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ANNUAL REPORT **MINISTRY OF HEALTH MALAYSIA** **2017**

Ministry of Health Malaysia



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MINISTRY OF HEALTH MALAYSIA
2017

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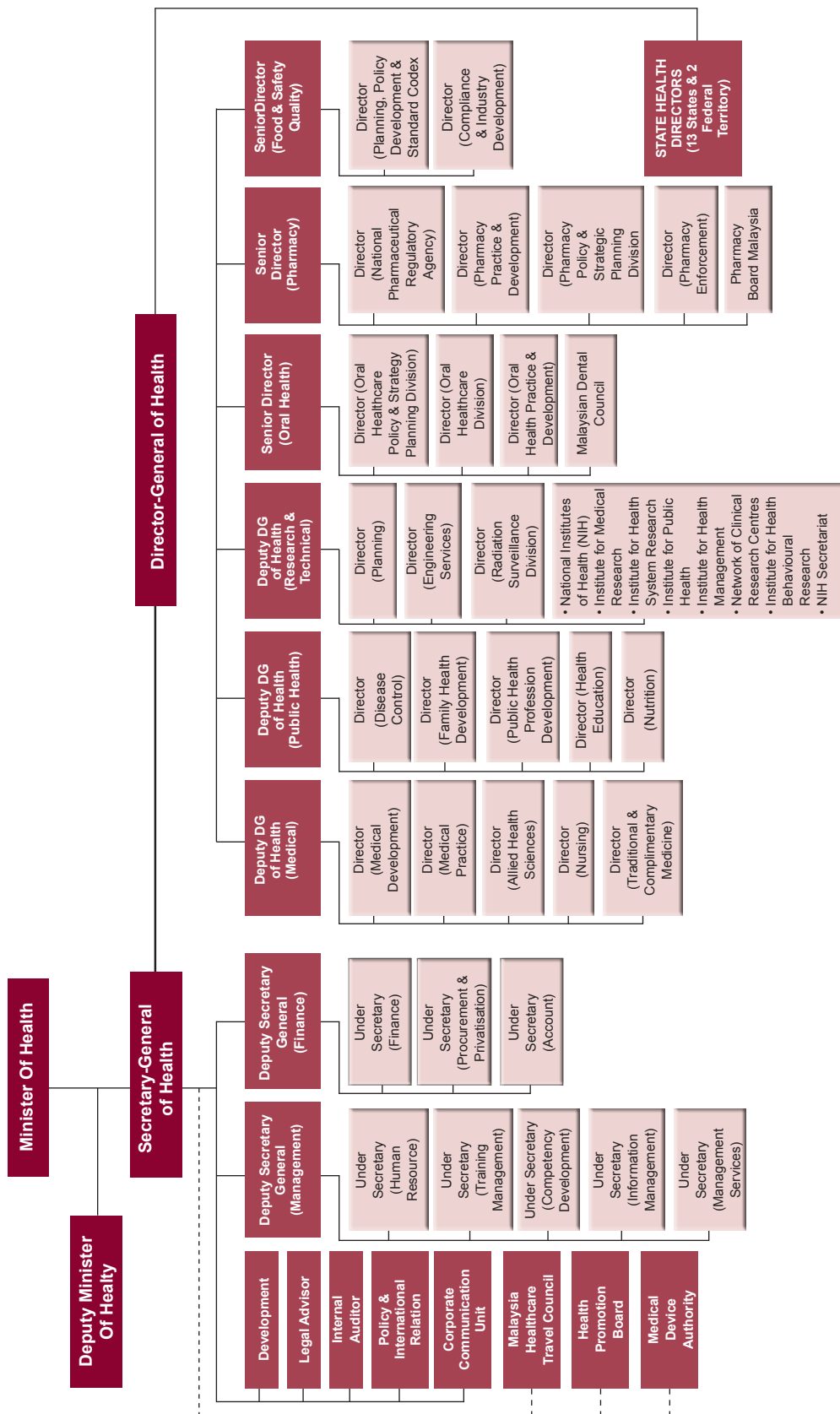
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ORGANISATION CHART MINISTRY OF HEALTH, MALAYSIA



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 60 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

The population of Malaysia in 2017 was 32.05 million with an annual population growth rate 2016 to 2017 of 1.32 per cent. The total population in 2017 increased by 0.42 million as compared to 31.63 million recorded in 2016. The geographical distribution of population showed that Selangor had the highest population of 6.38 million, while Wilayah Persekutuan Putrajaya recorded the lowest population of 0.09 million. Wilayah Persekutuan Putrajaya recorded the highest annual population growth rate of 2.96 per cent, while Wilayah Persekutuan Kuala Lumpur recorded the lowest annual growth rate of 0.09 per cent (**Table 1**).

Table 1
Population and Annual Population Growth Rate by State, Malaysia 2016 and 2017

No	State	Population ('000)		Annual Population Growth Rate 2016/2017 (%)
		2016	2017 ^e	
1.	Johor	3,651.8	3,700.5	1.33
2.	Kedah	2,119.7	2,146.2	1.25
3.	Kelantan	1,796.7	1,829.7	1.84
4.	Melaka	901.1	914.7	1.51
5.	Negeri Sembilan	1,099.3	1,117.1	1.62
6.	Pahang	1,626.7	1,648.0	1.31
7.	Pulau Pinang	1,717.7	1,746.3	1.67
8.	Perak	2,482.1	2,496.4	0.58
9.	Perlis	251.0	252.2	0.48
10.	Selangor	6,291.5	6,380.8	1.42
11.	Terengganu	1,183.4	1,207.7	2.05
12.	Sabah	3,802.8	3,866.8	1.68
13.	Sarawak	2,738.7	2,767.6	1.06
14.	W.P. Kuala Lumpur	1,789.7	1,791.3	0.09
15.	W.P. Labuan	96.8	97.7	0.93
16.	W.P. Putrajaya	84.4	86.9	2.96
	MALAYSIA	31,633.5	32,049.7	1.32

Notes:

1. Current population estimates 2016 and 2017

2. The added total may differ due to rounding.

3. e - estimated

Source: Department of Statistics, Malaysia ([www.dosm.gov.my/Population Quick Info](http://www.dosm.gov.my/Population%20Quick%20Info))

Overall, Malaysia is predominantly urban, with 75.5 per cent of the total population living in urban areas, and 24.5 per cent of the population living in the rural areas (**Table 2**). In 2017, the economically-active (working age) population which consists of population aged 15 to 64 years was 22.3 million or 69.6 per cent of the total population. Meanwhile, young age and old age population were 7.7 million (24.1 per cent) and 2.0 million (6.3 per cent) respectively.

Table 2
Statistics Related to Population, 2017e

No	Population	Number ('000)	% of Total Population
1.	Male	16,561.1	51.7
2.	Female	15,488.6	48.3
3.	Urban	24,182.5	75.5
4.	Rural	7,867.2	24.5
5.	Economically-active (age 15-64 years)	22,314.0	69.6
6.	Dependent Population:		
	• Young age (below 15 years)	7,732.9	24.1
	• Old age (above 64 years)	2,002.8	6.3

Notes:

1. Current population estimates 2017.
2. The added total may differ due to rounding.
3. e - estimated

Source: Department of Statistics, Malaysia ([www.dosm.gov.my/Population Quick Info](http://www.dosm.gov.my/Population%20Quick%20Info))

The dependency ratio is the ratio of dependents to the 100 persons in the working age (15-64 years) population. This ratio can be disaggregated into the total dependency ratio, youth age dependency ratio and the old-age dependency ratio. The total dependency ratio shows a decreasing trend from 44.0 in 2016 to 43.6 in 2017. The decline in this ratio was due to a decrease in the youth dependency ratio. This was attributed to the reduction in the total fertility rates and crude birth rates in Malaysia. The youth dependency ratio shows a decreasing trend from 35.3 in 2016 to 34.7 in 2017. However, the old age dependency ratio shows an increasing trend from 8.7 in 2016 to 9.0 in 2017.

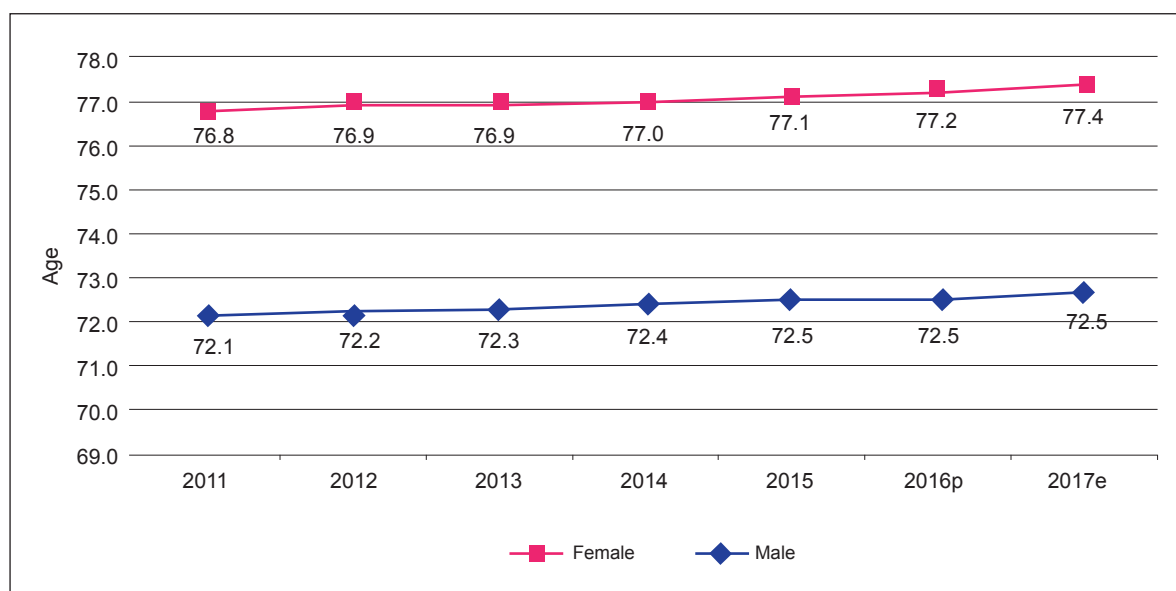
HEALTH STATUS

Health status is measured by the health condition of the individual and the population as a whole. It can be measured through some health status indicators such as life expectancy at birth, mortality and morbidity.

a. Life Expectancy At Birth

Life expectancy is the average remaining age (years) for a person is expected to live at the beginning of the certain age. Life expectancy at birth indicates the number of years a newborn infant would live if prevailing patterns of mortality at the time of its birth are to stay the same throughout its life.. 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 2017 data has increased to 72.5 years for male and 77.4 years for female respectively, as compared to 72.1 years for male and 76.8 years for female recorded in 2011 (**Figure 1**). This means that the babies born in 2017 are expected to live up to 74.8 years compared to 74.3 years in 2011.

Figure 1
Life Expectancy at Birth (in Years) by Sex, Malaysia, 2011 to 2017



Notes:

1. *p* = Preliminary figures
2. *e* = Estimated figures

Source: Department of Statistics, Malaysia

b. Mortality

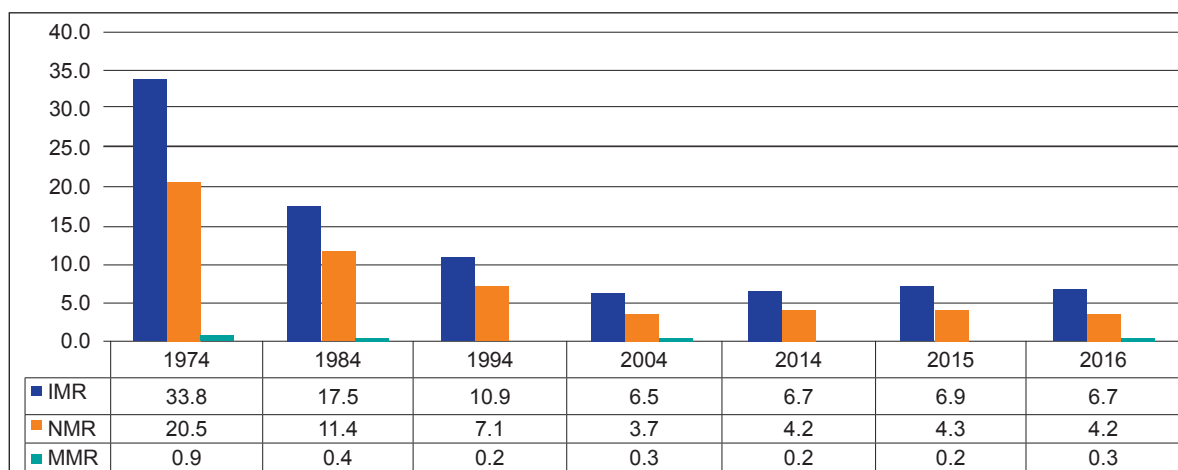
Mortality data provides a useful endpoint for measuring health. These data provide a comprehensive picture of the health of the community, for each individual.

For the past 42 years (1974-2016), the mortality rates in Malaysia had been decreasing. The trend of maternal mortality rate (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 0.9 per 1,000 live births in 1974 to 0.3 in 2016. Even though there was a slight increase in the MMR in 2004, the rate has stabilized for the past 20 years, i.e. from 1994 to 2013. 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 33.8 in 1974 to 6.7 in 2016. 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 20.5 in 1974.

Figure 2
IMR, NMR and MMR, Malaysia, 1974 to 2016



Source: Vital Statistics, Malaysia, 2017, Department of Statistics, Malaysia

The trend for the other mortality rates remains relatively the same from 2010 to 2017 (**Table 3**). Intensive immunization efforts and other related programmed were carried out by both the public and private sectors could 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, 2010 to 2017

No	Indicator	2010	2011	2012	2013	2014	2015	2016	2017
1.	Crude death rate (per 1,000 population)	4.6	4.7	4.7	4.7	4.9	5.0	5.1	5.2
2.	Maternal mortality ratio (per 100,000 live births)	26.1	26.2	23.2	21.4	22.3	23.8	29.1	n.a
3.	Infant mortality rate (per 1,000 live births)	6.7	6.5	6.2	6.3	6.7	6.9	6.7	7.3
4.	Neonatal mortality rate (per 1,000 live births)	4.3	4.2	4.0	4.0	4.2	4.3	4.2	n.a
5.	Under-5 mortality rate (per 1,000 live births)	8.4	8.0	7.6	7.9	8.3	8.4	8.1	8.6
6.	Toddler mortality rate (per 1,000 population aged 1-4 years)	0.4	0.4	0.4	0.4	0.4	0.4	0.4	n.a
7.	Stillbirth rate (per 1,000 births)	4.5	4.5	4.3	4.3	4.3	4.4	5.2	4.5
8.	Perinatal mortality rate (per 1,000 births)	7.7	7.6	7.3	7.3	7.4	7.7	8.3	n.a

Note:

n.a - data not yet available

Source: Vital Statistics, Malaysia, 2017, Department of Statistics, Malaysia

c. 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, stabilisation of patients or the need of isolation in order to prevent the spreading of the diseases to others. For the period of 2001-2017, the number of admissions in MoH Hospitals increased 35.4 per cent to 2,158,574 in 2017 from that of 1,594,175 in 2001. The 10 principal causes of hospitalization in the MoH Hospitals for 2017 are shown in **Table 4**. The diseases were regrouped to groupings based on the International Statistical Classification of Disease 10th Revision (ICD-10). In 2017 “Pregnancy, childbirth and the puerperium” (22.74 per cent) was the top cause of admissions in MoH hospitals followed by “Diseases of the respiratory system” (13.29 per cent).

