement of medical equipment. The Division also develops and establishes national policies, guidelines, legislation and standards in relation to environmental health engineering, healthcare facility engineering, medical physics and radiation health and safety, hospital and clinic support services.

Way Forward for Engineering Services
In view of the expanding services in the provision of healthcare to the patients and public, and protecting the public health and radiation workers, the roles of engineers and scientists in the Engineering Services Division have become more prominent in assisting the medical team to realize the vision of the Ministry of Health. There is a need for a long-term commitment to continuously train the personnel to improve their knowledge, skills and competencies. A system for a fast, efficient and effective processing and delivery of information and services is necessary thus the Division will need to optimise the use of available infrastructure, equipment and technology in its daily work processes.

This Division has now become a major provider of Engineering and Scientific Support Services to the Medical and Health Programs of the Ministry of Health. The Division will continue to plan, implement, monitor and coordinate preventive health programs through the application of public health engineering principles and methods. The Division is committed to provide engineering support for the effective and proper functioning of building, equipment and engineering system, ensure reliability and efficiency of engineering installations and ensure all healthcare facilities are well maintained to appropriate standards. It will also continue to provide an effective and efficient control in the use of ionizing radiation in medicine

NATIONAL INSTITUTES OF HEALTH

The National Institutes of Health (NIH) which comprises of the Institute for Medical Research (IMR); Institute for Public Health (IPH); Network of Clinical Research Centres (CRCs); Institute for Health Management (IHM); Institute for Health Systems Research (IHSR) and Institute for Health Behavioural Research (IHBR) continue their activities in research, training, consultancy and diagnostics services in supporting the Programmes of the MoH. Each institute continues to focus its research to addresses the Ninth Malaysia Plan (9MP) Health Research Priority Areas as well as in the core research areas of each institute thus further strengthening their functions as Centres of Excellence for health research.

The NIH Secretariat continues to provide research management and support for the NIH Institutes. In strengthening the process of research management, the NIH has developed a web portal system called the National Medical Research Register (NMRR) for the purpose of research registration, submission and approval of access to any unpublished health information.

Institute for Medical Research
The Institute for Medical Research (IMR) is the research arm of MoH and its main function is to carry out research to identify, elucidate, control and prevent diseases and health issues prevalent in the country. The activities of the IMR consist of:

1. Research activities
2. Diagnostic services
3. Consultative services
4. Scientific and Technical training programmes

- **Research activity**

In 2012, staff members of the Institute were engaged in 78 research projects. The Institute published 111 scientific papers and produced 27 reports. In addition, staff of the Institute was involved in 233 presentations at local and international seminars. Table 15 lists the research projects conducted at the Institute.

TABLE 15
IMR RESEARCH PROJECTS, 2012

No.	Project Title
1.	Development of transgenic Aedes mosquitoes
2.	Determination of biogenic amines levels in local fish-based food and identifying best manufacturing practices to reduce biogenic amines levels and contaminants
3.	Detection of Biomarkers in Early Dengue Patients for Possible Prediction of Severe Dengue Disease (DHF/DSS)
4.	Study of Possible Presence of Virulence Gene of Dengue Virus Associated With Severe Dengue and Emergence of Novel Strain by Sequence Analysis of Dengue Virus Isolates
5.	Immune Parameters and Their Role in The Pathogenesis of Dengue and Severe Dengue
6.	Effect of Sublethal Dosages of Insecticides on Dengue Virus Replication in Aedes aegypti
7.	A DNA Based Approach For The Identification of Forensically Important Fly Species
8.	Bionomic studies of Aedes albopictus (Skuse)
9.	Identification of Potential Oncogenes and Tumour Suppressor Genes Involved in the Pathogenesis of Oligodendrogliomas and Glioblastomas
10.	Optimisation of Cultivation Methods for Isolation of Pathogenic Leptospires and Molecular Characterisation of Malaysian Pathogenic Leptospira Clinical Isolates
11.	Rapid Detection of Six Bacterial Pathogens From Cerebrospinal Fluid Specimens of Suspected Meningitis Cases Using Multiplex Real Time PCR
12.	Malaria Study in Malaysia
13.	Screening of Compounds for Potential Properties for Neglected Tropical Diseases, Lymphatic Filariasis
14.	Molecular Cloning and Characterization of Tropomyosion and Arginine Kinase as Major Allergens of Macrobrachium rosenbergii (Giant Freshwater Prawn)
15.	Insecticide Susceptibility Status in Anopheles crescens: Vector of Plasmodium knowlesii in Peninsular Malaysia
16.	Association of Single Nucleotide Polymorphisms in the Tumour Necrosis Factor-alpha and Lymphotoxin-alpha (TNF-LTA) Gene Region with Rheumatoid Arthritis
17.	Development of In-House HIV-1 Drug Resistance Genotyping Assay and Assessment of the Prevalence of HIV-1 Drug Resistance among HIV Patients.
18.	Preclinical Efficacy of MSC Transplantation in an Experimental Model of Liver Cirrhosis
19.	Detection and Identification of Pathogenic Agents in Ticks (Acari: Ixodidae)
20.	Development of Four Lines Lateral Flow Strip for the Detection of Tuberculosis
21.	A Study of Malaysian Families Affected by a Neutrophil Dysfunction Related Primary Immunodeficiency (PID)
22.	A Study of Wiskott-Aldrich Syndrome and Its Related Spectrum of Diseases in Primary Immunodeficiency Patients in Malaysia
23.	Updates of Malaysian Food Composition Database
24.	Development of New Molecular Detection Methods in Knowlesi Malaria in Malaysia
25.	Molecular Characterization of the Simian Malaria Parasite, Plasmodium knowlesi in Malaysia
26.	Incidence of Human Plasmodium knowlesi Malaria, Host Parasite Interaction and Associated Risk Factors in Malaysia

27.	Molecular Characterization and Genotyping of Brucella Species Isolated From Cases of Brucellosis
28.	The Role of Human Leukocyte Antigen (HLA) Alleles in Susceptibility of Multiple Sclerosis Patients in Malaysia
29.	Evaluation of Physical and Chemical Approach to the Efficient Disruption for Aspergillus DNA Extraction
30.	Assessment of Risk of Acquiring Iatrogenic Malaria Infection in National Blood Transfusion Service
31.	Screening of Wolbachia in Aedes albopictus Skuse, Aedes aegypti (Linnaeus) and Culex sp. in Kuala Lumpur and Selangor
32.	Identification of Novel Autoantibodies as Putative Biomarkers in Malaysian Multiple Sclerosis Patients
33.	Identification of Biomarkers for Antiphospholipid Syndrome in Females With Foetal Loss in Malaysia
34.	Molecular Analysis of Hepatitis B Virus (HBV) Among Hepatitis B Carriers in Malaysia
35.	A Study of X-Linked Agammaglobulinemia Patients and Their Family Members in Malaysia
36.	The Development of Solid-Phase Protein Truncation Test for Rapid Identification of Germline Mutations in Retinoblastoma
37.	To Study Functional Metabolite Properties of Malaysian Edible Seaweed for Potential Glucose Lowering Effect Targeting the Digestive Enzyme Activities: An In Vitro Study
38.	Laboratory and Field Evaluation of the Bioefficacy of Semiochemicals in Aedes Control
39.	Inherited Metabolic Disease in Children With Sudden Deaths
40.	Application of High Resolution Melting Analysis for Detection of drug resistance genes of Mycobacterium tuberculosis in Clinical Samples
41.	Entomology and Parasitology Study on Diseases of Public Health
42.	Development and Optimization of Aedes mosquitoes Monitoring and Surveillance Tools in Malaysia
43.	Selection of Suitable Trial Site and Base-Line Survey of Aedes Population: Pre-Field Evaluation of Genetic Control of Aedes aegypti
44.	Evaluation of Mass-Rearing and Sex-Sorting Techniques for Transgenic Aedes aegypti
45.	Vectorial Capacity and Transovarial Transmission of Dengue Infection in Field-Collected Aedes Mosquitoes
46.	Larval Competition Between Wild Type Aedes aegypti, Transgenic Aedes aegypti (L.) and Wild Type Aedes albopictus
47.	Phenotype and Genotype of Pompe Disease in Malaysian Children
48.	The Outcome of Endovascular Coiling Versus Microsurgical Clipping in Treating Cerebral Aneurysm: A Retrospective Cohort in Hospital Kuala Lumpur
49.	Identification of Genetic Modifiers of HbE/Beta-Thalassaemia in Malaysia - By Whole Exome Sequencing
50.	Translational Oncology Program for the Development of New Assays for Cancers - Screening of Markers for the Diagnosis and/or Prognosis of Nasopharyngeal Carcinoma
51.	Identification and Characterization of Cancer Stem Cells in Nasopharyngeal Carcinoma (NPC) Samples
52.	The Quantitative Assessment of Chimerism: A Prospective Study in Post Haematopoietic Stem Cell Transplantation Patients

53.	In-Vitro Study of Human Adipose Derived Mesenchymal Stem Cell Expressing Tumour Necrosis Factor Related Apoptosis Inducing Ligand or (TRAIL) as a Potential Anti-Tumour Target for Cancer Treatment
54.	Comprehensive Analysis for Cancer Predisposition Genes Involved in Adult Acute Lymphoblastic Leukaemia Using Multiple Ligation-Dependent Probe Amplification (MLPA)
55.	High Resolution Genome-Wide Array Analysis of Acute Lymphoblastic Leukaemia (ALL) and Acute Myeloid Leukaemia (AML) Based on Malaysian Genetic Profiles
56.	Gene Silencing of Multidrug Resistant Genes in Leukaemia Cells
57.	Effect of TERT and TERC Gene Expressions in Regulating the Development and Progression of Acute Lymphoblastic Leukemic Cells
58.	Establishment of 3D Culture System for Anti-Tumour Spheroid Drug Screening In Vitro Using Brucea javanica Extract as a Model
59.	Study of the Effect of Kacip Fatimah and Misai Kucing Water Extract on Oxidatively Damaged DNA in Colorectal Cancer Cell Line (HCT116 and HT 29) In Vitro
60.	Development of In Vitro Model System and Migration Pathways on Chemo-Resistant Cancer Stem Cell-Induced Lung Cancer
61.	Fungal/Herbal Compounds for Targeted Therapy of Nasopharyngeal Carcinoma
62.	MicroRNAs in Adult Patients with Chronic Myeloid Leukaemia (CML) in Response to Imatinib Treatment for Quantitative Expression Profiling
63.	siRNA Mediated Gene Silencing and Quantitative Pathway Analysis in Multiple Myeloma
64.	Genome-Wide DNA Methylation Profiling on Acute Myeloid Leukaemia Patients in Malaysia
65.	Genomic Characterization and Whole Genome Sequencing of Philadelphia Positive in Adult Acute Lymphoblastic Leukaemia (ALL)
66.	Identification of Markers of Treatment Response and Recurrence in Nasopharyngeal Carcinoma
67.	Sequence Variants of Putative Tumour Suppressor Genes in Nasopharyngeal Carcinoma
68.	Determination of Biomarkers and Development of Test Kit for Laboratory Diagnosis of Japanese Encephalitis and others Arboviruses
69.	Study of the multipotency and global gene expression profile of limbal stromal cells
70.	Genomic analysis of chromosome aberrations in the pathogenesis of multiple myeloma (MM)
71.	Molecular Characterization and Epidemiology of Extended Spectrum Beta-Lactamase producing Escherichia coli, Klebsiella pneumoniae and Klebsilla spp isolates from major Malaysian hospital
72.	Biomarkers for Diabetes and Its Associated Complications in Malaysian Adults
73.	Molecular Characterization of Adenovirus Circulating in Malaysia From 2003 to 2011
74.	Study of Drug Sensitivity Profile and Genotyping of Plasmodium vivax Isolates in Sabah and Sarawak
75.	Acute Oral Toxicity Study of Selected Malaysian Medicinal Herbs on Sprague Dawley Rats
76.	NKEA Malaysian Herbal Monograph 2012, Herbal Plants: Moringa oleifera Lam Leaves (Merunggai), Clinacanthus nutans Lindau Leaves (Belalai Gajah), Momordica charantia L. Fruit (Peria Katak) and Mitragyna speciosa Korth Leaves (Ketum)
77.	Pre-Clinical Toxicology Studies of Misai Kuching Plus (MKP) and Hempedu Bumi Plus (HBP) on Sprague Dawley Rats
78.	Absorption, Distribution, Metabolism and Extraction (ADME) Study of Eurycoma longifolia Standardised Water Extracts

Source: Institute for Medical Research (IMR), MOH

- **Diagnostic Service**

Being the referral laboratory for the Ministry of Health, the IMR continues to provide and improve clinical laboratory tests. IMR provides specialised and referral diagnostic tests, and tests that are not done in other laboratories. In 2012, IMR provided about 373 different tests conducted by 14 different units/laboratories. The Biochemistry unit has managed to resume full function in 2012 after the fire which occurred on 18th April 2011; however the Oral Pathology diagnostic service is still operating in the Pathology Department, Hospital Kuala Lumpur and the Diabetes and Endocrine unit at the Institute for Public Health

- **Consultative Services**

IMR's staff provides advisory and consultative services to MOH, other government departments, as well as international organisations. Most units of the Institute also serve as referral centres to MOH laboratories throughout the country. During the year, 99 staff members provided consultative services at the national level, while 25 staff members provided such services at the regional /international level.

- **Scientific And Technical Training Programmes**

Training activities carried out by the Institute comprise 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 SEAMEO-TROPMED postgraduate courses namely, the Diploma in Applied Parasitology and Entomology and the Diploma in Medical Microbiology courses.

The ad hoc programmes provided training opportunities for 51 scientists, medical doctors and allied personnel from other departments and local and foreign institutes. There were 32 undergraduates from local tertiary institutions who received training through attachments at the various units of the Institute. The Institute also conducted 67 training workshops, 26 seminars and 50 courses during the year.

- **Awards**

In November 2012, the project on "Production of Sterile Maggot of Lucilia cuprina for Therapeutic Treatment of Diabetic Wound" by Dr Nazni Hj Wasi Ahmad and Dr Lee Han Lim won the National Innovation Award in the World Innovation Forum Kuala Lumpur.

IMAGE 16
DR NAZNI RECEIVING THE NATIONAL INNOVATION AWARD FROM THE HON. MINISTER OF SCIENCE, TECHNOLOGY & INNOVATION ON 6 NOVEMBER 2012

Source: Institute for Medical Research (IMR), MOH

The Library and Information Resource Unit of IMR was bestowed with the Anugerah Perpustakaan Gunasama Cemerlang 2011 by the National Library of Malaysia (NLM) being the Head of Library Services for Malaysia. The Library was one of the five awardees out of the 140 common user libraries termed as special libraries headed by the library professionals established in the Ministries, departments and government agencies. The award was given in due of NLM's appreciation and recognition for the continuous efforts of the concerned libraries in upholding their supportive roles in the provision of not only the relevant services but also in managing and enriching the nation's information collection of their respective stakeholders and clients.

Institute for Public Health (IPH)

Public health research is aims at improving the quality of life of population. It indicates a population-level approach with a likelihood of society-wide benefits. IPH, as one of the research institutes under the NIH, is focusing in public health research. As a research institute which focused towards public/ population health, the aim was to support MoH in providing optimum health care to the Malaysian population based on two stages:

i. Planning stage; data and information for the planning of health care services and resource allocation.
ii. Implementation stage; data and information in the monitoring and evaluation of the services.

TABLE 16
SIGNIFICANT EVENTS ORGANISED BY IPH

No.	Programme	Date	Venue
1	Launching Ceremony of the Global School Health Survey (GSHS) 2012 by Director of Institute for Public Health, Dr Tahir bin Aris	20 February 2012	Avillion Admiral Cove, Port Dickson
2	15th NIH Scientific Meeting incorporating the National Health Morbidity Survey (NHMS) 2011 and Global Adult Tobacco Survey (GATS) Conference	12-14 June 2012	Holiday Villa Hotel, Subang Jaya
3	Launching Ceremony of Clearinghouse for Research on Disability System by Ministry of Health Malaysia, Dato' Seri Liow Tiong Lai	4 December 2012	Auditorium, Parcel E, Putrajaya

Source: Institute for Public Health (IPH), MOH

- **Research Conducted By IPH**

The main function of the IPH is conducting research projects. The research projects are divided into 3 categories; Population/Community-based Health Research, research in Areas of Interest and Collaborative Research with other agencies either local or abroad; such as universities, the World Health Organization (WHO) and Center of Disease Control, Atlanta. The outcome of research that has been conducted should be beneficial to the stakeholders either the Ministry of Health, Malaysia or the other parties.

TABLE 17
POPULATION/COMMUNITY-BASED OR NATIONAL LEVEL RESEARCH/SURVEY

No.	Title of Research Project	NMRR ID.	Principal Investigator
1	National Health and Morbidity Survey 2012 : Malaysia Global School Based Student Health Survey	11-974-10401	Dr Noor Ani Ahmad, Dr Jasvindar Kaur, Suhaila Abd Ghaffar & Mohammad Zabri Johari
2	The Knowledge, Attitude and Practice in HIV and STI Related Risk Behaviors of Secondary School Children in Malaysia	11-293-8562	Dr Fadzilah Kamaludin
3	Community-based Participatory Research –Mentor-Mentee Approach to Promote Healthy Lifestyle Intervention Control Diabetes	11-925-10061	Dr Fadzilah Kamaludin
4	Mapping of Health Facilities and Services for Policy Decision Making	10-787-6532	Dr Tahir Aris
5	The Second Malaysia Burden of Disease and Injury Study	10-758-6818	Dr Mohd Azahadi Omar
6	The Bukit Koman, Raub, Community Health Status and Environmental Study	12-989-13681	Dr Gurpreet Kaur

Source: Institute for Public Health (IPH), MOH

TABLE 18
COLLABORATIVE RESEARCH WITH OTHER AGENCIES

No.	Title of Research Project	NMRR ID.	Co-Investigator/Co-Researcher	Main Owner/Collaborator
1	Tahap Post Partum Blue Di Kalangan Ibu Gestational Diabetes Mellitus di Hospital Kuala Lumpur	12-698-12640	Dr Tahir Aris	Hospital Kuala Lumpur
2	An Evaluation of the Referral of Diabetic Patients to Dental Clinics in the Ministry of Health Malaysia	10-1340-6840	Dr Mohd Azahadi Omar, Teh Chien Huey & Nor Hafizah Sahril	Oral Health Division, Ministry of Health
3	Kajian Penilaian Kefahaman Pesakit Berkaitan 'Informed Consent' Dalam Ujian Klinikal	11-268-9201	Hasimah Ismail	Clinical Research Center (CRC), Institute for Health Behavioral Research & National Institutes of Health (NIH)

No.	Title of Research Project	NMRR ID.	Co-Investigator/Co-Researcher	Main Owner/Collaborator
4	Cluster Randomization Trial of an Enhanced Smoking Cessation Programmes to Aid Smoking Cessation Compared with Brief Behavioral Support	11-906-10630	Lim Kuang Hock	Institute for Health Behavioral Research
5	A Study on Urinary Incontinence among Malaysian Women in Selangor : Prevalence, Risk Factors and QOL. 2011-2014	11-149-8830	Dr Gurpreet Kaur	Monash University
6	Estimating Dietary Sodium Intake among MOH Staff : A Pilot Study 2011	11-902-10361	Rashidah Ambak	Non-Communicable Disease Division, MOH
7	Current Health Message Triggers in Controlling Body Weight	11-279-9198	Hasimah Ismail	Institute for Health Behavioral Research
8	Risk Factors Associated with Pregnancy Induced Hypertension Mother Attended Health Clinic Temerloh, Pahang	12-1073-13285	Dr Tahir Aris	UKM Medical Centre
9	Global Adult Tobacco Survey (GATS)	11-151-8943	Helen Tee Guat Hiong	World Health Organization (WHO) and Centre for Disease Control (CDC), USA
10	Patient's Satisfaction towards Meals Services of Outsourced Food Services in Hospitals of Ministry of Health	11-139-8976	Rashidah Ambak	Course and Dietetic Service, Ministry of Health
11	Depression, Anxiety & Stress and Quality of Life (QOL) among the Elderly in an Urban Setting : 2012-2014	Research ID-14423	Dr Gurpreet Kaur	University Technology MARA
12	The Malaysian Cohort : 2012-2014	Research ID-13392	Ahmad Ali Zainuddin	Universiti Kebangsaan Malaysia (UKM)
13	Growth Charts for Malaysian Children : 2012-2014	Research ID-12642	Ahmad Ali Zainuddin	Institute for Medical Research
14	Evaluation on Effectiveness of Cost Saving Intervention for Enteral Product Usage in HKL	-	Yeo Pei Sien	Hospital Kuala Lumpur

Source: Institute for Public Health (IPH), MOH

TABLE 19
RESEARCH IN AREAS OF INTEREST

No.	Title of Research Project	NMRR ID.	Principal Investigator
1	Rapid Assessment of the Measles Elimination Program	12-648-12923	Dr Fadzilah Kamaludin

Source: Institute for Public Health (IPH), MOH

TABLE 20
ACHIEVEMENTS IN RESEARCH ACTIVITY

Bil.	Activity	Achievements
1.	Technical Report	14
2.	Publication (Journal Article, Journal Abstract, Research Highlight, Fact Sheets & Executive Summary)	54
3.	Consultancy	10
4.	Oral Presentation	28
5.	Poster Presentation	65

Source: Institute for Public Health (IPH), MOH

Network of Clinical Research Centre (CRC)

The CRC consists of six research units, which are the Clinical Epidemiology Unit (CEU), the Patient Registry Unit (PRU), the Healthcare Statistics Unit (HSU), the Clinical Trial Unit (CTU), One Stop Centre, and the Research Management Unit. As means to achieve the "*to improve patients' health outcomes through ethical and quality clinical research*" mission, the CRC assists government clinicians in establishing research protocol, research project planning, project management and publication. The CRC also organizes research consultation clinics and conduct research-related training courses such as good clinical practice (GCP), research ethics and research methodology. CRC has been operational since August 2000 and functions as the clinical research arm of the MoH. CRC has located among the major MoH hospitals and is headquartered at the Hospital Kuala Lumpur (HKL) (Figure 2).

The vision of the CRC is to become a leading clinical research organisation in Asia. As a research organisation in the MoH public healthcare system, as well as a government research institute, CRC has a dual mission. As part of the MoH, CRC has a broad public health mission: "To improve patients' health outcomes through ethical and quality clinical research". As a Government Research Institute (GRI), we also share responsibility for Malaysia's critical national mission to become a developed nation status by 2020. Specifically, CRC shall contribute to the development of the contract research outsourcing industry to make Malaysia a favourite clinical trial site in Asia, as envisioned in Malaysia's Third Industrial Master Plan 2006-2020 (IMP3). This is our contract research mission to contribute to our national wealth.

FIGURE 2
MAP OF THE CRC NETWORK

Source: CRC, MoH

- **Functions of National CRC (NCRC)**
  1. To provide leadership in the development and strengthening of clinical research capacity in MoH
  2. To facilitate the establishment of Hospital Clinical Research Centres (HCRCs) and provide technical support to the network of HCRCs
  3. To promote and support the conduct of Investigator Initiated Research among MoH staffs
  4. To coordinate the conduct of Industry Sponsored Research at MoH facilities
  5. To establish clinical database for MoH
  6. To establish collaboration with local, regional and international research organisations in the pursuit for excellence in clinical research in the country.

- **Functions of HCRC**
  1. To support and facilitate research activities in the hospital through the provision of:
     - Database of clinicians interested in research –interest areas, track record on Industry Sponsored Research (ISR) or Investigator Initiated Research (IIR) and publications;
     - Technical support such as statistical analysis;
     - Administrative support such as providing research assistants and study coordinators, facility support such as IT, statistical software, and others, and work station
  2. To assist in the registration of research protocol to NMRR (National Medical Research Register) and application of grants for research
  3. Participates in clinical trials and other research initiated or coordinated by NCRC
  4. To promote research through capacity building in the following ways:
     - Conduct courses like Good Clinical Practice (GCP), Good Research Practice (GRP), research methodology and biostatistics
     - Conduct regular in-house Continuous Professional Development (CPD)
     - Research clinics – providing consultation on research methodology, study design, protocol and statistical analysis

Institute for Health Management (IHM)

The idea to establish IHM was conceived during the 6th Malaysia Plan (1991-1995). Construction of the building was started in 1997 and the Institute became operational at the end of 2000. IHM was established to be the Center of Excellence in Health Management, and more specifically to enhance managerial capability in MoH. The core functions of IHM are research, training and consultation in health management. It also provides consultancy on health management in the public sector. IHM

has been awarded MS ISO 9001:2008, UKAS (UK) and Cofrac (France) accreditation in Oct 2005 to enhance its standing as a centre of excellence in its area of work. As such, the roles of IHM are to develop a strong and effective system in health research management, to develop a health management training program that is appropriate and current, capacity building in research and training in health management, to strengthen faculty members in the area of research methodology and training, to develop a comprehensive Reference Library of health management and related areas for the National Institutes of Health, to foster networking and smart partnership between individuals, institutions and organizations in the public and private sector for greater collaborative efforts, and to build capacity in giving input, feedback, views and proposals to MoH in strategic planning and evaluation of health plans.

Institute for Health Systems Research (IHSR)
IHSR was designated as a WHO Collaborating Centre for Health Systems Research in 1988. It was later upgraded into a WHO Collaborating Centre for Health Systems Research and Quality Improvement from January 2001 till the current period. The Institute's general area of research includes research in health care services, health outcomes, quality improvement, health policy, and health economics and financing.

Institute for Health Behavioural Research (IHBR)
IHBR is one of the six institutes which were derived from the structure of the NIH, MoH. Since its founding in 2006, IHBR has broadened and deepened its capacity and functions which now includes research, training, advisory and consultancy services in the field of health behaviour. This directly provides an effective health promotion research service that caters to the needs of the focus group.

CONCLUSION

The Research & Technical Programme will continue to support all programmes and activities within the MoH and also other sectors towards achieving the best in all health related endeavors and play an important role in ensuring that MoH activities are geared towards achieving national objectives.

Research activities will continue in supporting the other programmes and providing evidence for policy making and improving public health services and health delivery systems.

7 ORAL HEALTH

INTRODUCTION

With progress and affluence, the oral healthcare system must also transform to keep abreast with rising demands and expectations of the population. The Oral Health Programme of the Ministry of Health undertakes stewardship and governance for oral healthcare which include oral health policies, management of oral health programmes and services, legislation and regulations pertaining to the practice of dentistry and the promotion of oral health to ensure continual improvement of oral health status of Malaysians.

ACTIVITIES AND ACHIEVEMENTS

ORAL HEALTH EPIDEMIOLOGY AND RESEARCH

Several research projects continued in 2012 from previous years. Research efforts were concentrated at National and Programme levels.

National Level Research Projects and Initiatives

At national level, research projects were undertaken in collaboration with various agencies within and outside of the Ministry of Health.

- **National Health and Morbidity Survey (NHMS) 2011-2014**

In 2012, data analysis and the statistical report were completed for the oral health component which included load of illness, health seeking behaviour and utilization of oral healthcare. This study showed that the majority of the population would seek oral healthcare only when they perceived their oral health problems to be serious. The mean distance and travelling time for seeking oral healthcare in Sabah and Sarawak were comparatively higher than those at Peninsular Malaysia. Thus, there is a need to review current oral health promotion strategies and to identify paradigm shifts for addressing the behavioural determinants towards the improvement of the oral health status of the population. There is also a need to improve the accessibility to oral healthcare services in Sabah and Sarawak.

The Global School Health Survey (GSHS) is a school-based survey among students aged 13-17 years conducted by the World Health Organisation (WHO) in collaboration with UNAIDS, UNESCO, and UNICEF with technical assistance from the U.S. Centers for Disease Control and Prevention (CDC). Malaysia's first GSHS was conducted during February – April 2012 in all states, as part of the series of surveys under the National Health and Morbidity Survey (NHMS) 2011-2014. The Oral Health Division was tasked to prepare the write-up of the Hygiene Module in the GSHS. The module consisted of core GSHS items on frequency of toothbrushing, washing of hands before eating and after going to the toilet, and use of soap for handwashing. Site-specific items included use of fluoridated toothpaste, timing of last dental visit, avoidance of smiling or laughing due to appearance of the teeth, and missing class due to toothache in the past 12 months. Up to the end of 2012, analysis of data for the Hygiene Module was completed by Institute of Public Health, MOH Malaysia, with results checked and verified by the Oral Health Division. Preparation of the initial report was initiated and would continue into 2013.

- **National Burden of Disease (BOD) Study**

Data mining from three national surveys were completed in 2012. Results of analysis were submitted to the Institute of Health System Research for preparation of the final report in 2013. This report will provide the statistical representative estimate of the burden of disease expressed as Disability Adjusted Life Years (DALY). This estimate will be used to project the future burden of disease in Malaysia.

- **Analysis of Provider Payment and Expenditures in Health**

The preliminary report was completed and submitted to the Institute of Health Systems Research for

preparation of the final report. The findings showed that the private dental clinics in the country are concentrated in urban areas, especially in the Klang Valley. Higher revenues were reported in the urban areas. Providing incentives may be one of the measures to encourage setting up of dental clinics in the rural areas to improve accessibility to oral healthcare. The provision of appropriate dental coverage would encourage preventive dental visits to maintain good oral health and to reduce expensive complex dental treatment.

- **Collaborative Project "An Evaluation of Diabetic Patients to the Dental Clinic"**

Phase I data collection in the test states of Kedah and Negeri Sembilan and the control states of Johor and Terengganu was completed in 2012. Phase II of the study was started in the same test and control states in November 2012 and will continue into 2013.

- **National Oral Health Research Initiative (NOHRI)**

The NOHRI brings together all relevant private and public agencies with oral healthcare on the agenda. Since its inception in 2011, oral health research priorities for the 10thMP (2011-2015) have been identified and posted on the Oral Health Division MOH webpage. NOHRI hopes to bring about more multidisciplinary collaborative research for oral health. It is hoped that identifying oral health research priorities will give extra leverage for research grants in the future.

Programme Level Research Projects

These are research projects managed, coordinated and funded by the Oral Health Division. They may or may not involve other agencies.

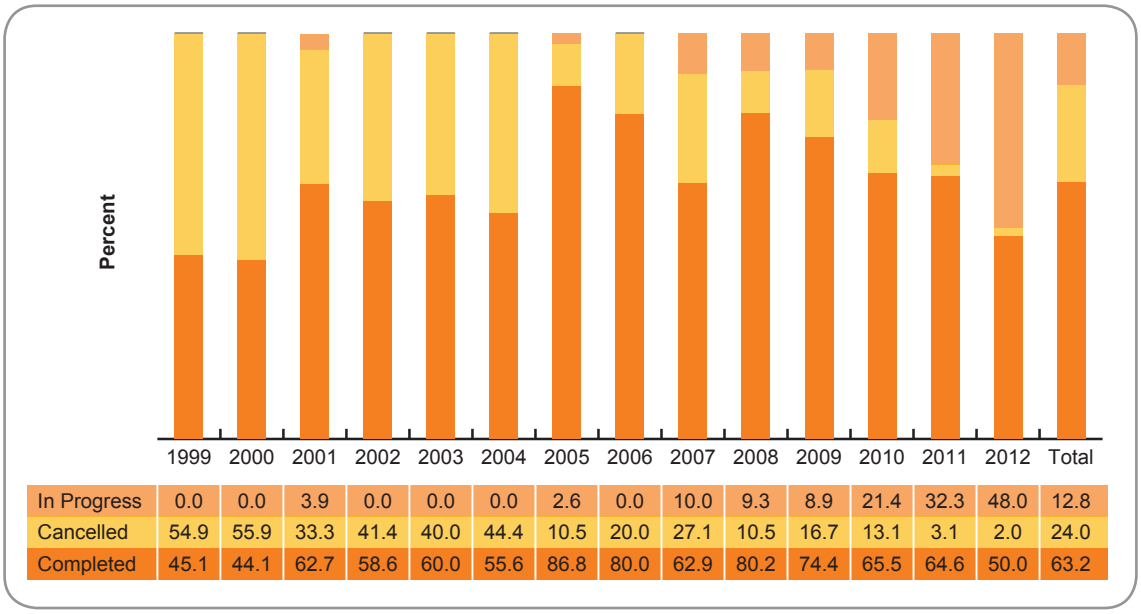
1. National Oral Health Survey of Adults (NOHSA 2010)
2. National Oral Health Survey of Preschool Children (NOHPS 2005)
3. Costing Dental Procedures in Sabah Dental Facilities
4. Costing Dental Procedures in Selangor Dental Facilities
5. Study on "High Incidence of Caries in Kelantan"
6. Study on "Dental Practitioners' Perception on the Utilization of Dental Therapists in the Private Dental Practice in Malaysia"

Health Systems Research (HSR) for Oral Health

In its efforts to inculcate a research culture in the organization, the Oral Health Programme monitors Health Systems Research conducted by the States since 1999 (Figure 1).

The percentage of cancelled projects has greatly reduced over the years due to better management and monitoring, better support and training of researchers and greater accountability among managers and researchers.

FIGURE 1
STATUS OF HEALTH SYSTEMS RESEARCH PROJECTS, 1999-2012



	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
In Progress	0.0	0.0	3.9	0.0	0.0	0.0	2.6	0.0	10.0	9.3	8.9	21.4	32.3	48.0	12.8
Cancelled	54.9	55.9	33.3	41.4	40.0	44.4	10.5	20.0	27.1	10.5	16.7	13.1	3.1	2.0	24.0
Completed	45.1	44.1	62.7	58.6	60.0	55.6	86.8	80.0	62.9	80.2	74.4	65.5	64.6	50.0	63.2

Source: Oral Health Division, MOH

PROFESSIONAL DEVELOPMENT

The Oral Health Division has made significant strides to improve personal development as well as career pathways.

Recognition of Postgraduate Dental Qualifications

The Division pursued recognition for various postgraduate qualifications in the MOH. The following qualifications were recognised by *Jawatankuasa Khas Perubatan* and subsequently by the Public Services Department (JPA) in 2012 (Table 1).

TABLE 1
POSTGRADUATE DENTAL QUALIFICATIONS RECOGNISED IN 2012

Recognition by ***Jabatan Perkhidmatan Awam***	Recognition by ***Jawatankuasa Khas Perubatan***
1. MDent Sc (Paediatric Dent), Uni Leeds, UK 2. Intercollegiate Diploma of Membership in Paediatric Dentistry, Royal Colleges of Surgeons and Physicians (Glasgow), Royal College of Surgeons (Edinburgh) and Royal College of Surgeon (England), UK 3. MSc (Forensics Odont), Uni Melbourne, Australia (recognition awarded "Personal to Holder")	1. M Restorative Dent (Conservative), USM 2. M Restorative Dent (Prosthodontics), USM 3. M Restorative Dent (Periodontics), USM 4. M Oral and Maxillofacial Surgery, USM 5. M Paediatric Dent, USM

Source: Oral Health Division, MOH

Postgraduate/Post-basic Training

A totl of 45 Federal Scholarships for postgraduate training were obtained in 2012 - 23 local and 22 abroad. These included two specialists who pursued Areas of Special Interest in (i) Management of Rehabilitation of Oral Oncology and (ii) Paediatric Oral Surgery.

Twenty two dental officers completed postgraduate training in 2012, and 18 clinical dental specialists completed their gazettement. Post-basic training in Periodontics for 25 dental nurses was conducted from June - December 2012 at the Children's Dental Centre and Dental Training College in Penang.

Career Pathways and Enhancement of Scheme of Service

A propoal paper to upgrade the scheme of service for Dental Surgery Assistants (DSA) from U17 to U19 was submitted to Human Resource Division in 2012. At the same time, a proposal was made to upgrade the DSA training structure from Certificate to Diploma level. A proposal for a 'topping up 'curriculum for certificate holders was also made to the Human Resource Division. Both are still pending. Proposal papers for *Skim Perkhidmatan Bersepadu* for Dental Nurses and Dental Technologists were put on hold pending decisions on degree programmes for these categories.

Continuing Professional Development (CPD)

Four hundred and eighty one courses were subscribed to locally, attended by more than 17,000 dental personnel in 2012 (Table 2).Ten dental officers went for in-service training abroad.

TABLE 2
IN–SERVICE TRAINING FOR DENTAL OFFICERS AND AUXILIARIES, 2012

In-Service Training	No. of Personnel Involved	Expenses (RM)
Local	17,294	2,571,992
Overseas	10	340,000

Source: Oral Health Division, MOH

FACILITY MANAGEMENT & DEVELOPMENT

The Ministry of Health has a comprehensive network of dental clinics - stand-alone clinics, health clinics, hospitals, primary and secondary schools and others. Oral healthcare is also rendered through mobile dental clinics and teams which provide outreach services. In 2012, the Programme received a mobile dental clinic (Klinik Pergigian Bergerak 1Malaysia) from 1Malaysia Development Berhad, bringing the total to 27 mobile dental clinics for the MOH.

IMAGE 1
THE OFFICIAL LAUNCH OF THE *KLINIK PERGIGIAN BERGERAK 1MALAYSIA* IN KUALA LIPIS, PAHANG ON 24 MAY 2012

Source: Oral Health Division, MOH

In 2012, under the National Blue Ocean Strategy (NBOS), dental clinics are incorporated in Urban Transformation Centres (UTCs) but oral healthcare is rendered as an outreach programme in the Rural Transformation Centres (RTCs). Overall, in 2012, there were 2,175 dental facilities equipped with 4,703 dental units in Malaysia (Table 3).

TABLE 3
DENTAL FACILITIES AND UNITS, 2012

Type Of Facility	Facilities	Dental Units
Stand-alone Dental Clinic	50*	441
Dental Clinic in Health Centre	570	1,328
Dental Clinic in Hospital	66	342
School Dental Clinic	929	847
Mobile Dental Clinic	27	44
1Malaysia Dental Mobile Clinics (Bus)	1	1
Dental Clinic in 1Malaysia Clinics • Urban Transformation Centre • Rural Transformation Centre	 2 2	 2 0
Mobile Dental Team • School Mobile Dental Team • Pre-School • Elderly & Special Needs	 377 134 3	
Total	**508**	**1,684****
Others: Prison/ Maktab Rendah Sains MARA (MRSM) Pusat Serenti, Pusat Kanak-kanak Cacat and Children Spastic Centre.	14	14
GRAND TOTAL	**2,175**	**4,703**

Note:
** Includes Children Dental Centre & Dental Training College, Penang*
***Total no. of portable dentals units for mobile dental teams*
Source: Health Informatics Centre, MOH

ORAL HEALTH TECHNOLOGY

Clinical Practice Guidelines (CPG)

The Dental Technology Section coordinates and assists in the development of Clinical Practice Guidelines (CPG) in collaboration with the Malaysian Health Technology Assessment Section (MaHTAS), Ministry of Health, Malaysia.

Three existing CPGs were reviewed and updated:

4. Management of Severe Early Childhood Caries (2nd edition)
5. Management of Chronic Periodontitis (2nd edition)
6. Management of Anterior Crossbite in Mixed Dentition (2nd edition)

One new CPG *Orthodontic Management of Missing Incisor* was completed and will be printed in 2013 while another *Management of Ameloblastoma* is expected to be ready for presentation to the Technical Advisory Committee in 2013.

Quick reference/Patient Information Leaflets

The development of quick references (QR) with key messages and recommendations was initiated

for two CPGs -*Management of Avulsed Permanent Anterior Teeth* and *Orthodontic Management of Missing Incisors*. Patient Information Leaflets (PIL) were also initiated in 2012 targeting the public on their role towards better treatment outcomes related to these two CPG. These will be completed in 2013.

Product Specifications for 2014-2017 in Approved Purchase Price List (APPL)
APPL product specifications for eight dental items were prepared and approved in 2012.

Technical Assessment of Dental Products
Technical Assessments were conducted on Capsulated Dental Amalgam 1 spill and 2 spills under APPL and these were found suitable for use.

Medical Device
The Medical Device Act and the Medical Device Authority were approved and established respectively in 2012. An awareness session for stakeholders on the Act was coordinated by the Malaysian Dental Association on 8 July 2012 in Kuala Lumpur. The aim is to increase awareness among stakeholders to only use registered products to ensure safe and quality care to patients.

HUMAN RESOURCE MANAGEMENT

Composition of Oral Health Work Force
In year 2012, there were 13,315 posts for oral health personnel in the Ministry of Health, of which 92.9% were filled (Table 4). There were 2,721 dental officers' posts in 2012 and only 9.6% were unfilled. Vacancies for dental tutors at the Dental Training College Malaysia were still high at 26.0% for Dental Nurses and 29.5% for Dental Technologists.

TABLE 4
ORAL HEALTH PERSONNEL IN THE MINISTRY OF HEALTH, 2009 - 2012

YEAR / CATEGORY	2009			2010			2011			2012		
	Post	Filled	%Vac	Post	Filled	%Vac	Post	Filled	%Vac	Post	Filled	%Vac
Dental Officers	2680	1597	40.4	2925	1781	39.1	2219	2094	5.6	2721	2461	9.6
Dental Nurse (Tutor)	41	12	70.7	41	10	75.6	42	11	73.8	42	11	26.0
Dental Nurse	2731	2447	10.4	2803	2513	10.3	2803	2562	8.6	2815	2574	8.6
Dental Technologist (Tutor)	17	6	64.7	17	6	64.7	17	6	64.7	17	5	29.5
Dental Technologist	916	731	20.2	933	745	20.2	937	815	13.0	943	858	9.0
Dental Surgery Assistants	3376	2820	16.5	3422	2947	13.9	3474	3173	8.7	3583	3422	4.5
Health Attendants	2074	1957	5.6	2219	2100	5.4	2258	2100	7.0	2269	2179	3.97
Drivers	848	805	5.1	860	838	2.6	915	837	8.5	925	860	7.02
TOTAL	**12683**	**10375**	**18.2**	**13220**	**10940**	**17.2**	**12665**	**11598**	**8.4**	**13315**	**12370**	**7.09**

Source: Oral Health Division, MOH

Nett Gain/Loss of Dental Officers

In year 2012, 514 dental officers joined the MOH. However, 105 left the service, giving a nett gain of 418 for the MOH in 2012 (Table 5).

TABLE 5
ORAL HEALTH PERSONNEL IN THE MINISTRY OF HEALTH, 2009-2012

YEAR / SUBJECT	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Reported for Duty	151	151	145	179	232	215	222	297	415	514
Attrition	22	24	56	78	107	84	81	104	105	96
• Retired (Compulsory)	8	6	7	10	20	9	2	10	13	3
• Retired (Optional)	4	3	9	5	2	0	2	5	2	3
• Resigned	7	12	32	48	73	54	54	72	82	89
• Released With Permission	1	2	6	14	10	20	23	16	7	0
• Other Reasons	2	1	2	1	2	1	0	1	1	1
Nett Gain/Loss	129	127	89	101	125	131	141	193	310	418

Source: Oral Health Division, MOH

Dental Specialists in MOH

There are eight dental specialties recognised by the Public Service Department in the MOH. There were 161 Clinical Dental Specialists and 122 Dental Public Health Officers in the MOH in 2012, giving a total of 276 (Table 6).

TABLE 6
NUMBER OF DENTAL SPECIALISTS IN THE MINISTRY OF HEALTH MALAYSIA, 2012

DISCIPLINE / YEAR	Oral Surgery	Orthodontics	Periodontics	Paediatric Dentistry	Oral Pathology / Oral Medicine	Restorative Dentistry	Special Needs Dentistry	Forensic	Dental Public Health	TOTAL
2009	45	30	18	25	6	14	0	0	129	**267**
2010	45	32	19	25	8	14	0	0	129	**272**
2011	45	25	20	27	9	16	0	0	118	**260**
2012	48	34	21	29	9	17	2	1	122	**276**

*Note: *Six are contract Dental Public Health Specialist*
Source: Oral Health Division, MOH

ACCREDITATION AND GLOBILIZATION

Verification and validation at the different levels of accreditation continued as usual in 2012. Preliminary evaluation of the Higher Education Providers (HEPs) database documents was conducted by the appointed panel of assessors and the accreditation processes continued in 2012.

Accreditation of Dental Degree Programmes

SEGi University College was given provisional accreditation and the approval to start a Bachelor of Dental Surgery (BDS) programme. The second surveillance accreditation visits were conducted for the BDS programmes in the International Medical University (IMU), Melaka-Manipal Medical College (MMMC), International Islamic University Malaysia (IIUM) and MAHSA University College.

A full accreditation visit was conducted for Windfield International College Dental Surgery Assistant Certificate programme. Re-accreditation visits were conducted for the BDS programme at University of Malaya (UM) and Universiti Sains Malaysia (USM).

Eight Memorandum of Agreement (MoA) between MOH and Higher Education Providers (HEPs) were endorsed on 26 May 2011 for the use of MOH facilities by dental undergraduates. These involved:

Principal Agreement

i. Universiti Sains Islam Malaysia (USIM)
ii. Universiti Islam Antarabangsa Malaysia (UIAM)
iii. Universiti Teknologi MARA (UiTM)
iv. International Medical University (IMU)
v. AIMST University
vi. Melaka-Manipal Medical College (MMMC)

Supplementary Agreement

i. MAHSA University College
ii. Penang International Dental College (PIDC)

Globalisation and Liberalisation of Oral Health Services

The role of the Oral Health Division includes facilitating the liberalization processes under the ASEAN Framework Agreement on Services (AFAS).The Oral Health Division (OHD) participated in the Health Services Sectoral Working Group (HSSWG) Meeting for the ASEAN Mutual Recognition Arrangement (MRA) in 2012. The preliminary draft of the MRA has been endorsed.

Under the Trans-Pacific Strategic Economic Partnership Agreement (TPP), the proposed schedules for Negative Listing were prepared and submitted to the Policy & International Relations Division, MOH to be forwarded to the Ministry of International Trade and Industry (MITI).

ORAL HEALTH INFORMATION SYSTEM

Oral Health Clinical Information System (OHCIS)

OHCIS, implemented in 10 clinics in Johor and 1 in Selangor since 2009, is in its stabilization and maintenance phase. The OHD forwarded OHCIS for participation in the Innovation, Communication and Technology Award (AIICT) *(Anugerah Inovasi Pengurusan Teknologi Maklumat dan Komunikasi)* 2011 and successfully emerged among the top five finalists. AIICT is a prestigious award under the Public Sector Innovation Award *(Anugerah Inovasi Sektor Awam (AISA)* that aims to give recognition to public agencies that have successfully utilised ICT in transforming service delivery.

IMAGE 2
PRIZE GIVING CEREMONY *FOR MAJLIS PERJUMPAAAN PENJAWAT AWAM NEGERI MELAKA DAN PENYAMPAIAN HADIAH AIICT 2011*, 31 OCTOBER 2012, MELAKA

Source: Oral Health Division, MOH

Dental Practitioners' Information Management System (DPIMS)
The DPIMS is the on-line database system for dental practitioners, which can be accessed at http://dpims.moh.gov.my/. The system successfully incorporated the online payment transaction module, *MyBayar*, in 2012, a result of collaboration between the MOH and the Malaysian Administrative Modernisation and Management Planning Unit (MAMPU).

The DPIMS was also one of the myHealth apps project which 'went-live' on 30 June 2012. This application allows users quick and easy access to healthcare information through their smart devices, including smartphones. The public can access information on any active practitioner, including their practising addresses.

The Oral Health Division, MOH Website
In 2012, the Oral Health Division (OHD) website was revised to ensure user-friendliness. Several enhancements were made:

Bilingual	English and Malay languages now available
Mobile Version	Website can be easily accessed via smart phone
Quick Links on the main page	Facilitate users to browse feedback form, MOHCube, HRMIS, MyCPD and OHD staff directory
Glossary	Meaning of terms incorporated
Menu	The menus and submenus were reconstructed with additions such as Management Profile, Career, Frequently Asked Questions (FAQs), Oral Health FAQs & Publication
Web Personalization	The pages and information are tailored to the dental practitioner and public

It is hoped that information can be easily accessed and shared by all. For further details, readers should visit http://ohd.moh.gov.my/v3/index.php/en/

ORAL HEALTH PROMOTION

The Oral Health Division continues to empower the public on the importance of oral health through various campaigns, exhibitions, media slots, MyHealth portals and other collaborative efforts. A total of 707,913 oral health promotion activities were undertaken by dental officers and dental nurses in the country.

Intra- and Inter-Agency Collaboration

- **Media slots**

Seven new oral health topics were prepared for radio/TV slots in 2012 but only 3 were taken up for media slots. In addition, RTM offered a TV programme of 13 episodes entitled `*Mutiara Putih'* through a private broadcasting company, Summit Treasure Sdn. Bhd. The filming of this series was completed in November 2012. The final series will be ready for RTM in 2013.

The Oral Health Promotion branch continues to be involved in selecting and editing the topics and scripts, coordinating personnel and preview sessions.

- **MyHealth Portal**

12 new oral health topics were identified for MyHealth Portal, a collaborative effort with the Health Education Division, MOH. In addition, 35 articles of more than 5 years were reviewed. A total of 52 questions from the 'ask the expert segment' were answered within 3 working days.

- **Health Campaigns and Exhibitions**

Health Campaigns and Exhibitions are done in collaboration with other MOH Divisions. The major events in 2012 were:

i. FDI/MDA Scientific Convention and Exhibition at Sunway Pyramid, on 13-15 January
ii. *Hari Anugerah Kantindan Dewan Makan Bersih* at Shah Alam Convention Centre on 23 April
iii. Oral Cancer Awareness Week at *Taman Tasik Shah Alam* on 18 November 2012

Oral Health Information Development and Dissemination

- **Content development and new oral health education and promotion materials**

Pop-up exhibition panels, banners and posters were developed, printed and distributed to the states. Titles included:

- *Penyakit Gusi and Kurangkan Pengambilan Gula*
- *Jagalah Kesihatan Gigi Anak untuk Kekal Sihat dan Ceria*
- *Kesihatan Pergigian untuk Ibu Mengandung*
- *Kurangkan Pengambilan Gula, Mulut Sihat, Hidup Lebih Sihat*
- *Hargailah Gigi Anda,Gigi Sihat, Senyuman Memikat*
- *Kesihatan Periodontium*
- *Kanser Mulut – Amalan dan bahan yang boleh meningkatkan kanser mulut*
- *Pemeriksaan Gigi Berkala*
- *Tips Penjagaan Kesihatan Pergigian*
- *Memberus Gigi*
- *Masalah Gigi Tidak Teratur*

Human Resource Development in Oral Health Promotion

A *Seminar on Developing Effective Oral Health Promotion Materials* was held at the Avillion Admiral Cove Hotel, Port Dickson on 9-11 July 2012. An in-house training session on graphics software for the central region (FTKL/Putrajaya, Selangor, Negeri Sembilan, Pahang) was conducted on 20 September 2012 at the Oral Health Division, MOH.

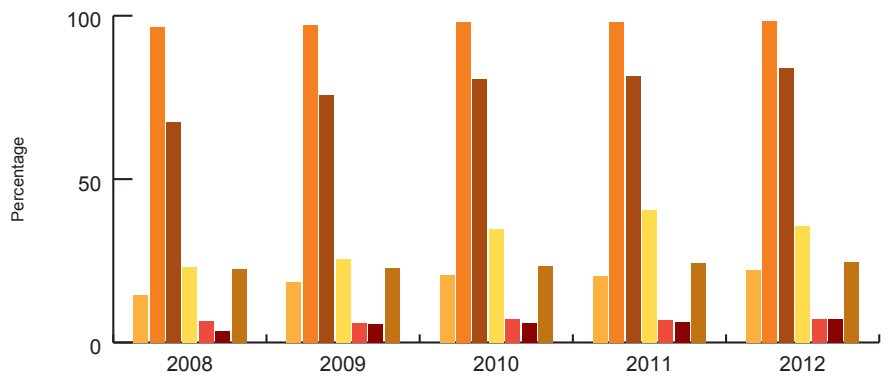
PRIMARY ORAL HEALTHCARE

The Oral Health Division, MOH emphasises oral healthcare to the following priority groups:

- pre-school children
- schoolchildren
- children with special needs
- ante-natal mothers
- the elderly group,
- disadvantaged adult groups (physically or mentally challenged or socially-deprived).

There was a small increase in the utilisation of primary oral healthcare from 24.2 % in 2011 to 24.5% in 2012 (Figure 2).

FIGURE 2
PERCENTAGE POPULATION GIVEN PRIMARY ORAL HEALTHCARE BY CATEGORY OF PATIENTS, 2008-2012



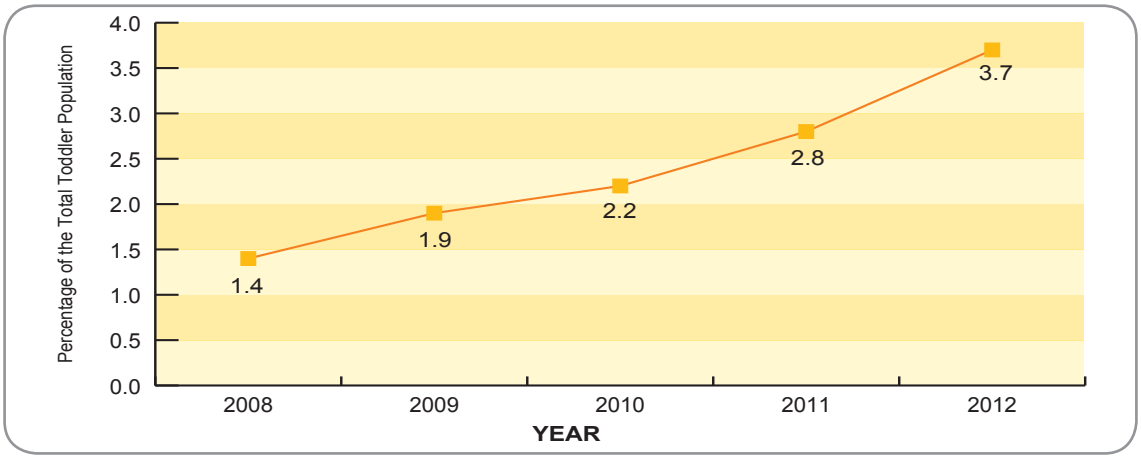
	2008	2009	2010	2011	2012
Pre-School	14.6	18.5	20.7	20.4	22.2
Primary Sch.	96.6	97.3	98	98.2	98.5
Secondary Sch.	67.5	75.6	80.5	81.6	84
Anternatal	23.1	25.5	34.6	40.6	35.6
Adults	6.6	6	7.1	6.9	7.3
Elderly	3.4	5.7	6.1	6.3	7.1
Overall	22.5	22.7	23.3	24.2	24.5

Source: Health Informatics Centre, MOH

Early Childhood Oral Healthcare

There has been a steady increase in toddlers receiving oral healthcare since 2008 to reach 3.7% of the toddler population in 2012 (Figure 3). Cursory oral examinations for toddlers are done in child care centres or Maternal and Child Health (MCH) Clinics. Fluoride varnish is rendered where necessary.

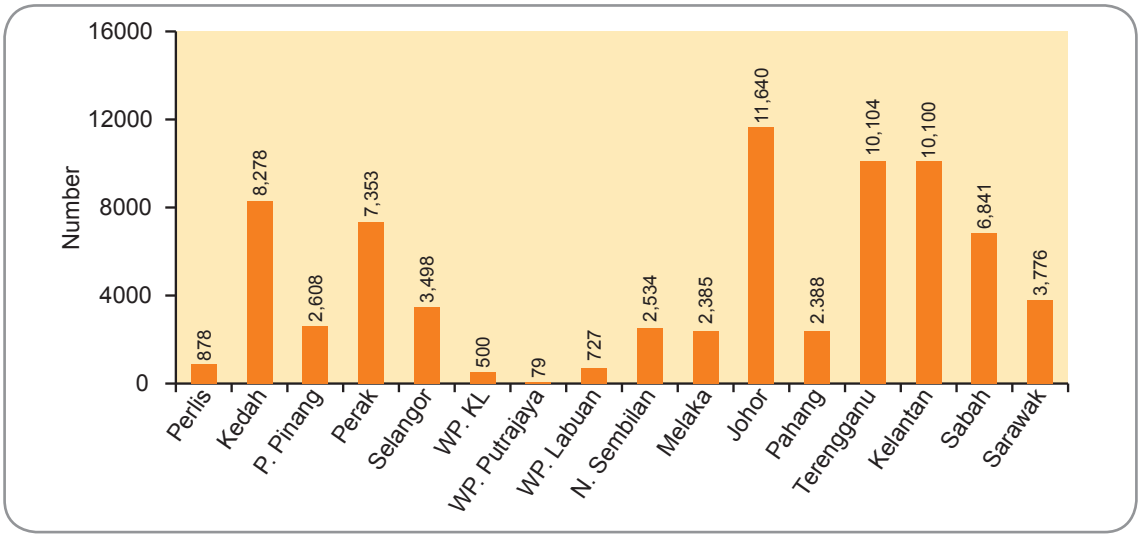
FIGURE 3
TODDLERS RECEIVING PRIMARY ORAL HEALTHCARE, 2008-2012



Source: Health Informatics Centre, MOH

Under the PERMATA Negara programme, 92.6% (809/874) of *Taska* Permata were visited and 77.1% out of 22,994 toddlers examined. A total of 195 childcare providers from 72 *Taska* Permata was given oral health education. *Taska* Permata in two states - Sabah and Sarawak - was provided with 1,210 sets of toothbrushes and toothpastes. Johor recorded the highest number of toddlers at 11,640 (Figure 4).

FIGURE 4
TODDLERS RECEIVING PRIMARY ORAL HEALTHCARE BY STATE, 2012

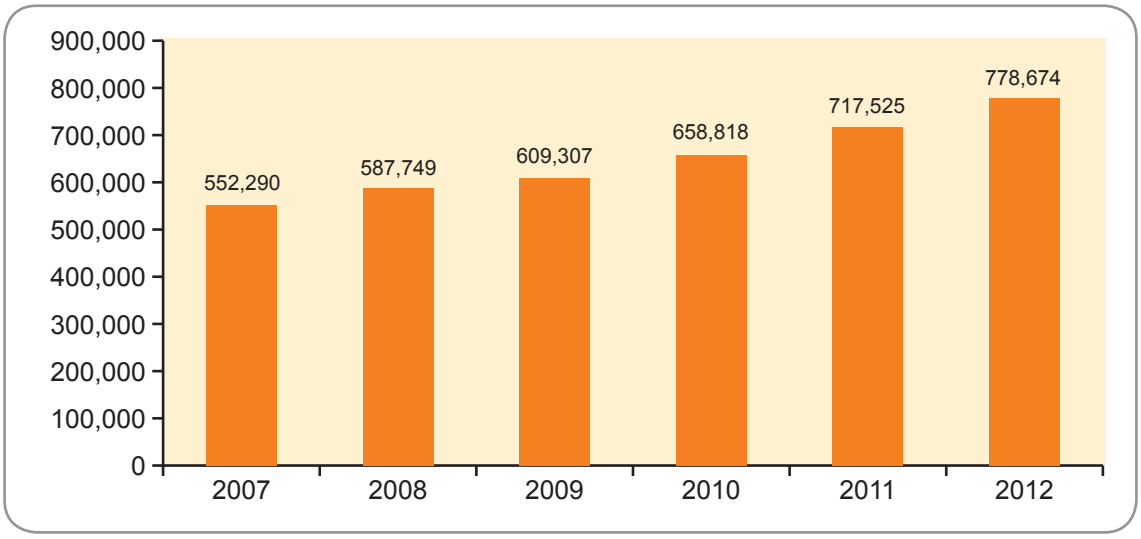


Source: Oral Health Division, MOH

Oral Healthcare for Preschool Children

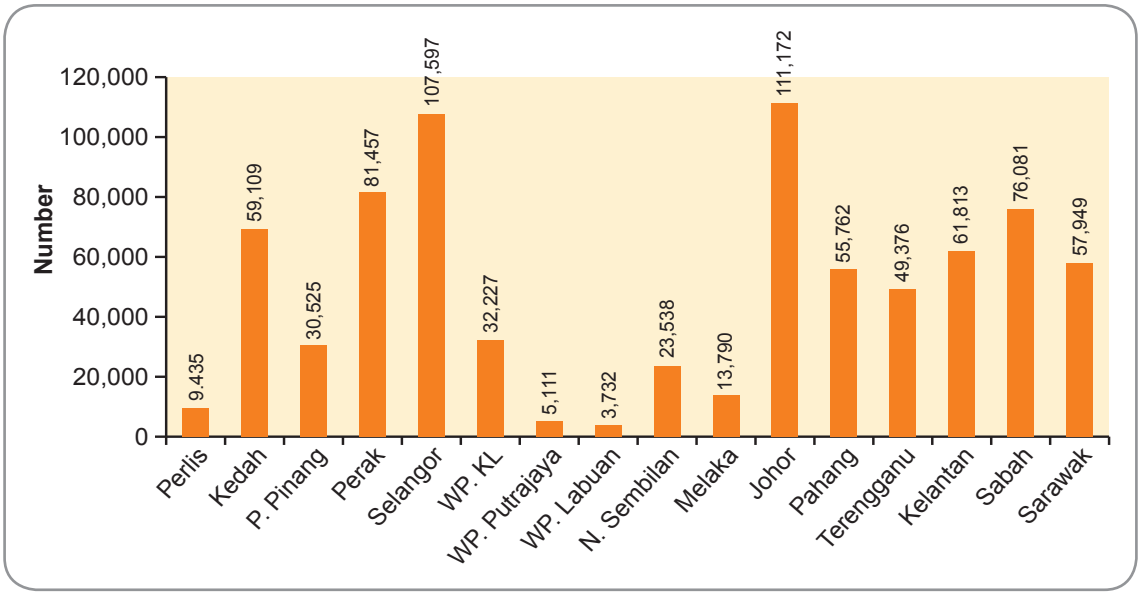
There was an improvement in the coverage of pre-school children in 2012 with a 1.7% increase from 2011 to 2012 (Figure 5). Johor, Selangor and Perak (Figure 6) recorded the highest number of preschool children receiving primary oral healthcare.

FIGURE 5
PRESCHOOL CHILDREN RECEIVING PRIMARY ORAL HEALTHCARE, 2007-2012



Source: Health Informatics Centre, MOH

FIGURE 6
PRESCHOOL CHILDREN RECEIVING PRIMARY ORAL HEALTHCARE BY STATE, 2012



Source: Health Informatics Centre, MOH

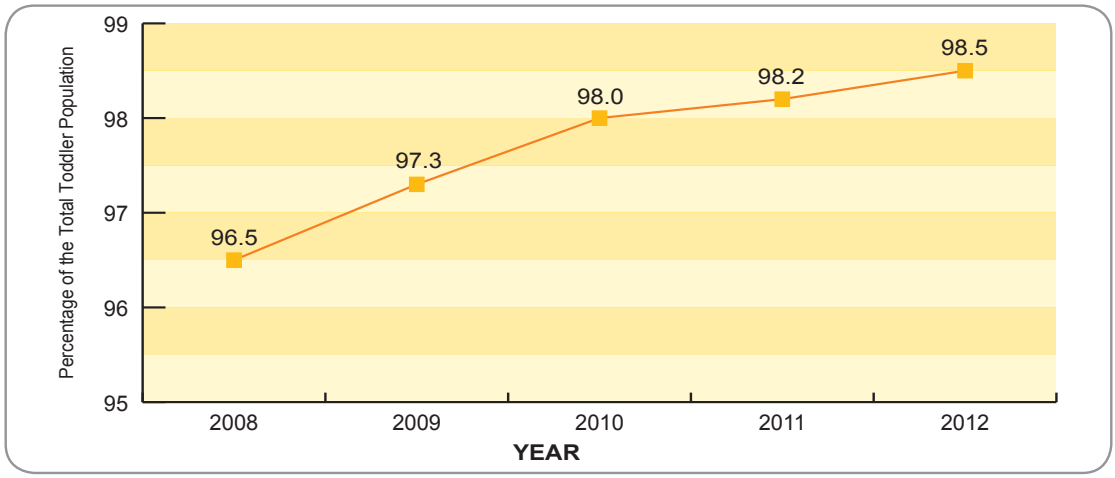
Oral Healthcare for Schoolchildren

The oral health status of schoolchildren has improved over the years. Hence, the Oral Health Division is looking into the introduction of a 2-year recall for 'low-risk' children so that resources can be channeled to other more needful target groups. This work will be piloted in Johor and FT Kuala Lumpur in 2013.

Primary Schoolchildren

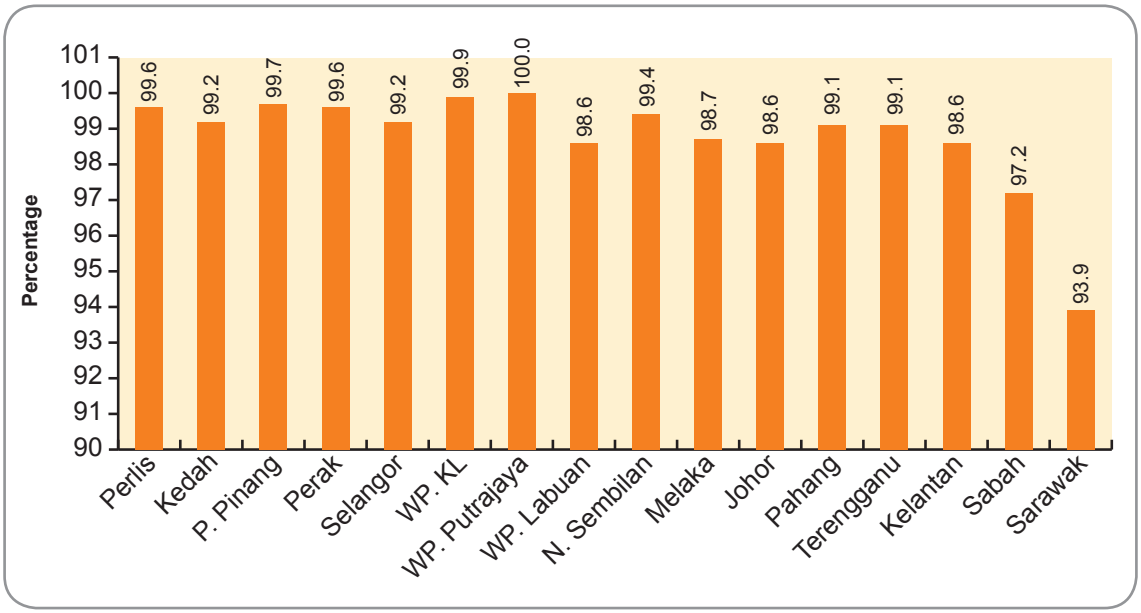
Coverage of primary schoolchildren shows an upward trend from 2008 (Figure 7). All states achieved the KPI target of 98.5% coverage except for Sabah (97.2%) and Sarawak (93.6%) (Figure 8).

FIGURE 7
COVERAGE OF PRIMARY SCHOOLCHILDREN, 2008-2012



Source: Health Informatics Centre, MOH

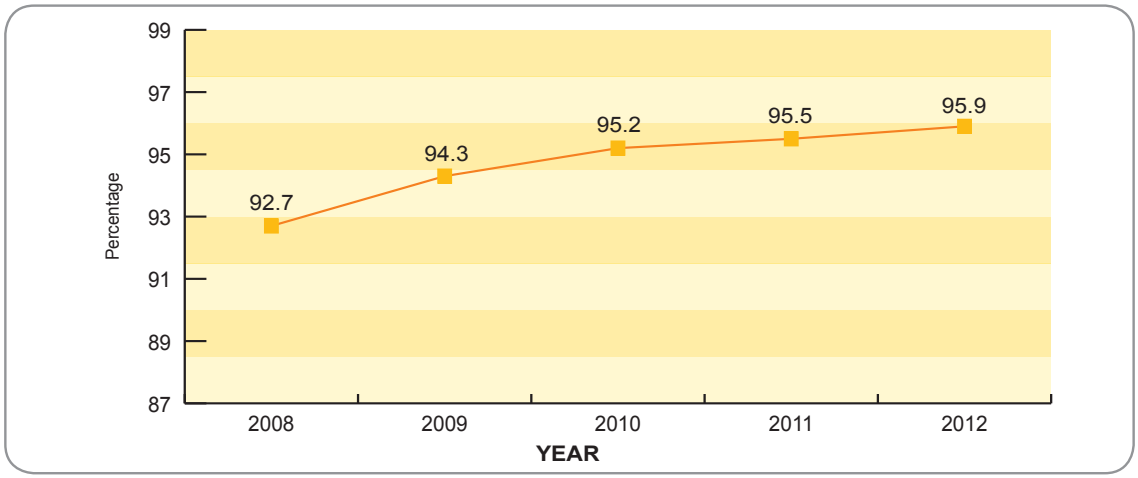
FIGURE 8
COVERAGE OF PRIMARY SCHOOLCHILDREN BY STATE, 2012



Source: Health Informatics Centre, MOH

There has also been a steady increase in primary schoolchildren rendered orally-fit (case completion) over the past 5 years (Figure 9). A total of 67.1% of primary schoolchildren did not require any treatment, compared to 66.3% in 2011. Caries-free children were 33.9%, an increase of 0.5% from 2011.

FIGURE 9
PRIMARY SCHOOLCHILDREN RENDERED ORALLY-FIT, 2008-2012



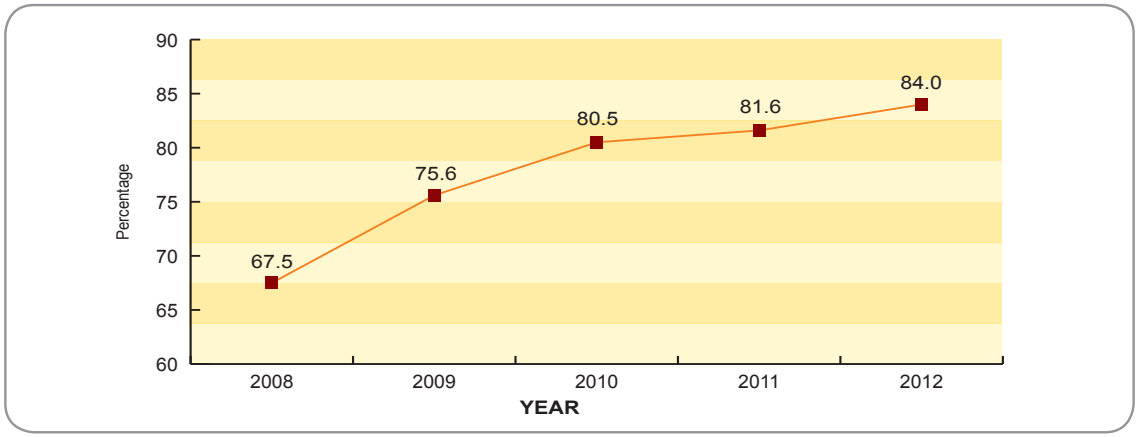
Source: Health Informatics Centre, MOH

Secondary Schoolchildren

A study on 'Comparison of Gingivitis-free Mouth using 6 Surfaces Versus 12 Surfaces of 6 Index Teeth Among 16-year-old Schoolchildren' was undertaken in 2012. This was necessary due to the differences in periodontal status data between service records and survey data. Eventually, a modified 7-surface index was found to give results equivalent to the 12-surface index and in less charting time. This was approved as the method to assess the gingival health of schoolchildren.

Due to a change in implementation, dental nurses are now the main providers for the secondary school dental service. There has also been a steady improvement in the coverage of secondary schoolchildren in the last 5 years (Figure 10).

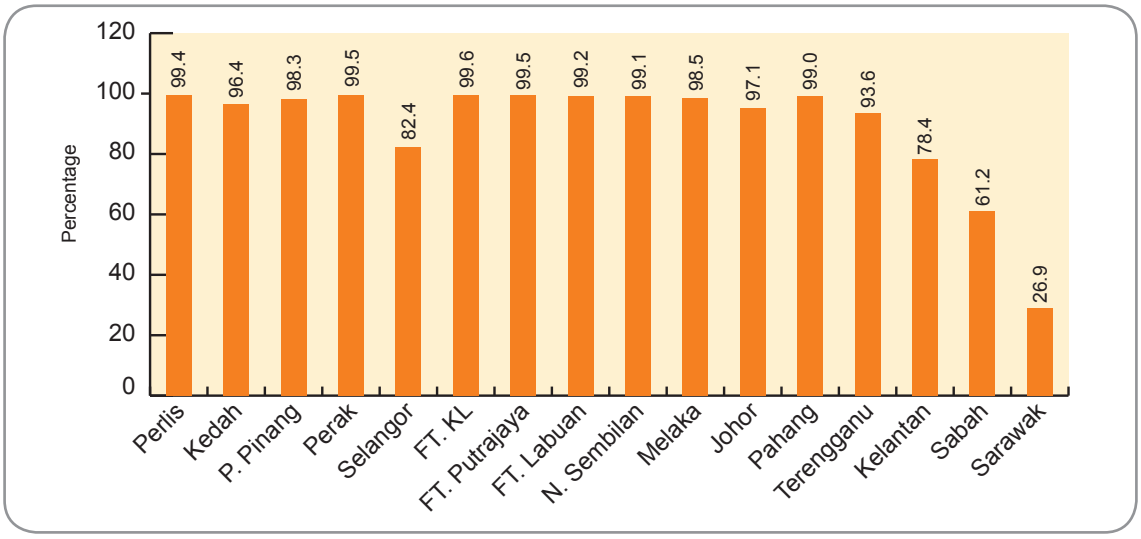
FIGURE 10
COVERAGE OF SECONDARY SCHOOLCHILDREN, 2008-2012



Source: Health Informatics Centre, MOH

The majority of states achieved the KPI target of 90% coverage except for Selangor, Kelantan, Sabah and Sarawak (Figure 11).