Table 4
10 Principal Causes of Hospitalisation in MoH Hospitals, 2017

No	Principal Causes	Percentage to total discharges (%)
1.	Chapter XV: Pregnancy, childbirth and the puerperium (O00-O99)	22.74
2	Chapter X: Diseases of the respiratory system (J00-J99)	13.29
3	Chapter I: Certain infectious and parasitic diseases (A00-B99)	8.37
4.	Chapter XVI: Certain conditions originating in the perinatal period (P00-P96)	8.03
5.	Chapter IX: Diseases of the circulatory system (I00-I99)	7.68
6.	Chapter XIX: Injury, poisoning and certain other consequences of external causes (S00-T98)	6.82
7.	Chapter II: Neoplasms (C00-D48)	5.15
8.	Chapter XI: Diseases of the digestive system (K00-K93)	4.69
9.	Chapter XIV: Diseases of the genitourinary system (N00-N99)	4.04
10.	Chapter XVIII: Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified (R00-R99)	3.01

Note: Based on ICD-10 3 digit code grouping

Source: MyHDW Fixed Format Report for MoH Hospitals, 2017. Health Informatics Centre, MoH

The number of deaths (for all causes) in MoH Hospitals for the period of 2001 to 2017 increased 40.3 per cent from 32,751 in 2001 to 45,939 in 2017. Starting in 2014, tabulations for causes of death in MoH Hospitals are based on the underlying cause of death, as per recommended by the World Health Organisation (WHO). “Diseases of the circulatory system” was the top cause of death in MoH hospitals recorded in 2017 (21.70 per cent), followed by “Diseases of the respiratory system” (19.32 per cent) and “Neoplasms” (13.80 per cent). The 10 principal causes of deaths in the MoH Hospitals for 2017 are as shown in **Table 5**.

Table 5
10 Principal Causes of Death* in MoH Hospitals, 2017

No	Principal Causes	Percentage to total deaths (%)
1.	Chapter IX: Diseases of the circulatory system (I00-I99)	21.70
2.	Chapter X: Diseases of the respiratory system (J00-J99)	19.32
3.	Chapter II: Neoplasms (C00-D48)	13.80
4.	Chapter I: Certain infectious and parasitic diseases (A00-B99)	12.93
5.	Chapter XVIII: Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified (R00-R99)	6.17
6.	Chapter XIV: Diseases of the genitourinary system (N00-N99)	4.65
7.	Chapter XI: Diseases of the digestive system (K00-K93)	4.39
8.	Chapter IV: Endocrine, nutritional and metabolic diseases (E00-E90)	4.17
9.	Chapter XVI: Certain conditions originating in the perinatal period (P00-P96)	2.75
10.	Chapter VI: Diseases of the nervous system (G00-G99)	2.01

Note: *based on underlying causes of death

Based on ICD-10 3 digit code grouping

Source: MyHDW Fixed Format Report for MoH Hospitals, 2017. Health Informatics Centre, MoH.

HEALTH FACILITIES AND FACILITY UTILISATION

In 2017, there were 994 Health Clinics, 1,798 Community Clinics and 91 Maternal and Child Health Clinics. In 2010, 1Malaysia Clinic was launched in selected urban areas, to provide basic medical services for illnesses and injuries such as fever, cough, colds, wounds and cuts, diabetes, and hypertension. As of 31 December 2017, there were 342 1Malaysia Clinics that provide immediate healthcare to population.

As for hospitals, there were 135 government MoH hospitals and 9 Special Medical Institutions with total beds of 37,388 and 4,832 beds respectively. Overall Bed Occupancy Rate (BOR) for MoH hospitals and Institutions in 2017 was 60.32 per cent (**Table 6**).

Table 6
Health Facilities by Type, Total Bed Complements and BOR in Ministry of Health, 2012 to 2017

No	Facility	2012	2013	2014	2015	2016	2017
1.	Number of Hospital	132	132	133	134	135	135
2.	Number of Special Medical Institution	8	9	9	9	9	9
3.	Total Beds (Official) ¹	38,978	39,728	40,260	41,389	41,995	42,220
4.	Bed Occupancy Rate (%) ¹	72.13	71.02	71.79	71.06	70.13	60.32
5.	Number of Health Clinics	919	934	956	958	969	994
6.	Number of Community Clinics	1,831	1,821	1,810	1,808	1,803	1,798
7.	Number of Maternal and Child Health Clinics	106	105	105	103	91	91
8.	Number of 1Malaysia Clinics	178	254	307	334	357	342

Note: ¹ refers to beds complement and BOR in MoH Hospitals and Special Medical Institutions

Source: Health Informatics Centre, MoH



2

MANAGEMENT

INTRODUCTION

The Management Program consists of eight (8) divisions/units answerable directly to the Secretary General, five (5) divisions under Deputy Secretary General (Management) and three (3) divisions under Deputy Secretary General (Finance). The main objectives of this program 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 & training development and financial management.

The divisions under the Deputy Secretary General (Management) are as listed below:

- i. Human Resource Division (HRD);
- ii. Training Management Division (TMD);
- iii. Competency Development Division (CDD);
- iv. Management Services Division (MSD); and
- v. Information Management Division (IMD).

ACTIVITIES AND ACHIEVEMENTS

HUMAN RESOURCE DIVISION (HRD)

Human resource management is an essential element to ensure effective implementation of health development programmes. The Human Resource Division (HRD) plays an important role to ensure ideal organisational structure of the Ministry of Health Malaysia (MoH) in delivering healthcare services to the public in line with current Government policies.

HRD is responsible in planning, monitoring and ensuring application and implementation of Human Resource Management Information System (HRMIS); implementing optimum human resource management in MoH through management of posts for 97 service schemes; and management of promotions in line with service needs. In addition, HRD also develops strategies, policies and regulations pertaining to human resource, conducts studies on human resource related areas, monitors the implementation of Human Resource Management Information System (HRMIS), and also implements optimum human resource management through the establishment of posts and service matters for 97 service schemes.

ESTABLISHMENT OF POSTS AND PERSONNEL

As of 31 December 2017, 253,381 posts (94.5 percent) of 268,012 posts in MoH had been filled. **Table 1** below indicates the breakdown of the posts and personnel according to the service group:

Table 1
Status of Posts in MoH as of 31 December 2017

No	Service Group	Post	Filled	Vacant	(%) Filled
1.	Management & Professional	59,115	54,825	4,439	92.7
2.	Paramedic & Auxiliary	138,225	134,526	5,026	97.3
3.	Executing Group	70,681	64,030	7,851	90.6
	Total	268,021	253,381	17,316	94.5

Source: Human Resource Division, MoH

Generally, there were 34,241 registered doctors with MoH comprised of 4,970 Medical Specialists, 24,656 Medical Officers and 4,545 House Officers. The total numbers of personnel for five (5) main service schemes in MoH are as tabulated in **Table 2**.

Table 2
Total Personnel for 5 Main Service Schemes in Ministry Of Health (2017)

No	Service Scheme	Total
1.	Doctors	34,241
2.	Dentists	3,867
3.	Pharmacists	7,759
4.	Nurses	65,709
5.	Assistant Medical Officers	13,904

Source: Human Resource Division, MoH

ORGANIZATION DEVELOPMENT AND ESTABLISHMENT

From 2016 to 2017, various efforts had been taken to ensure sufficient human resource in healthcare sector. The growing needs for human resource is anticipated by the increasing number of patients in healthcare facilities, disease burden and expansion of service scope in healthcare facilities as well as development of new and upgraded healthcare facilities nationwide.

The Lean Civil Service Policy which was introduced in 22 April 2015 suggested a reformed organizational structure and establishments to be implemented as one of the initiatives to capitalize services and deliverable under stretched resources. Hence, establishment of posts to meet current needs were conducted using redeployment and trade off approaches.

Therefore, in 2017, a total of 4,346 vacant posts had been traded off as to create the equal number of new establishments.

MANAGEMENT OF PROMOTION

Promotion is an essential aspect of Human Resource Management in producing outstanding and highly motivated officers. It is a medium of recognition for employees' contributions and provides better career pathway and benefits. Details of employee's promotions in MoH for 2017 are as follows (**Table 3**):

Table 3
Number of Promoted Officers (2017)

	Superscale Grade/ Special Grade	Management & Professional Group	Paramedic And Auxiliary & Executing Group	Total
Promotion	87	14,679	7,682	22,448

Source: Human Resource Division, MoH

HUMAN RESOURCE MANAGEMENT INFORMATION SYSTEM (HRMIS)

HRMIS plays a vital role to ensure the integrity and accuracy of human resource management data. This system comprises of information regarding management of personnel data, service profile, personal records and Annual Performance Evaluation Report (LNPT). One of the KPI for the Secretary-General is the achievement of HRMIS implementation in MoH. In 2017, 6 criteria were identified as HRMIS's KPI for the Secretary-General, in which MoH had successfully achieved 99.40 percent. Details of achievement by specified criteria are as follows (**Table 4**):

Table 4
Achievement Report of HRMIS MoH 2017

No	Target 2017	Achievement 2017
1.	<i>Data Perjawatan: Sepadan HRMIS Dan MyPost - 20 %</i>	19.99/20 (Per Module 99.97 %)
2.	<i>Data HRMIS Berintegriti - 20 %</i>	19.97/20 (Per Module 99.86 %)
3.	<i>Pelaksanaan Sasaran Kerja Tahunan (SKT) Disahkan/Tidak Disahkan - 15 %</i>	14.81/15 (Per Module 98.74 %)
4.	<i>Penilaian Laporan Nilai Prestasi Tahunan (LNPT) 2017 Selesai - 20 %</i>	19.80/20 (Per Module 98.87 %)
5.	<i>Pelaksanaan Pengisytiharan Harta - 15 %</i>	14.86/15 (Per Module 99.07 %)
6.	<i>Pelaksanaan Penamatan Perkhidmatan Melalui HRMIS - 10 %:</i> <i>i. Penamatan Perkhidmatan Pasca - Persaraan Kerana Mencapai Umur 55/56/58/60 Tahun;</i> <i>ii. Penamatan Perkhidmatan Sukarela - Persaraan Pilihan; dan</i> <i>iii. Kematian Dalam Perkhidmatan</i>	10/10 (Per Module 100 %)
	MoH HRMIS Achievement 2017	99.40 %

Source: Human Resource Division, MoH

ISSUES AND CHALLENGES

Amongst the issues and challenges pertaining to human resource in the healthcare sector faced by HRD in 2017 are:

- Inflexibility and rationalization in human resource management as a result of the Lean Civil Service Policy implementation until the year 2020;
- Insufficient posts to accommodate current healthcare needs due to the increasing number of healthcare facilities and expansion of healthcare service scopes;
- Increasing number of medical, dental and pharmacy graduates compared to availability of healthcare facilities to accommodate them;
- Misdistribution of healthcare professionals in various service schemes (skill-mix) in rural and urban areas and between public and private sector;
- Expansion of healthcare services is currently subject to the Government financial ability;
- Non-availability of a specific centralized personnel database to be shared in the human resource management;

- vii. Lack of comprehensive and timely integrated data for planning, managing and decision making; and
- viii. Enhancement of work process in service management.

ACHIEVEMENTS

Throughout 2017, significant achievements by HRD are as follows:

- i. Contract-based appointments of Medical Officers (UD41), Dental Officers (UG41) and Pharmacists (UF41) to solve the oversupply of graduates and limited establishment of post due to Lean Civil Service Policy;
- ii. Enhancement of current work process using office automation:
 - a. Implementation of emplacement for 3 main service schemes via online system namely e-Housemen, e-Dentist and e-Pharmacist.
 - b. Implementation of promotion exercise (career pathway) for 3 main service schemes (Grade 44-54) via in-house *e-Naik Pangkat* system (10,000 applications/year) which is more practical, productive, cost effective and accessible anywhere at anytime; and
- iii. Improvement of allowances and benefits/remunerations in order to retain healthcare personnel in public service.

TRAINING MANAGEMENT DIVISION (TMD)

The mission of Training Management Division (TMD) is to develop the human capital for Ministry of Health (MoH) in producing an effective and efficient healthcare delivery system. Taking into account the public expectation on first class healthcare services; many activities were implemented through training programs; to produce staffs that are knowledgeable, competent, committed, disciplined, having strong work ethics and values. In short, TMD's focus is to provide more opportunities for training and quality education with the goal of strengthening the human resources base.