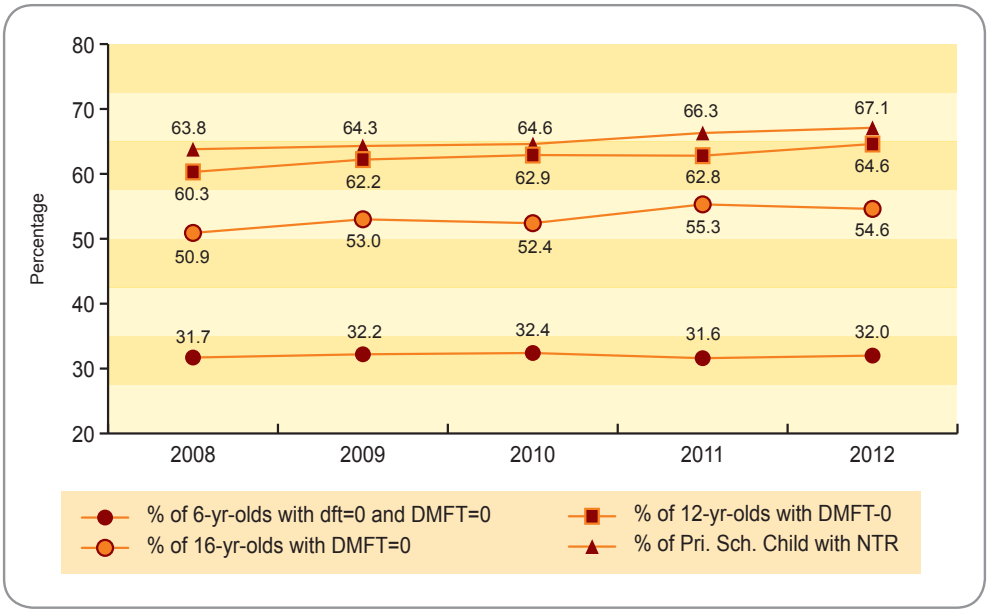
FIGURE 11
COVERAGE OF SECONDARY SCHOOLCHILDREN BY STATE, 2012



Source: Health Informatics Centre, MOH

The Oral Health Programme charts impact indicators for the school dental service (Figure 12). There were very slight increases in caries-free 6- and 12-year-olds, but not for 16-year-olds.There was also a slight increase of primary schoolchildren maintained orally-fit (No Treatment Required).

FIGURE 12
IMPACT INDICATORS FOR SCHOOL DENTAL SERVICES, 2008-2012



Source: Health Informatics Centre, MOH

Mean DMFT scores for 12-year-olds has fluctuated around 1 in the past 5 years and the situation seems to have plateaued for the 16-year-olds (Table 7).

TABLE 7
MEAN DMFT SCORE FOR 12 & 16-YEAR-OLDS, 2007-2012

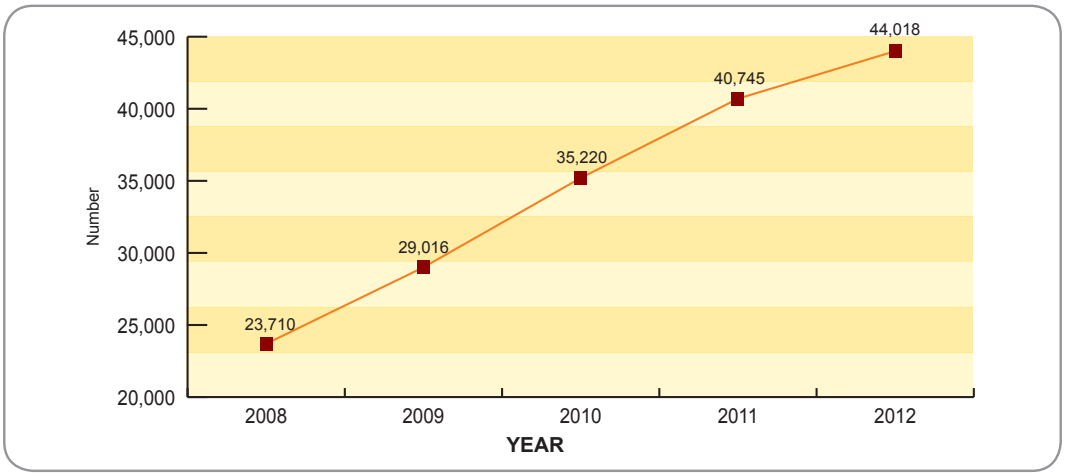
Year	Mean DMFT	
	12-yr-olds	16-yr-olds
2007	1.00	1.56
2008	1.01	1.48
2009	0.97	1.40
2010	0.96	1.44
2011	0.96	1.37
2012	0.92	1.39

Source: Health Informatics Centre, MOH

Oral Healthcare for Children with Special Needs

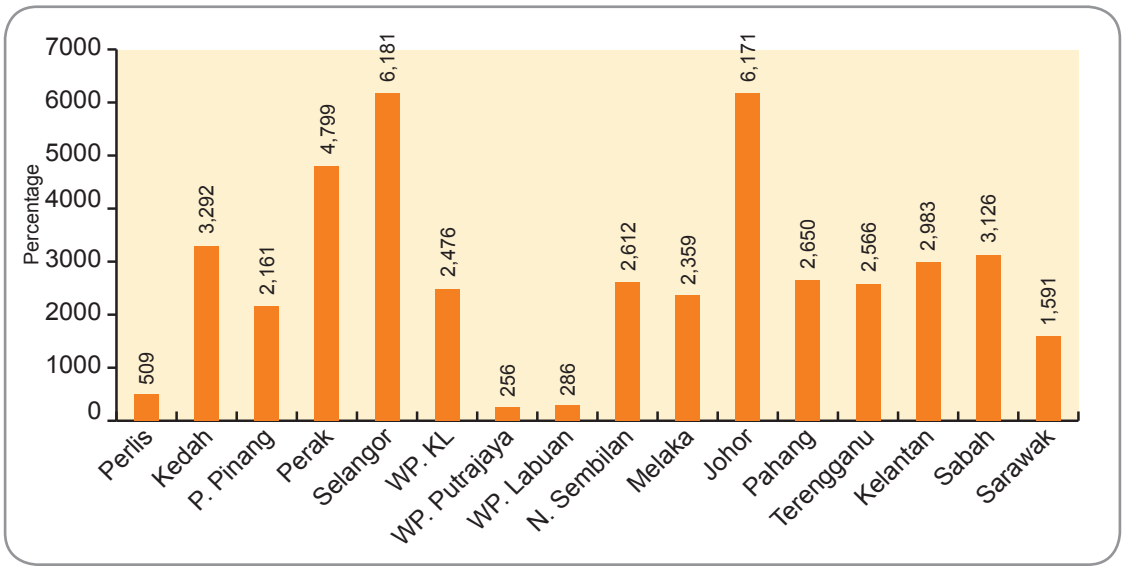
Primary oral healthcare has covered increasing numbers of children with special needs. This was further enhanced by NBOS 7 initiatives in 2012 which prioritized the special needs group, the elderly and single mothers. Overall, 44,010 special needs children received oral healthcare in 2012 (Figure 13). The highest numbers of children were seen in Selangor, Johor and Perak (Figure 14).

FIGURE 13
CHILDREN WITH SPECIAL NEEDS RECEIVING PRIMARY ORAL HEALTHCARE, 2008-2012



Source: Health Informatics Centre, MOH

FIGURE 14
CHILDREN WITH SPECIAL NEEDS RECEIVING PRIMARY ORAL HEALTHCARE BY STATE, 2012

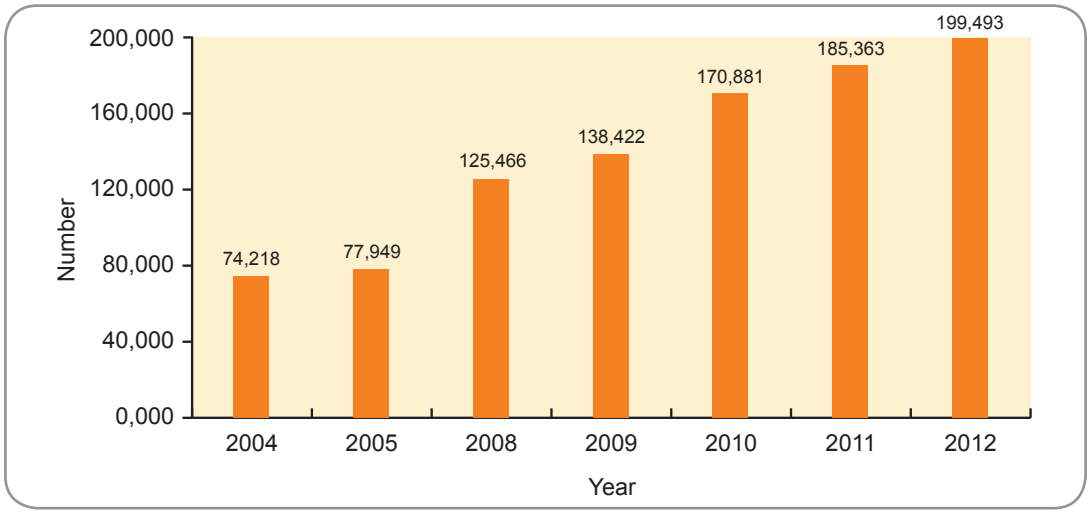


Source: Health Informatics Centre, MOH

Oral Healthcare for Antenatal Mothers

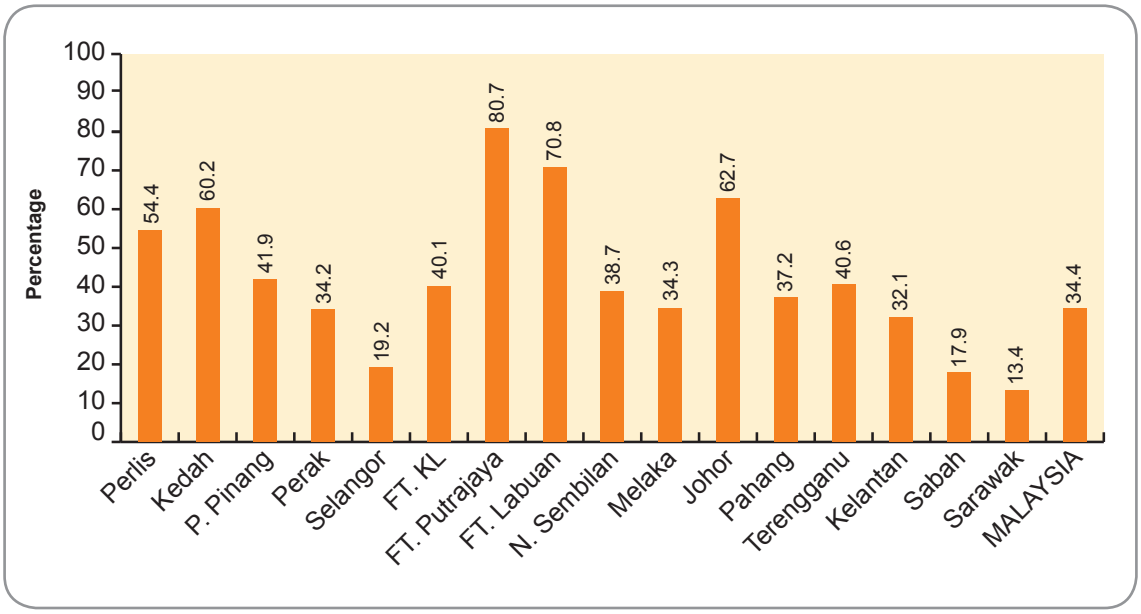
Efforts were made to increase antenatal mothers' attendances to dental clinics as part of routine antenatal checkups at MCH Clinics. There was an overall increase in utilisation as seen in the increase in new attendances from 185,363 in 2011 to 199,493 in 2012 (Figure 15). The highest percentage of antenatal mothers' rendered oral healthcare was in Putrajaya, followed by Labuan and Johor (Figure 16).

FIGURE 15
COVERAGE OF ANTENATAL MOTHERS, 2008-2012



Source: Health Informatics Centre, MOH

FIGURE 16
ANTENATAL MOTHERS RECEIVING PRIMARY ORAL HEALTHCARE BY STATE, 2012



Source: Health Informatics Centre, MOH

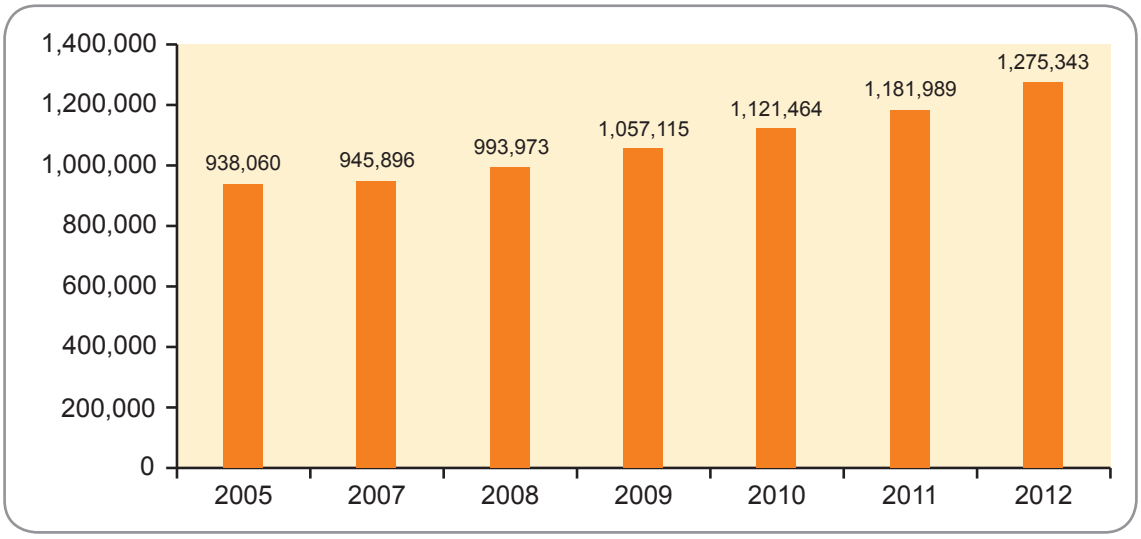
Oral Healthcare for Adults

New initiatives such as the UTCs and RTCs expanded oral healthcare for adults in 2012. UTC dental clinics operate from 8 am to 10 pm. In 2012, there were 2 UTCs - Melaka and FTKL. Three RTCs were developed in Perak (Gopeng), Kelantan (Wakaf Che Yeh), and Melaka (Kuala Linggi) where oral healthcare was rendered by mobile dental teams. With the opening of such facilities, 4,892 people utilized the dental clinics in UTCs and 912 utilized the RTCs in 2012.

Dental clinics providing daily outpatient services is now a Key Performance Indicator (KPI) for the Oral Health programme due to increasing demand for oral healthcare. In 2012, 87.9% (277/315) of dental clinics with ≥ 2 dental officers provided daily outpatient services compared to 74.5% in 2011. Utilisation of primary oral healthcare by adults has increased over the past 5 years (Figure 17). The highest numbers of adult patients were seen in Johor and Selangor in 2012 (Figure 18).

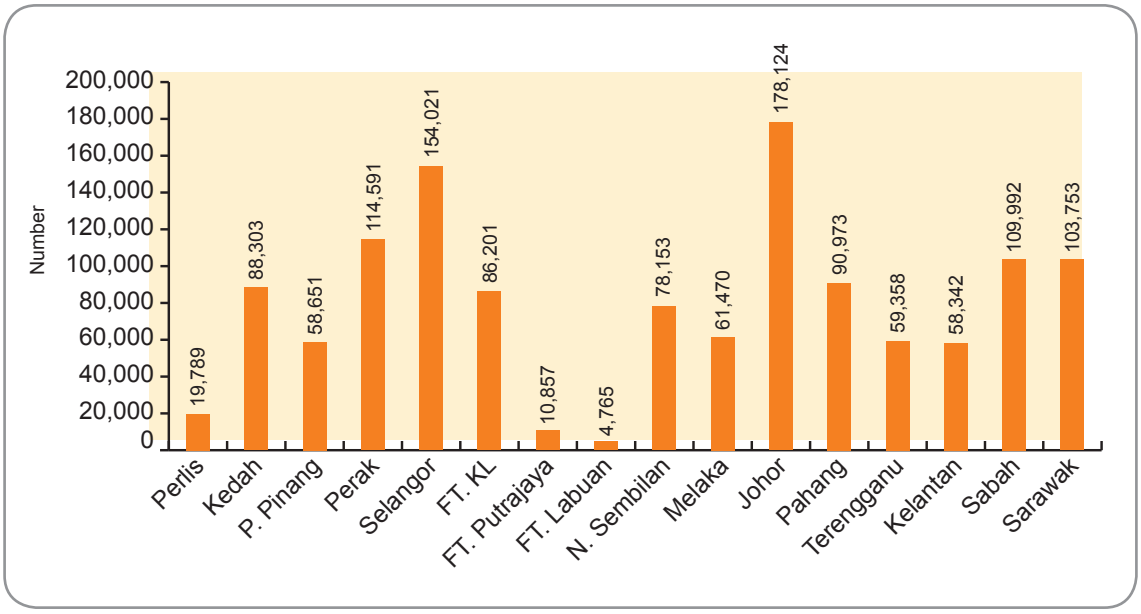
To address the need for endodontic treatment with the constraint of too few dental specialists, the Oral Health Division trained 21 dental officers on posterior endodontics and equipped 21 clinics with endodontic equipment and instruments.

FIGURE 17
ADULT POPULATION RECEIVING PRIMARY ORAL HEALTHCARE, 2005-2012



Source: Health Informatics Centre, MOH

FIGURE 18
ADULTS RECEIVING PRIMARY ORAL HEALTHCARE BY STATE, 2012



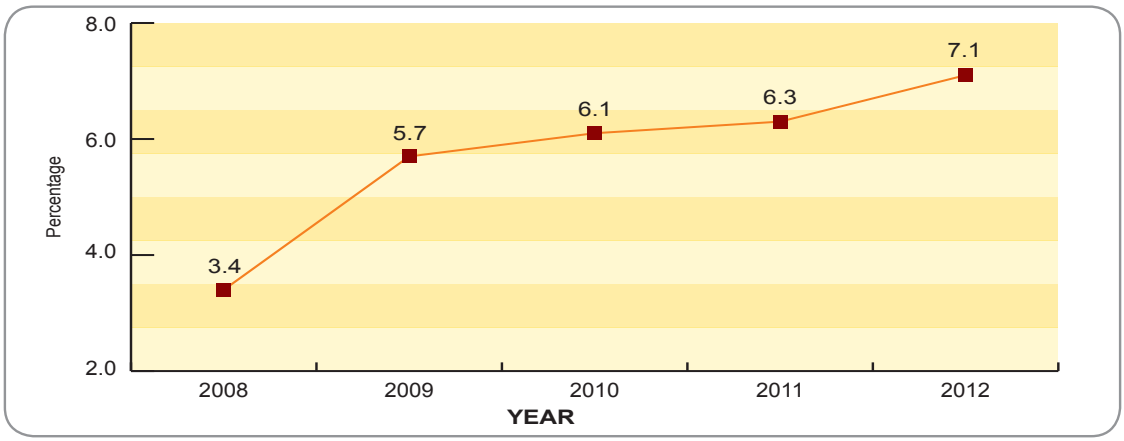
Source: Health Informatics Centre, MOH

Oral Healthcare for the Elderly

In 2012, the elderly (aged 60 and above) represented 8.3% (2.4 million) of the Malaysian population, and this is expected to reach 3.4 million by year 2020. Malaysia is expected to reach the status of an ageing nation by 2021, when the population of elderly aged 65 and above reaches 7.1%. This necessitates a shift in focus on oral healthcare needs of the elderly NBOS 7 initiatives also target the elderly thus affording them better accessibility to oral health care.

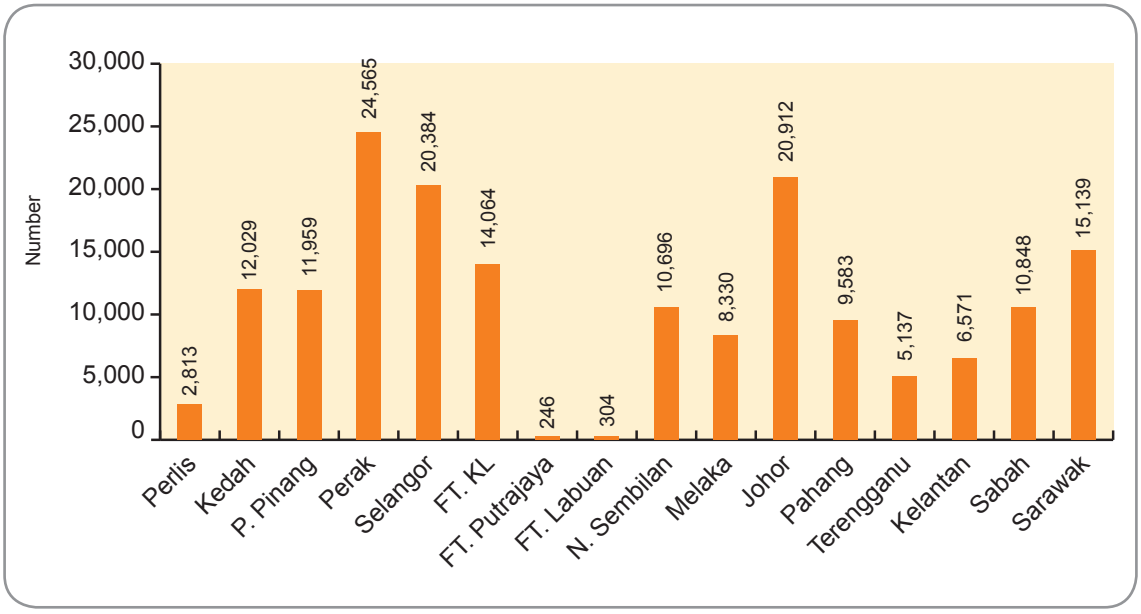
In 2012, the elderly represent 8.3% of the population. Of these, 7.1% (173,580) were rendered oral healthcare (Figure 19) among which 6,378 elderly were treated in 317 institutions. The highest numbers of elderly seen by primary care providers were in Perak, Johor and Selangor (Figure 20).

FIGURE 19
ELDERLY POPULATION RECEIVING PRIMARY ORAL HEALTHCARE, 2008-2012



Source: Health Informatics Centre, MOH

FIGURE 20
ELDERLY POPULATION RECEIVING PRIMARY ORAL HEALTHCARE BY STATE, 2012



Source: Health Informatics Centre, MOH

Despite an increase in the elderly utilising oral healthcare facilities, their oral health status is still below satisfactory level. The average number of teeth present among the elderly has remained at 9.5.Only 34.9% of 60-year-olds had 20 or more teeth (Table 8). This figure is below the targeted goal of 60% of elderly with 20 or more teeth in the National Oral Health Plan 2011-2020. There was a slight increase of edentulous elderly.

TABLE 8
ORAL HEALTH STATUS OF THE ELDERLY ATTENDING MOH DENTAL CLINICS, 2012

Age group	Average teeth present		Edentulous (%)		With 20 or more teeth (%)	
	2011	2012	2011	2012	2011	2012
60	14.6	14.6	11	11	35.3	34.9
65	12.9	13.8	14.5	14.4	28.2	28.7
75 and above	9.5	9.5	25.8	26.1	16.6	16.9

Source: Health Informatics Centre, MOH

Oral Healthcare for *Orang Asli*

The MOH took over the health services of the Orang Asli from the *Jabatan Kemajuan Orang Asli (JAKOA),* Ministry of Rural and Regional Development from 1 January 2012 and this included oral healthcare. Thus far, 36,048 Orang Asli were rendered oral healthcare in 2012, a 9% increase from 2011. A total of 93 Orang Asli schools were visited covering 19,661 primary schoolchildren.

SPECIALIST ORAL HEALTHCARE

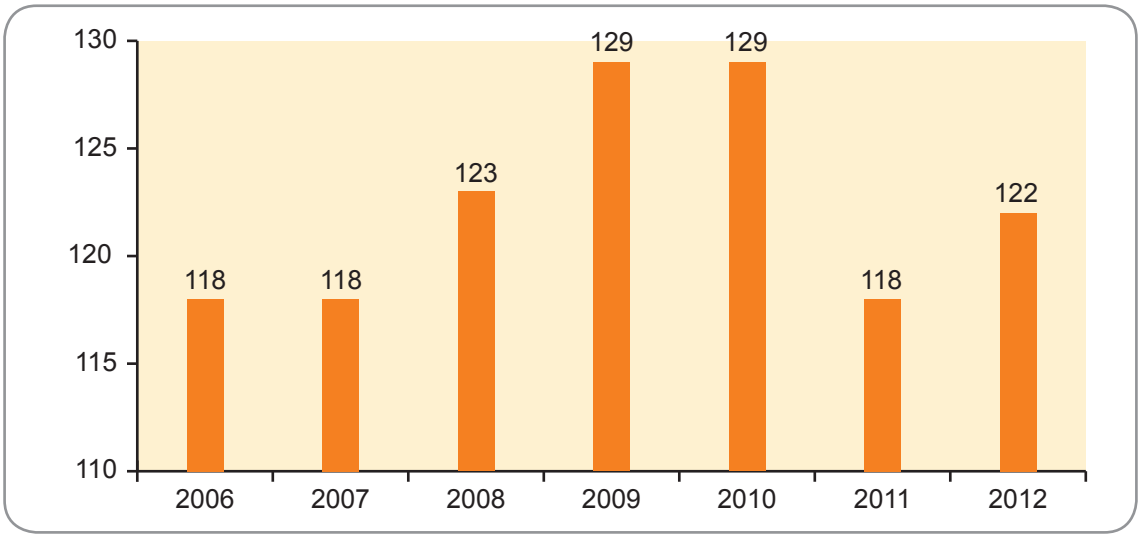
In 2012, there were 161 clinical dental specialists in the Ministry of Health, Malaysia (Table 9). Besides this, there are 122 Dental Public Health Officers in the MOH (Figure 21).

TABLE 9
GAZETTED CLINICAL DENTAL SPECIALISTS IN MOH, 2006-2012

Year / Discipline	2006	2007	2008	2009	2010	2011	2012
Oral Surgery	36	42	42	45	45	45 (*4)	48 (*3)
Orthodontics	26	31	29	30	32	25 (*5)	34 (*6)
Paediatric Dentistry	20	21	21	25	25	27	29
Periodontics	17	19	18	18	19	20	21
Oral Pathology/ Medicine	6	6	6	6	8	9	9
Restorative Dentistry	9	10	10	14	14	16	17
Special Needs Dentistry	0	0	0	0	0	0	2
Forensic Dentistry	0	0	0	0	0	0	1
TOTAL	**114**	**129**	**126**	**138**	**143**	**142 (*9)**	**161 (*9)**

(Not Inclusive of specialist undergoing gazettement)
**Contract Dental Specialist*
Source: Oral Health Division, MOH

FIGURE 21
DENTAL PUBLIC HEALTH OFFICERS IN MOH, 2006-2012



Source: Oral Health Division, MOH

Mapping of specialists' services was done to ensure appropriate distribution of existing specialists according to need and to identify training needs for the various specialties. In 2012, there were 44 dental officers sponsored for postgraduate training in various specialties both locally (19) and abroad (25) (Table 10). Four specialist oral health services were established in 6 facilities in 2012 (Table 11).

TABLE 10
DENTAL OFFICERS ON POST-GRADUATE TRAINING, 2012

SPECIALITIES	LOCAL	ABROAD	TOTAL
Oral Surgery	8	4	12
Orthodontics	0	9	9
Paediatric Dentistry	3	2	5
Periodontics	3	2	5
Restorative Dentistry	3	3	6
Oral Pathology & Oral Medicine	1	4	5
Special Needs Dentistry	0	1	1
Dental Public Health	1	0	1
TOTAL	**19**	**25**	**44**

Source: Oral Health Division, MOH

TABLE 11
NEW SPECIALTY SERVICES ESTABLISHED, 2012

Specialty	New services in 2012	Hospital / Dental Facilities
Oral Surgery	2	*Hosp. Teluk Intan, Perak* *Hosp. Tawau, Sabah*
Orthodontic	2	*KP Sibu, Sarawak* *KP Tudan, Miri, Sarawak*
Periodontology	1	*KP Paya Besar*, Pahang
Restorative Dentistry	1	*KP Bukit Payung, Terengganu*
Total	6	

Source: Oral Health Division, MOH

Monitoring Specialist Oral Healthcare Programme
Services rendered by dental specialties are monitored under the HIMS. The workload of dental specialists is reflected in the ratio of specialist to patients (Table 12). Generally, there has been an increase in the number of patients seen in each specialty.

TABLE 12
WORKLOAD OF DENTAL SPECIALIST BY DISCIPLINES, 2010-2012

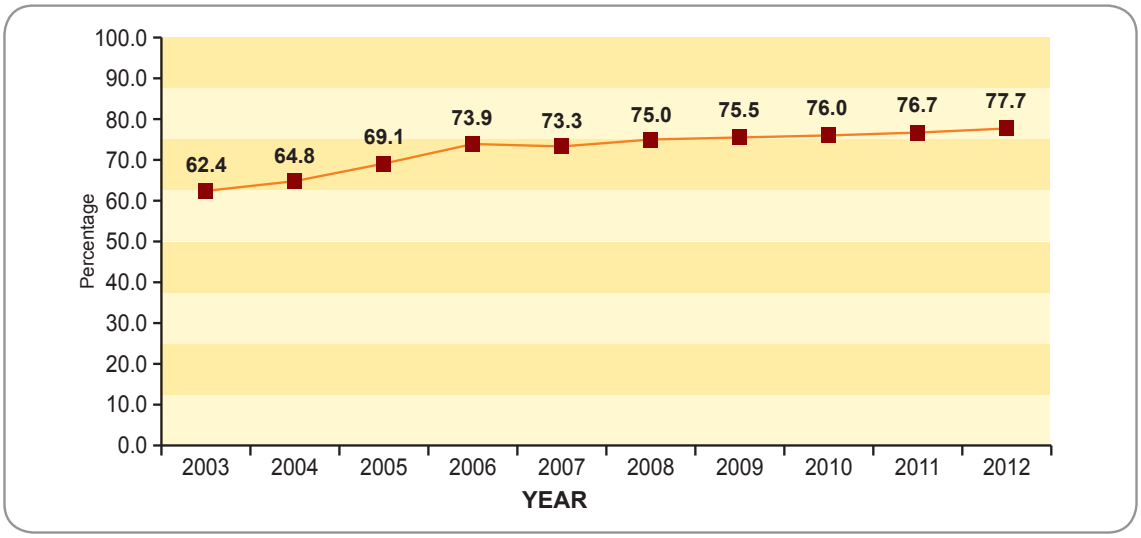
Specialty	Specialist : Patients		
	2010	2011	2012
Paediatric Dentistry	1:2,979	1:3,264	1:3,287
Oral and Maxillofacial/ Oral Surgery	1:2,799	1:2,950	1:3,144
Restorative Dentistry	1:1,244	1:1,332	1:1,495
Orthodontics	1:3,235	1:2,754	1: 2,362
Periodontic	1:1,374	1:1,494	1:1,627
Oral Pathology and Oral Medicine	1:463	1:527	1:816

Source: Oral Health Division, MOH

COMMUNITY ORAL HEALTHCARE

Water Fluoridation Programme
Year 2012 marked the 40th anniversary of the cabinet approval for the water fluoridation programme. However, coverage and maintenance of optimum fluoride levels at water treatment plants and reticulation points remain a challenge. Population coverage increased from 76.7% in 2011 to 77.7% in 2012 (Figure 22). All states achieved over 90% population coverage except for Pahang, Sarawak, Kelantan and Sabah.

FIGURE 22
COVERAGE FOR WATER FLUORIDATION PROGRAMME, 2003-2012



Source: Oral Health Division, MOH

Primary Prevention & Early Detection of Oral Pre-Cancer & Cancer

The aim of this programme is to reduce prevalence and incidence of oral cancer and pre-cancer in identified high risk communities. In 2012, 370 identified high-risk *kampung*/ estates/ communities were visited and 16,043 residents aged 20 years and above were screened for oral lesions. A total of 10,199 participants also received dental health education which emphasized oral cancer and potentially malignant lesions, their risk factors and mouth self-examinations to detect oral cancer early. Of the malignant cases detected from 2003 to 2012, about 36% were detected at Stages 1 and 2, and 64% at Stages 3 & 4.

The Mouth Cancer Awareness Week was held from 13-19 November 2012 to increase oral cancer awareness among health professionals and the public. Among the activities held were screening for 24,455 people, 464 awareness campaigns, 678 health education talks, 4 radio slots, and counseling on risk habits for 6,113 individuals. At national level, in collaboration with Oral Cancer Research & Coordinating Center (OCRCC), University of Malaya, the Mouth Cancer Awareness Week was launched on 18 November 2012 at Taman Tasik Shah Alam. A Walkathon, Oral Examination (including Mouth Cancer Screening), Health Screening, Mini Games and Charity booth sales were held in conjunction with the launch.

The Oral Health Division collaborates with OCRCC in research activities, many of which have received recognition for the credibility of research conducted. In 2012, the team of researchers, which include MOH oral health personnel, has successfully published 22 research papers in international peer review journals.

LAW & ENFORCEMENT

Laws and Regulations

The draft Dental Bill was tabled to the Malaysian Dental Council in 2012. This Bill was the first to undergo public engagement on the MOH website in August 2012. The new Dental Regulations were discussed in 2012. The Oral Health Programme was successful in bringing the practice of Dental Therapists under the same Bill.

The Dental Fee Schedule under the Private Healthcare Facilities and Services Act 1998 was reviewed.

The final draft was submitted to the Medical Practice Division for inclusion under the 13th Schedule of the Regulations relating to Registration of Private Hospitals. The amendment of the 7th Schedule of the Regulations relating to Registration of Private Medical and Dental Clinics will follow.

Registration of Dental Clinics

By the end of 2011, a total of 1,705 dental clinics had been registered. In 2012, 74 private dental clinics were approved for registration, bringing the total to 1,779 private dental clinics registered in 2012. However, the number of operating clinics by the end of 2012 was 1,652.

QUALITY ASSURANCE PROGRAMME (QAP)

The Quality Assurance Programme (QAP) strives to improve the quality, efficiency and effectiveness of the delivery of oral health services to ensure the patient, family and community obtain the 'optimum achievable benefit'.

National Indicator Approach (NIA)

There were five National Indicator Approach (NIA) Indicators in 2012 (Table 13).The 2012 QAP showed similar achievements to that of 2011, whereby 4 out of the 5 Indicators achieved their targets.

TABLE 13
NIA INDICATORS, 2012

No.	Indicator	Standard	Achievement (%)	
			2011	2012
1	Percentage of primary schoolchildren maintaining orally-fit status	≥ 65%	66.3	67.2
2	Percentage of secondary schoolchildren maintaining orally-fit status	≥ 80%	77.4	77.8
3	Percentage of 16-year-old schoolchildren free from gingivitis	≥ 95%	96.0	96.0
4	Percentage of non-conformance of fluoride level at reticulation points (Level < 0.4ppm)	≤ 25%	18.2	20.8
5	Percentage of non-conformance of fluoride level at reticulation points (Level > 0.6ppm)	≤ 7%	2.8	2.0

Source: Oral Health Division, MOH

District Specific Approach (DSA)

DSA indicators are developed and monitored at state level. The most common indicator adopted by all states except for Johor and Sarawak is that for the ante-natal service. DSA indicators unique to particular states include:

a) Selangor
- Incidence of needle stick injury
- Percentage of rejected x-ray

b) Terengganu
- Percentage of full dentures issued within two months
- Percentage of redo x-ray

The overall performance of DSA indicators relating to primary care has improved based on the higher standards set by districts and states. Similar to NIA, problem analysis was carried out by the respective clinic and district that did not achieve the standard (shortfall in quality) and remedial actions were identified and followed through.