MANPOWER PLANNING

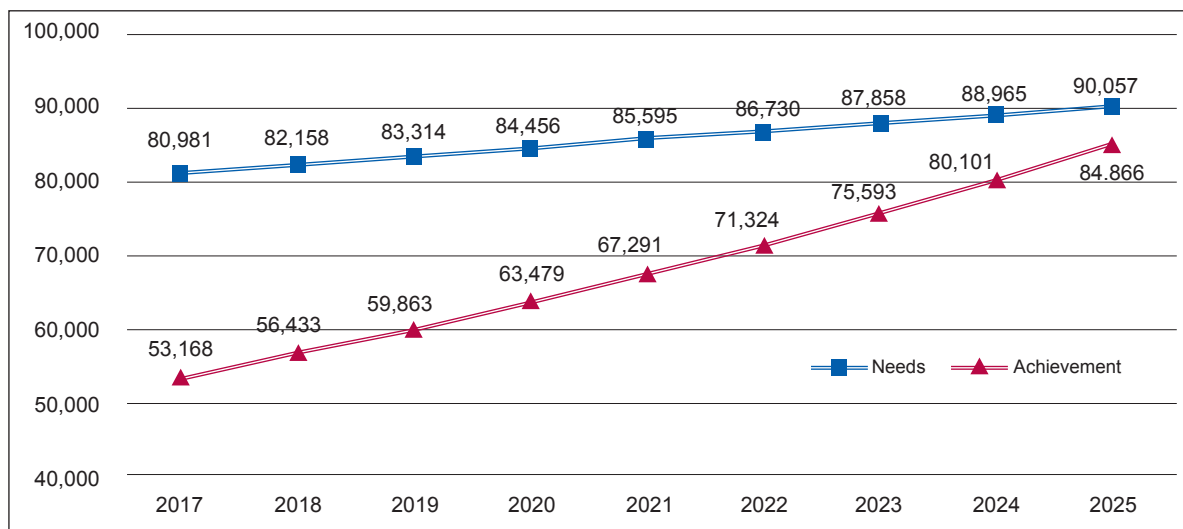
In accordance to demand and supply of Medical Officers, Dentists and Pharmacists, for any increased numbers of Medical Officers, Dentists and Pharmacists in the reference year, there is still a shortage to fulfill the country's needs (norms). However, there is a reduction in the gap of demand and supply of these professions with the increase in training capacity by Public University and Private Higher Education Institutions. **Figures 1, 2 and 3** show the current needs and the projection of Medical Officers, Dentist and Pharmacist with the Pharmacist updates through Business Licensing Electronic Support System (BLESS).

TRAINING PROGRAM

Training is a form of investment in producing skilled and efficient manpower in various healthcare fields. In order to ensure that MoH staff are equipped with the necessary skills and knowledge, TMD offers various training programmes including Pre-Service Training, Advanced Diploma and Post Basic Training, Masters training program for Medical Officers/Dental Officers/Pharmacists, Sub Specialty training for Medical Specialists, Doctor of Philosophy programs and In-service Short Period Courses.

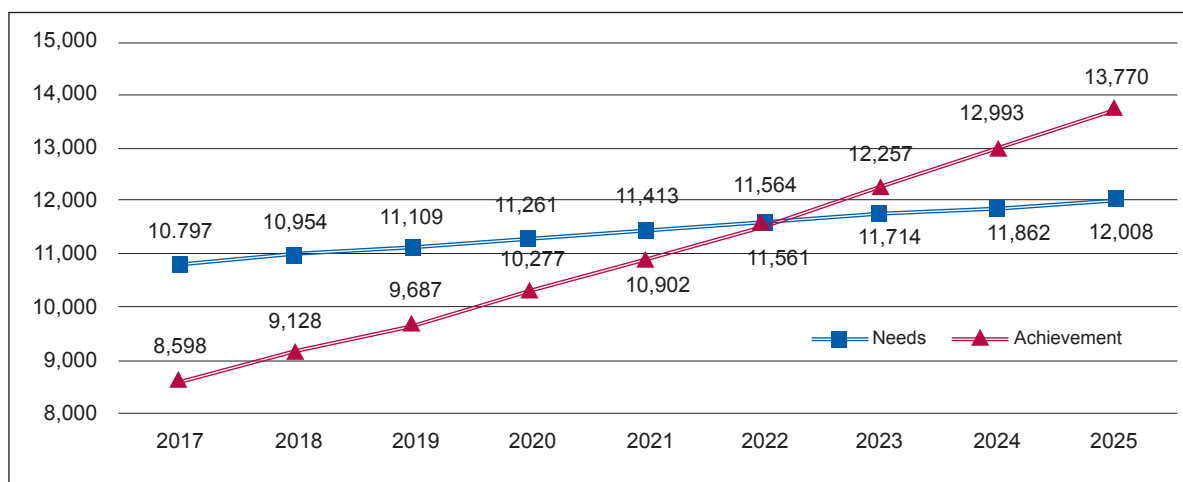
There is an increase in intake for various training/courses offered, Advanced Diploma and Post Basic Program, Masters Program (Medical Officers/Other Discipline) and Doctor of Philosophy programs. The numbers of intake by category are shown in **Table 5**.

Figure 1
Current Needs and Supply of Medical Officer with projection
using ratio of 1: 400 to Populations



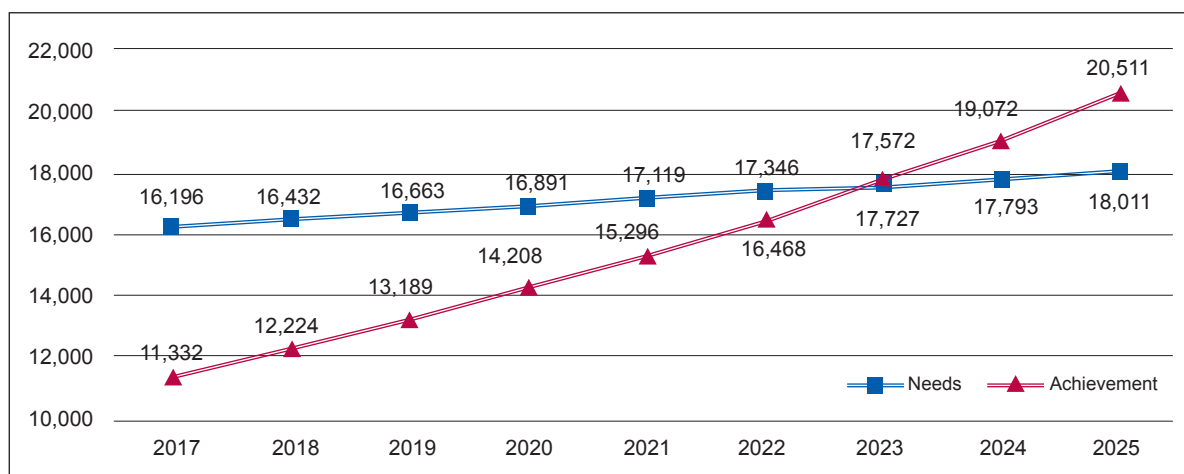
Source: Department of Statistic Malaysia (DOSM) and Malaysia Medical Council (MMC)

Figure 2
Current Needs and Supply of Dentist with projection using ratio of 1: 3,000 to Populations



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

Figure 3
Current Needs and Supply of Pharmacist with projection
using ratio of 1: 2,000 to Populations



Source: Department of Statistic Malaysia (DOSM) and Pharmaceutical Services Programme

Table 5
Intake by Type of Training, 2016 to 2017

No	Type of Training	2016	2017
1.	Pre Service Training in MoH Training Institution	5,568	4,013
2.	Pre Service Training in Outsourcing Program	15	-
3.	Advanced Diploma and Post Basic Training	3,901	4,244
4.	Masters program (Medical Officer)	890	980
5.	Sub Specialty Training (Medical Specialist)	154	150
6.	Master Program (Other Discipline)/ Philosophy Doctors)	9	10
7.	Short Period Courses in service training (overseas)	147	49

Note: Outsourcing refer to training in the Private Training Institution

Source: Training Management Division, MoH

PRE-SERVICE TRAINING

In the year 2017, 4,013 trainees have registered to undergo pre service training in the Ministry of Health (MoH) Training Institutes while no trainees were sent for Outsourcing program in the private training institution (ILS). The number of trainees in MoH Training Institutes in 2017 dropped by 28.0 per cent compared with 5,568 trainees in 2016. A breakdown for the number of trainees who have registered for the Pre Services Training conducted by MoH's Training Institutes for the year 2017 is shown in **Table 6**.

Table 6
Intake of Pre-Service Training, 2016 and 2017

No	Discipline	2016	2017
1.	Diploma in Nursing	2,274	1,711
2.	Diploma in Medical Assistant	1,557	834
3.	Diploma in Pharmacy Assistant	215	200
4.	Diploma in Environmental Health	329	238
5.	Diploma in Medical Laboratory Technology	178	187
6.	Diploma in Radiography & Radiotherapy	89	73
7.	Diploma in Dental Nursing	99	54
8.	Diploma in Dental Technology	82	73
9.	Diploma in Occupational Therapy	95	98
10.	Diploma in Physiotherapy	91	98
11.	Certificate in Community Health Nurses	0	0
12.	Certificate in Dental Surgery Assistant	392	309
13.	Certificates in Public Health Assistant	167	138
	Total	5,568	4,013

Note: 15 pre-service trainee in Outsourcing program

Source: Training Management Division, MoH

ADVANCED DIPLOMA AND SPECIALIZATION COURSE (POST-BASIC)

In 2017, 3,477 members of Allied Health Sciences (ASKB) from MoH and 767 health personnel from private health Institutions attended the Advanced Diploma Program and Specialization Course (Post-Basic) in 37 different fields in MoH Training Institutes all over the country, as shown in **Table 7**. A total of 4,244 members of ASKB underwent the Advanced Diploma and Specialization Course in the year 2017; an increase of 8.9 per cent compared to the previous year at 3,901 participants. The most popular program with the highest demand is Advanced Diploma in Midwifery with 1,175 participants (27.6 per cent), followed by Renal Care Specialization Course with 371 participants (8.7 per cent).

Table 7
Intake for Advanced Diploma and Specialization Courses (Post Basic), 2016 and 2017

No	Discipline	2016	2017
1.	Advanced Diploma In Midwifery	962	1175
2.	Advanced Diploma In Intensive Care	118	132
3.	Advanced Diploma In Perioperative Care	104	147
4.	Advanced Diploma In Cardiovascular Health	107	110
5.	Advanced Diploma In Oncology Care	50	47
6.	Advanced Diploma In Gerontology Care	19	21
7.	Advanced Diploma In Cytology	0	0
8.	Advanced Diploma In Medical Imaging (Breast)	11	11

No	Discipline	2016	2017
9.	Advanced Diploma In Palliative Care	18	18
10.	Advanced Diploma In Emergency Care	395	235
11.	Advanced Diploma in Respiratory Care	0	27
12.	Advanced Diploma in Blood Transfusion	0	38
13.	Advanced Diploma in Histopathology	0	14
14.	Renal Care	358	371
15.	Public Health Nursing	327	263
16.	Paediatric Care	241	228
17.	Health Personnel Management	0	14
18.	Orthopaedic Care	206	200
19.	Neonate Care	140	140
20.	Diabetic Management	142	233
21.	Psychiatric Care	61	83
22.	Infection Control	154	176
23.	Ophthalmic Care	58	47
24.	Primary Health Care	52	56
25.	Perianaesthesia Care	104	111
26.	Neurosciences Care	48	47
27.	Otorhinolaryngology Care	39	30
28.	Sports Medicine	0	10
29.	Gastrointestinal Endoscopy	54	83
30.	Investigation and Prosecution Law	12	12
31.	Rehabilitation Care	46	48
32.	Anaesthesia (Sabah & Sarawak only)	14	12
33.	HIV/AIDS Counselling	15	65
34.	Paediatric Dental Care	25	0
35.	Preparation Of Sterile Pharmaceuticals	10	18
36.	Forensic	11	0
37.	Periodontics Care	0	22
	Total	3,901	4,244

Source: Training Management Division , MoH

MASTER PROGRAM FOR MEDICAL OFFICER AND SUB SPECIALIZATION TRAINING

In 2009, Public Service Department (JPA) had delegated the authority to MoH for approval of 'paid study leave' for long-term courses such as Masters and Doctor of Philosophy (PhD) training. This shortened the processing time and increased the efficiency in managing the grant of study leave to the staff. A number of 980 medical officers were granted a scholarship by the Federal Government to undergo Masters Training Programme of medicine in various fields for 2017, as shown in **Table 8** below. The number of Medical Officers granted with scholarship increased by 10 per cent in 2017 compared to 2016 with 890 Medical Officers.

Table 8
Intake of Medical Officers for Masters Program, 2016 to 2017

No	Discipline	2016	2017
1.	Anesthesiology	102	120
2.	Public Health/Community	67	70
3.	Clinical Oncology	11	17
4.	Neurosurgery	12	15
5.	Obstetrics & Gynecology	39	50
6.	Ophthalmology	55	57
7.	Orthopedics	68	67
8.	Otorhinolaryngology	34	46
9.	Pathology	76	69
10.	Pediatrics	41	44
11.	Internal Medicine	58	68
12.	Emergency Medicine	59	68
13.	Family Medicine	65	66
14.	Nuclear Medicine	4	4
15.	Rehabilitation Medicine	10	9
16.	Sports Medicine	3	4
17.	Transfusion Medicine	6	8
18.	Plastic Surgery	9	6
19.	Psychiatry	48	54
20.	Radiology	65	68
21.	General Surgery	47	57
22.	Paediatric Surgery	8	8
23.	Forensic	3	5
	Total	890	980

Source: Training Management Division, MoH

In the year 2017, 150 Medical Specialists were granted a Federal Government Scholarship to undergo Sub-Specialty training program in various medical fields, as shown in **Table 9**.

Table 9
Intake of Sub Specialty Training for Medical Specialists, 2016 and 2017

No	The Discipline	2016	2017
1.	Medical	53	46
2.	Surgery	7	17
3.	Paediatric	17	15
4.	Obstetrics & Gynaecology	10	10
5.	Psychiatry	3	4

No	The Discipline	2016	2017
6.	Anaesthesiology	12	12
7.	Orthopaedic	15	15
8.	Otorhinolaryngology	9	5
9.	Ophthalmology	8	10
10.	Radiology	6	6
11.	Forensic	n. a	1
12.	Pathology	3	3
13.	Emergency Medicine	2	4
14.	Rehabilitation Medicine	n. a	1
15.	Nuclear Medicine	n. a	1
16.	Family Medicine	n. a	n. a
17.	Public Health	9	n. a
	Total	154	150

Source: Training Management Division, MoH

MASTERS AND DOCTORATE PROGRAM

In 2017, 103 MoH's officers from various health service schemes have been offered a scholarship for Master's program and 10 officers for PhD level in areas related to the health sector. The number of scholarships offered in 2017 recorded a slight increase of 9.6 per cent compared to 2016. Most of the Master's program scholarships are offered to 38 Dental Officers and 30 Pharmacists while the rest are offered to other health Profession in MoH.

SHORT-TERM (IN SERVICES) COURSES

In 2017, 49 of MoH's staff had attended short-term (in service) courses abroad as compared to 147 people in 2016. A reduction of 66.67 per cent is in accordance with the enforcement suspension of 7 days compulsory training for Civil Servant effective since 29 February 2016 as a result of reprioritizing MoH's training plan.

CURRICULUM DEVELOPMENT

The Training Management Division has worked to review and develop the curriculum based on the Malaysian Qualifications Framework to ensure that the programs offered meet the quality standards set. In that regard, in 2017 the Training Management Division had completed reviewing and developing 11 pre-service curriculums at the Diploma level for implementation in 2018. In addition, four (4) advanced programs have been upgraded from the Certificate to Advanced Diploma namely; Diabetes Care, Paediatric Nursing, Computerized Tomography and Neuroscience Care, while two (2) programs are being reviewed for enhancement which includes Post Basic Certificate in Nephrology Care, and Post Basic Certificate in Rehabilitation Care.

Currently, the Training Management Division is also developing three (3) new advanced programs namely Advanced Diploma in Neuro Rehabilitation, Post Basic Certificate in Dermatological Care and Post Basic Certificate in Wound Care Management.

TUTORS DEVELOPMENT

In 2017, there were a total of 1,394 Tutor posts in 33 MoH's Training Institution (ILKKM) and the Training Management Division. By December 2017, 1,127 of these posts (80 per cent) had been filled. To develop the capabilities and competencies of Tutors aimed at producing graduates with high performance and quality, the Tutors have been equipped with knowledge and skills enhancement through relevant courses and workshops throughout the year. In 2017, Tutor Development Division under MoH's Training Institution successfully organized 11 courses/workshops, including professionalism program for Clinical Instructors in ILKKM. This program seeks to strengthen effective supervision of students in the clinical areas. As of December 2017, the number of Clinical Instructors in ILKKM are 456 people. In addition, the unit also conducted Teaching & Learning Methodology course for newly appointed tutors in ILKKM.

COMPETENCY DEVELOPMENT DIVISION (CDD)

The Competency Development Division (CDD) is responsible in implementing programs and courses for generic competencies for MoH. CDD is also responsible for implementing other MoH programs such as the Department's Subject Examination for 16 non-joint service schemes and MoH Hospitals Management Conference.

ACTIVITIES AND ACHIEVEMENTS

COURSES HELD THROUGHOUT THE YEAR OF 2017

Throughout 2017 the courses held are as shown in **Table 10** below.

Table 10
Summary of Courses in 2017

No	Courses	Total Courses	Total Participants
1.	Leadership Course	7	234
2.	Capacity Building Course	10	492
3.	Mandatory Course	1	36
4.	Motivational & Basic Vehicle Care Course for Drivers	4	122
5.	Competency Based Training (CBT)- IPKKM level	6	420
6.	Competency Based Training (CBT)- JKN & HKL level	203	12,295
Total		231	13,599

Source: Competency Development Division, MoH

MoH DEPARTMENT SUBJECT EXAMINATION YEAR 2017

Throughout 2017, two (2) series of examinations were held. MoH Department Subject Examination Series 1/2017 was held from 14 to 23 April 2017 with a total of 42 candidates from nine (9) service schemes. The exam was held at the Teacher Training Institute, Bangsar, Kuala Lumpur. Meanwhile, MoH Department Subject Examination Series 2/2017 was held from 12 to 27 September 2017 with a total of 85 candidates from six (6) service schemes; at the Teacher Training Institute, Bangsar, Kuala Lumpur and MSU College, Kota Kinabalu, Sabah (**Table 11**)

Table 11
Examination Candidates by Service Schemes in 2017

No	Service Scheme	Number of Candidates		
		Phase 1	Phase 2	Total
1.	Medical Social Officer Grade S41	4	-	4
2.	Psychologist (General / Counselling) Grade S41	1	-	1
3.	Psychologist (Clinical) Grade S41	-	7	7
4.	Assistant Mechanical Engineer Grade JA29	2	4	6
5.	Assistant Electrical Engineer Grade JA29	5	4	9
6.	Assistant Electronic Engineer Grade JA29	10	-	10
7.	Assistant Civil Engineer Grade JA29	10	62	72
8.	Assistant Food Preparation Officer Grade C29	3	4	7
9.	Assistant Science Officer Grade C29	1	-	1
10.	Food Preparation Assistant Grade N19	4	4	8
11.	Hostel Supervisor Grade N19	2	-	2
Total		42	85	127

Source: Competency Development Division, MoH

MoH HOSPITAL MANAGEMENT CONFERENCE

The MoH Hospital Management Conference was held from 5 to 7 November 2017 at Vivatel Hotel, Kuala Lumpur. The conference acts as a platform for the top management of MoH to emphasize and inform current policies, discuss issues and problems at the hospital level, and also to make the best decisions in enhancing service delivery to the people.

Image 1
MoH Hospital Management Conference



Source: Competency Development Division

MANAGEMENT SERVICES DIVISION (MSD)

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 and every Division within the HQ to excel in their functions. MSD comprises of three (3) main branches that consist of several units:

A. General Management Branch

- i. Human Resource Management Unit;
- ii. Innovation Unit;
- iii. Protocol Unit;
- iv. Psychology Counselling Services Unit;
- v. Administration Unit; and
- vi. Record Management Unit.

B. Finance and Asset Management Branch

- i. Finance Unit;
- Overseas Travel Application Sub-Unit;
- ii. Asset Management Unit; and
- iii. Security Unit.

C. Information Resource Branch

- i. Library and Information Services;
- ii. System Management Services and Digitization; and
- iii. Development and Advisory Services.

HUMAN RESOURCE MANAGEMENT UNIT

Human Resource Management Unit is responsible in managing all service related matters for staff within the Ministry's HQ, which consist of various categories of positions as summarized in **Table 12**.

Table 12
Number of Personnel in Various Categories of Positions, Year 2017

No	Category of Position	No. of Personnel
1.	Administrative	3
2.	Top Management	85
3.	Professional & Management	1981
4.	Support Group	2,265
5.	Contract of/for Service	10
6.	Part Time	330
7.	Training Pool (<i>Simpanan Latihan</i>)	3,851
8.	Pool	201
Total		8,726

Source: Management Services Division, MoH

The core function of this unit is to provide effective and efficient personnel management services. Among the services provided are preparation of Kew-8 documentations, appointment and service confirmation, processing pension applications, record keeping for personnel's government service book and others as shown in **Table 13**.

Table 13
Human Resource Management Unit Activities (2017)

No	Activity	Performance
1.	Prepare and record Kew-8	10,300 cases
2.	Records service related matters in Government Service Books	26,873 records
3.	Process <ul style="list-style-type: none"> - appointment confirmation - service confirmation - pension status conferment 	229 applications
4.	Process retirements (compulsory/optional/derivative)	95 retirees
5.	Process loan applications (computer/housing/vehicle)	<ul style="list-style-type: none"> - 49 applications for computer loans - 33 applications for housing loans - 6 applications for vehicle loans
6.	Process Winter Clothing Allowance and Ceremonial Attire Allowance applications	<ul style="list-style-type: none"> - 44 applications for Winter Clothing Allowance - 76 applications for Ceremonial Attire Allowance
7.	Process promotions	576 applications
8.	Prepare Guarantee Letter (Medical)	1 application
9.	Process disciplinary cases	13 cases

Source: Management Services Division, MoH

This unit also has been appointed as the Human Resource Development Panel which convenes periodically to discuss various issues pertaining to service matters such as annual salary increments and conferment of the Excellent Service Awards. For 2017, the panel has undertaken activities as summarized in **Table 14**.

Table 14
Summary of Activities for Human Resources Development Panel (2017)

No	Activity	Performance
1.	Approve and confer annual salary increment for employees who have submitted their Annual Performance Appraisal Forms	6,508 conferment of annual salary increment The meeting was convened on 21 February 2018
2.	Select and confer the Excellent Service Awards to top performing personnel	554 personnel have been selected. The meeting was convened on 21 February 2018

Source: Management Services Division, MoH

In line with the Government's vision to modernize its administration and to create a paperless working environment, the Public Service Department has introduced the Human Resources Management Information System (HRMIS). The system offers numerous informations related to human resource management and MoH was selected as one of the pioneer agencies to use this system. Thus, this unit is responsible to ensure that HRMIS is implemented effectively in the Ministry's HQ. The achievements of Key Performance Indicators in HRMIS have been summarized as in **Table 15**.

Table 15
HRMIS - Key Performance Indicators and Performance, as of 31 December 2017

No	HRMIS Key Performance Indicators	Performance as of 31 December 2017 (%)
1.	Post Data	100.00
2.	Purification Data	98.58
3.	SKT	97.11
4.	LNPT	98.41
5.	Asset Declaration	89.43
6.	Leave	99.92

Source: Management Services Division, MoH

INNOVATION UNIT

The Innovation Unit serves as the ministry's focal point regarding innovation and Star Rating System (SSR) evaluation. A summary of innovation management's activities and achievements are listed in **Table 16**.

Table 16
Summary of Innovation Management Activities and Achievements

No	Activity	Achievement
1.	Meetings: - Innovation Steering Committee Meeting - Service Delivery Improvement Committee Meeting - Innovation Assessment Committee Meeting - Star Rating Steering Committee Meeting	Convened 2 meetings Convened 2 meetings Convened 2 meetings Convened 1 meeting
2.	Awards Submission: - Prime Minister Innovation Award - National Innovation Award - National Intellectual Property Award	1 submissions 3 submissions i. Winner of Service Category 2 submission i. Winner of Service Category ii. 3rd place of Paten Category

No	Activity	Achievement
3.	Exhibitions / Talks: - National Innovation And Creative Economy Expo 2017 (NICE'17) - BioMalaysia and BioEconomy Asia Pacific 2017 Exhibitions organized by Ministry of Science, Technology and Innovations Malaysia (MOSTI) in collaboration with Malaysian Bioeconomy Development Corporation Sdn. Bhd. (BioeconomyCorp). - Innovations Exhibition during 41 st Annual Governor Board Meeting of Islamic Development Bank (IDB) in Jakarta, Indonesia	4 participation 1 participation 1 participation representing Malaysia
4.	Creative Inspired Innovation Workshop	Convened 1 workshop
5.	Innovation Event	Awarded 27 winners of Innovation Awards, KIK Conventions and QA Conventions
6.	Star Rating Evaluation (SSR)	Evaluation conducted for the year 2017

Source: Management Services Division, MoH

Image 2
Innovation Management Activities (2017)



Source: Management Services Division, MoH

PROTOCOL UNIT

The Protocol Unit's function is to coordinate major events held in the Ministry such as MoH's Annual Dinner and to provide consultations related to protocol matters to Divisions, State Departments of Health and Institutions under MoH. The summary for protocol management achievements is as listed in **Table 17**.

Table 17
Summary of Protocol Management Activities and Achievements (2017)

No	Activity	Achievements
1.	Selection of Medical Representatives for the Hajj Season 2017M/ 1438H	275 Medical Representatives were selected.
2.	Event Management	Consulted/Coordinated 53 events such as: Launching Ceremony of Klinik Kesihatan Lenggong, Leprosy Day Launching Ceremony

Source: Management Services Division, MoH

Image 3
Protocol Management Activities (2017)



Launching Ceremony of Klinik Kesihatan Lenggong



Leprosy Day Launching Ceremony



Launching Ceremony Recommended Nutrient Intake Book

Source: Management Services Division, MoH

PSYCHOLOGY COUNSELLING SERVICES UNIT

The Psychology Counselling Services Unit plans, provides direction, develops and coordinates counselling activities for the Ministry's HQ. Counselling cases were managed in collaboration with the Human Resource Division. A summary of counselling cases and activities conducted in year of 2017 as listed in **Table 18** and **Table 19**.

Table 18
Counselling Cases in 2017

No	Counseling Cases in 2017	Cases
1.	Multi Referral Cases	11
2.	Exit Policy Intervention (individual counselling)	7
3.	Money Cure Cases	16
4.	Group Counselling	15

Source: Management Services Division, MoH

Table 19
Psychology Counselling Programs in 2017

No	Program/ Activity	Number of Series	Number of Participants
1.	Public Service Mentoring Program	1	42
2.	Pre-AKRAB Course (Public Service Peer Program)	1	45
3.	Intervention program in Exit Policy for MoH HQ's staffs (screening, intervention and observation process)	1	3
4.	Staffs Intervention & Development Programs (for Exit Policy staffs)	1	22
5.	Intervention program for the staffs with moderate appraisal achievement (Mind to Mind)	1	30
6.	Financial Education Programs	3	90
7.	Financial Profiling Screening	4	122
8.	Money Cure Programs	6	90
9.	Certified Neuro Linguistic Programme Practitioner (NLP) for Psychology Officers	1	30
10.	Accreditation training on Excel Character Indicator (<i>Indikator Perwatakan Unggul</i>) for MoH's Psychology Officers	1	30
11.	AKRAB Care Training (certified AKRAB to be peer supporter to the Exit Policy Staff)	1	116
12.	Training The Trainers Financial Education and management for Psychology Officers	2	38
13.	Workshop on counselling report writing for Psychology Officers	1	58
14.	Parenting programs	2	177
15.	Lifelong Learning Program (KOSPEN Program)	1	350

Source: Management Services Division, MoH

ADMINISTRATION UNIT

The Administration Unit is in charge of management and administration matters in the Ministry's Head Quarters. These include Joint Departmental Council (MBJ), appointment of Psychiatric & Hospital Visiting Committees, IPKKM & Paying Car Park management, complaints management, EKSA MSD Audit Committee, general administration, vehicles management, analysis of punch card reports, coordinating monthly MoH Assembly and National Day Celebration at MoH level, management of nurseries (E3 & E7) and cafeteria (E7). The activities and achievements pertaining to this unit for the year 2017 are as in **Table 20**, while **Image 4** depicts MoH administrative events in 2017.

Table 20
Summary of Administration Unit's Activities and Achievements

No	Activity	Achievement
1.	Joint Departmental Council (MBJ)	4 meetings were held More than 50 per cent of issues were resolved
2.	Appointment of Psychiatric & Hospital Visiting Committees	2,035 ALPH has been appointed for the 2017 to 2019 session 88 ALPH (P) has been appointed for the 2018 to 2020 session
3.	IPKKM & Paying Car Park management	Implemented throughout the year 1 coordination meeting were held
4.	Complaints Management	4 complaints and 14 non complaints (inquiries) have been acted upon
5.	EKSA BKP Audit Committee	2 internal audits were held
6.	MoH HQ's Punch Card Reports	12 Reports compiled yearly
7.	SPANCO car rentals	55 official cars for JUSA/Special Grade; and 217 replacements of official vehicles with expired leases
8.	Monthly MoH Assembly	7 Assemblies were held
9.	Coordinate National Day Celebrations	7 activities/events were held
10.	Nurseries Management	2 meetings were held 100 applications were processed
11.	E7 Cafeteria Management	3 meetings were held 12 cleanliness inspections were done

Source: Management Services Division, MoH

Image 4
Administrative Unit Events 2017



Monthly Assembly for the month of August 2017 in conjunction with the Launching of 60th Merdeka Month

Source: Management Services Division, MoH



Merdeka Trim & Fit IPKMM Hiking Programme

RECORD MANAGEMENT UNIT

The Record Management Unit is responsible in managing records at the Ministry of Health which include providing consultation services, managing records management programme, managing the correspondences and registry, monitoring the implementation of Document Digital Management System (DDMS) and managing personnel files. The achievements of this Unit are as in **Table 21**.