Achievements in the NIA and DSA are the result of strong co-operation, support and commitment among oral heath personnel and related agencies/stakeholders.

MS ISO 9001: 2000

In 2012, Kedah converted from manual documentation to interactive electronic Quality Management System (eQMS), making a total of nine states using the eQMS. Nationwide, 475 dental clinics out of 568 (83.6%) are ISO-certified. Sarawak (with 11 divisions) is the only state that is still undertaking district certification approach.

Quality Assurance Projects

In 2012, a total of 32 QAP projects were completed and 52 will continue into 2013. Johor has the highest number of completed QA projects(10 projects) in 2012. Many dental projects were presented at various conventions and several have received awards at regional and state levels (Table 14).

TABLE 14
WINNERS OF QA PROJECT AT STATE LEVEL CONVENTION, 2012

State	*Convention*	Title
Perak	*Konvensyen Inovasi Zon Utara 2012*	To reduce the severity of periodontal disease among ante-natal mothers at Klinik Pergigian Padang Rengas and Klinik Pergigian Sauk (First place - Oral category)
Johor	*Konvensyen Inovasi Jabatan Kesihatan Negeri Johor 2012*	Minimizing the percentage of untreated fractured crowns in mobile dental teams, Kulaijaya (First place- Poster category)

Source: Oral Health Division, MOH

Innovative and Creative Circle (ICC)

In 2012, a total of 16 ICC projects were completed and another 21 continued into 2013. Several dental projects won awards at state and national levels (Table 15).

TABLE 15
WINNERS OF ICC PROJECT AT STATE LEVEL CONVENTIONS, 2012

State	*Convention*	Title
Negeri Sembilan	*Pertandingan KIK Peringkat Kebangsaan KKM 2012* (Second place- Technical category)	*Alat Perangkap Amalgam Kristal*
WPKL &Putrajaya	*Pertandingan KIK Peringkat Jabatan Kesihatan Wilayah Persekutuan Kuala Lumpur & Putrajaya 2012* (First place - Technical category)	*Mempercepat Proses Penyediaan Peralatan Pelindungan Diri Pesakit Pada Hari Pesakit Luar*
Johor	*Konvensyen Inovasi Peringkat Jabatan Kesihatan Negeri Johor 2012* (Second place - Technical category)	*Kesukaran Dalam Proses Rendaman Gigi Palsu di Klinik Pergigian Batu Pahat*

Source: Oral Health Division, MOH

Innovation

Innovation is one of the quality activities actively undertaken by oral health personnel. In 2012, 77 innovation projects were completed and 22 projects will continue into 2013. This showed an increase in the total number of innovation projects compared to 2011 (57 completed and 13 to be continued). Several dental projects won awards at state, zone and regional levels, and nine dental projects were among the finalists for the National Innovation Awards, MOH 2012 held in Kuala Lumpur on 17-19 July 2012.

IMAGE 3
NATIONAL INNOVATION AWARDS, JULY 2012

Source: Oral Health Division, MOH

Key Performance Indicators (KPI)

Nineteen KPIs were monitored by the Oral Health Programme in 2012. Four new KPIs were introduced and five were dropped. Fifteen achieved the targets set in 2012.One of the KPIs i.e. percentage of dental clinics with 2 or more fulltime dental officers that provide daily outpatient service was chosen as the KPI for the Director-General of Health monitored by the Public Services Department, and also as a KPI for the Health Minister.

Amalan 5S

Amalan 5S was successfully implemented at the Oral Health Division and in MOH. MOH received certification from MAMPU in June 2012. The certification is from 1 June 2012 – 1 June 2014.

CHALLENGES AND FUTURE DIRECTIONS

The Oral Health Division is challenged with the influx of a large number of new dental graduates entering MOH. In 2012, a total of 514 entered service, the largest number so far in the history of the MOH. The number is expected to rise in 2013, with more institutions of higher learning having graduate outputs. Without an appreciable increase in infrastructure or equipment, greater numbers of new graduates strain the MOH capacity to provide training ground for these new dental officers. This mismatch between professional numbers and facilities does not translate into better access to oral healthcare for the public. Hence, the programme looks to justify for more mobile teams and mobile clinics. However, the sudden need to outfit UTCs and render services at RTCs also further strains the programme due to the acute shortage of DSAs to match dental officers.

There is also a need to look into the career pathways for oral health personnel at all levels. Hence, the much needed human resource projection review in 2012 to be taken to the stakeholders in 2013. A seminar is needed to provide guidance to ensure a good balance and mix of personnel to serve the population. Other collaborative efforts to engage the public is very much needed to empower Malaysians on preventive measures to avoid future dental problems. There is still much to do.

The Oral Health Division also undertakes the responsibility to provide access to adequate oral healthcare, especially to the underserved populations. The Programme plans for more outreach services for such populations. The development of policies, guidelines and monitoring of outcomes are conducted to ensure the delivery of quality care.

8 PHARMACY

INTRODUCTION

The Pharmacy Programme of the Ministry of Health (MOH) is the lead agency in ensuring quality medicines for the nation. The Programme is headed by a Senior Director who is responsible of four main activities namely Policy and Pharmacy Management, Pharmacy Practice and Development, Pharmacy Enforcement and National Pharmaceutical Control Bureau (NPCB). These four main activities play important roles in different aspects and approaches but with the same objective, that is giving the best professional pharmacy service to the public.

ORGANIZATIONAL AND HUMAN RESOURCE DEVELOPMENT

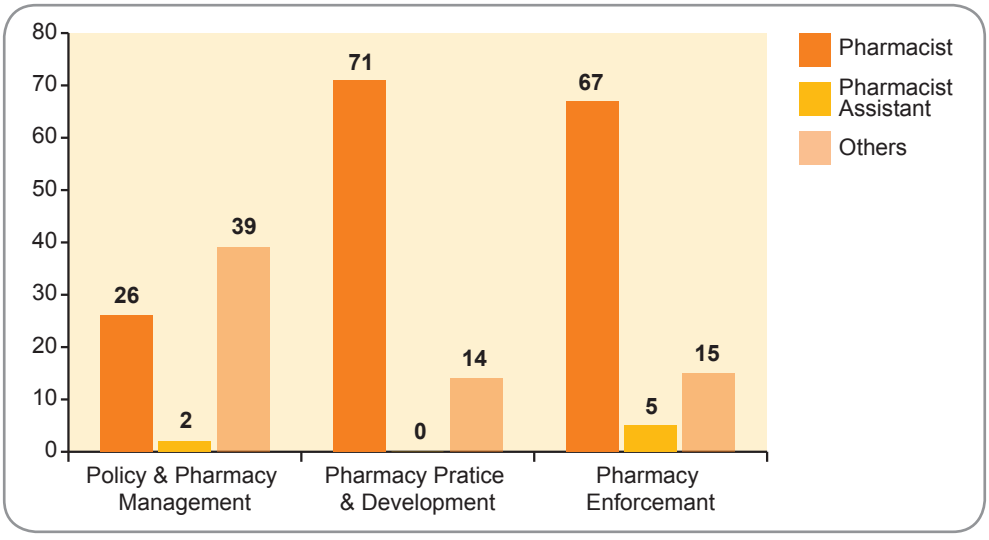
TABLE 1
NUMBER OF REGISTRATIONS BY PHARMACY BOARD OF MALAYSIA, 2006-2012

Description	Year						
	2006	2007	2008	2009	2010	2011	2012
No. of Newly Registered Pharmacists	437	534	617	705	739	934	918
No. of Provisionally Registered Pharmacists	529	614	722	813	925	922	1208
No. of Registered Body Corporates	107	98	43	48	48	44	57
No. of Pharmacist Annual Retention Certificates	4,292	4,422	5,924	5,507	8,852	8,746	8,968
No. of Body Corporate Annual Retention Certificates	270	414	371	445	663	794	548

Source: Pharmaceutical Services Division, MOH

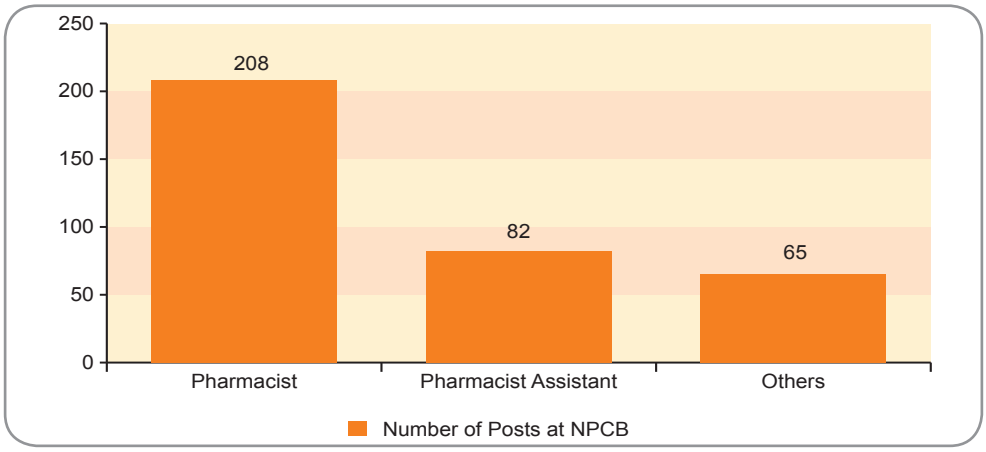
The number of posts for pharmacy personnel at PSD, MOH is shown in Figure 1.

FIGURE 1
NUMBER OF POSTS FOR PHARMACY PERSONNEL



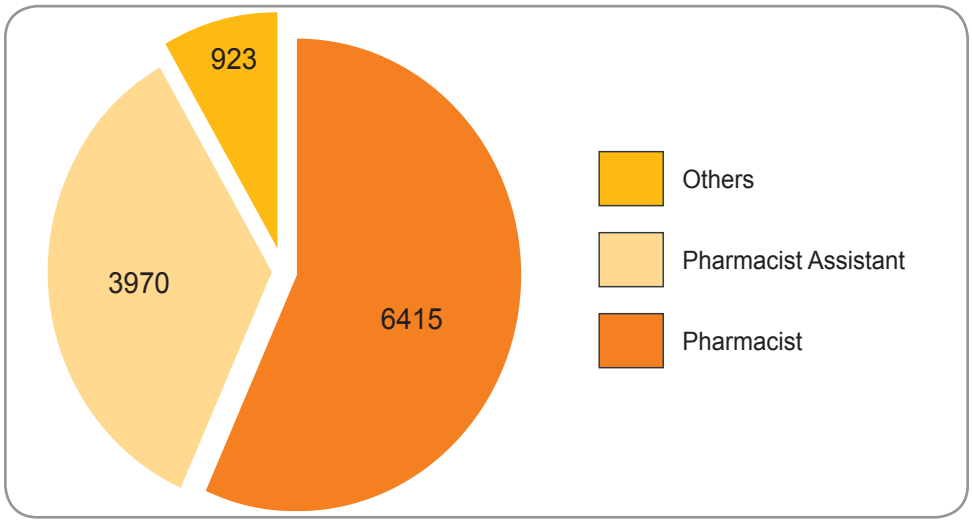
Source: Pharmaceutical Services Division, MOH

FIGURE 2
NUMBER OF POSTS AT NATIONAL PHARMACEUTICAL CONTROL BUREAU (NPCB)



Source: Pharmaceutical Services Division, MOH

FIGURE 3
NUMBER OF PHARMACY POSTS AT MOH



Source: Pharmaceutical Services Division, MOH

Training
Number of training conducted in 2012.(Tables 2,3 and 4)

TABLE 2
TRAINING CONDUCTED LOCALLY BY PSD, MOH

Year	HQ		Institutions & States	
	No. of Courses Conducted	No. of Attendance	No. of Courses Conducted	No. of Attendance
2012	69	2,706	285	12,013

Source: Pharmaceutical Services Division, MOH

TABLE 3
TRAINING CONDUCTED LOCALLY BY NPCB, 2012

Types of Training	No. of Training	No. of Attendance
Courses	18	501
Seminar	5	229
CME session	28	1431
Training session	86	1246
Workshop	11	276
TOTAL	**148**	**3683**

Source: Pharmaceutical Services Division, MOH

TABLE 4
TRAINING CONDUCTED OVERSEAS BY PSD AND NPCB

YEAR	No. of Courses Conducted	No. of Attendance
2012 (PSD)	6	7
2012 (NPCB)	51	115

Source: Pharmaceutical Services Division, MOH

ACTIVITIES AND ACHIEVEMENTS

PHARMACEUTICAL SERVICES DIVISION

MOH Pharmaceutical Products (Medicines and Non Drug) Expenditure

The total cost of medicines procured in 2012 for all MOH hospitals and health clinics was RM 1,983 million. This shows an increase of 12.2% in medicines expenditure compared to 2011. The total cost of non-drug procured was RM 683.6 million. The amount of closing stock for medicines and non-drug in December 2012 was RM 296.1 million, which is about 1.3 months of stock holding.

TABLE 5
MOH PHARMACEUTICAL PRODUCTS EXPENDITURE, 2007-2012

Year	Total Expenditure (RM Million)	% Increment over the previous year
2007	1,355.00	9.89
2008	1,510.00	11.44
2009	1,402.35	-7.13
2010	1605.54	14.48
2011	1767.61	10.09
2012	1983.51	12.21

Source: Pharmaceutical Services Division, MOH

TABLE 6
TYPES OF MEDICINES PROCUREMENT IN 2012

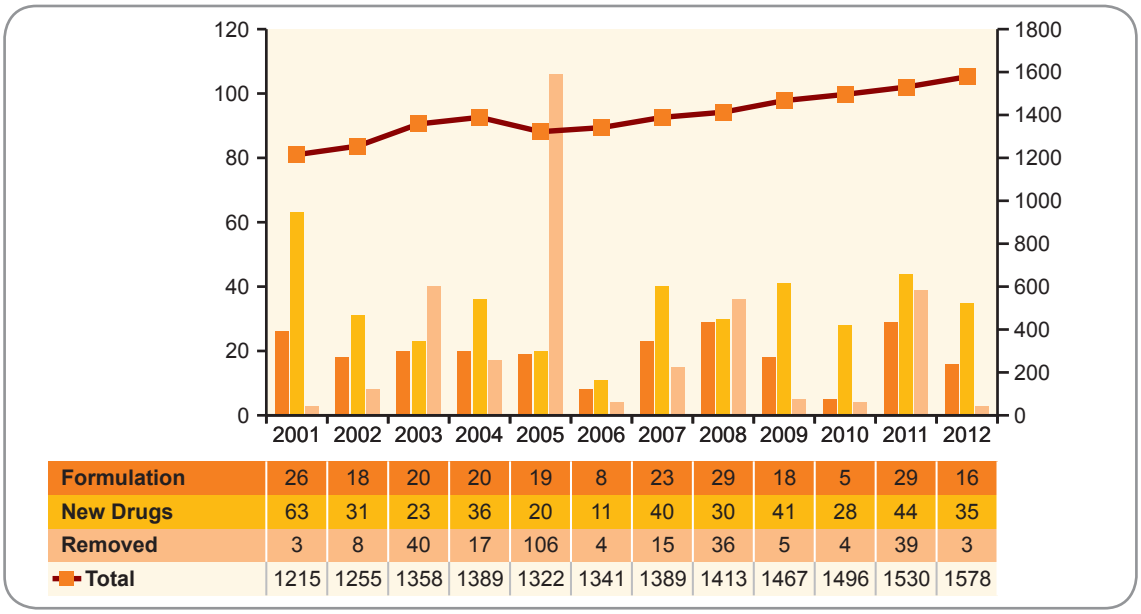
Year	APPL (RM)	MOH Contract (RM)	Local Purchase & Quotation (RM)
2012	810,332,787 (41%)	760,829,333 (38%)	412,355,654 (21%)

Source: Pharmaceutical Services Division, MOH

MOH Drug Formulary

In 2012, 3 drugs have been removed from the formulary while 51 drugs, including new formulations or strengths, were listed into the formulary. As a result, there were a total of 1578 preparations in the MOH Drug Formulary at the end of 2012 (Figure 4).

FIGURE 4
DRUGS LISTED INTO MOH DRUG FORMULARY, 2001-2012



	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Formulation	26	18	20	20	19	8	23	29	18	5	29	16
New Drugs	63	31	23	36	20	11	40	30	41	28	44	35
Removed	3	8	40	17	106	4	15	36	5	4	39	3
Total	1215	1255	1358	1389	1322	1341	1389	1413	1467	1496	1530	1578

Source: Pharmaceutical Services Division, MOH

Workshops and Legal Framework

- **Full Term Review of Malaysia National Medicines Policy Workshop (MNMP)**

The Pharmaceutical Services Division, Ministry of Health Malaysia held a workshop on the Full Term Review of the Malaysian National Medicines Policy (MNMP) in Holiday Villa & Suites, Subang, Selangor on 15-17 October 2012. The objectives of the workshop were to review on the achievements, shortfalls and relevance of the present strategies which were implemented from end of 2006 – 2012 and to propose new components and strategies for the next 5 years. The workshop involved all stakeholders as their inputs and consensuses are valuable towards the formulation of the policy which we chart the journey for the pharmaceutical sector in the coming years. The workshop was attended by 150 participants from various professional bodies, relevant industry consumer associations, other government agencies and ministries as well as universities.

The essence of the current policy which emphasizes on quality and safety, accessibility and affordability is maintained and agreed upon by all the stakeholders. New issues that are considered pertinent such as the governance of medicines and viability and sustainability of the pharmaceutical industry are

regarded as important and therefore included in the revised policy. Partnership and collaboration for the healthcare industry was viewed in a more macro context whereby it should be realised in areas of human resource, research and development and technical cooperation. Another area that needs focus is the development and implementation of best practices to ensure the provision of quality medicines use at all levels of health care. The stakeholders also highlighted that systematic consideration of the practical aspects of implementation is also pertinent to the successful implementation of the policy. The output of the workshop was a draft of the revised policy. Several follow-up workshops will be conducted to fine tune the policy and to formulate the next 5-year plan of action.

IMAGE 1
OFFICIAL LAUNCHING OF MNMP

Source: Pharmaceutical Services Division, MOH

IMAGE 2
MNMP PARTICIPANTS

Source: Pharmaceutical Services Division, MOH

- **New Pharmacy Bill**

The Pharmaceutical Services Division (PSD) has made the decision to create a new law that incorporates the Registration of Pharmacists Act 1951, Poisons Act 1952, Sale of Drugs Act 1952 and the Medicines (Advertisement and Sale) Act 1956 to the new Act. Subsequently, the Pharmacy Bill was drafted, among others, to overcome weaknesses and lacuna in existing legislation; to promote the guided harmonization and liberalization among industry players; to ratify international treaties and conventions which was signed by the state; to impose deterrent penalties on serious offences and to

clarify and strengthen the structure and powers of the competent authority and the role of enforcement officers.

In ensuring the transparency and acceptance of the Pharmacy Bill to the public and other stakeholders, the PSD has implemented an online public engagement. This is a channel to announce and to acquire feedbacks from them. Extracts of the Pharmacy Bill was displayed in MOH Portal on 16th November 2012 until 7th December 2012. As a result of the online public engagement, a total of 548 respondents had given feedbacks. 92.67% of the respondents were from private pharmacists and 2.56% were from pharmacists in the MOH and the rest were from academia (0.55%), medical practitioners (0.18%), assistant pharmacists (0.37%), assistant medical officer (0.18%), NGOs (1.65%), public (0.18%), industry (0.18%), traditional medicine practitioners (0.92%), foreign embassies (0.18%) and agencies in the Ministry of Health (0.37%). Only 1.28% of the respondents had protested the tabling of the Bill in the Parliament.

Conferences

- **7th Pharmacy R&D Conference 2012**

This conference was held on 19th to 21st June 2012 at The Zon Regency Hotel, Johor Bahru. Participants are pharmacist, healthcare personnel from Ministry of Health, Ministry of Defense, University Hospitals and other public and private agencies. The conference was to encourage, create platform and share research findings among the participants.

IMAGE 3
OFFICIAL LAUNCHING OF 7TH PHARMACY R&D CONFERENCE 2012

Source: Pharmaceutical Services Division, MOH

IMAGE 4
BRIEFING OF DIRECTOR GENERAL OF HEALTH BY PARTICIPANT

Source: Pharmaceutical Services Division, MOH

- **Pharmacy Practice Scientific Conference**

The Pharmacy Practice Scientific Conference (PPSC) was held on the 24-25th March 2012 at Hotel Istana, Kuala Lumpur with the theme of Pharmacy Specializations: Achieving Excellence. In tandem with the theme of the conference, 4 specialist pharmacists from the United States of America were invited to assist the preparation workshop for the Board of Pharmacy Specialists Examination. A total of 17 MOH pharmacists have passed the exam that was organized by the American College of Clinical Pharmacy.

Official Launching of Know Your Medicine Ambassador Program

The program was launched on 11th of May 2012 in Kota Bharu, Kelantan. Among the objectives of the program were to promote the quality use of medicines among the consumers, increasing consumer knowledge and skills so that they can make decisions about their health care, the incorporation of the concept of empowerment in medication and also to form network of individuals in the community who act as representatives that support quality use of medicines

.

IMAGE 5
KNOW YOUR MEDICINE PROGRAM MODULE

Source: Pharmaceutical Services Division, MOH

IMAGE 6
OFFICIAL LAUNCHING OF KNOW YOUR MEDICINE PROGRAM

Source: Pharmaceutical Services Division, MOH

Pharmaceutical Services Division Publications
Among the publications that were produced and circulated throughout MOH facilities in 2012 were 3 protocols, 2 flipcharts, 4 pamphlets and 15 guidelines.

TABLE 7
TYPES OF PUBLICATIONS PRODUCED

No.	Type of Publication	Title of Publication
1	Protocol	Home Medication Review Protocol
		Anticoagulation Treatment Book (Warfarin)
		Protocol Medication Therapy Adherence Clinic: Psychiatry
2	Flipchart	Patient Education Module for DMTAC Service
		Counselling HIV/AIDS Patients
3	Pamphlet	Understanding HIV Infection
		Understanding *Anti-Retroviral Medications* (HAART)
		Messages Calendar
		What Prescribers Should Know About Generic Medicines

No.	Type of Publication	Title of Publication
4	Guidelines & Training Modules	Medication Therapy Adherence Clinic (MTAC) Warfarin Training Module
		Ward Pharmacy Training Module
		Pharmacist Training Module for Respiratory MTAC In Adult Asthma & COPD
		Pharmacist Training Module Parenteral Nutrition 1st Edition
		Pharmacist Training Logbook Medication Therapy Adherence Clinic (MTAC): Diabetes Mellitus
		Know Your Medicine Ambassador Program Module
		Counselling Guidelines of Medicines
		Guidelines on Premises Inspection
		Cross-Reference for Export-Controlled Chemicals
		Guidelines on Handling Complaints
		Investigation Guidelines for Enforcement Officers, Ministry of Health
		Guidelines on Disposal of Confiscated Goods/Exhibits
		Guidelines on Closing Investigation Papers without Further Action
		Guidelines on Handling Exhibits and Exhibits Store for Enforcement Pharmacy, Ministry of Health
		Compilation of example of charges of Poisons Act 1952, Sale of Drugs Act 1952 and Registration of Pharmacists Act 1951

Source: Pharmaceutical Services Division, MOH

A total of 3 editions of Berita Ubat-Ubatan (magazine concerning DCA policies) and 3 editions of the MADCRAC Bulletin (Malaysian Adverse Drug Reactions Advisory Committee Bulletin) were published in the year 2012, along with one edition of the NPCB Annual report.

Medicines Price Lists of 2012 data were made available for publication by December 2012. These medicines price lists can be easily accessed via the official PSD website.

IMAGE 7
MEDICINES PRICE LIST (PRINTED 2013)

Source: Pharmaceutical Services Division, MOH

Printing of Guidelines for MOH Drug Formulary Third Edition (August 2012) – The proforma Unit has prepared a guidelines as reference to all MOH facilities in using medicines listed in and out of the Formulary. Among the contents of the guidelines are:

i) Procedure in listing a medicines into the MOH medicines formulary
ii) Introduction to the National Essential Drug List (NEDL), now known as National Essential Medicines List (NEML)
iii) Procedure for aplication of special approval medicines by the Director General of Health and Senior Director of Pharmaceutical Services Division
iv) Proforma and special approval medicines forms
v) Terms of reference for the Therapeutic Drug Working Committee in the health, hospital and state.

The guidelines have been circulated to all the MOH facilities in the country.

National Medicines Use Survey

The National Medicines Use Survey (NMUS) which was initiated in 2005 is a research project jointly sponsored by the Pharmaceutical Services Division (PSD) and Clinical Research Centre (CRC). Starting from September 2006, PSD undertook the role of primary sponsor for NMUS while CRC remained as an important collaborating unit that provides research and statistical supports. NMUS is conducted continuously to study the utilization of medicines in the country which is expected to change over time. The objectives of NMUS are:

i. To know the types and amount of medicines supplied in Malaysia. These are useful in measuring the utilization and the expenditure level of medicines in the country.
ii. To know the types and amount of medicines prescribed and/or dispensed in Malaysia. These are useful measures for the quality of prescription and dispensing practices in the country.
iii. To know the types and amount of medicines consumed by consumers in Malaysia. These are useful measures for the pattern of use of medicines in order to evaluate its rational use by consumers in the country.
iv. To stimulate and facilitate researches on use of medicines.

In order to capture data at various levels of the medicines supply and distribution system in the country (including government and private healthcare facilities), NMUS has to conduct several surveys systemically. The following methods were used to collect these data:

i. Download from existing databases, for example hospital's pharmaceutical procurement databases
ii. Primary data collection for dispensing survey (Beginning in 2010, NMUS is no longer collecting prescription data from private clinics directly as these data were collected through the National Medical Care Survey (NMCS) by CRC)

IMAGE 8
NMUS PARTICIPANTS

Source: Pharmaceutical Services Division, MOH

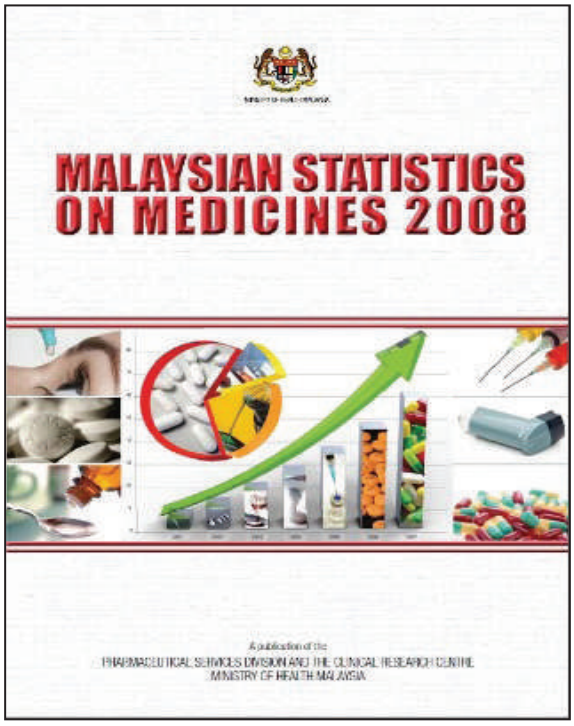
The achievements of NMUS for 2012 are summarized in Table 8. As a result of the implementation of NMUS, four reports entitled Malaysian Statistics on Medicines (MSOM) have been published for the year 2004 until 2008, which are accessible through the websites of PSD (www.pharmacy.gov.my) and CRC (www.crc.gov.my). The report for MSOM 2009 and 2010 will be published in early 2014.

TABLE 8
ACHIEVEMENT OF NMUS IN 2012

No.	Activities	Outputs	Achievements
1.	Continuous implementation of NMUS project in collaboration with CRC.	Publication of the Malaysian Statistics on Medicines (MSOM	MSOM 2008: Published in May 2013
2.	Development of a client-server application to enter dispensing data.	"NMUS Data Entry (Retail Pharmacy)" Application	1 application

Source: Pharmaceutical Services Division, MOH

IMAGE 9
MSOM REPORT, 2008



Source: Pharmaceutical Services Division, MOH

These generated reports have been useful in providing preliminary data on medicines use in the country and can be used as a basis for further actions if necessary. For example, it can be used as a tool for better decision making in the allocation of healthcare resources for the Malaysian population. These data can also be used for comparison on drug usage pattern with developed countries. This effort is important for monitoring to increase the quality of drug usage towards a more cost effective treatment. This is in accordance with the objectives of the Malaysian National Medicines Policy (NMP).

System Development Activities

In 2012, PSD has emphasized on the importance of the development of the Pharmacy Hospital Information System (PHIS) and the Clinical Pharmacy Information System (CPS). This project focused on the development of 12 modules in the system throughout 2012. Achievements of system development until 31 December 2012 are shown in Table 9.

TABLE 9
SYSTEM DEVELOPMENT ACTIVITIES

No	Activities	Achievements
1	Kick OFF Meeting to start the project	Project Initiation Document (PID) v1.2 and project plan v.3.2 were endorsed by Project Implementation Technical Committee (PITC)
2	Workshop on Preparation and Verification on User Requirements (4 sessions)	User Requirement Specification (URS) v1.3 was finalized on 15 Feb 2012
3	Workshop on System Design Review (2 sessions)	System Design Documentation (SDD) v1.2 was finalized on 12 Apr 2012
4	Workshop/meetings on Data Preparation and Development (8 sessions)	Drug and non drug data specifications was finalized on July 2012. Data validation process will be carried out continously until system development is completed.

Source: Pharmaceutical Services Division, MOH

A total of 14 activities such as workshops, reviews, visits and meetings were held to validate and verify the user requirements before finalizing User Requirement Specification (URS) document and System Design Documentation (SDD).

Besides system development, implementation readiness/preparation activities were conducted tremendously at pilot facilities as shown in Table 10. This is to ensure that all facilities are ready in terms of infrastructures and users towards implementing the system in their facilities.

Allocation of hardware was finalized during Infrastructure Implementation Meeting held at each pilot facility. Apart from that, users were also introduced with ADKAR (Awareness, Desire, Knowledge, Ability, Reinforcement) concept during Change Management Program at facility.

TABLE 10
IMPLEMENTATION READINESS/PREPARATION ACTIVITIES AT PILOT FACILITIES

No	Activities	Achievements
1	Dialogue session and Courtesy visit at Pilot Facilities	i) Courtesy visit at PKD Kinta : 18 April 2012 ii) Dialogue session at Hospital Pakar Sultanah Fatimah, Muar : 11 June 2012 iii) Courtesy visit at JKN Perak : 30 November 2012 iv) Courtesy visit at JKN Kelantan : 3 December 2012 v) Courtesy visit at JKN Sarawak : 19 December 2012 vi) Dialogue session at Hospital Miri, Sarawak : 20 December 2012

No	Activities	Achievements
2	Change Management Program at Headquarters and Pilot Facilities	i) Meeting for preparation and content review for Change Management Program - 4 May, 7 May, 16 May, 21-22 May, 28 June dan 4 July 2012 ii) Change Management Workshop at HPSF, Muar : 7 July 2012 iii) Change Management Workshop at PKD Kinta : 13 September 2012 iv) Change Management Workshop at Hospital Seri Manjung : 5 December 2012
3	Infrastructure Implementation Readiness at Pilot Facilities	i) Infrastructure Implementation Meeting at HPSF, Muar : 3 September 2012 ii) Infrastructure Implementation Meeting at PKD Kinta : 12 September 2012 iii) Infrastructure Implementation Meeting at Hosp. Seri Manjung : 6 December 2012 iv) Infrastructure Implementation Meeting at Hosp. Tanah Merah 23 December 2013

Source: Pharmaceutical Services Division, MOH

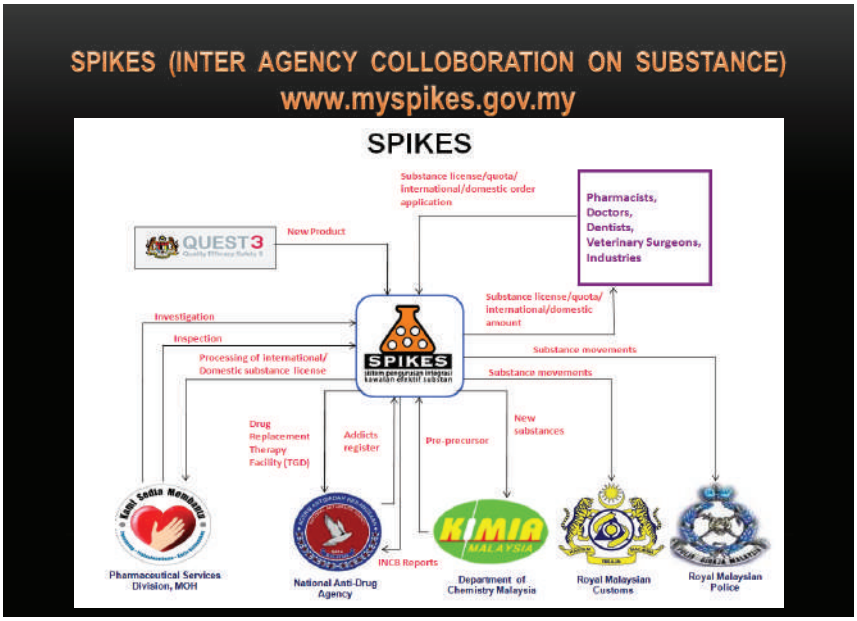
- **Integrated Substance Control Management System (SPIKES)**

SPIKES is a management and control system of substances which was developed as a result under the Drug Supply Suppression sub-initiative under the National Key Results Area (NKRA) Crime Lab under the Government Transformation Programme (GTP). SPIKES integrate control substances (narcotics, psychotropic substances and precursor chemicals) and facilitates substance information sharing among other relevant enforcement agencies which are the stakeholders in SPIKES such as the National Anti Drug Agency (NADA), Narcotics Crime Investigation Department, Royal Malaysian Police (RMP), Preventive Division (Narcotics), Royal Malaysian Customs (RMC), Narcotics Section, Forensics Division, Chemistry Department of Malaysia (CDM) and Pharmacy Enforcement, Pharmaceutical Services Division, Ministry of Health (MOH). PSD MOH as the nation's competent authority for the control of substances had been appointed as the lead agency to for conducting this collaboration. The SPIKES system had been officially launched on 23rd October 2012 at the Anggerik Hall, National Pharmaceutical Control Bureau of Health.

IMAGE 10
OFFICIAL LAUNCHING OF SPIKES

Source: Pharmaceutical Services Division, MOH

FIGURE 5
STAKEHOLDERS IN SPIKES



Source: Pharmaceutical Services Division, MOH

Good Governance For Medicines (GGM)

Two GGM guidelines were revised and published in November 2012 which are Guidelines on Giving and Receiving Gifts for Civil Servants under the Pharmacy Program, Ministry of Health Malaysia and Guidelines for Pharmacy Members in Dealing with Pharmaceutical Company Representatives and Suppliers.

The GGM unit received co-sponsorship from the WHO Representative Office for Brunei Darussalam, Malaysia and Singapore for the GGM TOT workshops and the publication of the GGM guidelines. The fund awarded was RM64,554.00. Several workshops to develop the GGM TOT module were conducted on these respective dates:

- 8-9 March 2012
- 2-3 April 2012
- 4-5 June 2012
- 5-7 November 2012 (sponsored by WHO)
- 4-5 December 2012 (sponsored by WHO)

TABLE 11
ACHIEVEMENTS OF GGM IN 2012

No.	Activities	Outputs	Achievements
1.	Development of GGM Training of Trainers (TOT) Module	The GGM TOT Module.	To be endorsed and implemented in 2013.
2.	Revision of two (2) GGM guidelines.	Publication of the 2nd edition of two GGM guidelines.	Distribution and implementation of the new GGM guidelines nationwide.

Source: Pharmaceutical Services Division, MOH

NATIONAL PHARMACEUTICAL CONTROL BUREAU

5S Certification

The 5S practice, which originated from Japan, is now being adapted in the country. This practice emphasizes on maintaining a systematic work environment in order to increase productivity. The Malaysian government fully supports this practice in the effort to improve efficiency of the public service.