Table 21
Summary of Records Management Unit Activities and Achievements

No	Activity	Achievement
1.	Document Digital Management System (DDMS) Provides expert consultation on records classification and file coding for DDMS implementation.	<ul style="list-style-type: none"> - Classification build-up for Perak State Health Department and 3 hospitals in preparing towards implementation of Digital Document Management System (DDMS). - Usage and implementation monitoring of Document Digital Management System (DDMS) for 37 departments in the Ministry of Health headquarter.
2.	Managing MoH Personnel Files <ul style="list-style-type: none"> - Managing personnel files for Human Resources Division in MoH HQ. - Managing personnel files by using SPFP. 	<ul style="list-style-type: none"> - 51,209 files - 11,603 files

No	Activity	Achievement
3.	Records Management Programme Organize activities that support integrated record management such as training, consultancy services and inspection to ensure good practices of records management is applied at all levels (creation, usage, maintenance and disposal of records) in ministry.	<ul style="list-style-type: none"> - Organized three (3) courses for records management. - Consultations for all departments in MoH HQ on managing files and correspondence. - Planning, monitoring and implementing record disposal programs in the Ministry: <ul style="list-style-type: none"> • 10,687 files were disposed • 8 files were transferred to National Archives of Malaysia
4.	Managing Correspondence and Registry in MoH HQ <ul style="list-style-type: none"> - Receive, sort and distribute mails; <ul style="list-style-type: none"> • Domestic mail; • Registered mail; • Express mail; • Despatched mail; and • Parcel - Posting of mails and parcels <ul style="list-style-type: none"> • Domestic mail; • Registered mail; • Express mail; and • Parcel 	152,409 mails; <ul style="list-style-type: none"> • 83,668 mails; • 19,436 mails; • 46,089 mails; • 3,209 mails; and • 7 parcels 99,934 mails; <ul style="list-style-type: none"> • 88,041 mails; • 11,635 mails; • 56 mails; and • 202 parcels

Source: Management Services Division, MoH

Image 5
The Record Management Activities 2017



Appraisal and Disposal of Classified Files Course

Source: Management Services Division, MoH

FINANCE UNIT

The Finance Unit manages all finance related matters for employees in the HQ including payment of salaries, allowances, rewards and bonuses; processing of bills and claims payment in less than 14 days as well as official and personal applications for overseas travel. This Unit is also responsible for the HQ's Management Programme whereby a total of RM1.4 billion has been allocated under operating budget. The performance-based expenditures for the financial year ending 31 December 2017 (including Accounts Payable Period) is 102.42 per cent (please refer to **Table 22**).

Table 22
Total Allocations and Expenditures by Activity under Management Programme for the Financial year ending 31 December 2017

Activity	Allocation (RM)	Expenditure (RM)
HQ Management	476,839,414.05	523,622,888.21
Human Resources	17,137,400.00	13,144,980.86
Finance	479,213,641.46	473,174,691.02
Training	235,090,312.96	233,836,400.22
Information Technology	39,240,629.43	35,361,655.28
Competency Development	4,890,410.00	3,575,755.47
Total	1,252,411,807.90	1,282,716,371.06

Source: Management Services Division, MoH

As a Responsibility Centre which is classified to Tier 1 (PTJ1), the Management Services Division (MSD) is responsible in receiving and distributing the allocation warrants to all other PTJs under its jurisdiction. In the year 2017, a total of 315 warrants were received and 651 sub-warrants were distributed.

The MSD is the secretariat to the MoH's Finance and Accounts Management Committee (JPKA). The Committee had convened four quarterly-meetings to monitor the financial and accounts performances of 15 PTJ2 and 30 PTJ3 under its jurisdiction. In addition, MSD's responsibilities also include collecting and accounting the revenues for the HQ. In the year 2017, a total of RM16.1 million of revenue and non-revenue receipts were collected and accounted. Besides that, MSD encourages periodical courses for finance staff to equip them with the necessary skills and knowledge in order for them to carry out their daily tasks efficiently and effectively with adherence to the rules and regulations.

Table 23
Summary of Official and Personal Applications for Overseas Travel, 2017

No	Activity	Achievement
1.	Official Overseas Travel Applications	1,225 approvals
2.	Personal Overseas Travel Applications	2,518 approvals

Source: Management Services Division, MoH

ASSET MANAGEMENT UNIT

The Asset Management Unit is responsible for managing matters related to assets, rental of premises, maintenance and procurement. The performance for each activity for the year 2017 is as in **Table 24**.

Table 24
Summary of Asset Management Unit Activities and Achievements

No	Activity	Achievement
1.	a. Building Maintenance for MoH Headquarters Offices in Putrajaya b. Cleaning services and Pest Control services for following office buildings: - Allied Health Sciences Division - Food Safety & Quality Division - Training Management Division (Precint 2) - Cenderasari building (TCM, BPK and MMC)	2017 - 3 Maintenance Meetings were held 2017 - 3,803 Complaints and defects were fixed Maintenance and Cleaning Services Company appointed. Meets cleaning and pest control services standards based on quotation from the Quotations Committee.
2.	Premises and Space Rental	2017 - 60 office space rental applications were processed 2017 - 2 residential rental applications were processed
3.	Registration of Asset	2017 – Capital Asset : 9 units; and Low Value Asset : 81 units
4.	Government Moveable Assets Management Committee Meeting (JKPAK) at Moh HQ level	4 meetings/year

Source: Management Services Division, MoH

SECURITY UNIT

The Security Unit is responsible for planning, designing, managing, coordinating and implementing the Protective Security System in the Ministry of Health (MoH) in a holistic manner. The Security Unit gives advice, monitors and enforces laws, regulations and directives pertaining to safety protection to agencies and departments under the jurisdiction of the Ministry of Health. This unit also functions as a reference point under the Official Secrets Act 1972 on classified documents and technical advice. The performance for some main activities for 2017 is as in **Table 25**.

Table 25
Summary of Activities and Achievements of Security Unit

No	Activity	Achievement
1.	MoH Headquarters Security Committee Meeting	Convened 2 meeting (6 June and 18 November 2017)
2.	MoH Security Framework Coordination Meeting	Convened 1 meeting. (23 January 2017)
3.	Protective Security Special Award by the Chief Government Security Office of the Prime Minister's Department	Awarded 5 Stars
4.	Protective Security Course	2 series of course were held
5.	Basic Auxiliary Police Course	1 course was held – 18 members have successfully completed the course
6.	Fire Safety and Emergency Course	1 series was held
7.	Building Evacuation Drill	1 series was held

Source: Management Services Division, MoH

Image 6
Security Unit Activities 2017





Photos of activities and achievements

Source: Management Services Division, MoH

INFORMATION MANAGEMENT DIVISION (IMD)

Information and Communication Technology (ICT) is widely used to improve the quality of delivery of health services. In line with the MoH ICT Mission towards optimising comprehensive ICT services for more efficient and effective health service delivery and MoH ICT Vision as Business Drivers in an Integrated and Quality Health Services, the Information Management Division (IMD) has devised strategies to strengthen the readiness and integration of ICT through the following initiatives:

EXPANSION OF ICT INFRASTRUCTURE

- **Provision of 1Gov*NET Services**

1Gov*Net is the Government Integrated Telecommunications Network that supports the delivery of online public services. A total of 2,912 facilities were connected to 1Gov*Net compared with 2,835 facilities in the previous year. The increase is due to the readiness of new 1Malaysia clinics and facilities that need to be equipped with Internet line.

ENHANCING SYSTEMS, APPLICATIONS AND DATABASES

- **HIS@KKM Enhancement**

Sistem Pengurusan Pesakit (SPP) will be further enhanced with the development of additional modules, namely, Clinical Documentation (CD), Operating Theatre Management System (OTMS), Laboratory

Information System (LIS) and Central Sterile Supply Services Information System (CenSSIS). User requirements, system requirements and system design studies have been completed for the CD module. The modules for LIS, OTMS and CenSSIS are in the system design phase.

- **Teleprimary Care and Oral Health Clinical Information System (TPC – OHCIS)**

The TPC-OHCIS system has gone live since 1 June 2017 in six (6) health clinics (KK), namely, KK Seremban, KK Senawang, KK Seremban2, KK Sikamat, KK Ampangan, KK Mantin and seven (7) dental clinics (KP), namely, Pusat Pakar Pergigian Seremban, KP Seremban, KP Senawang, KP Seremban2, KP Sikamat, KP Ampangan and KP Mantin.

- **Pharmacy Information System (PhIS) and Clinic Pharmacy System (CPS)**

The overall performance of PhIS and CPS Project is 94.15 per cent. A total of 1,174 facilities has gone live as of December 2017 which includes 144 hospitals and health institutions, eight (8) Medical Store (MUS)/Office of Pharmacy Affairs, 105 Health Department/District Health Office and 917 health clinics. The remaining 50 facilities will be implemented in 2018 and 2019.

- **In-House Applications Development for MoH**

In empowering government services to the people, IMD has spearheaded the in-house development of applications to meet the demand of various divisions in MoH as well as the general public.

In 2017, four (4) in-house applications were developed and implemented as follows:

- i. **HealthCare Logo (HCL) System**, implemented since 15 November, 2017 to facilitate the food industry parties in online application of the Healthy Choice Logo for their products.
- ii. **Medical Practice Control System (MedPCs) - The Approval Module** has been completed in December 2017 and implemented on 2 January 2018. This module facilitates the Application for Approval to establish or maintain private health facilities or services, Private Medical Clinic and Private Dental Clinic.
- iii. **Integration of OPTIMS, DPIMS AND APHIS with myCPD (Online Monitoring of Continuing Professional Development)** has been implemented on 16 August 2017 which allows the sharing of CPD total points for three (3) main professions, namely, Dental Practitioner, Optometrist and Associate Health Practitioner to obtain Annual Practice Certification.
- iv. **Upgrading the Clearinghouse for Research on Disability System, MoH.** The new version of the system was implemented in December 2017. The purpose of this system is to provide information on persons with disabilities to the relevant stakeholders. This system enables users to access to literatures related to disability, both locally and internationally.

In addition, four (4) other applications have also been developed, namely:

- i. **ePerolehan System (ePIS)**, to assist and strengthen procurement monitoring processes in the Procurement Division;
- ii. **Online Entomological and Pest Information System (myEntopest) Phase 1**, Surveillance Data Management System and Monitoring of Entomological and Pest Activity aims to ensure that preventive and infectious disease control activities for infectious diseases can be implemented efficiently and effectively;
- iii. **Malaysia Quitline (MQuit)** (Smoking Cessation Line) which provides web-based online smoking cessation intervention services; and
- iv. **BPM Data Center System** to manage server hardware in MoH data center.

A total of eight (8) existing applications have been upgraded, such as HiDATA, eHouseman, IPKKM ePrestasi, QAP *Penjaga Kesihatan Premier*, OPTIMS, eBiLLING, DPIMS and ePatuh to meet user's current needs.

IMPLEMENTING CHANGE MANAGEMENT AND ICT CULTIVATION AMONG MOH EMPLOYEES

- **MoH ICT Steering Committee**

In 2017, the MoH ICT Steering Committee co-chaired by the Secretary-General and Director-General of Health had convened four (4) meetings on 15 February, 16 June, 15 August and 2 November 2017.

- **MoH ICT Technical Committee**

The MoH ICT Technical Committee Meetings (JTI) were held for 10 times on 24 January, 7 February, 16 March, 13 April, 18 May, 7 June, 1 and 3 August, 19 September, 17 October and 16 November 2017. A total of 74 ICT projects have been evaluated for technical approval.

- **MoH ICT Officers Meeting**

MoH ICT Officers Meeting is an annual event that provides a discussion platform for MoH ICT Officers nationwide which includes the participation of ICT officers from MoH headquarters, the state health departments, hospitals, institutions and colleges. The programme includes meeting, dialogue with the Under-Secretary of IMD and knowledge sharing sessions related to current ICT development. MoH ICT Officers Meeting Series 1/2017 was held on 25 May 2017. The meeting was attended by 120 participants comprising of officers from grades 41 and above.

WAY FORWARD

IMD will continue to play an important role in realising the achievement of the defined vision, mission and strategic plan of MoH ICT.

CONCLUSION

In conclusion, the main objective of the Management Programme is to enable the achievement of MoH's vision and mission by providing supportive 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 of Ministry of Health (MoH) is headed by the Deputy Secretary General (Finance) and comprises of three divisions namely Finance Division, Account Division and Procurement and Privatisation Division. This sector is responsible for managing matters related to finance such as budget and expenditure, accounts management, payments, procurement of assets and services, and also privatisation in the Ministry.

ACTIVITIES AND ACHIEVEMENTS

BUDGET MANAGEMENT

MoH was allocated RM24.80 billion in 2017 whereby RM23.46 billion was for Operation Budget (B42) and RM1.34 billion for Development Budget (P42).

Performance of Operating Budget for 2017

In 2017, MoH has spent RM23.94 billion (102 per cent) of the total allocated budget (**Table 1**). The highest operating budget allocation was for medical programme with the amount of RM13.43 billion (57.26 per cent) followed by allocation for public health with the amount of RM4.81 billion (20.51 per cent).