In line with this, the National Pharmaceutical Control Bureau (NPCB) launched the 5S campaign back in July 2010. The NPCB went through a series of internal and external audits and scored an average of 96.23% during the final audit. NPCB was then awarded the 5S certification from the Malaysia Administrative Modernisation & Management Planning Unit (MAMPU) on 17 December 2012. The certificate has been issued with effect from 17 December 2012 to 17 December 2014.

1st Technical Meeting on Development & Harmonisation of Standards on Pharmaceuticals and Vaccines (DHSPV) among OIC Member States

The 1st Techinical Meeting on Development and Harmonisation of Standards on Pharmaceuticals and Vaccines (DHSPV) among OIC Member States was held at Putra World Trade Centre, Kuala Lumpur on 1-2 October 2012. The organization of this meeting is a joint effort between the Ministry of Science, Technology and Innovation (MOSTI) and Ministry of Health Malaysia (MOH) in collaboration with the OIC General Secretariat.

The meeting was attended by representatives from the OIC Member States i.e. Brunei Darussalam, Gambia, Indonesia, Malaysia and Saudi Arabia, as well as international bodies i.e. World Health Organization (WHO), Statistical, Economic and Social Research and Training Centre for Islamic Countries (SESRIC) and Islamic Development Bank (IDB).

The meeting was held as an initiative of the OIC Member States towards production and self-reliance of pharmaceuticals and vaccines to ensure reliable supply of good quality, safe, effective and affordable medicines and vaccines.

The meeting deliberated on the Terms of Reference (ToR) and the structure of the OIC-DHSPV Technical Committee. The 2nd Technical Meeting will be conducted in 2013.

IMAGE 11
1ST TECHNICAL MEETING ON DEVELOPMENT AND HARMONISATION OF STANDARDS ON PHARMACEUTICALS AND VACCINES (DHSPV) AMONG OIC MEMBER STATES

Source: Pharmaceutical Services Division, MOH

Bilateral Meeting with Other Regulatory Agencies

- ***NPCB and National Agency of Drug and Food Control (NA-DFC), Republic of Indonesia***

The Bilateral Meeting between NPCB and NA-DFC was conducted on 11 June 2012 as an initiative to improve the working relationship between Malaysia and Indonesia in the pharmaceutical regulatory field.

The meeting was held at Boulevard Hotel, Mid Valley, Kuala Lumpur and was attended by 21 officers (5 officers from NA-DFC, 14 officers from NPCB and 2 representatives from the Policy and International Relations Division, Ministry of Health, Malaysia). A representative from the Embassy of The Republic of Indonesian was also present as an observer.

IMAGE 12
TECHNICAL BILATERAL MEETING BETWEEN NPCB & NA-DFC

Source: Pharmaceutical Services Division, MOH

- ***NPCB and Food and Drug Administration of Thailand (Thai FDA)***

The Bilateral Meeting between NPCB and Thai FDA was held at Siam City Hotel, Bangkok, Thailand on 2 July 2012. The meeting was attended by YBhg. Dato' Eisah A. Rahman, Senior Director of Pharmaceutical Services, Ministry of Health Malaysia along with 4 NPCB officers and 9 officers from Thai FDA.

The meeting discussed issues in the field of cooperation between the two countries including sharing of information regarding regulatory control of pharmaceutical products and market surveillance of products, network formation and cooperation in matters pertaining to shortage of medicine supply especially orphan drugs during crisis, emergencies and natural disasters, and exchange of experiences related to online application and delivery of information.

- ***NPCB and Health Sciences Authority (HSA), Singapore***

The Bilateral Meeting between NPCB and HSA was held successfully on 9 April 2012 at the Gardens Hotel & Residences, Kuala Lumpur. This meeting was chaired by YBhg. Dato' Eisah A. Rahman, Senior Director of Pharmaceutical Services, Ministry of Health, Malaysia and Prof. John Lim, Chief Executive Officer of the Health Sciences Authority, Singapore. The meeting was attended by 31 officers from both countries (21 delegates from Malaysia and 10 delegates from HSA, Singapore). Among the issues discussed were Good Manufacturing Practice (GMP) joint inspection, inspection of BA/BE sites, joint evaluation of dossiers, enforcement issues and training for both agencies.

At the end of the meeting, a programme of cooperation in the field of pharmaceutical regulatory between NPCB and HSA was developed and agreed upon by both parties. Both parties also agreed that the bilateral meeting is to be conducted every year and HSA will be the host for 2013.

IMAGE 13
BILATERAL MEETING BETWEEN NPCB & HSA

Source: Pharmaceutical Services Division, MOH

Memorandum of Understanding (MoU) between Ministry of Health, Malaysia and Health Sciences Authority (HSA), Singapore

A Memorandum of Understanding (MoU) between the Ministry of Health, Malaysia and Health Sciences Authority (HSA), Singapore was successfully signed on 28 March 2012 in Singapore. The memorable event was witnessed by the Minister of Health of both countries. This was a very significant event particularly for the National Pharmaceutical Control Bureau and the Pharmaceutical Services Division as it is the first MoU signed by Malaysia in the field of pharmaceutical regulatory.

Among the field of cooperation which has been agreed upon is the pharmaceutical regulatory field, information sharing in regards to enforcement activities, surveillance, pharmacovigilance, sample testing, Good Manufacturing Practice inspections and clinical studies along with collaboration in all fields relating to pharmaceutical products which has an impact on the health of the public.

SUMMARY

Pharmacy Programme with four main activities such as Policy and Pharmacy Management, Pharmacy Practice and Development, Pharmacy Enforcement and National Pharmaceutical Control Bureau (NPCB) were successfully carried out in year 2012. Existing activities and pharmacy services provided will be strengthened in ensuring only quality, safe and efficacious pharmaceutical and health products are available and affordable to the public.

9 FOOD SAFETY & QUALITY

INTRODUCTION

Food Safety and Quality Division (FSQD) is responsible for the planning, implementation, monitoring and evaluation of the Food Safety and Quality Programme that is implemented at the national, state and district levels, the entry points and the local authorities. The main objective is to protect the public against health hazards and fraud in the preparation, sale and consumption of food and to facilitate trade. The mandate comes from the Food Act 1983 and its regulations.

Under the Food Safety and Quality Programme, two (2) divisions were established, namely the Planning, Policy Development and Codex Standard Division and the Compliance and Industry Development Division. There are eight (8) branches under these Divisions, namely Communication and Consumerism, Policy and Research, Standard and Codex, Surveillance and Laboratory, Domestic Industry, Domestic Compliance, Import and Export, and the Management Section.

ACTIVITIES AND ACHIEVEMENTS

POLICY AND RESEARCH BRANCH

The Policy and Research Branch is responsible for managing and monitoring activities related to policy, quality and innovation, regulating monitoring projects, human capital development and monitoring the development, maintenance and application of information system. It is also responsible for the maintenance of technical information within the Division's website. One of the main activities is formulation of policy and the permanent Secretariat to the National Food Safety and Nutrition Council (NFSNC).

Activities Related to FSQD Policy
The Policy Section is responsible for formulating policy paper, providing input to the highest management, preparation of *Dasar Baru* and One-Off, and conducting activities related to the National Food Safety Policy and the National Food Safety Action Plan.

As the Secretariat for the planning and evaluation of achievement of the Food Safety and Quality Programme, the Key Results Areas (KRA) which are also the Key Performance Indicators (KPI) of YB Deputy Minister of Health, are monitored continuously. The achievement for 2012 is illustrated in **Table 1**.

TABLE 1
KRA ACHIEVEMENT, 2012

Indicator	Target (%)	Actual (%)
Percentage of food poisoning episodes in school	>5	21.2
Percentage of food poisoning episodes in National Service Training Camps Programme (PLKN)	>5	61.5
Percentage of premises for export complying with importing countries' requirements	>95	99.3
Percentage of registered food premises inspected which are hygienic	>96	97
Percentage of foods not complying with the Food Act 1983 and Food Regulations 1985.	<4	3

Source: Food Safety and Quality Programme, MOH

In line with the national interest to strengthen food safety along the food supply chain, the National Food Safety Action Plan (2010-2020) was reviewed by relevant stakeholders.

Two (2) series of workshop and three (3) series of meeting were conducted to prepare, review and adopt the proposed new initiatives of the plan. The new initiatives of the plan (2010-2020) were presented at the *Mesyuarat Khas Ketua Pengarah Kesihatan dengan Pengarah Bahagian dan Negeri KKM* on 8 October 2012, and were finally presented at the 11th NFSNC Meeting held on 13 December 2012 for the councils' endorsement.

The Policy Section is also responsible in the preparation and coordinating inputs for the Ministry of Health (MOH) Strategic Plan 2011-2015, the framework for the Outcome Based Budgeting (OBB) for FSQD and the profile and standard competency for all professions in FSQD.

Secretariat to the National Food Safety and Nutrition Council (NFSNC)
The NFSNC is the highest national advisory body that provides advice related to food safety and nutrition in Malaysia. The council is chaired by YB Minister of Health and consists of 48 members including 16 Secretaries-General and 25 Directors-General from various Ministries and agencies and non-governmental organizations. The NFSNC establishment was approved by the Cabinet on 21 March 2001.

The objective of NFSNC is to ensure the health of the consumers is assured by strengthening food safety at all levels of the food supply chain in the country and to ensure Malaysians achieve optimum nutrition status. Three major meetings were held in 2012:

- One (1) Meeting of the Main Committee on Food Safety was held on 28 June 2012 in preparation for the 11th NFSNC Meeting.
- One (1) NFSNC Technical Committee Meeting was held on 10 October 2012 in preparation for the technical issues that will be discussed in NFSNC.
- The 11th NFSNC Meeting was held on 13 December 2012 and chaired by YB Minister of Health and attended by 38 council members including Secretary General of MOH, Director-General of Health representative, representatives of the Secretaries-General and Directors-General of the various Ministries and agencies. The meeting was also attended by the representatives from the Malaysian Institute of Chemistry (IKM), Federation of Malaysian Manufacturers (FMM), the Malaysian Association of Environmental Health (MAEH), the Nutrition Society of Malaysia (NSM), and the Federation of Livestock Farmers' Associations of Malaysia (FLFAM). A total of 29 issues, two (2) proposals and four (4) information papers were presented during the meeting. The 11th NFSNC Meeting also agreed to appoint authorities which are responsible for food safety in Sabah and Sarawak as new council members.

IMAGE 1
11TH NFSNC MEETING

Source: Food Safety and Quality Programme, MOH

Star Rating System (SSR)
SSR is one of the mechanisms to evaluate and rate the performance of Government agencies in order to ensure that the service delivery in the public sector is at the level of excellence. Among the components evaluated by Malaysian Administrative Modernisation & Management Planning Unit (MAMPU) are Management Components, Core Services and Client Management. SSR audit for MOH was conducted on 11-20 June 2012 at MOH Headquaters and Pahang State Health Department.

MS ISO 9001:2008 Certification
FSQD was awarded with the MS ISO 9001:2008 certification on 4 May 2012. In order to obtain and maintain the certification and to continuously improve the effectiveness in the quality management system the following was conducted:

- Six (6) MS ISO 9001:2008 Steering Committee Meetings were held for 2012, chaired by the Deputy Director of Policy and Research as Quality Management Representative (QMR) and the Policy Section as the secretariat.
- MS ISO 9001:2008 Second Stage Audit by SIRIM was held on 12-13 January 2012.
- Internal Audit was conducted by the FSQD Internal Audit team on 7-14 August 2012 to monitor the implementation of the Quality Management System to the requirements of MS ISO 9001:2008 standards.
- Management Review Meeting (MRM) was held on 19- 21 December 2012 to review the suitability, adequacy and effectiveness of the management on an on-going basis. This review included assessing opportunities for improvement and the need for changes to the quality management system, including the quality policy and quality objectives.
- Three (3) session of Technical Update related to MS ISO 9001:2008 documents were held on 14 September 2012 to enhance the staff awareness. To improve the competency of the internal auditors, five (5) internal auditors were sent for the Internal Audit courses organized by SIRIM Training on 2-3 July 2012.

Innovation
A total of 12 innovation laboratories were established for the year 2012. Through these innovation laboratories, several innovation proposals were put forward for innovation competitions such as the Food Safety and Quality Programme Innovation Award and the MOH Headquarters.

The Food Safety and Quality Programme Innovation Award 2011 was held on 24 April 2012 at the Parcel E Auditorium, Putrajaya. Two (2) awards were contested for; i.e. the Innovation Award 2011 (Group and Individual category) and the Innovation Idea Contest 2012 (Management and Technical category). Special Award for Innovation was introduced as an appreciation to the achievement of the innovation laboratories at a higher level.

IMAGE 2
PANEL OF JUDGES OF THE INNOVATION AWARDS 2011

Source: Food Safety and Quality Programme, MOH

IMAGES 3
WINNERS OF THE INNOVATION AWARD 2011

Source: Food Safety and Quality Programme, MOH

The innovation project titled “Smart Partnership for Food Safety BKKM-IPT-SMEs” by the Innovation Lab 1 of FSQD won second place in the MOH National Innovation Award 2012 held on 20 July 2012 under the Service Innovation category.

IMAGE 4
MINISTRY OF HEALTH INNOVATION AWARD COMPETITION 2012

Source: Food Safety and Quality Programme, MOH

Activities Involving Research and Monitoring
Projects carried out are classified into two (2) categories; National Projects where food samples from the entire country are analyzed, and Specific Projects, where the projects are focused on food safety issues within a state, or on specific food safety issues. Food safety projects also include development of food analytical methods involving cooperation between the FSQD and institutions of higher learning, and subsequently, the transfer of the method to the food laboratories under the programme. A total of 24 National and Specific Projects have been carried out within 2012.

In 2012, the *Malaysian Total Diet Study* (MTDS) 2011-2012 was continued with cooperation of the Nutrition Division, MOH in completing the "Food Comparison List for ASEAN" with the "Follow-up Meeting on the *Workshop on Food Consumption Data and Exposure Assessment"*.

Activities Involving Information and Communication Technology (ICT)
In 2012, two (2) information systems, that support the activities of the Food Safety and Quality Programme were developed in-house; the Food Analyst Registration Information System (FARIS) and the Interactive Club for Food Safety and Quality (MohKLIK). MohKLIK was launched by YB Minister of Health on 23 April 2012. FSQD has also partnered with the Malaysian Communications and Multimedia Commission (MCMC) in developing systems for issuance of health certificate for edible birds' nests before being exported to China.

DOMESTIC INDUSTRY BRANCH

Programmes and activities related to food safety assurance, good hygiene practices and conformity assessment were developed, implemented and monitored to further improve food safety in the relevant food sector in order to reduce food contamination and the occurrence of food poisoning in this country.

FOOD SERVICES

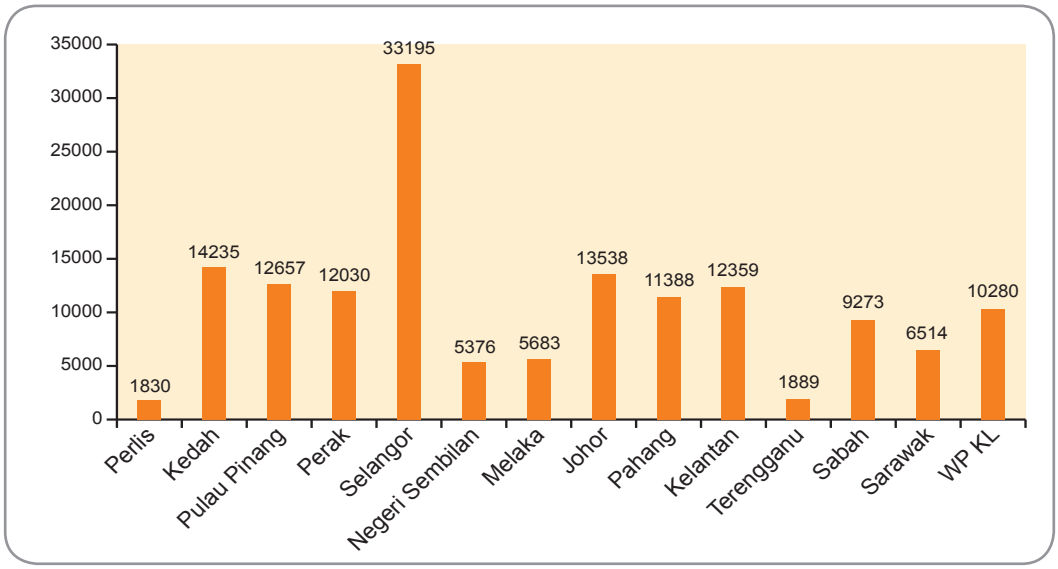
Programmes and activities are carried out to enhance the good hygiene practices in the relevant food services sector.

Food Handlers Training Programme

The objective of this programme is to give exposure and create awareness among food handlers on hygiene and food safety, personal hygiene and cleanliness of food premises to reduce food poisoning outbreaks throughout the country.

Figure 1 shows the number of food handlers trained by Food Handlers Training Schools (SLPM) by states for 2012. Throughout 2012, a total of 151,198 food handlers were trained by 166 SLPM recognized by MOH. Overall, the number of food handlers trained since 1996 rose to 845,691. In December 2012, 18 candidates successfully passed the *Kursus Wajib Tenaga Pengajar* (TOT) and were certified to be trainers for Food Handlers Training Course (LPM). Thus up to 2012, a total of 440 trainers had been certified by MOH to conduct the LPM courses all over Malaysia.

FIGURE 1
NUMBER OF FOOD HANDLERS TRAINED BY FOOD HANDLERS TRAINING SCHOOLS BY STATE, 2012



Source: Food Safety and Quality Programme, MOH

Self Assessment Programme (KENDIRI) in Schools

The Self Assessment Programme (KENDIRI) in schools is one of the tools to reduce the risk of food poisoning incidences in school canteens and hostel kitchens as agreed by the Joint Committee on Food Safety and Quality and Nutrition between the Ministry of Education (MOE) and MOH since 2008. Implementation of this programme will improve the cleanliness and safety of food prepared and acts as the first line of defense in the prevention of food poisoning incidences.

The mechanism of the KENDIRI programme in school canteens/hostel kitchens involves the sharing of responsibility where the contractors/operators must conduct their own assessment and the cleanliness of premises is monitored directly by the schools, District Education Office (PPD), District Health Office (PKD), State Education Department (JPN), State Health Department (JKN), MOE and MOH.

Through the implementation of the KENDIRI programme, the rate of food poisoning at schools have shown a decrease of 21.2% with 115 cases of food poisoning in 2012 compared to 146 incidences in 2011.

Self Assessment Programme (KENDIRI) in National Services (NS) Training Programme
Since 2010, the effectiveness of the KENDIRI programme in reducing food poisoning incidences in schools was extended to the kitchen of NS Training Camps. The elements of assessment have been adjusted according to the availability and suitability of the premises. The mechanism in NS Training Camps involved shared responsibility where the contractor must conduct their own assessment and the cleanliness of the premises is monitored directly by the Deputy Commandant of Camp Management, PKD, JKN, National Service Training Department (JLKN) and MOH.

Through the implementation of the KENDIRI programme, the rate of food poisoning in NS Training Camps have shown a decrease of 61.5% with five (5) cases of food poisoning in 2012 compared to 13 incidences in 2011.

1Malaysia Milk Programme (PS1M)
The school milk programme under PS1M for 2012 began on 18 Mac 2012 and continued up to November 2012. The Ultra High Temperature (UHT) milk was supplied by four (4) companies according to zones as stated in **Table 2.**

TABLE 2
LIST OF SUPPLIERS AND PROCESSING FACTORIES FOR PS1M BY ZONE

Zone/State	Supplier	Processing Factories
Zone 1: Perlis, Perak dan Kedah	Hybrid Allied Sdn. Bhd.	Allied Dairy Sdn. Bhd.
Zone 2: Melaka, Selangor, Penang and Federal Territory of Kuala Lumpur	Dutch Lady Milk Industries (M) Bhd.	Dutch Lady Milk Industries (M) Bhd.
Zone 3 : Johor and Pahang	Konsuma Sdn. Bhd.	Abico Dairy Farm Company Ltd., Thailand
Zone 4: Sabah, Sarawak, Terengganu, Kelantan, Federal Territory of Labuan, and Negeri Sembilan	Sabah International Dairies Sdn. Bhd.	Sabah International Dairies Sdn. Bhd.

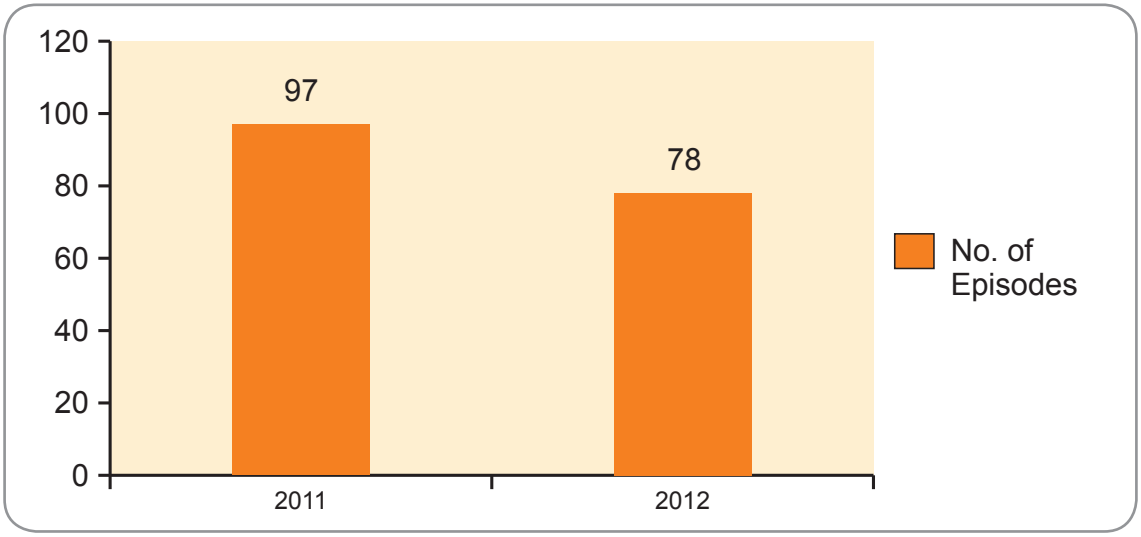
Source: Food Safety and Quality Programme, MOH

Monitoring of implementation for PS1M was carried out by JKN according to the Monitoring Procedure for the PS1M Distribution Control Mechanism. This include monitoring food safety control measures along the supply chain from the factories, warehouses, untill the storage at schools.

For 2012, three (3) local processing factories and a foreign company in Thailand were approved to supply milk under this programme. Monitoring audits were carried out twice yearly at these establishments. A total of 24 warehouses have been verified and approved whereas 104 vehicles have been verified for approval before milk distribution was undertaken. The total number of schools approved for milk distribution was 7,617 (98.6%) which include 15 schools in the Federal Territory of Labuan, 2,266 schools in Sabah and Sarawak and another 5,336 schools in Peninsular Malaysia.

To ensure the safety of the UHT supplied, sampling was conducted at the warehouses before milk was distributed to the schools. Throughout the programme, monitoring samples were also taken by MOH along the supply chain to determine if any problem occured along the way. A total of 3,796 samples were taken for analysis in 2012.

FIGURE 2
NUMBER OF CLINICAL SYMPTOM EPISODES REPORTED FOR 2011 AND 2012



Source: Food Safety and Quality Programme, MOH

For 2012, the total number of clinical symptom episodes reported that was thought to be caused by drinking UHT milk had shown a slight decrease to 78 episodes from 97 episodes reported in 2011. This involved 2,270 (0.16%) students from 1,433,407 students who received the milk supply in 2012 compared to 3,379 (0.24%) affected from a total of 1,406,904 students who receiveed the milk in 2011.

To overcome this situation, action was taken according to locality, where batches of milk involved in clinical symptom episodes were not distributed to students and replaced with new batches of milk to avoid milk supply disruption.

AUDIT AND CERTIFICATION

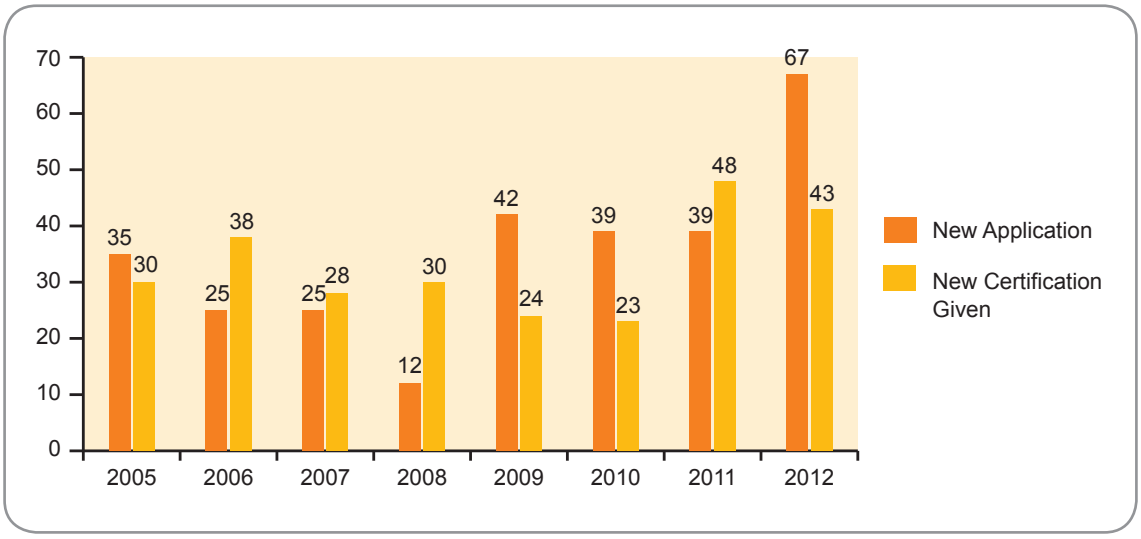
There are three (3) types of certification schemes related to food safety assurance under MOH, namely:

a. Hazard Analysis and Critical Control Point (HACCP) Certification Scheme
b. Good Manufacturing Practice (GMP) Certification Scheme
c. Skim Keselamatan Makanan 1Malaysia (SK1M) Certification

HACCP Certification Scheme

The HACCP Certification Scheme was introduced by FSQD at the end of 1997 and was launched in 2001. The purpose of this scheme is to assist industry in complying with the requirement of importing countries, as HACCP is recognized worldwide as a food safety assurance system. As of December 2012, a total of 239 food industries were certified under the MOH HACCP Certification Scheme. This certification has helped the industry in meeting the needs of countries of the European Union (EU) and the United States (US) for the export of fish and fishery products.

FIGURE 3
NUMBER OF HACCP CERTIFICATION, 2005-2012

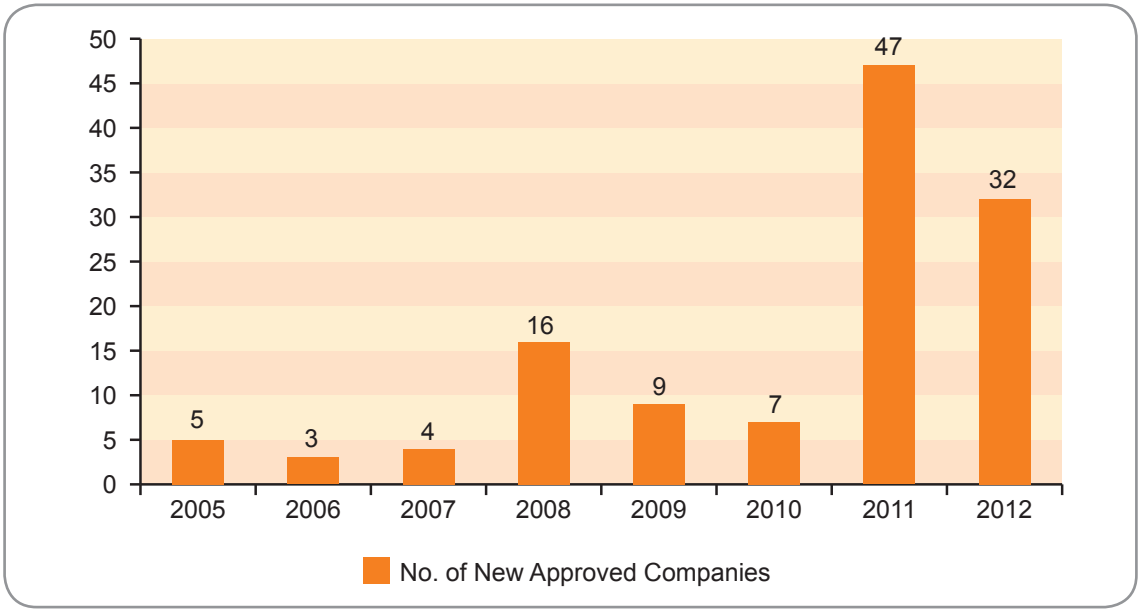


Source: Food Safety and Quality Programme, MOH

Good Manufacturing Practices (GMP) Certification Scheme

The GMP Certification Scheme was established at the request of the importing countries and the small and medium enterprise (SMEs) in the country. This certification scheme was launched by YB Minister of Health on 19 December 2006. As of December 2012, a total of 123 companies have received GMP certification. This certification will enhance consumer confidence on the products and assist industry in expanding their market.

FIGURE 4
NUMBER OF GMP CERTIFICATIONS, 2005-2012



Source: Food Safety and Quality Programme, MOH

***Skim Keselamatan Makanan* 1Malaysia (SK1M)/*Skim Makanan Selamat Tanggungjawab Industr*i (MeSTI)**

SK1M was officially launched by YB Minister of Health on 8 November 2010. It was part of the transformation programme for the food industry, specifically for the SMEs, to upgrade and strengthen their food safety assurance system as well as to increase their compliance to the Food Hygiene Regulations 2009, in stages based on the capability of the food industry.

SK1M consisted of three (3) levels of certification based on the basic requirement of food safety assurance and hygiene aspects, namely:

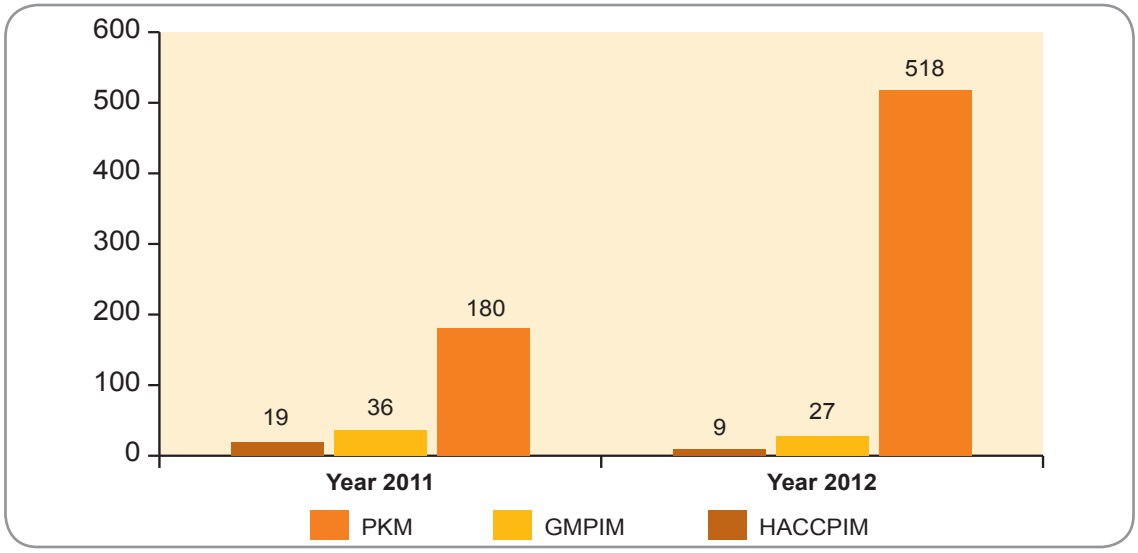
i. Food Safety Inspection (PKM)
ii. GMP 1Malaysia or GMP1M
iii. iii.HACCP 1Malaysia or HACCP1M

However, beginning 1 June 2012, the *Makanan Selamat Tanggungjawab Industri* (MeSTI) Scheme was introduced to replace SK1M, where it is the rebranding of SK1M. It is an improvement of SK1M to facilitate food enterprises, particularly SMEs, in meeting the requirements under the Food Hygiene Regulations 2009.

Under the MeSTI certification, guidance will be provided to food enterprises to develop and implement a food safety assurance programme before certification is given. Under this food safety assurance programme, the SMEs are required to develop a planned and documented practical system together with control records. Among the key elements in an effective food safety assurance programme are control of premises, control of operation and traceability.

Until December 2012, a total of 789 food industries were given SK1M recognition. Of the total, 698 are PKM recognition, followed by 63 GMP1M and 28 HACCP1M recognitions.

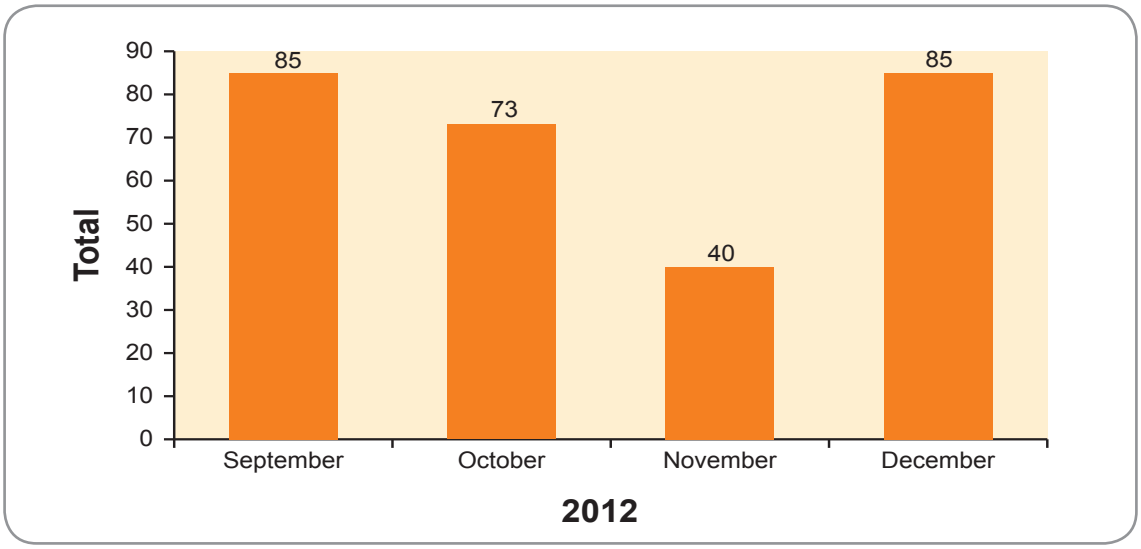
FIGURE 5
NUMBER OF SK1M RECOGNITION FOR 2012



Source: Food Safety and Quality Programme, MOH

However, beginning September 2012, MeSTI certification was implemented. Until December 2012, a total of 283 MeSTI certifications were given to the food industry in Malaysia.

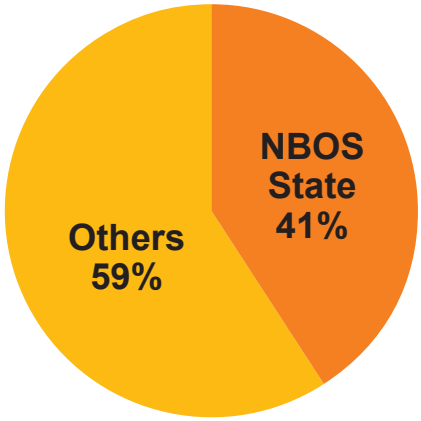
FIGURE 6
NUMBER OF MESTI CERTIFICATION FOR 2012



Source: Food Safety and Quality Programme, MOH

Of the total number of 789 SK1M recognitions given to food industry throughout Malaysia, 320 is the recognition of SK1M under the NBOS project in 2012 which involved Rural Transformation Centre (RTC) Perak, RTC Kelantan and RTC Melaka.

FIGURE 7
ACHIEVEMENT OF SK1M RECOGNITION UNDER THE NBOS PROJECT

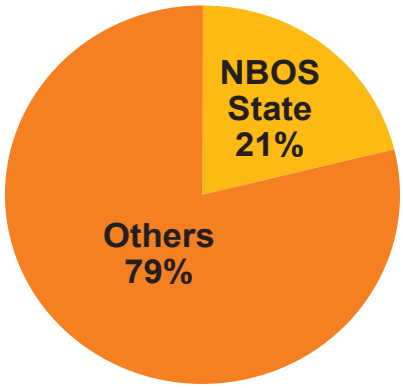


SK1M	Total	Percentage (%)
NBOS State	320	41
Others	469	59
TOTAL	**789**	**100**

Source: Food Safety and Quality Programme, MOH

Besides that, of the total number of 283 MeSTI certification given to food industry throughout Malaysia, 59 is the certification of MeSTI under NBOS project in 2012 which involved RTC Perak, RTC Kelantan and RTC Melaka.

FIGURE 8
ACHIEVEMENT OF MESTI CERTIFICATION UNDER THE NBOS PROJECT



MeSTI	Total	Percentage (%)
NBOS State	59	20.85
Others	224	79.15
TOTAL	**283**	**100**

Source: Food Safety and Quality Programme, MOH

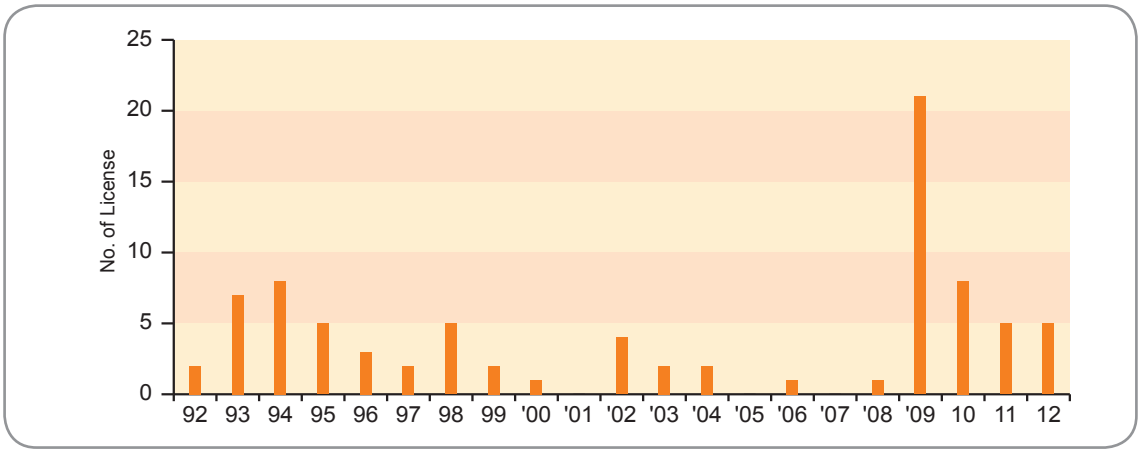
LICENSING

The water source used for the manufacture of natural mineral water (AMS), packaged drinking water (AMB) and ice for the purpose of trade or business must be licensed as provided for under Regulations 360A, 361 and 394A of the Food Regulations 1985, respectively.

Natural Mineral Water

Since the enforcement of this requirement in 1992 until 2012 (Figure 13), a total of 82 sources of natural mineral water have been licensed. 29 licenses are for local natural mineral water sources while the rest are for foreign sources. In 2012, a total of five (5) new licenses were issued.

FIGURE 9
ISSUANCE OF NATURAL MINERAL WATER LICENSES 1992-2012

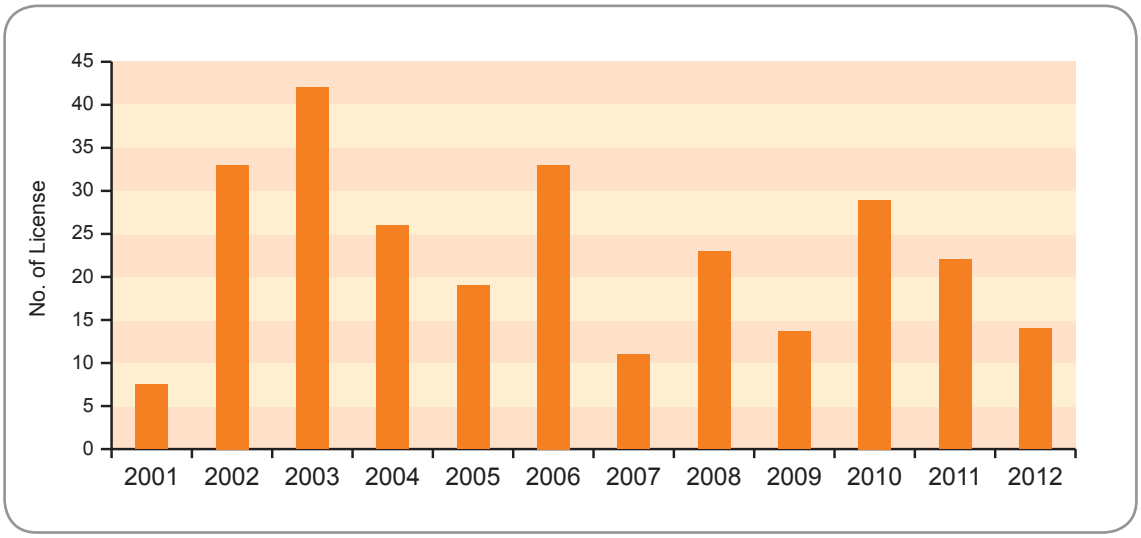


Source: Food Safety and Quality Programme, MOH

Packaged Drinking Water

A total of 270 packaged drinking water licenses were approved in 2001-2012 (Figure 14). In 2012, a total of 14 new licenses were issued whilst eight (8) licenses were revoked.

FIGURE 10
ISSUANCE OF PACKAGED DRINKING WATER LICENSES 1992-2012



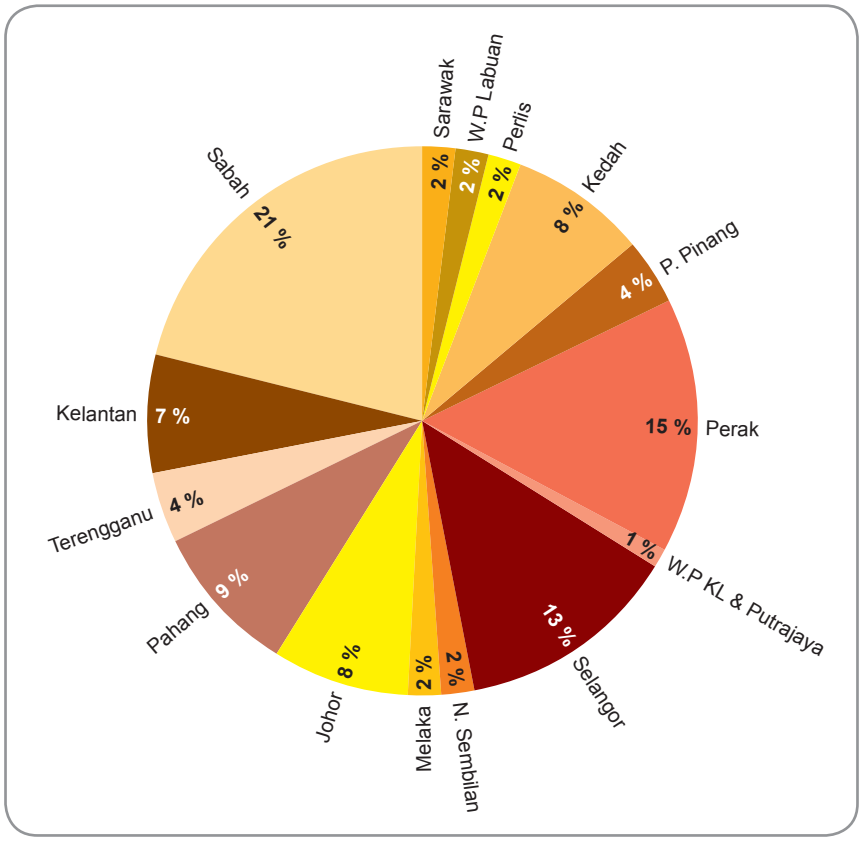
Source: Food Safety and Quality Programme, MOH

Ice

In 2012, 47 (88.7%) out of a total of 53 new applications and renewal for licenses received were approved. A total of 36 new companies have obtained licenses in 2012. However, it is still far from the targeted amount. There were only 62 companies licensed until 2012 and this amount is only 18.5% of the total ice factory in Malaysia, totaling 335 companies.

Educational enforcement approach has been undertaken on the ice manufacturers to increase their awareness. The majority of the ice manufacturers are SMEs. Therefore, financial constraints and lack of knowledge on food safety seemed to be among the main factors of failure to obtain a license.

FIGURE 11
PERCENTAGE OF ICE LICENSEES BY STATE, 2012



Source: Food Safety and Quality Programme, MOH

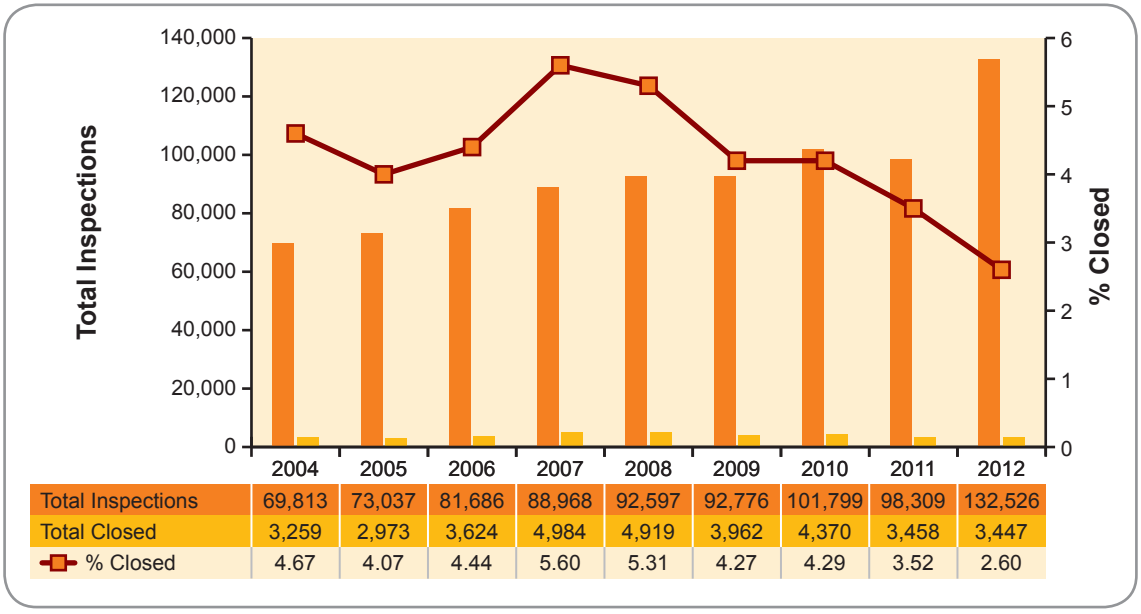
DOMESTIC COMPLIANCE BRANCH

The role of the Domestic Compliance Branch is to plan, review and coordinate all enforcement activities based on the Food Act 1983 and its regulations. Such activities include food sampling, inspection of food premises, enforcement activities such as closure of unhygienic food premises and seizure of non-complying food, investigation of complaints and management of food safety issues.

Inspection and Closure of Food Premises

Inspection of food premises is one of the routine activities to ensure that all food premises are clean and hygienic. In 2012, a total of 132,526 food premises were inspected and 3,447 (2.6%) insanitary food premises were closed under Section 11, Food Act 1983 (**Figure 12**)

FIGURE 12
INSPECTION AND CLOSURE OF FOOD PREMISES, 2004-2012



	2004	2005	2006	2007	2008	2009	2010	2011	2012
Total Inspections	69,813	73,037	81,686	88,968	92,597	92,776	101,799	98,309	132,526
Total Closed	3,259	2,973	3,624	4,984	4,919	3,962	4,370	3,458	3,447
% Closed	4.67	4.07	4.44	5.60	5.31	4.27	4.29	3.52	2.60

Source: Food Safety and Quality Programme, MOH

Registration of Food Premises

As required under Regulation 3, Food Hygiene Regulations 2009 (FHR 2009), food premises which must be registered with MOH are food factories, food premises which are involved in food catering, food outlets (restaurants, stalls, canteen etc) and vehicles which sell ready-to-eat food. Registration of food premises shall be carried out by the owner of food premises through online application at http://fosimdomestic.gov.my. Through promotional activities and registration of food premises that have been carried out nationwide by FSQD beginning March 2010 to 2012, there are 47,555 registered food premises. This number consists of 4,932 food factories, 2,617 premises which are involved in food catering, 39,670 food outlets and 366 vehicles which sell ready-to-eat food. **(Table 3)**

TABLE 3
REGISTRATION OF FOOD PREMISES FROM MARCH 2010-2012

Category	Year			
	2010	2011	2012	Cumulative
Factories	1,056	1,737	2,139	4,932
Premises involved in food catering	540	674	1,403	2,617
Food outlets	5,938	12,661	21,071	39,670
Vehicles selling ready-to-eat food	74	85	177	336
TOTAL	**7,608**	**15,157**	**24,790**	**47,555**

Source: Food Safety and Quality Programme, MOH

Food Sampling

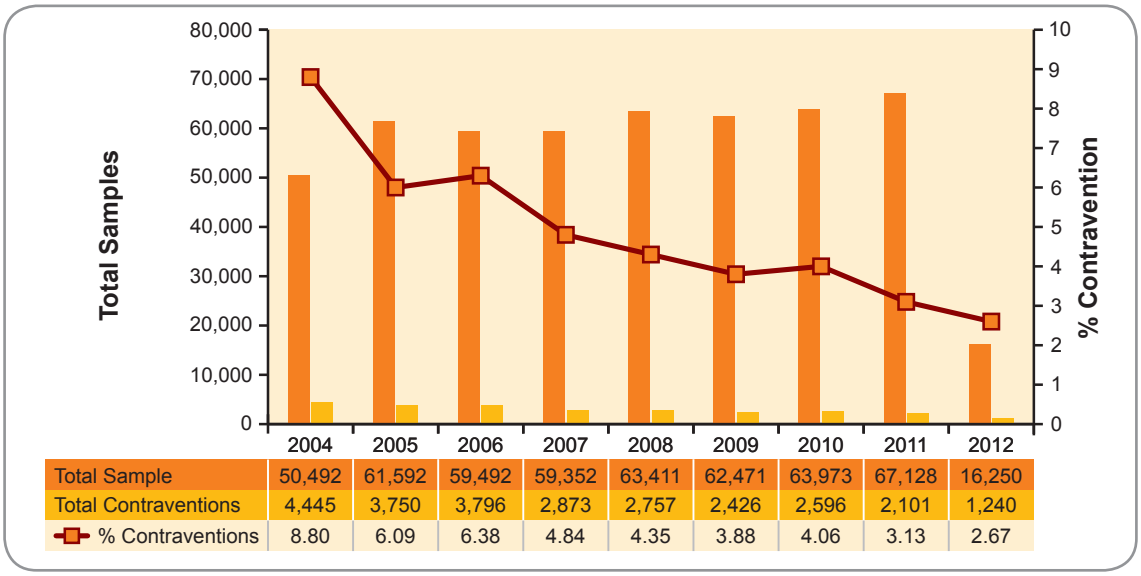
The purpose of food sampling is to ensure that food prepared or sold in Malaysia adhere to requirements under the Food Act 1983 and Food Regulations 1985. Food sampling target for 2012 was 16,250 samples based on the norm under the 2012 Plan of Action as specified by FSQD. Food sampling is

divided based on parameters of analysis as follows:

i. Microbiology - 40%
ii. Chemical - 55%
iii. Physical - 5%

In 2012, a total of 46,479 food samples were taken for analysis and 1,240 (2.67%) of the samples contravened certain requirements under Food Act 1983 and Food Regulations 1985 (**Figure 13**). Percentage of contravention has been decreasing since 2004 i.e. from 8.8% in 2004 to 2.67% in 2012. A total of 619 persons were prosecuted for contravening the Food Act 1983 & Food Regulations 1985 and fines amounting to RM559, 070.00 were collected.

FIGURE 13
FOOD SAMPLING, 2004-2012



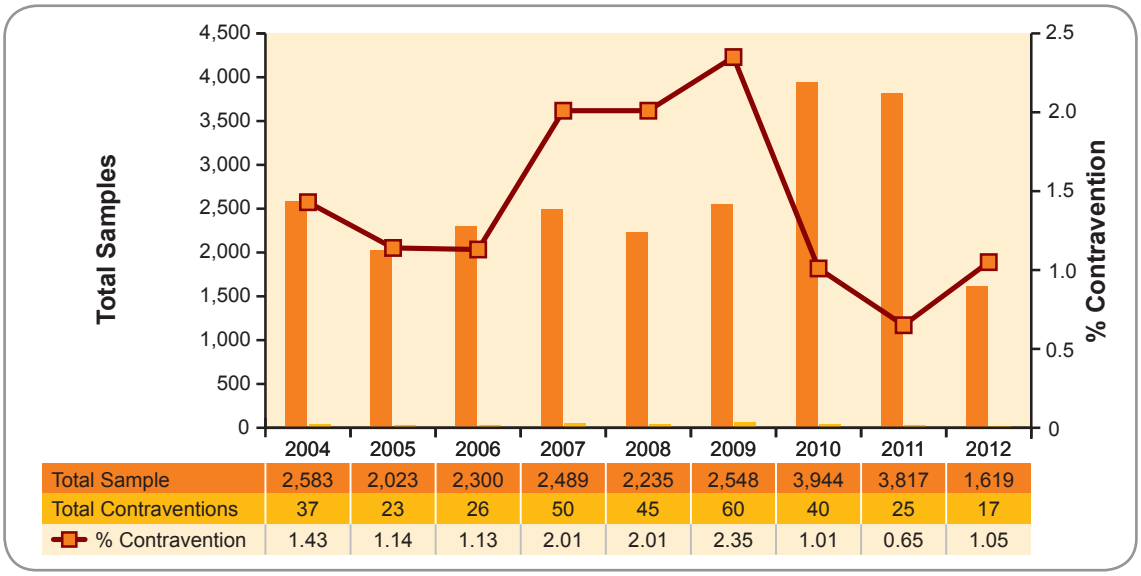
	2004	2005	2006	2007	2008	2009	2010	2011	2012
Total Sample	50,492	61,592	59,492	59,352	63,411	62,471	63,973	67,128	16,250
Total Contraventions	4,445	3,750	3,796	2,873	2,757	2,426	2,596	2,101	1,240
% Contraventions	8.80	6.09	6.38	4.84	4.35	3.88	4.06	3.13	2.67

Source: Food Safety and Quality Programme, MOH

Monitoring of Pesticide Residues

In 2012, a total of 1,619 food samples (**Figure 14**) were taken for pesticide residue analysis consisting of 1,394 samples of vegetables and 225 samples of fruits. Results of the analysis showed that 13 (0.93%) of the vegetable samples and four (4) (1.78%) of the fruit samples contained pesticide residues above the Maximum Residual Limit (MRL) as stated in Table 16, Regulation 41, Food Regulations 1985.

FIGURE 14
MONITORING OF PESTICIDE RESIDUES IN VEGETABLES AND FRUITS, 2004-2012



	2004	2005	2006	2007	2008	2009	2010	2011	2012
Total Sample	2,583	2,023	2,300	2,489	2,235	2,548	3,944	3,817	1,619
Total Contraventions	37	23	26	50	45	60	40	25	17
% Contravention	1.43	1.14	1.13	2.01	2.01	2.35	1.01	0.65	1.05

Source: Food Safety and Quality Programme, MOH

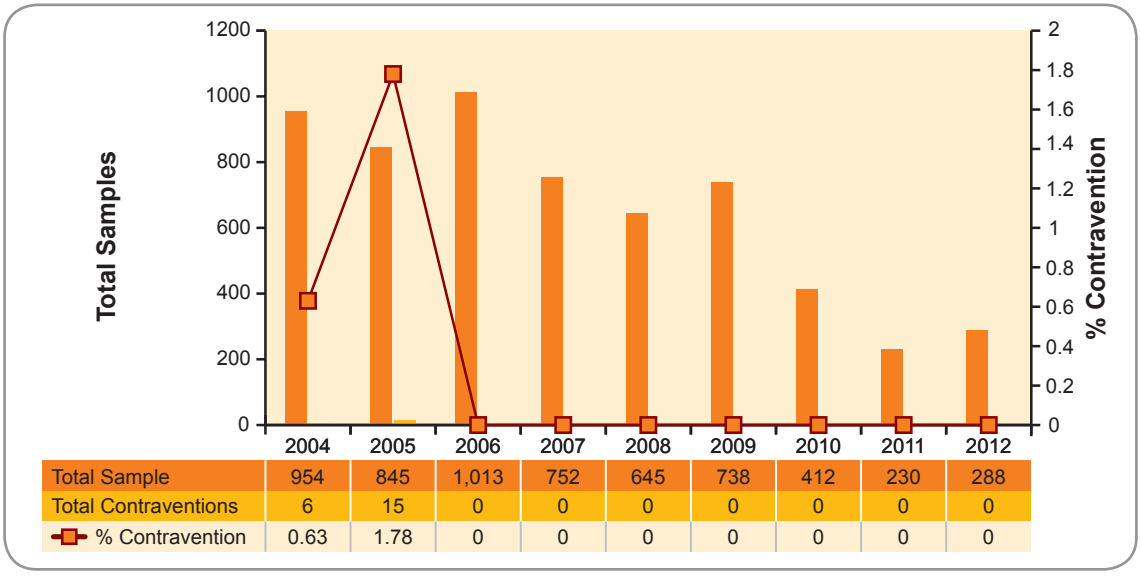
Monitoring of Drug Residues

As a result of continuous monitoring and enforcement, the abuse of veterinary drugs such as nitrofuran, chloramphenicol and beta agonist has been reducing.

i) Nitrofuran

In 2012, a total of 283 poultry samples and five (5) egg samples were taken for analysis of nitrofuran residue and none of them were positive (**Figure 15**).

FIGURE 15
MONITORING OF NITROFURAN IN CHICKEN MEAT AND EGGS, 2004-2012



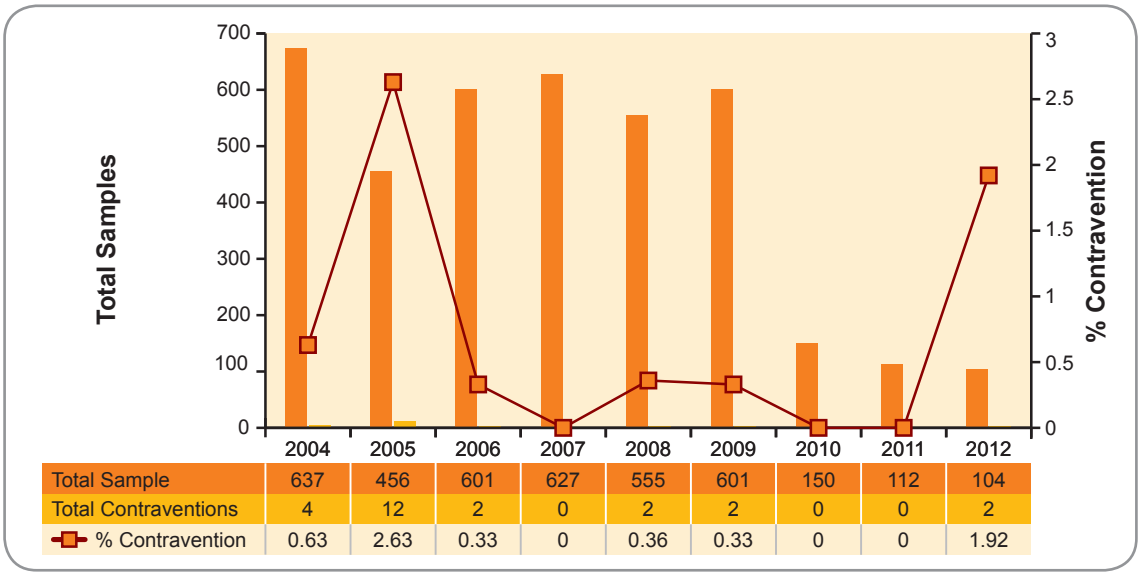
	2004	2005	2006	2007	2008	2009	2010	2011	2012
Total Sample	954	845	1,013	752	645	738	412	230	288
Total Contraventions	6	15	0	0	0	0	0	0	0
% Contravention	0.63	1.78	0	0	0	0	0	0	0

Source: Food Safety and Quality Programme, MOH

ii) Chloramphenicol

A total of 104 chicken meat samples were taken for chloramphenicol analysis and two (2) of the samples were found to contain residues of chloramphenicol (**Figure 16**). In addition, 127 fish samples were taken for the same analysis and one (1) sample was found to contain residues of chloramphenicol (**Figure 17**).

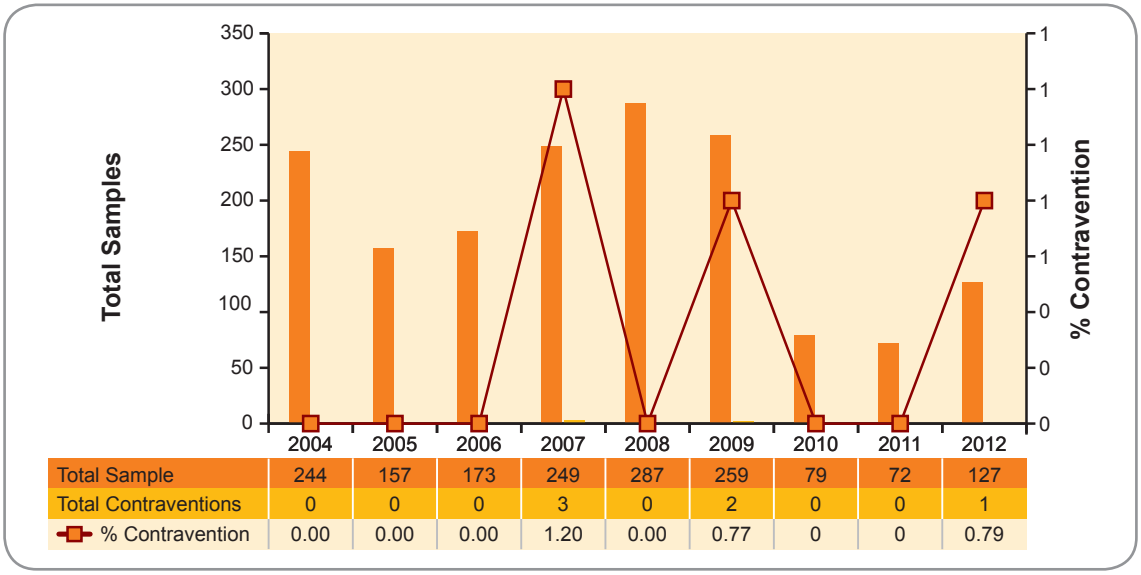
FIGURE 20
MONITORING OF CHLORAMPHENICOL IN CHICKEN MEAT, 2004-2012



	2004	2005	2006	2007	2008	2009	2010	2011	2012
Total Sample	637	456	601	627	555	601	150	112	104
Total Contraventions	4	12	2	0	2	2	0	0	2
% Contravention	0.63	2.63	0.33	0	0.36	0.33	0	0	1.92

Source: Food Safety and Quality Programme, MOH

FIGURE 17
MONITORING OF CHLORAMPHENICOL IN FISH, 2004-2012



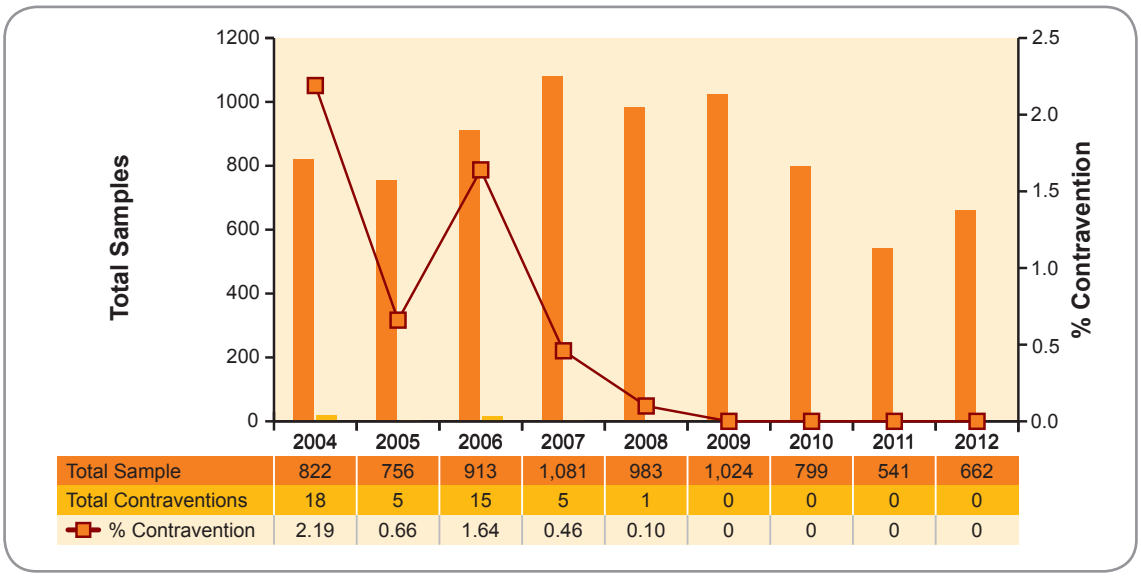
	2004	2005	2006	2007	2008	2009	2010	2011	2012
Total Sample	244	157	173	249	287	259	79	72	127
Total Contraventions	0	0	0	3	0	2	0	0	1
% Contravention	0.00	0.00	0.00	1.20	0.00	0.77	0	0	0.79

Source: Food Safety and Quality Programme, MOH

iii) Beta-Agonist

In 2012, a total of 662 samples were taken for beta-agonist analysis (**Figure 18**). These include pork (217 samples), beef (225 samples), mutton (37 samples) and duck meat (183 samples). As a result of continuous enforcement through routine inspections and special operations, the abuse of beta agonist has been reduced. Since 2009 none of the samples taken were positive for beta-agonist.

FIGURE 18
MONITORING OF BETA AGONIST IN MEAT, 2004-2012



	2004	2005	2006	2007	2008	2009	2010	2011	2012
Total Sample	822	756	913	1,081	983	1,024	799	541	662
Total Contraventions	18	5	15	5	1	0	0	0	0
% Contravention	2.19	0.66	1.64	0.46	0.10	0	0	0	0

Source: Food Safety and Quality Programme, MOH

IMPORT BRANCH

The objective of food import control is to ensure that food imported into this country comply with the Food Act 1983 and its regulations. The food import control activities carried out at the entry points include inspection and sampling of food consignments as well as enforcement activities such as detention, rejection, prosecution and destruction of consignments that contravene such provisions.

Food Import Control System

MOH manages food import control through the use of a web based application system i.e. FoSIM which uses a risk-based approach in determining food safety hazard of imported food. The risk attributed to the food is determined by six (6) levels of examination, that is:

a. Level 1 (Auto Clearance) - Food automatically released without inspection
b. Level 2 (Document Examination) - Food released after satisfactory document inspection
c. Level 3 (Monitoring Examination) - Food released after inspection and samples may be taken for analysis
d. Level 4 (Surveillance Examination) - Food released after inspection with samples taken for analysis
e. Level 5 (Hold, Test & Release) - Food detained pending results of sample analysis
f. Level 6 (Auto Rejection) - Food automatically rejected

Monitoring of food imports at each entry point

The monitoring of imported foods at the entry points is based on the following targets:

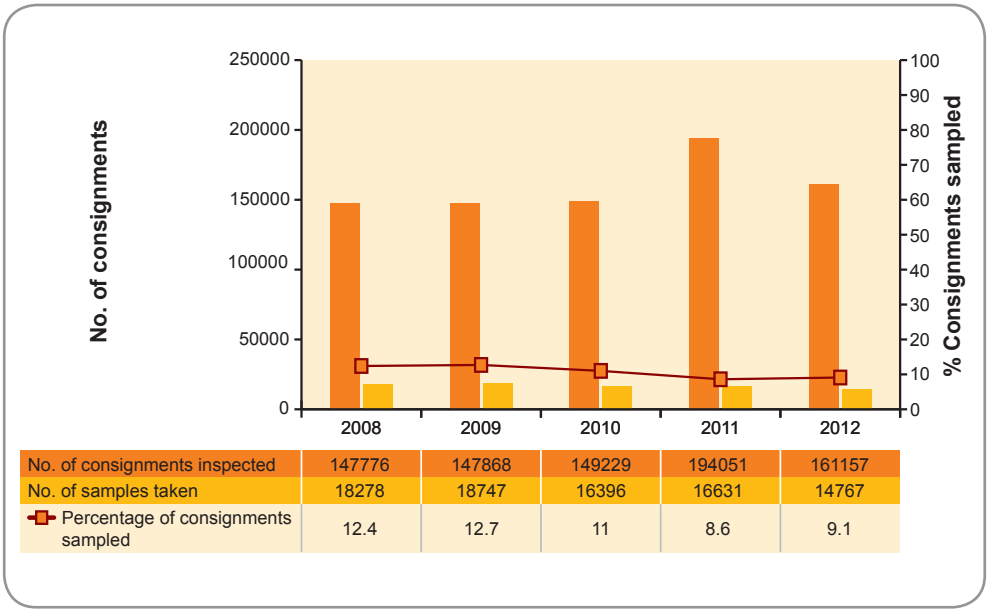
a. 100% document inspection – 100% inspection of document (K1) on all declaration for imported food consignments either manually or electronically.
b. 70% food consignment inspection at land entry points
c. 40% food consignment inspection at seaports
d. 35% food consignment inspection at airports
e. 10% of the food consignments inspected to be sampled for analysis

Activities and achievement

In 2012, 161,157 consignments were inspected and 14,767 samples (9.1%) were taken for analysis (**Figure 19**). From the total samples taken for analysis, 178 samples (1.2%) contravened the Food Act 1983 and Food Regulations 1985 (**Figure 20**).

There were 99 food alerts on contravening food consignments imported from 17 countries in the year 2012. The food alerts were then notified to all states and entry points for further action.

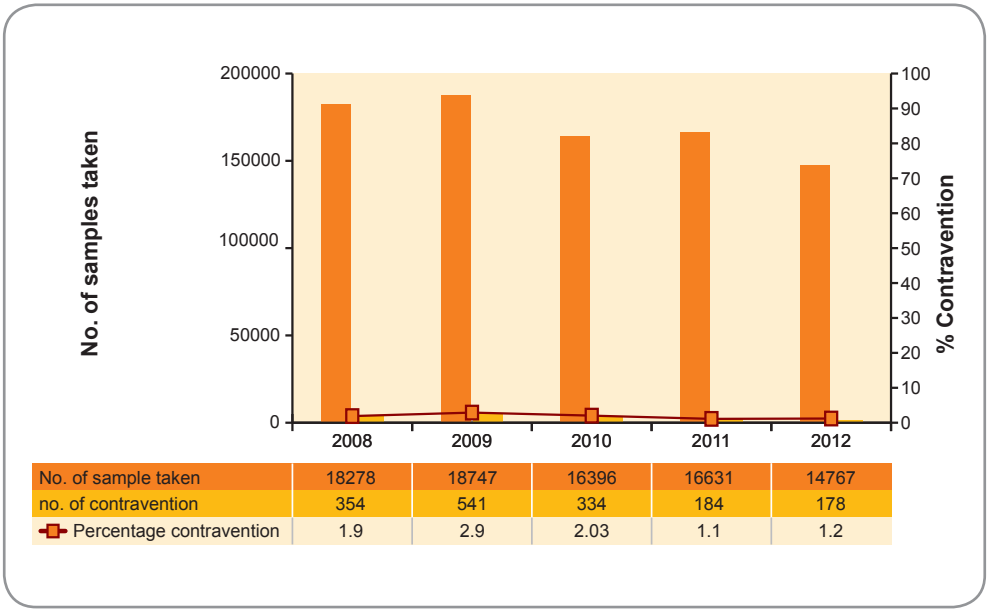
FIGURE 19
INSPECTION AND SAMPLING OF IMPORTED FOODS, 2008-2012



	2008	2009	2010	2011	2012
No. of consignments inspected	147776	147868	149229	194051	161157
No. of samples taken	18278	18747	16396	16631	14767
Percentage of consignments sampled	12.4	12.7	11	8.6	9.1

Source: Food Safety and Quality Programme, MOH

FIGURE 20
CONTRAVENTION OF IMPORTED FOOD, 2008-2012



	2008	2009	2010	2011	2012
No. of sample taken	18278	18747	16396	16631	14767
no. of contravention	354	541	334	184	178
Percentage contravention	1.9	2.9	2.03	1.1	1.2

Source: Food Safety and Quality Programme, MOH

EXPORT BRANCH

The Export Branch is responsible to ensure official control activities carried out on the fish and fishery products supply chain are in accordance with the requirements of the importing countries. FSQD has been appointed as the Competent Authority (CA) by the EU and tasked to provide guarantees that the EU import requirements on fish and fishery products are complied with along the fish and fishery products supply chain.