Table 1
Allocation and Expenditure of Operating Budget by Programme (2017)

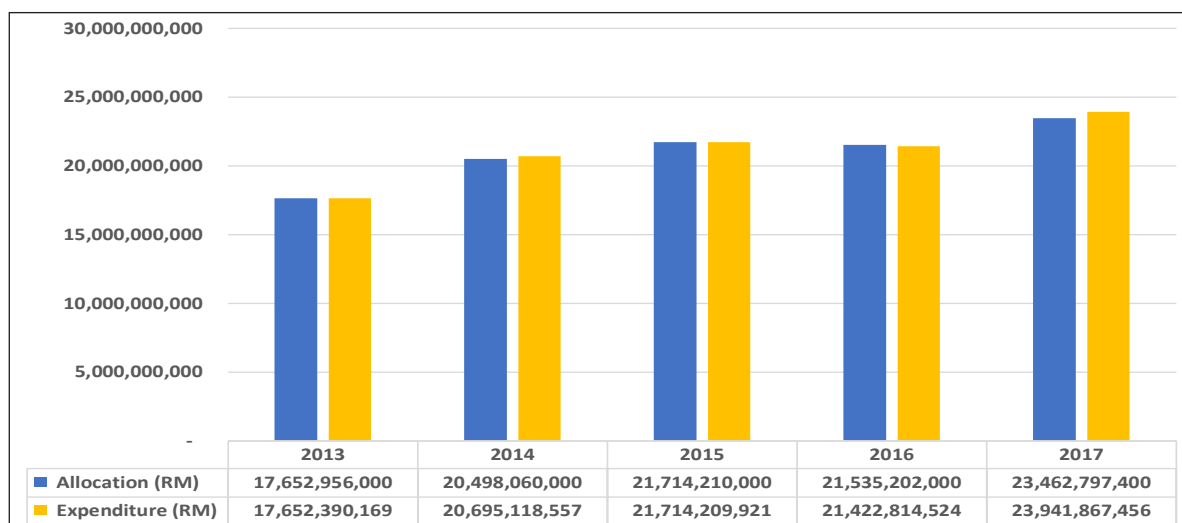
Programme	Allocation (RM)	Expenditure (RM)	Percentage (%)
Management	1,559,356,668	1,559,356,660	100.00
Public Health	4,812,338,347	5,164,631,655	107.32
Medical	13,434,535,805	13,561,312,578	100.94
Research & Technical Support	389,292,366	389,292,362	100.00
Oral Health	914,130,528	914,130,525	100.00
Pharmaceutical Services	193,651,127	193,651,123	100.00
Food Safety & Quality	91,135,831	91,135,827	100.00
Malaysian Health Promotion Board	5,500,000	5,500,000	100.00
Medical Device Authority	5,000,000	5,000,000	100.00
<i>Syarikat Jaminan Kerajaan</i>	10,000,000	10,000,000	100.00
Specific Programme	2,034,468,736	2,034,468,733	100.00
New Policy	5,887,992	5,887,991	100.00
One off	7,500,000	7,500,000	100.00
Total	23,462,797,400	23,941,867,456	102.04

Source: Finance Division, MoH

Overall Performance of Operating Budget from 2013 to 2017

In the past five years (2013-2017), allocation for Operating Budget have increased from RM17.65 billion in 2013 to RM23.46 billion in 2017. **Figure 1** shows the overall performance of Operating Budget from year 2013 to 2017.

Figure 1
Operating Budget Overall Performance from 2013 to 2017



Source: Finance Division, MoH

Performance of Development Expenditure for 2017

Total budget allocated for MoH Development Budget in the year 2017 was RM1.34 billion; out of which, RM1.30 billion (96.88 per cent) has been used from the total allocation (**Table 2**). In general, the Development Expenditure performance of MoH for the past five years has been more than 90% every year (**Figure 2**).

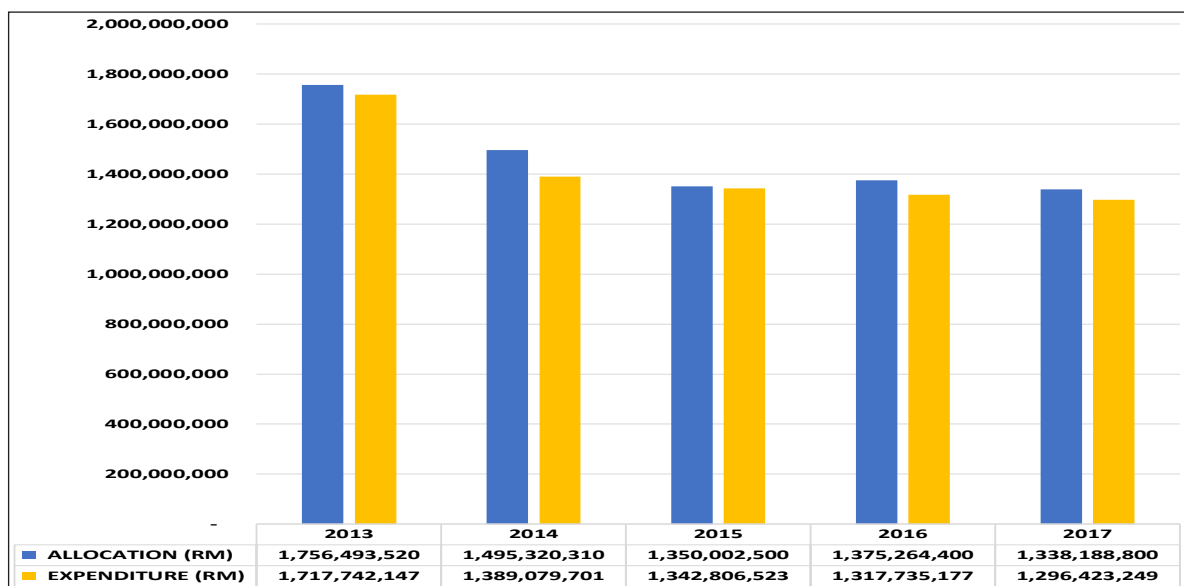
Table 2
Development Budget Allocation and Expenditure by Project Details (2017)

Project Detail	Title	Allocation (RM)	Expenditure (RM)	Percentage (%)
00101	Development of New Colleges	19,561,000	18,618,919	95.18
00104	Outsourcing	240,000	240,000	100.00
00105	In-service Training	42,000,000	41,611,022	99.07
00100	TRAINING	61,801,000	60,469,941	97.85
00201	Rural Health Services	88,926,837	86,886,985	97.71
00203	Urban Health Services	129,449,500	127,981,975	98.87
00200	PUBLIC HEALTH	218,376,337	214,868,960	98.39
00300	HOSPITAL FACILITIES	369,450,593	351,842,790	95.23
00400	NEW HOSPITAL	317,347,078	314,849,666	99.21
00500	RESEARCH & DEVELOPMENT	26,501,000	25,906,938	97.76
00600	UPGRADE, RENOVATION & REPAIR	69,619,828	66,514,696	95.54
00700	PROCUREMENT & MAINTENANCE OF LAND	17,000,000	16,245,534	95.56
00800	ICT FACILITIES	54,569,422	54,556,737	99.98

Project Detail	Title	Allocation (RM)	Expenditure (RM)	Percentage (%)
00900	Maintenance of MoH Quarters	32,000	31,876	99.61
00901	Rural Quarters Facilities	1,808,364	1,383,667	76.51
00902	Urban Quarters Facilities	4,914,200	4,709,261	95.83
00904	Health Offices & Department	835,000	463,894	55.56
00900	STAFF FACILITIES	7,557,564	6,556,822	86.76
01000	HEALTH PROMOTION	1,000,000	1,000,000	100.00
01100	EQUIPMENT & VEHICLES	194,933,978	183,579,288	94.18
Total		1,338,188,800	1,296,423,249	96.88

Source: Finance Division, MoH

Figure 2
Overall Performance of Development Budget from 2013 to 2017



Source: Finance Division, MoH

REVENUE MANAGEMENT

Revenue Collection

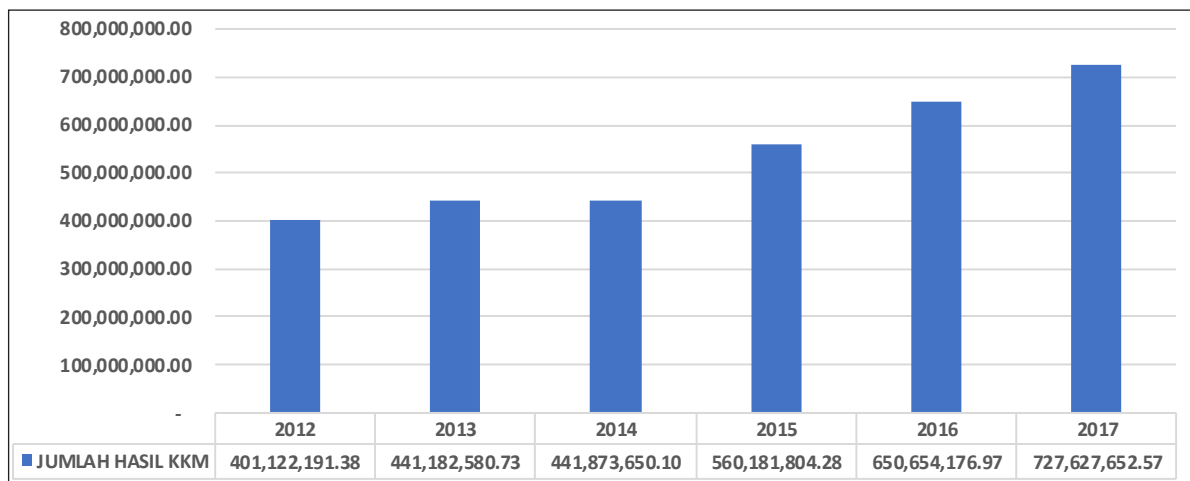
The total MoH revenue for the year 2017 is RM727.63million. This includes RM655.32 million from medical charges, RM57.3 million from Account Receivable (Medical Charges), RM3.93 million from Account Receivable (Rental) and revenue from Medical Device Authority (MDA) which was RM11.09 million. The actual revenue for the year 2017 was RM655.32 million compared to RM650.65 million in 2016, with an increase of RM4.67 million. Actual revenue classification for the year 2017 is shown in **Table 3**, while **Figure 3** shows MoH revenues from 2013 to 2017.

Table 3
Revenues Collection based on Classification (2017)

Classification	Revenue (RM)
License, Registration Fees & Permits	19,952,857.11
i. Charges (under Fees Act 1951)	409,820,042.52
ii. Others	35,056,083.37
	444,876,125.89
Sales of Goods	2,349,507.18
Rental	29,070,757.05
Interest & Return of Investment	82,986.75
Fines & Penalties	44,777,086.39
Overseas Contribution & Compensation	
Local Contribution	4,723.86
Oil & Gas Exploration Activities	-
Non-Revenue Receipts	114,193,151.04
Revenues from Federal Territories	9.813.00
TOTAL	655,317,008.27
Medical Device Authority Revenue	11,090,425.00
Account Receivable (Medical)	57,284,178.98
Account Receivable (Rental)	3,935,740.32
Grand Total	727,627,352.57

Source: Finance Division, MoH

Figure 3
Total Revenues Collected Based on Year (2013 to 2017)



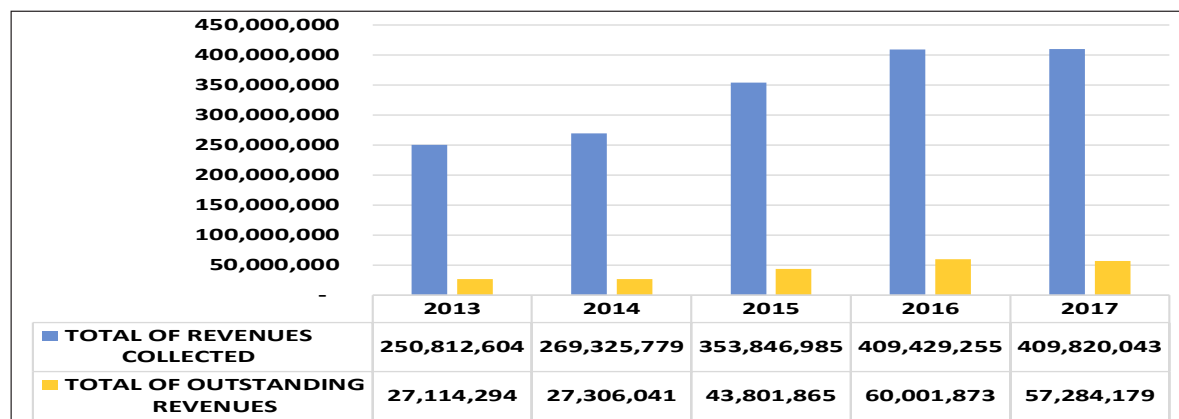
Source: Finance Division, MoH

Revenue Collection and Outstanding Fees for Health Services Under Fees (Medical) Order 1982, Fees (Medical) (Amendment) Order 2017, Fees (Medical) (Cost of Services) Order 2014 and Fees (Medical) (Full Paying Patients) Order 2007

Revenue collection from health services provided by MoH facilities shows a steady increment from year 2013 to 2017. In 2017, a total of RM409.82 million was collected under Fees (Medical) Order. The outstanding medical fees shows a reduction of 4.5 per cent from RM60 million in 2016 to RM57.28 million in 2017.

Figure 4

Revenue Collection and Outstanding Fees under Fees (Medical) Order from Year 2013 to 2017

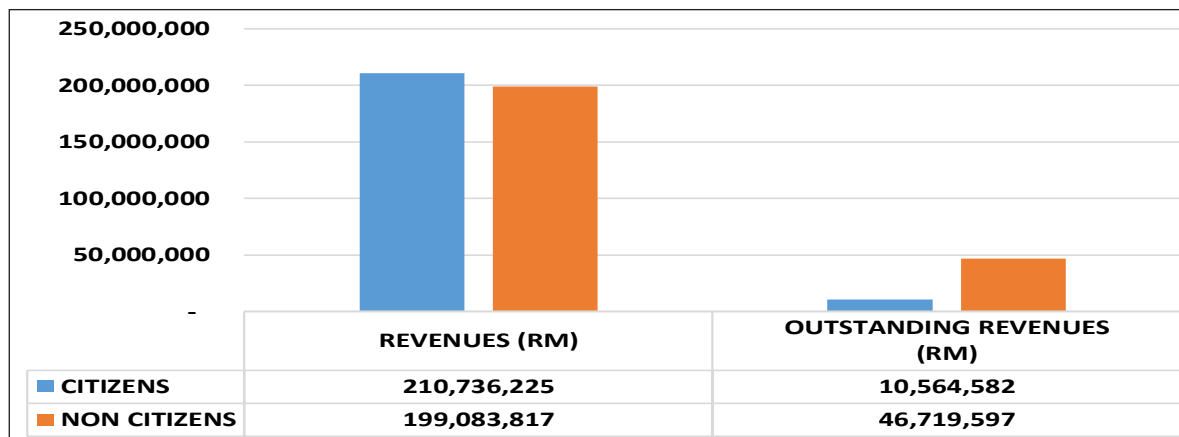


Source: Finance Division, MoH

In 2017, revenues collected under Fees (Medical) Order 1982 shows that 51.4 per cent (RM210.74 million) of the total RM409.82 million collected are from Malaysian citizens as compared to revenues collected from non-citizens which was 48.6 per cent (RM199.08) only. Nevertheless, total outstanding revenues among non-citizens are 81.5 per cent (RM46.72 million) compared to only 18.5 per cent (RM10.56 million) outstanding revenues for Malaysian citizens.