Export Control of Fish and Fishery Products to the European Union (EU)
FSQD conducts official controls in line with the Standard Operating Procedures and Protocols for export of fish and fishery products as follows:

- ***Implementation of Official Control for the Export of Fish and Fishery Products to the EU***

FSQD conducted official control in line with the Standard Operating Procedures and Protocols for the export of fish and fishery products as follow:

i) Approval of export establishments, transport vehicles, ice producers, cold stores, premises of semi-processed raw materials and sources of imported raw materials
In 2012, 22 export establishments, 44 transport vehicles, three (3) sources of ice and one (1) cold store were approved. Surveillance audits had been carried out by FSQD to verify the maintenance on the compliance with the EU requirements by the approved export establishments, transport vehicles, sources of ice and cold store.

ii) Implementation of Monitoring Programmes
In 2012, 660 samples of fishery end products, 150 samples of capture fishery products and 128 samples of water and ice were taken for purposes of monitoring. Corrective actions were also taken for any contravention detected.

iii) Issuance of Health Certificate for Export of Fish and Fishery Products to the EU
In 2012, a total of 328 Health Certificates were issued by FSQD amounting to 2,504.4 metric tonnes worth RM 44 million.

iv) Strengthening of the Official Controls
The EU Management System for Official Control of Food Export of Fish and Fishery Products to EU (FExOC) has been developed by FSQD and the system is on test run in 2012 before its full implementation in 2013. The objective of this system is to strengthen the official controls implemented by FSQD where all information related to the surveillance and monitoring programmes of all approved facilities including rapid alert system and issuance of health certificate for the purpose of export of fish and fishery products are being integrated into this system.

Export of Fish and Fishery Products to the United States of America (US)

i) Listing of Complying Export Establishment for the Export of Fish and Fishery Products to the US
FSQD conducted verification for the purpose of listing of complying export establishments for export of fish and fishery products to US based on the US requirements on seafood as follow:

ii) Listing of Complying Export Establishment
In 2012, 33 processing establishments had been listed for export of fish and fishery products to the US. Surveillance audits had been carried out by FSQD to verify the maintenance of compliance with the US requirements by the export establishments.

iii) Implementation of Monitoring Programme
In 2012, 485 samples of fish and fisheries products were taken under the Fishery Products Monitoring Programme were taken for analysis, and there was no contravention detected.

- ***The United States Food And Drug Administration (USFDA) Inspection 2012***

USFDA is significantly increasing the number of routine inspections worldwide of foreign food firms under USFDA jurisdiction that export to the US (growers/harvesters, processors/manufacturers, packers/repackers, and holders of food). This increase is mandated based on the requirements under the new USFDA Food Safety Modernization Act (FSMA). These routine inspections focussed on preventing food safety problems and as part of USFDA's overall public health goal of strengthening the US food safety system. In 2012, three (3) grain processing establishments were inspected by the USFDA, accompanied by representatives from FSQD.

Compliance Listing of Fish Facilities for the Export of Fish and Fishery Products to other than the EU

i) Compliance Listing of Export Establishments for the Export of Fish and Fishery Products to other than the EU
In 2012, 11 export establishments had been listed in the Compliance List of export establishments for Export of Fish and Fishery Products to other than the EU.

ii) Compliance Listing of Transport Vehicles for the Export of Fish and Fishery Products other than the EU
In 2012, 11 transport vehicles companies were listed in the Compliance List of export establishments for the Export of Fish and Fishery Products other than to the EU.

Export Control of Fish and Fishery Products to the Russian Federation
Monitoring programmes had been implemented for the processing establishments that had intention to export fish and fishery products to to the Russian Federation. In 2012, 23 samples for capture fishery products and 189 samples of fishery end products were taken, and there was no contravention detected.

Export Control of Food Products of Animal Origin to Vietnam
Effective from 1 September 2010, all processing establishments intending to export food products of animal origin must be registered with the National Agro-Forestry-Fisheries Quality Assurance Department (NAFIQAD), Vietnam before exportation of food products are undertaken based on the Circular Guiding on the Food Hygiene and Safety Control for Imported Foodstuffs of Animal Origin, No. 25/2010/TT-BNNPTNT. As of December 2012, 26 processing establishments have been approved and listed by NAFIQAD for export of fish and fishery products to Vietnam.

- ***Export Of Food Products Of Plant Origin To Vietnam***

For the purpose of food safety control over imported foodstuffs and protection of public health, the Ministry of Agriculture and Rural Development of the Socialist Republic of Vietnam has promulgated the Circular No. 13/2011/TT-BNNPTNT of March 16, 2011 guiding the food safety control for imported foodstuffs of plant origin. The circular shall come into force on 1 July 2011. In this regard, MOH as the competent authority in food safety is in the midst of preparing the registration documents as required by NAFIQAD to enable Malaysia to export food products of plant origin to Vietnam.

Export of Edible Bird's Nest to China
The requirement of zero tolerance for nitrite in bird's nest by China is a major concern to the Malaysian bird's nest industry. Malaysia views this matter seriously as this has greatly affected the Malaysian bird's nest industry. This requirement cannot be met by most of the Malaysian exporters because of the inevitable presence of nitrite in edible bird's nest.

Based on the Joint Malaysia-China Expert Group Meeting on Edible Bird's Nest which was held in Kuala Lumpur from 28-30 December 2011, the standard for nitrite in raw clean edible bird's nest at 30 ppm had been gazetted under the Food Regulations 1985 on 31 January 2012. China had also enforced the standard for nitrite at maximum level of 30 ppm on 28 February 2012.

Subsequently, the Protocol of Inspection, Quarantine and Hygiene Requirements for the Importation of Bird Nest Products from Malaysia to China was signed between Ministry of Agriculture and Agro Based Industry and General Administration of Quality Supervision, Inspection and Quarantine, China on 19 September 2012.

MOH will ensure that all the requirements stipulated in the protocol are being complied with before the raw clean edible bird's nest could be exported to China. In 2012, FSQD had audited 82 processing establishments to verify the compliance status of the companies.

Export of Ready-To-Eat Minimally Processed Fruits and Vegetables to Singapore
Agri-Food and Veterinary Authority (AVA) Singapore requires all establishments intending to export ready-to-eat minimally processed fruits and vegetables to Singapore to be registered and certified by FSQD by 1 March 2012. The establishments shall comply with the requirements listed in the Guideline for Ready-to-eat Minimally Processed Fruits and Vegetable by AVA. In 2012, 12 export establishments exporting ready-to-eat minimally processed fruits and vegetables to Singapore have been registered and certified by FSQD.

AVA Singapore had conducted an assessment visit on the establishments exporting minimally processed ready-to-eat fruits and vegetables in Malaysia from 27-28 August 2012. The purpose of the visit was to evaluate the compliance status of these exporters in Malaysia with the AVA Singapore requirements based on the Guidelines for Ready-To-Eat Minimally Processed Fruits and Vegetables. The certified establishments had successfully maintained its compliance with AVA Singapore's requirements.

- ***Export of Minimally Processed (MP) Coconut to Singapore***

The guideline was endorsed during the 16th Malaysia-Singapore Bilateral Meeting on Agriculture in 2012. The exporters were given two (2) years to comply with the requirements stated in the guidelines.

- ***Export of Minimally Processed (MP) Sugarcane to Singapore***

In 2012, seven (7) MP Sugarcane processing establishments were registered and certified by FSQD, MOH.

Issuance of Export Certificates

In 2012, a total of 38,171 Health Certificates and 4,245 Free Sales Certificates were issued by the District Health Office for the export of food products other than fish and fishery products to the EU. In addition, 24 Non Genetically Modified Food (Non-GMF) certificates were also issued by FSQD in 2012.

LABORATORY BRANCH

Laboratory Section

The Laboratory Section is responsible to plan, monitor and coordinate all the activities and services provided by all food laboratories under MOH. There are 15 food laboratories in the country consisting of 10 Food Safety and Quality Laboratories (FSQL) and 5 Public Health Laboratories (PHL). Food analysis services undertaken include chemical and microbiological analysis for purposes of surveillance, enforcement and research related to food safety and quality. In addition, this Section is also responsible to identify and coordinate laboratory services capability conducted by the food laboratories including provisions of resources to ensure that analysis are implemented effectively in line with current development and demand for analysis.

- ***Laboratory Output***

In 2012, a total of 77,546 food samples were analysed. From the amount, 39,371 (50.77%) are for microbiological analysis and 38,175 sample (49.23%) for chemical analysis. *Turn around time* (TAT) achieved for microbiological analysis was 98.41% whilst for chemical analysis it was 98.91%.

- ***Audit***

To ensure all food laboratories are competent to conduct food analysis, the quality system ISO/IEC 17025 General Requirements for the Competence of Testing and Calibration Laboratories was implemented in all laboratories. All laboratories will be audited to ensure the laboratory quality systems are implemented as planned.

In the year 2012, internal and external audits were conducted at food laboratories to ensure the quality system ISO/IEC 17025 is continuously implemented effectively. The internal audits were conducted by the certified auditor appointed by FSQD whereas external audit was done by certified auditor appointed by Department of Standard Malaysia. The corrective actions of non-conformance issued by the auditors have been undertaken by the laboratories to maintain the accreditation status.

- ***Proficiency Testing***

All food laboratories have participated in Proficiency Testing (PT) organised by various agencies to

monitor the reliability of test results and the competence of laboratories and analyst. The PT programme for chemical analysis was provided by Food Analysis Performance Assessment Scheme (FAPAS), United Kingdom and Chemistry Department Proficiency Testing Scheme (FODAS), Malaysia whereas Food Environment Performance Assessment Scheme (FEPAS) and IFM Quality Services, Australia was the organizer for microbiological analysis. All laboratories were satisfactorily competent in the PT programme.

Analyst Practices Section

The Analyst Practices Section is responsible to conduct the registration of food analysts, regulate the practice of food analysts and related matters in accordance with the Food Analysts Act 2011, as well as the establishment of Malaysian Food Analysts Council.

- ***Drafting of the Food Analyst Regulations***

This Section was responsible for the drafting of the Food Analyst Regulations to complement the Food Analyst Act 2011. The draft regulation was submitted to the Attorney General Chambers through the Legal Advisor, MOH for approval.

- ***Development of Food Analysts Registration System (FARIS)***

The development of FARIS was initiated in August 2011 and is expected to be completed in mid 2012. FARIS was developed to facilitate the systematic registration of food analysts. The system is in the last stage of development.

- ***Development of Draft Procedures to Support the Food Analyst Act 2011 and the Food Analyst Regulations***

To support the implementation of the Food Analyst Act 2011 and the Food Analyst Regulations, this Section has been developing draft procedures particularly for the registration of food analysts.

STANDARD AND CODEX BRANCH

The Standard and Codex Branch performs activities such as reviewing and updating of the Food Regulations 1985 as well as formulation of new legislations in line with the development of Codex standards and those of other countries.

The Activity of the Advisory Committee on the Food Regulations 1985

This Committee was established to approve proposed amendments to the Food Regulations 1985. This Committee comprises representatives from government agencies, public institutions of higher education, consumer and professional organisations. There are 11 Expert Working Committees established under this Committee to review applications from the industry or other parties to amend the Food Regulations 1985.In addition, the Expert Working Committees will also discuss amendments to the Food Regulations 1985 for the purpose of harmonization with Codex standards.

The list of Expert Working Committees is as follows:

i. Expert Working Committee on Nutrition/Health Claims/Advertisement
ii. Expert Working Committee on Food Additives
iii. Expert Working Committee on Contaminants in Food
iv. Expert Working Committee on Microbiology
v. Expert Working Committee on Food Commodities Standards
vi. Expert Working Committee on Food Labelling
vii. Ad-hoc Expert Working Committee on Genetically Modified Food
viii. Expert Working Committee on Drug Residue in Food
ix. Task Force on Pesticide Residue in Food
x. Expert Working Committee on Food Packaging and Containers
xi. Ad hoc Expert Working Committee on Drinking Water Standard

Gazettement of food legislations under the Food Act 1983
In 2012, a total of four (4) gazettements were issued which comprises one (1) approved laboratories and three (3) amendments to the Food Regulations 1985.

Food Standard Advisory Services
To improve services to the public, this Section offers services for product classification of Food Drug Interface (FDI) products, label screening services and labelling advisory services.

- ***Food Drug Interface (FDI) Product Classification***

A total of 3,709 applications for classification of FDI products were received in 2012 and some were discussed at the FDI Product Classification Committee Meeting. This classification service is to classify whether the products is food by FSQD or pharmaceutical product by National Pharmaceutical Control Bureau (NPCB). However, effectively on 14 December 2012; the NPCB has become the one stop centre for the product classification of FDI products and FSQD has discontinued the service.

- ***Label Screening and Labelling Advisory Services***

Free label screening service has been given to the industry since 2008. A total of 260 labels have been screened in 2012. Through this service, the industry will be informed of the status of their product label and if they require more clarification, they are advised to apply for the labelling advisory services.

This Section also provides Labelling Advisory Service to industries which require labelling advisory services (not mandatory) through the Labelling Advisory Committees. The charge is RM 1,000.00 per label. The applicant is required to amend their product labels based on the comments provided in accordance with the Food Act 1983 and Food Regulations 1985. A total of 33 labels were reviewed by the Labelling Advisory Committee in 2012

SURVEILLANCE BRANCH

Surveillance Section
This Section is responsible for carrying out surveillance activities on food safety issues at the national level. In addition, this section also conducts follow-up activities for any food safety non-compliance or violations. Searching, collecting and analysing information on issues related to food safety are key components of active (ad-hoc) surveillance activities. This section is also involved in planned surveillance activities for zoonotic disease related to food, antimicrobial resistance (AMR) and seaweed. Main activities carried out by the Surveillance Section are divided into three (3) which are:

- ***Activities on Bank of Information***

Among the sources of information for the bank of information are through:

i. ***Food Search***
Daily reports from the collection of information through searching related websites around the world. The reports also are issued on monthly basis.

ii. ***Food Alert (Import)***
Notification of food violations using the Food Safety System of Malaysia (FoSIM), web-based system to help control food safety at the entry point that is monitored by the Import Branch. One (1) report is produced to evaluate the trend of violations detected by FoSIM.

iii. ***EURASFF (EU Rapid Alert System for Food and Feed)***
This system allows the exchange of information quickly and effectively among the EU countries

when any risk to human health and animal is detected in the food and feed chain.

*iv. **ARASFF (ASEAN Rapid Alert System for Food and Feed)***
This system allows the exchange of information quickly and effectively between the ASEAN Member States when any risk to human health and animal detected in food and feed chain.

*v. **INFOSAN (International Food Safety Authorities Network)***
This system enables the delivery of information quickly and effectively between countries under the World Health Organization (WHO) when any risk to human health is detected in the food chain.

*vi. **Crisis Alert Team (CAT) Team***
The CAT Team task force monitors food safety issues through newspapers and premier news channels TV1, TV3 and NTV7 daily.

- ***Surveillance Sampling Activities***

Specific activities related to surveillance are divided into two (2) categories:

i. **Active Surveillance (Ad-hoc)**
These activities are carried out to identify issues and food safety status through the bank of information activities, the output of the risk profile, data from the Food Laboratory, MOH, complaints, orders and international food crisis. The Surveillance Section has conducted 16 active (ad-hoc) surveillances for 2012 as shown in **Table 4**.

TABLE 4
ACTIVE SURVEILLANCE SAMPLING

No.	Title
2/2012	*Surveillance on Level of Salmonella Newport Contamination in Local Watermelon*
3/2012	Studies on *Content Total Arsenic and inorganic Arsenic In Rice In Local Market*
5/2012	Detection on *Porcine Deoxyribonucleic Acid (DNA) in Local Flour*
6/2012	*Surveillance on Patulin Contamination in Local Food Products*
7/2012	*GMO and Polygalacturonase Gene Status in Fresh Tomatoes in Entry Point (Port Klang)*
10/2012	*Surveillance on Level of Acrylamide In Instant Coffee in Local Market*
11/2012	*Surveillance on Nitrate and Nitrite Content in Pickle in Local Market*
15/2012	*Surveillance on Escherichia Coli O104 and O157 in Fresh Vegetables*
16/2012	*Surveillance on Level of Microbial Contamination in Chilled Products in Local Market*
17/2012	Surveillance on Iodine Content in Follow-Up Formula in Local Market
18/2012	*Surveillance on Heavy Metal Contamination in Seaweed Produced in Malaysia*
19/2012	*Surveillance on Acrylamide Level in Food products in Local Market*
20/2012	*Surveillance on MCPD Content in Local Tea*
21/2012	*Surveillance on Food Products Suspected to Contain Sudan Red Dye and Rhodamine B*
22/2012	*Surveillance on Quality and Safety Level of Cooking Oil Used in Night Market and Food Stalls*
23/2012	*Determination of Omega 3 Content in Eggs*

Source: Food Safety and Quality Programme, MOH

ii. Planned Surveillance

This activity involves the issues of food-borne zoonoses, antimicrobial resistance (AMR) and seaweed. The purpose of the zoonosis activity is to identify the contamination level of Brucella spp. in goat's milk, *Mycobacterium tuberculosis* in cow's milk and *Salmonella enteritidis* in egg. This activity is under the purview of the Technical Committee on Zoonoses between MOH and the Department of Veterinary Services (DVS) and sampling conducted periodically.

AMR activities are carried out to reduce and control AMR in food while seaweed activities are carried out to discover the status of heavy metal and microbiological contamination of seaweed in Sabah. The Surveillance Section has conducted seven (7) planned surveillance for 2012 as shown in **Table 5**.

TABLE 5
PLAN SURVEILLANCE SAMPLING

No	Title
1/2012	*Surveillance on Level of Salmonella Enteritidis Contamination in Local Chicken Eggs – Series I*
4/2012	*Surveillance on Safety Level in Fresh Goat's Milk at Point of Sales – Brucellosis – Series II*
8/2012	*Detection on Mycobacterium Tuberculosis in Fresh Cow's Milk at Point of Sales – Series I*
9/2012	*Surveillance on the presence of antimicrobial resistant (AMR) in Fresh Fish and Meat in Local Market*
12/2012	*Surveillance on Safety Level in Fresh Goat's Milk at Point of Sales – Brucellosis – Series III*
13/2012	*Detection on Mycobacterium Tuberculosis in Fresh Cow's Milk at Point of Sales – Series II*
14/2012	*Surveillance on Level of Salmonella Enteritidis Contamination in Local Chicken Eggs – Series II*

Source: Food Safety and Quality Programme, MOH

- ***Activities on Surveillance Newsletter***

The Surveillance Newsletter is one of the information dissemination channels for food safety issues. This newsletter provides techical inputs as a guide and reference for FSQD staff. The following are Surveillance Newsletters issued in 2012 in collaboration with the Risk Assessment Section:

a) Cronobacter sakazakii
b) Inorganic arsenic

Risk Assessment Section

This section is responsible for carrying out activities related to food safety risk assessment. Risk assessment is a scientific evaluation of known or potential adverse health effects resulting from human exposure to food hazards.

Risk assessment, risk management and risk communication are the key component of Risk Analysis. Risk assessment implementation consists of the elements of hazard identification, hazard characterization, exposure assessment and risk characterization. Risk assessment is carried out to assess the risk of food hazard including chemical, microbiological and physical. It is important to estimate the risk of food hazard and give recommendations for improving the food safety control

system in order to control and prevent human health effect from contaminated food.

Main activities carried out by the Risk Assessment Section are as follows:

a. Collect and analyse surveillance, monitoring and research data related to food safety.
b. Conduct risk assessment on food safety issues.
c. Conduct oral presentations and posters as well as training on risk assessment.
d. Publish related reports.

Specific activities related to risk assessment are divided into four (4) categories:

a. Risk profiling
    i. Risk profiling is a document that describes the background of an identified issue on food safety
    ii. As a preliminary activity for risk management in an effort to understand the issue on food safety
b. Exposure assessment
    i. Exposure assessment is one of the elements in risk assessment to estimate the risk of a hazard as a result of consuming contaminated food
    ii. Conducted based on the current issues on food safety or requested from other Section / Branch / Division or agencies
c. Routine risk assessment
    i. Routine risk assessment is carried out based on specific projects and utilising existing or new data
    ii. Conducted to solve food safety issue such as standard setting and reviewing existing control measures
d. Ad hoc risk assessment
    i. Ad hoc risk assessment is conducted regarding the current issue on food safety
    ii. To understand the background of a food hazard in an effort to make quick decisions
    iii. Conducted continuously during food safety crisis

A total of 33 specific activities related to risk assessment were carried out in 2012. In addition, the Risk Assessment Section was also involved in various presentations at the national and international level. This is to promote risk assessment activities in Malaysia. The list of presentations which had been conducted is shown in **Table 6**. Other than that, the Risk Assessment Section had produced one (1) article entitled "The Use of Bisphenol, A Free Feeding Bottle" which had been published in the MyHEALTH Portal.

TABLE 6
PRESENTATIONS OF RISK ASSESSMENT, 2012

No.	Title	Venue/Program
1.	Risk-based Food Safety Standard : Role of Food Consumption in Exposure Assessment	International Conference on Sharing Information on Food Standards in Asia, 21st February 2012, Jakarta, Indonesia
2.	Dioxin and dioxin-like PCB exposure in the diets of adult population in Malaysia	National Food Technology Seminar 2012, 6-8 Mac 2012, Hotel Renaissance Melaka
3.	(i) Risk Assessment Activities (ii) Introduction to Food Hazard	*Kursus Asas Kawalan Makanan Import*,18 April 2012, UUM Kedah,
4.	Technical Update : Decision-making and quantitative risk analysis using @Risk and the decision tool suite	Technical Update : 26 April 2012, BKKM, Putrajaya

No.	Title	Venue/Program
5.	*Latihan Analisis Risiko kepada Bahagian Pematuhan dan Pembangunan Industri*	*Latihan Analisis Risiko*, 5 Julai 2012, BKKM, Putrajaya
6.	*Strengthening Analytical Capabilities for Current and Future Needs*	MIFT Seminar, 23 Oktober 2012, Crown Plaza Hotel, Kuala Lumpur.

Source: Food Safety and Quality Programme, MOH

COMMUNICATION AND CONSUMERISM BRANCH

The Communication and Consumerism Branch functions are;

i) to plan and coordinate all food safety and quality promotional activities, and
ii) to coordinate and respond efficiently to complaints and inquiries related to the food safety and quality.

School Canteen Cleanliness Competition

This competition was conducted in 2012 for primary school canteens and organised with the cooperation of MOE. This competition recognises schools that have taken the initiatives to maintain the cleanliness of their canteens. This is the continuity of similar competition in 2011.

Majlis Anugerah Kantin dan Dewan Makan Sekolah Menengah Bersih 2011 Peringkat Kebangsaan

Majlis Anugerah Kantin dan Dewan Makan Sekolah Menengah Bersih 2011 Peringkat Kebangsaan was officiated by YB Minister of Health on 23 April 2012 at the Shah Alam Convention Center (SACC). About 1,300 people attended the event.

YB Minister of Health also launched the MoHKLiK, the Interactive Food Safety Club, which is a portal where users could participate in online activities such as food safety video, e-comic, fan page and many more.

Other than that, there were exhibitions and conference on food safety during the event. The topics presented during the conference were :

a. Food Safety Perception among Consumers about School Canteen;
b. Clean Canteen, Safe Food; and
c. Guidelines of Implementation Healthy Food in School.

Food Safety Promotion at The State Level

The Food Safety Campaign at the state level were held throughout the year from January-December 2012, as follows:

a. Terengganu Food Safety Promotion Carnival on 6-8 September 2012;
b. Negeri Sembilan Food Safety 1Malaysia Carnival in October 2012;
c. Sabah Food Safety Carnival on 2-4 November 2012; and
d. Johor Food Safety Carnival on 9-11 November 2012.

At the state level, the activity on ”Lihat, Hidu, Rasa” was conducted by the Germ Buster Squad. The activities conducted were exhibitions, talks, demonstrations and brochures distribution.

Food Safety Promotional Exhibitions with other Agencies

Information on this activity is in **Table 7.**

TABLE 7
FOOD SAFETY PROMOTIONAL EXHIBITIONS WITH OTHER AGENCIES, 2012

No.	Activities	Date
1.	Rural Transformation Centre (RTC) in Gopeng, Perak	17 February 2012
2.	Rural Transformation Centre (RTC) in Pengkalan Chepa, Kelantan	4 May 2012
3.	National Teacher's Day Festival 2012, Kuala Kangsar, Perak	12-16 May 2012
4.	Consumer's Month Exhibition organized by KPDNKK, in Tesco, Semenyih, Selangor	1-3 June 2012
5.	Health Carnival and *Sambutan Minggu Doktor Muda Peringkat Kebangsaan*, Presint 9, Putrajaya	7 July 2012
6.	Malaysian International Food and Beverage Trade Fair (MIFB) Exhibition, PWTC, Kuala Lumpur	12-14 July 2012
7.	International Food Safety Conference co-hosted by MIFT and MOH in Kuala Lumpur	16-18 July 2012
8.	BeSS Exhibition during *Pelancaran Program Penjaja* 1Malaysia di Medan Selera Abdul Aziz, Kuala Lumpur	14 October 2012
9.	National Innovatiopn Conference and Exhibition (NICE) in KLCC	5-7 November 2012
10.	Rural Transformation Centre (RTC) in Melaka	10 November 2012
11.	BeSS Exhibition on *Seminar Peniaga dan Penjaja* 1Malaysia in PICC	18 November 2012
12.	Malaysia Agriculture, Horticulture and Agrotourism International Show in MAEPS Serdang	23 November – 2 December 2012
13.	Tastefully Food and Beverages in PWTC	13-16 December 2012
14.	BeSS Exhibition during *Pelancaran Program Penjaja* 1Malaysia di Taiping Perak	20 December 2012
15.	BeSS Exhibition during *Pelancaran Program Penjaja* 1Malaysia di Terengganu	29 December 2012

Source: Food Safety and Quality Programme, MOH

In addition to the Food Safety Promotion Programme, other educational materials were also published as follows:

i. Brochures
a. 'Makanan Selamat Tanggungjawab Industri (MeSTI)'
b. 'Bersih, Selamat, Sihat (BeSS)'
c. 'Piagam Pelanggan'
d. 'Teh Berwarna (brosur and book mark)
e. 'Perbezaan Air Minuman Berbungkus dan Air Mineral Semulajadi'
f. MoHKLiK
g. 'Panduan Minum Susu Kotak'
h. 'Jadual Waktu Lihat, Hidu, Rasa'

ii. Posters
a. '3 Cara Kenali Susu Rosak'
b. 'Piagam Pelanggan'

c. MeSTI
d. Food Supply Chain

iii. Exhibition Items

a. 3D Model Food Supply Chain
b. Food Safety and Quality Division (Pop-up and bunting)
c. 'Perbezaan Air Minuman Berbungkus dan Air Mineral Semulajadi'
d. MeSTI (Pop-up and Roll-up)
e. MoHKLiK (Pop-up, mascot, website)
f. MKMPK (Pop-up)

iv. Jingle, Video Clip, CD

a. Animation Film 'Panduan Minum Susu Kotak'
b. Life Action Film 'Panduan Minum Susu Kotak'
c. MeSTI (radio airtime, TVC, web video)

v. Mass Media

a. 1 slot on 'Selamat Pagi Malaysia'
b. Crawler 'Pendaftaran Premis' on RTM
c. 'Pesanan Ramadhan' on radio Hotfm, Suriafm, RTM
d. Media Conference MKMPK, December 2012
e. Media Conference 'Majlis Anugerah Kantin dan Dewan Makan 2012 Peringkat Kebangsaan', April 2012
f. MeSTI Advertisement in newspaper, radio (local and central) and web sites
g. Radio slots about food safety in 15 states.
h. ANNUAL REPORT 201

WAY FORWARD

One of the key characteristics that Malaysia is identified with is food; they have a multitudinous variety of food selection, and Malaysians definitely love their food. The establishment of FSQD as one of the new programmes in MoH is a huge step forward to solidify and strengthened the food safety control in Malaysia, and thus further encourages the food industry in Malaysia.

10 POLICY AND INTERNATIONAL RELATIONS

INTRODUCTION

The Policy and International Relations Division is responsible for the formulation of non-clinical policies for the nation's health sector. The Division also coordinates matters related to the Cabinet, acts as the focal point for the Ministry with respect to international relations and responsible for promoting the local healthcare industry as well as being the Delivery Management Office (DMO) for Healthcare National Key Economic Area (Healthcare NKEA). This Division is also the designated national focal point for the World Health Organization (WHO).

Activities are carried out by three Sections of the Division namely:

(a) Policy and International Relations Section;
(b) Health Industry and Secretariat Section; and
(c) Delivery Management Office, Healthcare NKEA.

ACTIVITIES AND ACHIEVEMENT

Cabinet Related Matters

In 2012, this Division prepared and coordinated 14 Cabinet Notes and 37 Memorandum for tabling at the Cabinet Meeting. The Division also provided inputs and facilitated the preparation of 67 comments on Memorandum received from other ministries as well as 58 feedbacks to decisions made by the Cabinet throughout the year 2012.

High Level Meetings within MOH

The Division also serves as the secretariat for 3 high level meetings in the Ministry. In 2012, 39 Post-Cabinet Meetings, 20 Morning Prayers and 2 Secretary-General's Meeting with State Health Directors were held.

International Relations

(a) ***Secretariat for Bilateral Meetings***

In year 2012, this Ministry had participated in the 6th Bilateral Ministers' of Health Meeting between Malaysia and Brunei Darussalam from 25 to 26 June 2012 in Bandar Seri Begawan, Brunei Darussalam. Various topics and work plans ranging from public health issues, food safety and quality, pharmaceutical products and medical tourism were deliberated and adopted by the two countries.

(b) ***Secretariat for Technical Bilateral/ Expert Group Meetings***

Technical Bilateral Meetings are held to follow up on the Joint Work Plans agreed in the Bilateral Health Ministers' Meeting. In year 2012, there were four Technical Bilateral Meetings/ Joint Expert Group Meetings held, namely:

(i) The 4th Bilateral Technical Working Group Meeting on Health between Malaysia and Brunei Darussalam from 13 to 14 March 2012 in Bandar Seri Begawan;
(ii) The Technical Bilateral Meeting between the National Pharmaceutical Control Bureau (NPCB), MOH and the National Agency of Drug and Food Control (NADFC, Republic of Indonesia) was held at the Boulevard Hotel, Mid Valley held on the 11 June 2012 in Kuala Lumpur;
(iii) The 1st Joint Expert Group Meeting on Traditional Systems of Medicine between Malaysia and the Republic of India from 7 to 9 September 2012 in New Delhi; and
(iv) The 2nd Joint Expert Group Meeting on Health Cooperation between Malaysia and Thailand from 20 to 21 December 2012 in Chiang Mai.

(c) ***Memorandum of Understanding (MoU) - Signing of the Memorandum of Understanding (MoU) on Cooperation in the Field of Pharmaceutical Regulatory Affairs***

The National Pharmaceutical Control Bureau (NPCB) and the Health Sciences Authority (HSA)

of Singapore signed a Memorandum of Understanding (MoU) in the field of pharmaceutical regulatory affairs on 28 March 2012 in Singapore. The signing ceremony was witnessed by H.E. Dato' Sri Liow Tiong Lai, Minister of Health Malaysia and his counterpart, H.E. Gan Kim Yong, Minister of Health Singapore.

(d) ***Working Visits***

The Division is also responsible for arranging and coordinating the Honourable Minister of Health's working visits to foreign countries.

(i) The Honourable Minister of Health Malaysia and delegation made a working visit to Geneva and Turkey from 30 May to 2 June 2012. The purpose of this visit was to strengthen bilateral cooperation in the field of health; and

(ii) The Honourable Minister of Health Malaysia has also made a working visit to Myanmar to officiate the Malaysia Healthcare – Seminar & Exhibition 2012. The working visit had forged greater cooperation in the areas of pharmaceutical, health tourism, communicable disease and traditional medicine between Malaysia and Myanmar. The Honourable Minister of Health also paid a courtesy call upon H.E. Minister of Health Myanmar to discuss on-going health cooperation between Malaysia and Myanmar.

(e) ***International Trade and Health***

The Division lead the Ministry of Health's negotiating team on matters relating to the health sector for three major trade negotiating committee meeting in 2012:

(i) 11th Malaysia-Australia Trade Negotiating Committee (TNC) Meeting for Expert Group on Services – Malaysia-Australia Free Trade Agreement (MAFTA) from 20 to 24 January 2012 in Kuala Lumpur;

(ii) 9th Negotiating Trans-Pacific Partnership Agreement (TPPA) from 5 to 9 March 2012 in Melbourne, Australia; and

(iii) 7th Malaysia-European Union Free Trade Agreement (MEUFTA) from 16 to 20 April 2012 in Brussels, Belgium.

MOH's involvement is primarily focussed on the following areas:

(a) Services - Market Access;
(b) Trade in Goods;
(c) Sanitary and Phytosanitary Measures (SPS);
(d) Intellectual Property Rights (IPR) related to pharmaceuticals;
(e) Technical Barriers to Trade (TBT); and
(f) Movement of Natural Persons (MNP).

(f) **World Health Organization (WHO)**

Throughout 2012, the Division coordinated placements of 3 foreign WHO consultants and 5 WHO fellows in various institutions in Malaysia. In addition, the Division also coordinated and processed applications from 169 participants and 3 short-term advisors comprising Malaysian professionals to attend 85 meetings/ workshops/ study visits overseas under WHO sponsorship.

The Division also coordinated the participation of MOH delegation in WHO meetings:

- 65th World Health Assembly, 21 - 26 May 2012, Geneva, Switzerland; and
- 63rd Session of the WHO Regional Committee for the Western Pacific, 24 - 28 September, Hanoi, Viet Nam.

In May 2012, Malaysia was appointed as a member of the WHO Executive Board and participated in its meetings:

- 131st Session of the WHO Executive Board, 28 – 29 May 2012, Geneva, Switzerland; and
- Second Extraordinary Meeting of the WHO Program, Budget and Administrative Committee of the Executive Board (PBAC), 6 – 7 December 2012, Geneva, Switzerland

(g) **ASEAN and Other International Bodies**

During the year 2012, the Division coordinated MOH's participation in various meetings:

- 7th ASEAN Senior Officials Meeting on Health Development, 26-30 March 2013, Cebu, Philippines;
- 11th ASEAN Health Ministers Meeting, 5th ASEAN+3 Health Ministers Meeting and 4th ASEAN-China Health Ministers Meeting, 2-6 July 2012, Phuket, Thailand;
- 68th Asean Coordinating Committee On Services (CCS), 13 – 16 March 2012, Siem Reap, Cambodia;
- 69th ASEAN Coordinating Committee on Services (CCS), 2 - 5 May 2012, Da Nang, Viet Nam;
- First APEC Health Working Group, 5 – 10 February 2012, Moscow, Russia;
- Second APEC Health Working Group, 24 – 27 June 2012, Saint-Petersburg, Russia; and
- Coordinated and processed applications for 11 MOH officials to attend 8 meetings/ workshops/ seminars under APEC sponsorship.

Introductory Health Economics Course

This Division organised an Introductory Health Economics course for MOH administrative officers from 19 to 23 November 2012 at the Kolej Sains Kesihatan Bersekutu Sultan Azlan Shah, Ulu Kinta, Perak. A total of 16 MOH administrative officers completed the course successfully. The course is aimed at introducing health economic concepts and the application of analytical tools that are commonly used in decision making with regards to resource allocation and economic evaluation in the health sector. Apart from that, the participants were also exposed to matters related to international trade, intellectual property rights related to pharmaceuticals and initiatives undertaken by the government to develop healthcare industry through the Economic Transformation Program (ETP).

Promotion and Development of the Healthcare Industry

The Division works closely with other government agencies and the private sector to promote and develop the local healthcare industry. These government agencies includes the Ministry of International Trade and Industry (MITI) and its agencies i.e. Malaysian External Trade Development Corporation (MATRADE) and Malaysian Industrial Development Authority (MIDA); Ministry of Tourism and its agency i.e. Malaysian Tourism Promotion Board (Tourism Malaysia) as well as the Performance Management and Delivery Unit (PEMANDU) of the Prime Minister's Department.

Besides that, the Division also has close collaboration with industry organisations in the private sector, namely the Association of Private Hospitals of Malaysia (APHM), Malaysian Society for Quality in Health (MSQH), Malaysian Organisation of Pharmaceutical Industries (MOPI), Pharmaceutical Association of Malaysia (PhAMA), Malaysian Medical Device Association (MMDA) and Association of Malaysia Medical Industries (AMMI).

(a) Healthcare Services

(i) 1Malaysia Promotion Program, Oman on 29-30 April 2012 at Crowne Plaza Hotel, Muscat, Sultanate of Oman

The 1Malaysia Promotion which aims to streamline Malaysia's promotional activities was the first consolidated promotional event held in Oman consisting of 8 government agencies. The agencies involved were MATRADE, MOH, MIDA, Construction Industry Development Board (CIDB), Multimedia Development Corporation (MDEC), Tourism Malaysia, Halal Development Corporation (HDC) and Ministry of Higher Education (MOHE). The 1Malaysia Promotion in Oman was lead by The Honourable Datuk Sri Mustafa Mohamed, Minister of International Trade and Industry (MITI).

The Healthcare Sector was headed by YBhg. Datuk Kamarul Zaman Md Isa, the Secretary General of MOH. Five Malaysian organisations in the Healthcare Sector participated in 1Malaysia Promotion ie. Malaysia Healthcare Travel Council (MHTC), KPJ Healthcare Bhd., Ming Medical Services Sdn. Bhd., Strategy Sdn. Bhd. and Scope Management Sdn. Bhd. Business breakout sessions with Oman's companies were held with a total of 40 participants from 14 local companies. Trade deals worth an estimated USD500,000 were concluded.

In conjunction with this program, MOH officials lead by the Secretary General also made working visits to the Oman Royal Hospital and Atlas Star Medical Center as well as courtesy call on Oman's Health Minister.

IMAGES 1
1MALAYSIA PROMOTION PROGRAM IN OMAN

Forum chaired by Minister of International Trade and Industry

Healthcare Sector Booth

Minister of International Trade and Industry visiting Healthcare Sector Booth

Courtesy Visit with Oman Health Minister

Source: Policy & International Relations Division, MOH

(ii) APHM International Healthcare Exhibition 2012 on 17th – 20th July 2012 at Kuala Lumpur Convention Centre

The Honourable Minister of Health Malaysia officiated the Opening of the 20th APHM International Healthcare Conference and Exhibition which was held from 17-20 July 2012. 80 healthcare related companies participated in the exhibition by taking up 120 exhibition booths. The Division also coordinated MOH's participation in the exhibition, taking up 8 booths with participation from the National Pharmaceutical Control Bureau, Medical Device Bureau, Clinical Research Centre, Health Education Division, Malaysia Healthcare Travel Council and Traditional and Complementary Medicine Division. The MOH Divisions/Agencies successfully showcased and disseminated information related to their services to the visitors. A total of 2,000 visitors inclusive of 605 Conference delegates visited the 3 days exhibition.

IMAGES 2
MOH PAVILION AT THE APHM INTERNATIONAL HEALTHCARE EXHIBITION 2012

Source: Policy & International Relations Division, MOH

(iii) Organising Incoming Buying Mission in conjunction with APHM International Healthcare Exhibition 2012 on 17th – 20th July 2012 at Kuala Lumpur Convention Centre

In line with ongoing efforts to promote the healthcare sector, this Division in collaboration with MATRADE organised an Incoming Buying Mission (IBM) on 17th – 20th July 2012. 20 participants from Japan, Singapore, Philippines, Ukraine, United Kingdom, Cambodia, Ghana, Kenya and Zimbabwe participated in this IBM. A total of 205 business meetings between the 20 buyers and 50 local companies were held on 17th – 20th July 2011. Trade deals worth an estimated USD31.6 million (RM101.3 million) for medical disposables, pharmaceuticals, antiseptics and disinfectants were concluded.

IMAGES 3
BUSINESS MEETINGS DURING THE APHM INTERNATIONAL HEALTHCARE EXHIBITION 2012

Business Meeting Session between buyers and local companies

Business Meeting between Ghana & Malaysian companies

Source: Policy & International Relations Division, MOH

(iv) Malaysia International Healthcare Travel Expo and Conference (MIHTE) 2012 on 5-7 November 2012 at Sunway Pyramid Convention Centre

The Honourable Minister of Health Malaysia officiated the Opening of the 1st Malaysia International Healthcare Travel Expo and Conference which was held from 5th - 7th November 2012. 84 exhibitors from all over the world such as Australia, China, Hong Kong, Indonesia, Malaysia, Singapore, United Kingdom and United States participated in the exhibition. MOH participation in the exhibition was coordinated by the Division with participation from the National Pharmaceutical Control Bureau, Medical Device Bureau and Medical Practise Division. The MOH Divisions/Agencies successfully showcased and disseminated information on their services to the visitors. A total of 1,308 conference delegates and visitors visited the 3 days exhibition.

IMAGES 4
MOH BOOTH AT MIHTE 2012

Source: Policy & International Relations Division, MOH

(b) Medical Devices

(i) Medical Fair Asia 2012 on 12th – 14th September 2012 at Suntec Singapore

Medical Fair Asia organised by Messe Dusseldorf Asia took place in Singapore for the 9th edition. MOH participated for the first time in this exhibition through a Country Pavilion. MOH's participation was lead by this Division together with MATRADE and MIDA. A total of 10 Malaysian companies participated under the Malaysia Pavilion.

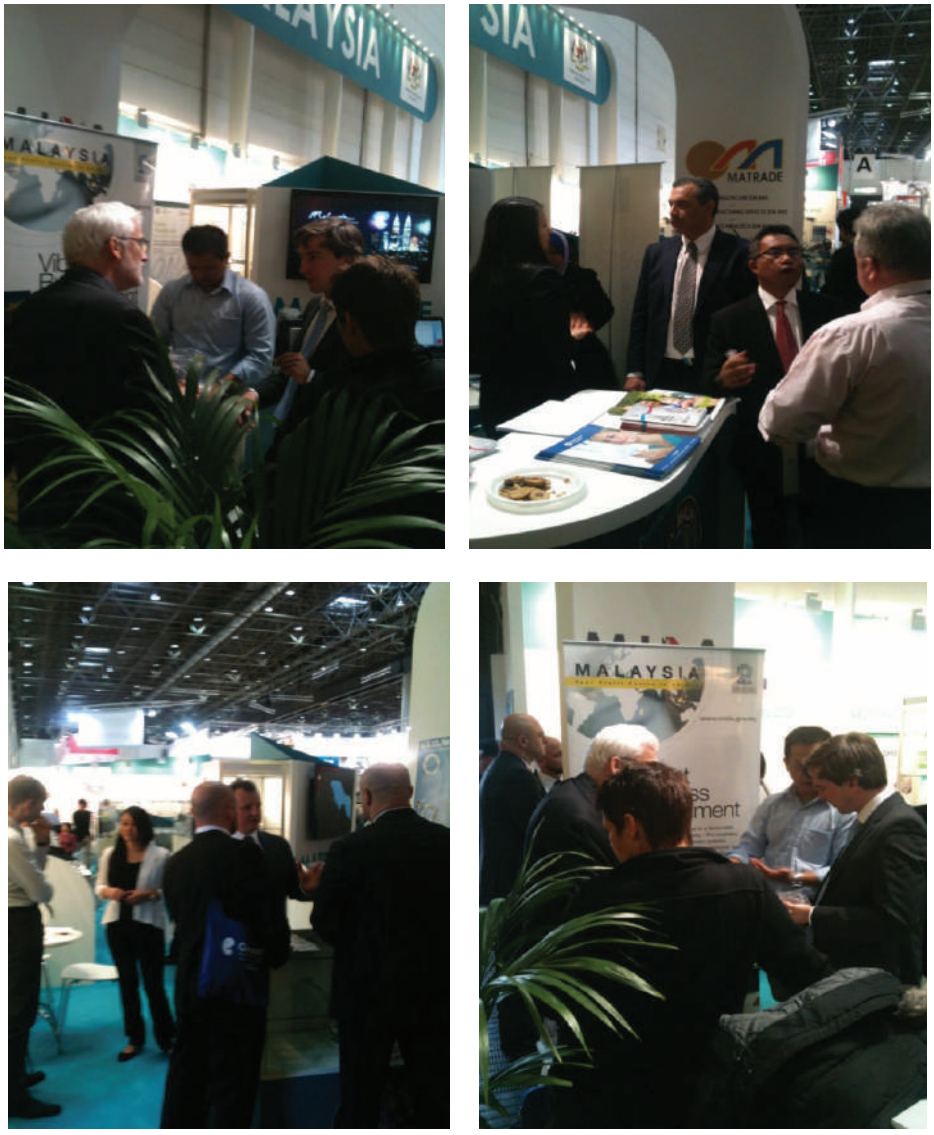
Besides Malaysia, there were over 500 exhibitors from 35 countries including national groups and pavilions from Austria, China, France, Germany, Italy, Japan, Singapore, South Korea, Spain, Taiwan and USA. More than 7,000 visitors were attended this exhibition. Products exhibited were hospital furniture, patient transfer trolleys, birth care and chiropractic tables, A&E requirements, lab, ward and CSSD furniture, intravenous catheters, infusion sets, endotracheal tubes, medical disposables, Salmonella Ezplex Kits, Plasmonex Kits, functional graded structured dental post, pharmaceutical base for drug delivery and respiratory components and equipment. A total of 866 inquiries were received by the Malaysian exhibitors during the exhibition. The trade deals reported from Malaysian companies during the 3 days event were estimated at RM1.72 million.

(ii) MEDICA 2012, 14th - 17th November 2012, Dusseldorf, Germany

The Division lead MOH's participation in MEDICA Dusseldorf 2012 together with MATRADE and MIDA. MEDICA is the largest medical devices trade fair in the world since 1968. A total of 4,554 exhibitors from 64 countries participated where 17 exhibition halls were used. During the 4 days exhibition, 130,600 visitors were recorded with participation from 120 countries.

A total of 30 Malaysian companies participated in MEDICA Dusseldorf and consist of rubber glove manufacturers, catheters, orthopaedic implants, tubing and hospital furniture. 8 Malaysian companies were grouped under the Malaysia Pavilion together with 3 government agencies (MOH, MIDA and MATRADE). The Pavilion served as a one stop center for promotion and enquiries on the healthcare sector in Malaysia. The Malaysia Pavilion recorded RM26.5 million worth of trade deals from this 4 days event.

IMAGES 5
MALAYSIAN PAVILION AT MEDICA 2012



Visitors having further discussion to gather more information on Malaysian products.

Source: Policy & International Relations Division, MOH

(c) Pharmaceutical

(i) Signing of Memorandum of Understanding (MoU) on Cooperation in the Building of Technical Capabilities, Promoting Clinical Trials and Facilitating Access to Innovative Medicines and Quality Generics Products in Malaysia

The Government of Malaysia and Novartis Corporation (Malaysia) Sdn. Bhd. has signed a MoU on Cooperation in the Building of Technical Capabilities, Promoting Clinical Trials and Facilitating Access to Innovative Medicines and Quality Generics Products in Malaysia on 12 June 2012 The MoU was signed for the purpose of enhancing cooperation in the field of pharmaceuticals.

(ii) CPhI Worldwide 2012, Madrid, Spain

CPhI Worldwide is the world's largest pharmaceutical networking event with participation of 30,413 representatives from 140 countries, was held in Madrid, Spain from 8 – 11 October 2012. This event brings together manufacturers and products with potential customers as well as the opportunity to keep abreast with the latest industry developments.

MOH in collaboration with MIDA and MATRADE participated in the exhibition. MOH was represented by this Division and the National Pharmaceutical Control Bureau. The government agencies together with 6 local companies teamed up and participated under the Malaysia Pavilion.

The 6 local companies were:
(a) Ain Medicare Sdn. Bhd.;
(b) Natural Wellness;
(c) Jitu Bio-Tech Industries (M) Sdn. Bhd.;
(d) Xepa-Soul Pattinson (M) Sdn. Bhd.;
(e) YSPIndustries (M) Sdn.Bhd.; and
(f) Kotra Pharma (M) Sdn. Bhd.

Two other companies from Malaysia namely, CCM Pharmaceuticals Sdn. Bhd. and Hovid Berhad also took part in this exhibition individually. The MOH delegation also made a courtesy call to the Director General Basic Services and Pharmacy, Ministry of Health, Social Services and Equality Spain and a working visit to Factory Merck SL. The Malaysia Pavilion received a total of 2,500 visitors during the event with 668 enquiries made and 174 business meetings held. Total sales reported by Malaysian companies during CPhI 2012 were estimated at RM34.1 million.

Healthcare National Key Economic Area (Healthcare NKEA)

(a) Healthcare NKEA Steering Committee Meeting

The Division through Delivery Management Office (DMO) and PEMANDU continue to closely monitor the progress of implementation of Entry Point Projects (EPPs) through a total of 10 Healthcare NKEA Steering Committee Meetings conducted in 2012. Apart from solving issues related to implementation of projects, the committee also discussed and endorsed new projects. There are a total of 13 Entry Points Projects under the Healthcare NKEA.

(b) Medical Device Entry Point Project (EPP)

Medical Device was recognized as EPP following a lab conducted in July 2011. Seven EPPs were identified by the lab. In 2012, six EPPs on Medical Device were announced by the Prime Minister:

- Medical Equipment Supply Chain Orchestration
- Medical Furniture and Hardware Cluster
- Regional Contract Manufacturing Hub For Medical Devices and Pharmaceuticals
- Upscale Malaysia's In Vitro Diagnostics (IVD) industry
- High-Value Medical Devices Contract Manufacturing Expansion - Orthopaedic Medical Devices
- EXDEV - Production Extension and new development in medical devices manufacturing

CONCLUSION

Throughout 2012, the activities of the Policy and International Relations Division were carried out as planned. This Division will continue its role as a focal point of the Ministry in various areas for which it is responsible and will strive to achieve targets that have been set out in its yearly work plan.

INTERNAL AUDIT

INTRODUCTION

Internal Audit Division (IAD), Ministry of Health Malaysia (MoH) was established in 1980, under the Treasury Circular No. 2 Year 1979. The roles and responsibilities of IAD was further enhanced by Treasury Circular No. 9 Year 2004. Internal audit is part of the Ministry of Health's internal control components and is directly responsible to the Secretary General. IAD independently conducts audits and reports to the Secretary General, Ministry of Health and relevant parties.

ACHIEVEMENT

In 2012, the IAD had planned to carry out 5 types of audit as follows:

i. Financial Management Audit;
ii. Follow-up Audit;
iii. Vouchers Audit;
iv. Performance Audit, and
v. Special / Investigation Audit.

The Audit Annual Plan was approved by the MoH's Secretary General in January 2012. Accordingly, the IAD had implemented 168 Audits as follows:

Financial Management Auditing
The IAD had conducted 78 financial management audits on 78 Responsibility Centres (RC). The Audit covered management control, receipts control, budget control, assets control and the trust account/ trust fund/deposit control. As a result of the audit conducted, the findings identified were as follows:

a. Management Control
Among the audit findings raised were the letter of authority for receipts, expenses and assets were not prepared, and *Manual Prosedur Kerja* (MPK) and *Fail Meja* not updated, management of punch cards are not in order, service books and personal files not updated, annual work targets not prepared timely, surprise checks not performed in a timely manner and less than seven days of training a year.

b. Receipts Control
For the control on receipts, the audit findings raised issues such as no segregation of duties to receive and record collection, Receipts Record Form / Counterfoil and Mail Register not maintained and updated, delay in bank in of collection or submission to the main collector, poor management in renting out office space, list of returned cheques and Accounts Receivable not maintained.

c. Budget Control
Audit findings reported included warrants not timely recorded and transfer of allocations were made by unauthorised officers and frequency of allocations transfer under the same object code.

d. Expenses Control
Expenses Control recorded the highest percentage of audit findings as compared to other controls. Among the findings were the irregular management of procurement through quotations, breakdown of procurement to avoid procurement through quotation, information of procurements not registered in the Government Procurement Information System (GPIS), contracts not signed in due time and the contracts were not signed by the authorised officer.

e. Assets and Inventory Control
Audit findings found that Current Asset Forms (KEW.PA-2) and Inventory Forms (KEW.PA-3) were not updated, labeling of asset not done, the management of vehicle log book was unsatisfactory and the store management was unorganised.

f. Account/Trust Fund/Deposit Control
Audit findings were that the records of vehicle, computer and housing loan not updated, trust

account reconciliation not prepared and Deposit Account Register not updated.

Follow-Up Auditing
The follow-up Audit carried out on 23 Responsibility Centres was to reprimand and ensure that remedial actions have been taken based on previous Audit. Overall, the level of compliance with the financial management and improvement made based on the previous audit comment were satisfactory. The percentage of recurring issues recorded was 29.99% compared to the previous years. The highest percentage recurring issue recorded was 44.9% and the lowest was 7.14%.

Vouchers Auditing
Vouchers auditing were carried out on 26 Responsibility Centres to ensure that payments were authorised, properly made and supporting documents related to the procurement were complete.

The most common weaknesses were on the payment voucher and its supporting documents, which included 47.29% of the total Audit findings. Weaknesses that often occurred were incomplete supporting documents, vouchers / supporting documents not stamped "TELAH BAYAR", improper payment and others. In addition, weaknesses related to the Local Purchase Order was the second highest category of weaknesses (15.66%), such as acknowledgement on the Local Purchase Order not made / incomplete and the problems of supplies / services received.

Performance Auditing
The IAD conducted performance audits on 17 projects/activities in 2012 as listed in the subjects below:

- Procurement of Medical Equipment in Hospital Kuala Lumpur, Hospital Sungai Buloh, Sarawak General Hospital, Hospital Raja Perempuan Zainab II, Kelantan and North Seberang Perai District Health Office
- Management of Subsidy Payment for Patient Treatment Under the Liability of Federal Government to the National Heart Institute Sdn. Bhd.
- Management of Financial Assistance Payments to Non-Governmental Bodies (NGOs), Ministry of Health Malaysia
- Construction of Operation Theatre and Central Sterile Supply Department at Hospital Kuala Krai, Kelantan; Sang Lee Clinic, Raub, Pahang and Upgrades at Kuala Nerang Hospital (HKN) Phase 1 Extension Building of Emergency Unit
- Management of Uniforms Facilitation at Banting Hospital, Miri Hospital, Muar District Health Office and Sepang District Health Office
- Management on Reagent at Teluk Intan Hospital, Perak
- Management on Procurement of Preliminary Works Ministry of Health Malaysia;
- Revenue Management at Health Clinics in Kelantan
- Ambulance Management at Sultanah Aminah Hospital, Johor Bahru
- Construction of Health Clinic Type 3 (KK3) and Quarters in Langkawi, Kedah
- Pilot Study on Reduction of Responsibility Centres in Hospital Batu Pahat

Special / Investigation Auditing
IAD conducted 24 special audits / investigations in 2012, where the cases are based on the direction of the Minister of Health, the Secretary General, top management of the MoH, the Malaysian Anti-Corruption Commission and the Auditor General's Report.

Financial Management Performance Evaluation System (3PK System)
The 3PK system is an application developed to assist the Secretary General to monitor and evaluate the financial performance of each department and the MoH as a whole. This system was developed in 2007 based on a rating system of Accountability Index prepared by the National Audit Department.

The Secretary General through Secretary General's Circular No. 1 of 2008 made it compulsory for all Responsibility Centres to answer all the questions in the 3PK system. The system could be accessed at http://spppk.moh.gov.my.

Based on the evaluation, MoH received overall marks of 92.96% down 0.53% compared to the first half evaluation of 93.49%. The financial management performance evaluated for year 2012 by 472 RC is shown in Table 1.

TABLE 1
TOTAL SCORE OF 3PK SYSTEM IN 2012

Status	First Half		Second Half	
	No. of RC	%	No. of RC	%
Excellent (90 - 100%)	388	82.38	378	80.08
Good (70 - 89%)	81	17.20	92	19.50
Satisfactory (50 - 69%)	0	0	1	0.21
Unsatisfactory (0 - 49%)	0	0	0	0
Unverified	2	0.42	1	0.21
Total	**471**	**100**	**472***	**100**

Note: The RC increase was due to Hospital Orang Asli Gombak's transfer of management to MoH.
Source: Internal Audit Division, Ministry of Health

WAY FORWARD

The IAD is committed in assisting MoH to enhance service delivery to clients in a prudent and effective manner. Internal control of MoH management aspects will continue to be a core audit activity and further enhanced from time to time as required. Beginning in 2013, the IAD will devote at least 40% of its auditing on procurement and ICT applied in existing audit activities.

Besides continuing audit of financial management, vouchers, follow-up, and special performance / inquiry, the Adoption Program will be implemented in 2013. The Responsibility Centres will be chosen based on financial management performance evaluated through the 3PK system, Auditing Information Management System (SPMP), financial management audits by IAD or other agencies such as National Audit Department and financial management inspections by National Accounting Department or MoH. The Responsibility Centres selected will be visited twice in a year. In addition to evaluating the financial management undertaken during the audit, the RC will be guided directly primarily against recurrence of financial management problems.

CONCLUSION

The IAD of MoH had successfully carried out its programs/activities as planned. With commitment and cooperation from other divisions, IAD is confident that MoH could further enhance its financial and program/ activities/ projects management. MoH should strive to undertake corrective actions to resolve the issues and rectify weaknesses as reported by IAD to avoid recurrence in future.

12 IMPORTANT EVENTS

IMPORTANT EVENTS

16 January 2012
Dato' Dr. Mah Hang Soon, Chairman of the State Health, Local Government, Consumer Affairs, Environment, Transport and Non-Islamic Affairs Committee, officiated the launching of *Operasi Tahun Baru Cina Tahun 2012* at the Pusat Perniagaan Gerbang Malam, Ipoh, Perak.

21 February 2012
Dr. Hj. A. Rahman bin Mokhtar, State Health Executive Committee, offficated the *Launching of Cancer Day* at the Sek. Men. Keb. Tengku Ibrahim, Permaisuri, Setiu, Terengganu.

23 February 2012
Dato' Eisah A. Rahman, Senior Director of the Pharmaceutical Services Division, officiated the *Sistem Pengurusan dan Kawalan Substan (SPIKES)* at the Anggerik Hall, NPCB.

4 March 2012
Tan Sri Dato' Sri Muhyiddin bin Mohd Yassin, Deputy Prime Minister of Malaysia, officiated the *World Kidney Day 2012: Kidneys for Life* at the Dataran Merdeka, Kuala Lumpur.

24-25 March 2012
Dato' Sri Liow Tiong Lai, Health Minister of Malaysia, officiated the launching of *Majlis Perasmian Sambutan Hari TB Sedunia Peringkat Kebangsaan* at the Seri Pacific Hotel, Kuala Lumpur.

24-25 March 2012
Dato' Sri Dr. Hasan bin Abdul Rahman, Director General of Health, Malaysia, officiated the *Pharmacy Practice Scientific Conference 2012* at the Istana Hotel, Kuala Lumpur.

9 April 2012
Dato' Eisah A. Rahman, Senior Director of the Pharmaceutical Services Division, officiated the *Technical Bilateral Meeting between National Pharmaceutical Control Bureau (NPCB) and Health Science Authority (HAS) Singapore* at the Gardens Hotel and Residences, Kuala Lumpur.

10 April 2012
Datuk Rosnah Binti Abdul Rashid Shirlin, Deputy Health Minister of Malaysia, officiated the *Majlis Perasmian Sambutan Hari Kesihatan Sedunia Peringkat Kebangsaan* at the State Education Library, Pengkalan Chepa, Kelantan.

16 April 2012
Dato' Sri Liow Tiong Lai, Health Minister of Malaysia, officiated the *Majlis Pelancaran Menandatangani Perjanjian Kerjasama Antara KKM dengan IPTA/IPTS dan Karnival Kesihatan* at Hospital Tapah, Perak.

16 April 2012
Dato' Sri Liow Tiong Lai, Health Minister of Malaysia, visited the *Karnival Kesihatan Hospital Tapah* at Hospital Tapah, Perak.

19 April 2012
Dato' Sri Mohd Najib Tun Razak, Prime Minister of Malaysia, officiated the opening ceremony for *Pusat Bersalin Berisiko Rendah 1Malaysia* at Precinct 8, Putrajaya.

21 April 2012
Datuk Rosnah Binti Abdul Rashid Shirlin, Deputy Health Minister of Malaysia, officiated the *Majlis Plancaran Zoomers Kelab Doktor Muda Peringkat Kebangsaan* at the Sekolah Kebangsaan Wawasan, Seremban 2, Negeri Sembilan.

10 May 2012
Dr. Hj. Anwa bin Sulaiman, Terengganu Health Director, officiated the *Majlis Tilawah Al-Quran Peringkat Negeri Terengganu* at the State Public Library, Terengganu.

11 May 2012
Dato' Sri Dr. Hasan bin Abdul Rahman, Director General of Health, Malaysia, officiated the *Program Duta Kenali Ubat Anda* at Kota Bharu, Kelantan.

14 May 2012
Dr. Hj. A. Rahman bin Mokhtar, State Health Executive Committee, officiated the *Sambutan Hari Kesihatan Sedunia Peringkat Negeri Terengganu* at the Dewan Majis Daerah Marang, Terengganu.

20 May 2012
Dato' Sri Liow Tiong Lai, Health Minister of Malaysia, officiated the *Majlis Perasmian Pelancaran Karnival Jelajah Sihat* at Dataran Bentong, Pahang.

24 May 2012
Dato' Sri Liow Tiong Lai, Health Minister of Malaysia, officiated the launching of *Klinik Pergigian Bergerak 1Malaysia* at Kuala Lipis, Pahang.

25 May 2012
Pehin Sri Haji Abdul Taib Mahmud, Chief Minister of Sarawak, officiated the *2012 Commonwealth Dental Association/FDI World Dental Federation Joint International Scientific Convention & Trade Exhibition Cum 69th Malaysia Dental Association AGM* at the Borneo Convention Centre, Kuching, Sarawak.

26 May 2012
Tan Sri Mohd Isa bin Samad, Chairman of Felda Malaysia, officiated the *Sambutan Hari TB Peringkat Negeri Terengganu* at the Sek. Men. Keb. Ketengah Jaya, Dungun, Terengganu.

31 May 2012
Dato' Haji Abdul Ghani Othman, Chief Minister of Johor, officiated the *Majlis Perasmian Sambutan Hari Tanpa tembakau Sedunia Peringkat Kebangsaan* at the Universiti Teknologi Malaysia, Johor.

4 June 2012
Datuk Seri Diraja Dr. Zambri Abdul Kadir, Chief Minister of Perak, officiated the *Malam Ramah Mesra Bersama Jururawat.*

11 June 2012
Dato' Eisah A. Rahman, Senior Director of the Pharmaceutical Services Division, officiated the *2nd Technical Bilateral Meeting between National Pharmaceutical Control Bureau (NPCB) and the Badan Pengawas Obat dan Makanan (BPOM), Republic of Indonesia* at the Boulevard Hotel, Midvalley, Kuala Lumpur.

13-15 June 2012
Datuk Rosnah Binti Abdul Rashid Shirlin, Deputy Health Minister of Malaysia, officiated the *Simposium Guru Penasihat Kelab Doktor Muda* at the Tabung Haji Complex, Pulau Pinang.

19-21 June 2012
Dato' Sri Dr. Hasan bin Abdul Rahman, Director General of Health, Malaysia, officiated the *Pharmacy Research and Development Conference* at the Zon Regency Hotel, Johor Bahru.

23 June 2012
Dato' Dr. Mah Hang Soon, on behalf of the Health Minister of Malaysia, officiated the *Sambutan*

Hari Denggi ASEAN Peringkat Kebangsaan and the Karnival Jelajah Sihat Bersama Komuniti at the Dataran Majlis Bandaraya Ipoh, Perak.

28 June 2012
Datuk Kamarul Zaman bin Md Isa, MoH Chief Secretary, officiated the *Anugerah Perkhidmatan Cemerlang dan Jasamu Dikenang 2012* at the Dewan Besar, Wisma Darul Iman, Terengganu.

29 June 2012
Datuk Rosnah Binti Abdul Rashid Shirlin, Deputy Health Minister of Malaysia, officiated the *Majlis Anugerah Media Kesihatan and the launching of MyHealth Apps* at the Royale Chulan Hotel, Kuala Lumpur.

1 July 2012
Dr. Chong Chee Kheong, Director of the Disease Control Division, officiated the opening ceremony for the *Majlis Perasmian Sambutan Minggu Sihat Doktor Muda Peringkat Kebangsaan* which was held on 1-7 July 2012 at Sekolah Kebangsaan Presint 9 (2), Putrajaya.

11-12 July 2012
Dr. Hj. Anwa bin Sulaiman, Terengganu Health Director, officiated the *Konvensyen Inovasi Peringkat Negeri* at the State Public Library, Terengganu.

11-13 July 2012
Dato' Sri Dr. Hasan bin Abdul Rahman, Director General of Health, Malaysia, officiated the *2012 National Point of Care Testing (POCT) Policy and Guidelines Workshop* at the Institute for Health Management, Bangsar, Kuala Lumpur.

13-14 July 2012
En. Toh Chin Yaw, Representative of Bandar for the State Legislative Assembly (ADUN Bandar), officiated the *Sambutan Hari Tanpa Tembakau* at the Dataran Shahbandar, Kuala Terengganu.

19 July 2012
To' Puan Hajah Norliza binti Mahmud, wife to Chief Minister of Terengganu, officiated the *Forum Awam Peringkat Negeri Terengganu: Teknik Reproduktif Bantuan* at the Dewan Besar, Wisma Darul Iman, Terengganu.

23 July 2012
Dato' Dr. Mah Hang Soon, Chairman of the State Health, Local Government, Consumer Affairs, Environment, Transport and Non-Islamic Affairs Committee, launched the *Operasi Ramadhan 2012* at the Tapak Bazar Ramadhan Batu Gajah, Perak.

24 July 2012
Dr. Hj. Anwa bin Sulaiman, Terengganu Health Director, launched the *Bulan Kemerdekaan Peringkat Negeri Terengganu* at the State Health Department, Wisma Persekutuan, Kuala Terengganu.

3 September 2012
Dr. Hj. A. Rahman bin Mokhtar, State Health Executive Committee, offficated the opening ceremony of *Klinik 1Malaysia Kubang Parit* at Kubang Parit, Terengganu.

6-8 September 2012
En. Azmi bin Razik, Chief Executive Officer for the Enterpeneur Development Foundation officiated the *Karnival Keselamatan dan Kualiti Makanan 1Malaysia* at Kuala Terengganu.

9 September 2012
Dato' Sri Liow Tiong Lai, Health Minister of Malaysia, launched the *Aktiviti 10,000 Langkah Merdeka*

at the Taman Ujana Rimba Tropika, Kota Kinabalu, Sabah.

20 September 2012
Tn. Hj. Mohd Nor bin Othman, Member of Parliament for Hulu Terengganu officiated the *Majlis Pelancaran Minggu Penyusuan Susu Ibu Sedunia* at the Dewan Majlis Daerah Hulu Terengganu.

22 September 2012
Dato' Hajjah Nordiyanah binti Haji Hassan, State Health Director of Perak, launched the *Kempen Keselamatan Makanan Peringkat Negeri Perak* at the Mydin Meru Hypermall, Meru Raya, Ipoh, Perak.

25-27 September 2012
Dr. Hj. Anwa bin Sulaiman, Terengganu Health Director, officiated the *Terengganu Scientific Conference* at Hotel Permai, Kuala Terengganu.

27 September 2012
Dato' Hj. Othman bin Mustapha, Director General of JAKIM, officiated the *Seminar Pendidikan Fatwa Kebangsaan 2012* at the auditorium D8, Presint 1, Putrajaya.

29 September 2012
Prof. Madya Dr. Abdol Samad bin Nawi, Rector of UITM Dungun, launched the *PROSIS Program* at the UITM Dungun, Terengganu.

1-2 October 2012
Dato' Eisah A. Rahman, Senior Director of the Pharmaceutical Services Division, officiated the *1st Technical Meeting on Development and Harmonisation of Standards on Pharmaceuticals and Vaccines (DHSPV) among OIC Member States* at the Putra World Trade Centre (PWTC, Kuala Lumpur.

7 October 2012
Dato' Sri Liow Tiong Lai, Health Minister of Malaysia, officiated the opening ceremony for *Sambutan Hari Kesihatan Mental Sedunia Peringkat Kebangsaan* at Taman Tasik Permaisuri, Cheras, Kuala Lumpur.

13 October 2012
Tn. Tengku Putera bin Tengku Awang, Speaker for the Terengganu State Legislative Assembly, officiated the opening ceremony for *Hari Mental Sedunia* at Padang Astaka, Kuala Berang, Hulu Terengganu.

14 October 2012
Dato' Sri Liow Tiong Lai, Health Minister of Malaysia, officiated the *Majlis Bicara Hati dan Pelancaran Minggu Kesedaran Pendermaan Organ 2012* at the National Heart Institute, Kuala Lumpur.

15-17 October 2012
Dato' Eisah A. Rahman, Senior Director of the Pharmaceutical Services Division, officiated the *Bengkel Kajian Penuh Dasar Ubat Nasional (DUNAS)* at the Holiday Villa Hotel & Suites, Subang Jaya.

18 October 2012
Dato' Dr. Hj. Azmi bin Shapie, Director of the Medical Development Division, officiated the launching of *Pameran Sempena Minggu Kesedaran Pendermaan Organ 2012* at the National Library Auditorium, Kuala Lumpur.

29 October 2012
Dato' Sri Liow Tiong Lai, Health Minister of Malaysia, officiated the *1st National Stem Cell Congress* at the Istana Hotel, Kuala Lumpur.

1 November 2012
To' Puan Hajah Norliza binti Mahmud, wife to Chief Minister of Terengganu, officiated the road show for *Pendermaan Organ Peringkat Negeri* at the Convention Hall, Wisma Darul Iman, Terengganu.

17 November 2012
Dr. Wardati Bt. Haji Abdul Malik, State Health Deputy Director (Dentistry) of Perak, officiated the *Program Promosi Kesihatan Pergigian Saringan Kanser Mulut untuk orang Asli 2012* at the SK Pos Dipang School Hall, Kampar, Perak.

28 November 2012
Dato' Dr. Mohd Azhar Bin Haji Yahaya, Deputy Chief Secretary (Management) of MoH, officiated the opening ceremony for the *Perak Innovation Convention 2012* which was held on 28-30 November 2012.

28 November 2012
Dato' Dr. Hj. Azmi bin Shapie, Director of the Medical Development Division, officiated the opening ceremony for the *Advanced Course on Donor Management and Coordination* which was held on 28 November – 2 December 2012 at the Bella Vista Langkawi, Kedah.

1 December 2012
Datuk Dr. Lokman Hakim bin Sulaiman, Deputy Director General of Health (Public Health), officiated the opening ceremony for *Sambutan Hari AIDS Sedunia Peringkat Kebangsaan* at the Institut Kemahiran Belia Negara, Kuala Perlis.

3 December 2012
Dato' Dr. Mah Hang Soon, Chairman of the State Health, Local Government, Consumer Affairs, Environment, Transport and Non-Islamic Affairs Committee, officiated the launching of *Promosi Kebersihan dan Keselamatan Makanan R&R Peringkat Negeri Perak 2012* at the R&R Tapah Arah Selatan.

4 December 2012
Dato' Sri Liow Tiong Lai, Health Minister of Malaysia, officiated the *Launching Ceremony of Clearing House for Research on Disability System* at the Parcel E Auditorium, Putrajaya.

12-13 December 2012
Dato' Dr. Maimunah bt A.Hamid,Deputy Director General of Health (Research & Technical Support), officiated and chaired the *Proof of Concept (POC) for Malaysian Health Data Warehouse (MyHDW)* session at the Auditorium Dr. Tengku Mohd Azzman Shariffadeen, MIMOS, Kuala Lumpur.

17-19 December 2012
Datuk Dr. Lokman Hakim bin Sulaiman, Deputy Director General of Health (Public Health), officiated the *ASEAN Risk Communication Training of Trainers – Risk Communication in Health Crisis* at the Institute for Health Management, Bangsar, Kuala Lumpur.

26 December 2012
Dr. Hj. Anwa bin Sulaiman, Terengganu Health Director, officiated the *Hari AIDS Sedunia* at the Klinik Kesihatan Seberang Takir, Kuala Terengganu.

Annual Report
Ministry of Health
2012

ISSN 1511-1512
9 771511 151000