Figure 5

Revenue and Outstanding Revenue Under Fees Act 1951 According to Citizenship for 2017



Source: Finance Division, MoH

*Data for outstanding revenues are inclusive of in-patient only.

MoH is very committed to reduce outstanding medical bills by taking concerted efforts as follows:

- Implementing internal circulars such as Guidelines for Fees (Medical) (Cost of Services) Order 2014 and Guidelines for Revenue Management for Non-Citizens Who Receive Treatments Without Paying The Deposits to improve revenue collection;
- Allowing only patients from registered private companies (with MoH) to use Guarantee Letter (GL) to receive treatments without deposits;
- Reinforcing the Health Insurance Protection Scheme for Foreign Workers (SPIKPA);
- Equips hospital staffs (particularly from the Revenue Unit) with knowledge of the implementation of Fees (Medical) Order through workshops and trainings; and
- Expands bill payment options with the use of credit/debit cards and internet banking.

FINANCIAL AIDS AND SUBSIDIES

Medical Assistance Fund

MoH provides assistance for less fortunate and poor patients by providing Medical Assistance Fund either by partially or fully financing the cost of treatment, rehabilitation devices or medications. Application for this fund are referred by medical officers/specialists in government hospitals to the Hospital's Social Work Department for socio-economic assesment.

One-Off Grant (Financial Aids) to Private/NGO Hemodialysis Centers

As announced in Budget 2017 by the Honourable Prime Minister and Minister of Finance, "To encourage the establishment of more private hemodialysis centres, the government will provide one-off grants worth RM200,000 for purchase of equipment, involving a total allocation of RM40 million." One-Off-Grants, with a ceiling amount of RM200,000 are meant for the following applications:

- i. Establishment of new hemodialysis center with a capacity of having at least four (4) dialysis machines, especially at locations with high demand for hemodialysis; or
- ii. Extension of existing hemodialysis center; or/and
- iii. Replacement of hemodialysis machine(s), reverse osmosis water purifying system(s) and dialyser reprocessor(s) that reach seven (7) years or more.

A total of 181 dialysis centers, consisting of 52 NGOs-owned and 129 private centers have been given the one-off grants approval.

Financial Assistance for NGOs

MoH provides financial assistance for NGOs to conduct health related programmes or activities like counselling, awareness campaign, treatment and other activities for patients and communities. Among NGOs that received this financial assistance are Malaysian Hospice Council for Paliative Homecare for Cancer Patients, Malaysia Foundation for the Prevention of Tuberculosis (MAPTB) and National Diabetic Institute (NADI).

Payment to the National Heart Institute of Malaysia

MoH also provides subsidy for Malaysian citizens who are entitled; i.e the poor and less fortunate, civil servants and civil servant retirees that receive treatment at the National Heart Institute of Malaysia.

Table 4
Total Amount of Subsidy and Organisations/Patients Benefited, 2013 to 2017

No	Types of Subsidy/ Programme	Expenditure and Total Number of Benefitted Patients/ Organisations				
		2013	2014	2015	2016	2017
1.	Medical Assistance Fund	RM 30.13 million (5,182 patients)	RM 48.07 million (6,245 patients)	RM 41.43 million (5,338 patients)	RM 43.92 million (5,518 patients)	RM 47.25 million (5,656 patients)
2.	Haemodialysis Subsidy & Erythropoietin Injection	RM 31.61 million (3,160 patients)	RM 23.96 million (2,854 patients)	RM 22.79 million (2,944 patients)	RM 22.74 million (2,942 patients)	RM 23.96 million (2,415 patients)
3.	Financial Assistance for NGOs (Health Activities)	RM 0.71 million (16 NGOs)	RM 3.29 million (22 NGOs)	RM 3.66 million (40 NGOs)	RM 2.50 million (45 NGOs)	RM 3.25 million (65 NGOs)
4.	Payment to National Heart Institute Sdn. Bhd.	RM 361.79 million (170,310 patients)	RM 381.34 million (194,450 patients)	RM 418.45 million (206,423 patients)	RM 435.65 million (224,534 patients)	RM 465.08 million (232,237 patients)

Source: Finance Division, MoH

FINANCIAL MANAGEMENT ACCOUNTABILITY INDEX (AI) AUDITING

Financial Management Accountability Index Auditing is held annually to evaluate the extent to which the Ministry complies with the financial rules that have been set. Eight (8) of the elements that are audited are as follows:

- i. Management Control;
- ii. Budget Control;
- iii. Receipts Control;
- iv. Expenditure Control;
- v. Procurement Management;
- vi. Management of Trust Account/Trust Fund/Deposit;
- vii. Asset and store management; and
- viii. Management of Government Vehicles.

For the year 2016, auditing for work process and documentation was done from 13 December 2016 to 31 January 2017 and MoH has obtained a five-star performance with a percentage score of 91.55 per cent.

OUTCOME BASED BUDGETING (OBB) COURSE

From 1 until 3 November 2017, Finance Division has conducted Outcome Based Budgeting (OBB) Course for Activities and Programmes at Imperial Heritage Hotel Melaka. The objective of this course is to study and analyze all the outcome and output of MoH's Activities and Programme to ensure the outcome are in line with the requirements and directions of the Ministry and development of the nation.

Participants of the workshop are MoH Activities and Programme leaders and coordinators, whereby the speakers are from Ministry of Finance. The workshop provides a platform for all MoH Activities and Programme leaders and coordinators to brainstorm for KPI's preparation, outcome and output achievement.

WORKSHOP FOR UPDATING REVENUE'S MANAGEMENT CIRCULAR LETTER/ CIRCULAR

Finance Division has conducted Workshop for Updating Revenue's Management Circular Letter/ Circular from 17 to 19 April 2017 at Hotel Crystal Crown, Petaling Jaya. The objectives of the workshop is to review, reorganize and update all circulars related to revenue management issued by MoH and to produce a comprehensive guide for all hospitals particularly revenue management unit to ensure better-quality work flow in the unit. Participants of the workshop are officers from Finance Division, State Health Department and Hospital Revenue Unit.

MEETING FOR DISCUSSION OF REVENUE MANAGEMENT ISSUES IN MALAYSIAN HOSPITALS

Four (4) meetings have been conducted in order to discuss revenue management issues in all Malaysian hospitals, according to zones. Issues discussed were regarding outstanding fees and write-off for hospitals, other revenue management issues related to Fees (Medical)(Amendment) Order 2017 and Fees (Medical)(Cost of Services) Order 2014, and also steps to improve Revenue Management Systems in hospitals. **Table 5** shows the series of meetings that have been conducted in 2017:

Table 5
Revenue Management Issues in Hospitals Meeting Series

No	Zone	Attendance	Date
1.	Sabah/Sarawak Collaboration with Sabah Health Department	Sabah Health Department and all hospital directors in Sabah.	24 July 2017
2.	East Coast Collaboration with Kelantan Health Department	Kelantan, Terengganu and Pahang Health Department and all hospital directors from these three states.	22 August 2017
3.	North Zone Collaboration with Pulau Pinang Health Department	Perlis, Kedah, Pulau Pinang Health Department and all hospital directors from these three states,	12 September 2017
4.	South Zone Collaboration with Johor Health Department	Negeri Sembilan, Melaka, Johor Health Department and all hospital directors from these three states.	26 September 2017

Source: Finance Division, MoH

MoH FINANCIAL MANAGEMENT COURSE

From 25 to 27 October 2017, 64 officers in charge of financial management in MoH has attended a Financial Management Course held at Ancasa Resort, Port Dickson, Negeri Sembilan. The main objective of the course was to improve the knowledge of MoH's officers in financial management procedure. Amongst the module contents of the course are *Pengurusan Kehilangan dan Hapuskira Wang Awam*, Payment Management under Treasury Instruction (TI) 59 and MoH Budget Management, TI 58(a) Management, Refunding of Revenues under TI 87(b), outstanding revenues management and MoH audit reprimand.

Image 1
MoH Financial Management Course



Source: Finance Division, MoH

PROCUREMENT PERFORMANCE

The procurement value of MoH's tender in year 2017 is RM4.56 billion, which includes the procurement of pharmaceutical, medical equipment, services, ICT, vehicles and Approved Products Purchase List (APPL). In line with Government's optimization policy, MoH has implemented government revenue savings of RM537 million in 2017 to ensure that approved allocations are adequate to meet the core services and patient care needs so that healthcare is not affected. The savings obtained are based on the comparison between the department's price estimate and the contract price offered as well as the price negotiation mechanism held with the company appointed following the special approval by the Ministry of Finance (MOF). The procurement of MoH by category in the year 2017 managed by the Procurement and Privatisation Division is shown in **Table 6**.

Table 6
Procurement of MoH in 2017

No	Category	Procurement (RM)	Savings (RM)
1.	Pharmaceutical	1,603,922,603.43	250,080,232.66
2.	Medical Equipment	130,012,214.00	13,424,862.80
3.	Services	395,902,368.44	42,438,739.72
4.	ICT	217,299,246.63	7,903,246.27
5.	Vehicles	13,440,000.00	60,000.00
6.	APPL	2,200,000,000.00	223,000,000.00
Total		4,560,576,432.50	536,907,081.45

Source: Procurement and Privatisation Division, MoH

IMPLEMENTATION OF ePROCUREMENT (eP) SYSTEM

The eP System was developed since 2000 for government agencies to perform online procurement of supplies and services with government suppliers. The eP system is one of the largest Government-to-Business (G2B) virtual markets in ASEAN with two (2) million online catalogs. Among other Ministries, MoH was recorded as a largest eP system user and used the eP System widely. In 2017, MoH continued to demonstrate excellence in the performance of eP System by implementing 706,369 transactions with a value of approximately RM5.5 billion. **Table 7** shows the highest achievement of 10 Ministries in the use of the eP System in 2017.

Table 7
Highest Transaction Report for 10 Ministries in year of 2017

No	Ministry	Transaction from January-December 2017	
		No of Transaction	Amount of Transaction (RM)
1.	Ministry of Health	706,369	5,493,489,924.82
2.	Ministry of Education	101,811	3,001,505,085.98
3.	Ministry of Home Affairs	91,087	1,953,366,709.30
4.	Prime Minister's Department	73,578	1,012,912,603.21
5.	Ministry of Defence	50,899	2,725,199,543.50
6.	Ministry of Agriculture & Agro-Based Industry Malaysia	37,981	290,605,096.02
7.	Ministry of Higher Education	32,799	412,058,635.93
8.	Ministry of Finance	28,577	313,673,066.05
9.	Ministry of Rural & Regional Development	23,567	162,653,933.32
10.	Ministry of Communication & Multimedia	23,394	329,976,442.76

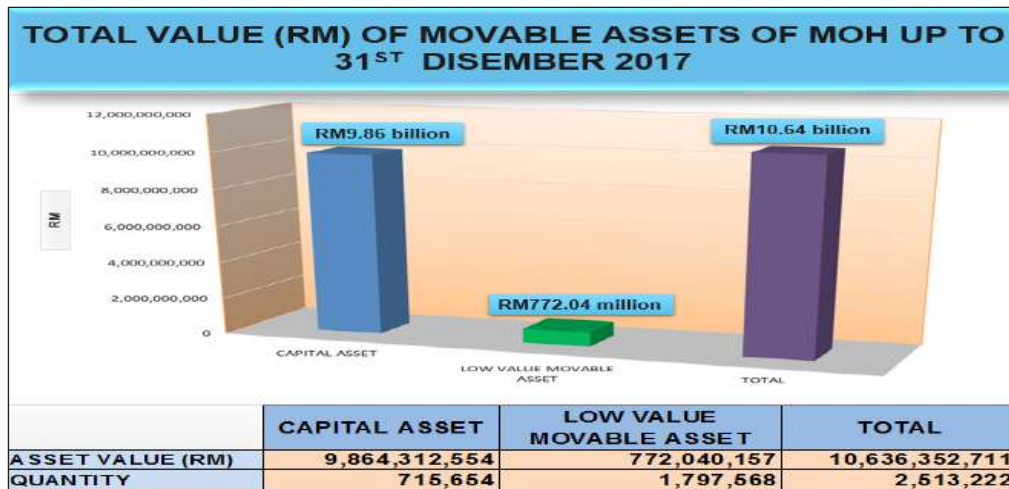
Source: eP System, Ministry of Finance Malaysia

In line with the implementation of the New eP system which will take effect from 1 January 2018, MoH has already made preparations in terms of training and infrastructure requirements to ensure Responsible Centres (PTJs) use the system.

MOVABLE ASSET MANAGEMENT OF MINISTRY

The movable assets of MoH in the year 2017 are at a total of 2,513,222 units with a procurement value of RM10.6 billion. Every PTJ must conduct inspections on all the Government Moveable Assets at least once a year to ensure all movable assets used are safe and still functioning at an optimum level. **Figure 6** shows the movable assets of MoH up to 31 December 2017.

Figure 6
Total Value of Movable Assets of MoH in Year 2017

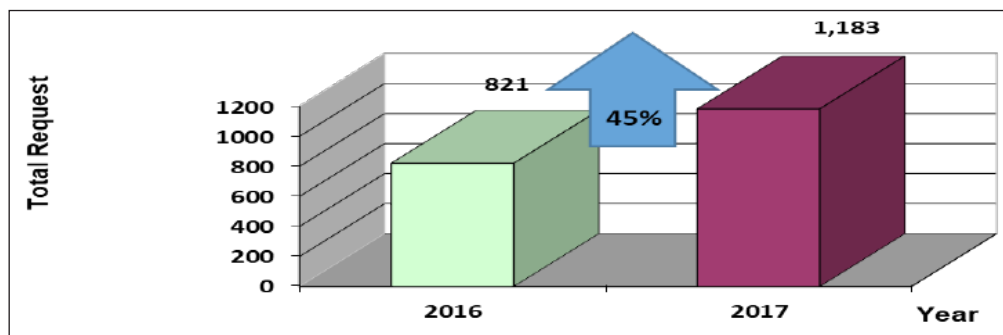


Source: Source: Procurement and Privatisation Division, MoH

GIFTS RECEIPT

Overall, the ministry has approved 1,183 gift applications and has received 1,124,794 asset units as gifts with the value of RM24.7 million. Total gift request approval for the year 2017 has seen an increase of 45 per cent compared to 2016. In the year 2016, the ministry has approved 821 requests and has received 6,649 asset units with a total value of RM15.1 million. The most contributed items based on requests received throughout year 2017 are of furniture & office equipment, medical equipment, furniture (desk chair, wheelchair, air conditioner, television, fan) and other equipment which are beneficial in providing convenience and comfort for patients and ministry. **Figure 7** shows the comparison of the total gift request for the year 2016 and 2017.

Figure 7
Comparison of the Total Gift Request for the Year 2016 and 2017



Source : The Procurement and Privatisation Division, MoH

INITIATIVE IN IMPROVING PROCUREMENT MANAGEMENT

The Procurement and Privatisation Division has taken a continuous initiative in optimizing expenditures by ensuring approved allocations are sufficient to meet the core services and patient care needs so that healthcare is not affected. The initiative that has been taken to improve the efficiency of the procurement process by updating the Standard Operating Procedures (SOPs) are as follows:

Outsourced Food Service

MoH has implemented Outsourced Food Service Policy in MoH hospitals involving new hospitals with more than 250 beds. This initiative is carried out continuously through improvement of the Outsourcing Food Service such as creating SOP, improving technical specification for government spending optimization and others.

SOP Management for Approval of Procurement of Imported Goods, MoH Series 2

Ministry of Finance (MoF) in its letter dated 26 September 2014 has informed that Controlling Officer is fully responsible for reviewing the status of local/import goods before the procurement is carried out. Therefore, for goods that have been identified as not available in the country and worth more than RM50,000.00, Controlling Officer's approval shall be obtained prior to the acquisition. Controlling Officer has been given authorization to consider and approve the acquisition of imported goods at the Ministry level. To improve the application of imported goods, MoH Import Goods Procurement application has been updated and SOP Management Approval for Procurement Of Imported Goods, MoH No. 2 was distributed on 11 January 2017. In the year 2017, 3,417 applications for imported goods were received and considered by the MoH Assessment Committee of Imported Goods. Of these, 3,316 applications were approved whereby 101 applications were rejected. **Table 8** shows a summary of the application for import of MoH for the year 2017.

Table 8
Summary of Application for Imported Goods of MoH in 2017

Item	Quantity / Result												
	Medical/ Non Medical Devices	Result		Medicines	Result		Reagent/ Consumables	Result		Others	Result		Total
		Approved	Not Approved/KIV		Approved	Not Approved/KIV		Approved	Not Approved/KIV		Approved	Not Approved/KIV	
Numbers of Application	429	416	13	1,223	1,173	50	1,437	1,408	29	328	319	9	3,417
APPROVED													3,316
REJECTED													101

Source: Procurement and Privatisation Division, MoH

Off-Take Agreement Program (OAP)

Off-Take Agreement Program (OAP) by MoH is a program designed to help the local healthcare sector to develop and compete internationally hence contributing to the country's Gross National Income (GNI) through investments and to provide job opportunities to the public. The program aims to encourage local medicine manufacturers and medical devices with the Entry Point Project (EPP) status to produce local products for export. OAP serves as a platform to help local manufacturers to be able to compete

internationally and providing job opportunities for Malaysians as well as the transfer of new technologies in related fields.

Implementation of MS ISO 9001:2015

Quality Management System of the Procurement and Privatisation Division, MoH had fulfilled the requirements of MS ISO 9001:2015 for the scope of Procurement, Asset and Store Management and Privatisation replacing the MS ISO 9001:2008. The certificate of MS ISO 9001:2015 was issued on 17 June 2016 by SIRIM QAS International Sdn. Bhd. The Procurement and Privatisation Division is the first MoH Department to obtain the MS ISO 9001:2015 Certification. To acquire the MS ISO 9001:2015 certification, the Division has conducted several activities such as quality document preparation workshops, internal audit courses and staff awareness courses. In addition, several discussions sessions between consultants and the Division's officers were held to finalize the Procurement and Privatisation Division's quality documents.

PRIVATIZATION PROGRAMME

Medical Equipment Enhancement Tenure (MEET) Concession Agreement

MEET Concession Agreement with Quantum Medical Solutions Sdn. Bhd. was signed on 17 April 2014 with a 13-year concession period. Under this Concession Agreement, it covers nine (9) states which consist of Penang, Perak, Selangor, Negeri Sembilan, Melaka, Johor, Sabah, Sarawak, Federal Territory of Kuala Lumpur & Putrajaya, Federal Territory of Labuan, and one (1) training institute namely Institute Training of Ministry of Health Malaysia (Dentistry) Penang. The scope of the MEET Concession Agreement covers the maintenance of existing medical equipment, procurement of GAP equipment and maintenance of GAP medical equipment. This Concession Agreement involves 2,857 health and dental clinics in nine (9) states. The total allocation in 2017 received by MoH is RM99.3 million for payment under the MEET programme.

Foreign Workers Medical Examination Coordination & Surveillance System in Malaysia (FOMEMA)

FOMEMA was signed on 16 December 2016 with a seven (7) year concession period. Among the scopes of this agreement is to monitor and supervise medical examination of foreign workers, to issue and transmit online medical certification status, to charge and collect service fees and medical fees.

Medical and Laboratory Store Privatisation Concession Agreement with Pharmaniaga

Medical and Laboratory Store Privatisation Concession Agreement with Pharmaniaga Logistics Sdn. Bhd. (PLSB) takes effect from 1 December 2009 until 30 November 2019. PLSB is responsible in carrying out four (4) main functions namely turnover, inventory, warehousing and distribution. Under Klausula 14, price revision is done every 3 years for products under APPL. This takes effect from 1 December 2017 until 30 November 2019, involves 744 products and 89 providers with contract value estimation of RM2.6 billion. Under APPL price revision 2017 to 2019, MOF had appointed 27 Bumiputera companies to supply products under *Skim Anak Angkat* (SAA) and *Skim Panel Pembuat Bumiputera* (SPPB). This scheme is a programme developed by MoF that aims to help Bumiputera manufacturing company for drug products and non medicines in order to compete globally in accordance with Government Policy that puts emphasis on local manufactured goods. Among the conditions to be considered to supply products under SPPB/SAA are the company needs to be ranked Bumiputera, owns a factory in Malaysia and are registered with National Pharmaceutical Regulatory Agency or Medical Device Authority.

Hospital Support Service Concession Agreement (HSS)

Hospital Support Services (HSS) Concession Agreement was signed on 11 March 2015 with five (5) concession companies with a 10-year concession period effective from 1 April 2015 until 31 March 2025. **Table 9** below shows the details of the concession companies according to the hospitals and zones.

Table 9
List of Companies by Hospitals and Zones

No	Companies	Number of Hospitals/ Institutions	Zone / State Institution
1.	Radicare (M) Sdn. Bhd.	46	Klang Valley and East Coast (Selangor, Federal Territory of Kuala Lumpur and Putrajaya, Pahang, Kelantan and Terengganu)
2.	Medivest Sdn. Bhd.	22	South (Melaka, Negeri Sembilan and Johor)
3.	Edgenta Mediserve Sdn. Bhd.	32	North (Perlis, Kedah, Penang and Perak)
4.	Sedafiat Sdn. Bhd.	26	Sabah and Federal Territory of Labuan
5.	One Medicare Sdn. Bhd.	22	Sarawak
Total		148	

Source: Procurement and Privatization Division, MoH

The HSS Concession Agreement covers six (6) services; i.e. Facilities Engineering Management Services (FEMS), Biomedical Engineering Management Services (BEMS), Cleaning Services (CLS), Laundry & Linen Services (LLS), Health Waste Management Services (HWMS) and Facility Management Services (FMS). The project cost during concession period of ten (10) years is estimated at RM26.36 billion. For the year 2017, the Ministry has paid RM1.613 billion for these companies, including fees, variation order and payment for additional facilities. The HSS Concession Agreement has also required the companies to implement Sustainability Programme that covers three (3) areas, which are Energy Management, 3R and Indoor Air Quality.

ENHANCING OF KNOWLEDGE AND SKILLS OF PROCUREMENT AND ASSET OFFICERS IN MoH

The Government Procurement Management Training of Trainers (TOT) Course was held from 19 to 21 April 2017 at the Institute of Leadership and Development (ILD), Universiti Teknologi MARA (UiTM), Bandar Enstek, Nilai, Negeri Sembilan. 80 procurement officers from the State Health Department (JKN), Hospitals, Institutions and MoH Headquarters were trained as resource persons in government procurement management.

Image 2
The Government Procurement Management Training of Trainers (TOT) Course



Source: Procurement and Privatisation Division, MoH

Disposal towards Best Revenue Returns to the Government Course was organized from 8 to 10 August 2017 in Hotel Midah, Jalan Kampung Attap, Kuala Lumpur. 50 participants from JKN, Institutes and MoH Headquarters were selected to undergo this course.

Image 3

Course: Disposal towards Best Revenue Returns to the Government



Source: Procurement and Privatisation Division, MoH

Workshop on Strengthening the Procurement, Privatisation & Asset Management was held on 16 to 18 February 2017 at the Training Center of Fisheries Development Authority of Malaysia (LKIM), Sepang, Selangor, which was attended by 40 officers from Procurement and Privatisation Division. The objective of the workshop is to review, improve and update procurement, privatisation and asset management work processes to ensure that the work processes are best implemented in accordance with the regulations.

Image 4

Workshop on Strengthening the Procurement, Privatisation & Asset Management



Source: Procurement and Privatisation Division, MoH

TRANSFORMATION OF PROCUREMENT METHOD

MoH has planned to shift from conventional procurement methods to more innovative methods for high value and high-tech medical equipment. At the initial stage, eight (8) units of Computed Tomography Scan (CT scan) with maintenance package have been acquired in accordance with the leasing method. In comparison, the leasing method is more economical than conventional methods. Rental costs for a period of five (5) years leasing are relatively cheaper than the normal procurement method as MoH has to pay maintenance fees. From the service delivery point of view, the hospital is able to perform CT scan imaging services for the patient's benefit at a low starting cost.

New Specification Ambulance

In order to improve the pre-hospital services, MoH still needs an additional number of ambulances. In this regard, MoH has acquired 500 units of ambulances with the latest specifications and are in the midst of distributing to hospitals and clinics nationwide. The new specification ambulance is equipped with high-tech and sophisticated medical equipment, including 12-Lead ECG (electrocardiogram) Transmission and Telemetry. The process of distributing new specification ambulances to all hospitals and clinics began in July 2017 and will be fully completed by December 2018.

Image 5

Handing-Over Ceremony of new ambulances for hospitals in Kuala Lumpur, Putrajaya and Selangor on 17 August 2017

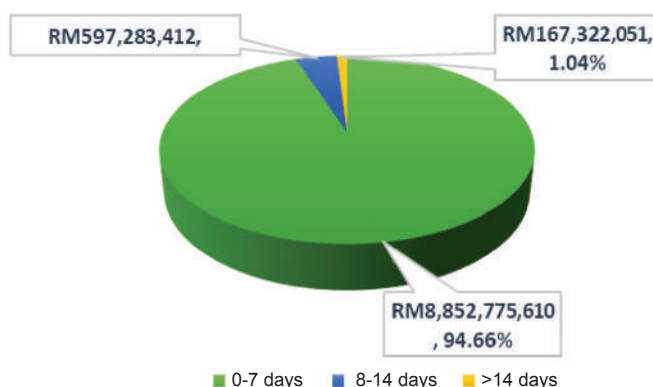


Source: Procurement and Privatization Division, MoH

PERFECT BILLING PERFORMANCE

MoH comprises of 451 PTJs throughout Malaysia and is one of the Ministries that records the highest number of bill payments. Overall, a total of 1,587,732 bill payments amounting to RM9,617,381,074.62 have been paid by the Ministry throughout 2017. Performance of Perfect Billing Payment (payment within 14 days) for MoH is 98.96 per cent. It comprises of 94.66 per cent (962,766 bills) that have been successfully settled within seven (7) days from the date of documents are completed and 4.30 per cent (68,231 bills) have been successfully completed within 8 to 14 days from the date of completed documents. The details of MoH bill payment performance for 2017 are as follows:

Figure 8
Perfect Billing Payment Performance Chart



Source: Account Division, MoH

There are several contributing factors to the delays in the successful completion of the overdue bill payments. The main factor of delay in 2017 is the unforeseen directive for closing of the year-end 2017 account on 6 December 2017 which must be complied by all PTJs. Information on the number of late bills paid for 2017 based on factors contributing to delays is as below:

Table 10
Overdue Factors

No	Factors	Number Of Bills
1.	Wrongly entered the transaction date	210
2.	No approval officer	24
3.	Document incomplete but has been registered in the system	30
4.	System failure	54
5.	Insufficient fund	3
6.	Payment for AP 58 (a) (entered the date of the original document, supposedly date on approval of AP58(a))	12
7.	Others (Unforeseen directive for closing of accounts for end 2017)	16,202
Total Number Of Bills		16,535

Source: Account Division, MoH

TRUST FUND MANAGEMENT

MoH has 24 Trust Fund Accounts, whereby one (1) of the trust fund accounts is under Section 10 while another 23 are under Section 9 of the Financial Procedure Act 1957. **Table 11** shows the balance of the Trust Fund Account as of 31 December 2017 with a total sum of RM85, 192,168.82.

Table 11
Trust Fund Accounts Balance as of 31 December 2017

No	Fund Code	Name of Trust Fund	RM
Trust Fund Under Section 10			
1.	857700 / 857701	Medical Aid Trust Fund (<i>Kumpulan Wang Amanah Tabung Bantuan Perubatan</i>)	60,822,361.22
		TOTAL	60,822,361.22
Trust Fund Under Section 9			
1.	886340	<i>Akaun Amanah Perkhidmatan Penyediaan Laporan Perubatan Dan Perkhidmatan Rawatan Perubatan Di Bawah Skim Perkhidmatan Pesakit Bayar Penuh Di Hospital Kerajaan</i>	14,225,517.85
2.	886341	<i>Akaun Amanah Penilaian, Pengiktirafan Akreditasi Dan Pemeriksaan Amalan Perkilangan Baik</i>	3,689,299.80
3.	886339	Clinical Research Trust Fund (<i>Akaun Amanah Penyelidikan Klinikal</i>)	1,703,618.38
4.	886344	Ministry of Health Training Institute Trust Fund (<i>Akaun Amanah Institut Latihan Kementerian Kesihatan Malaysia</i>)	1,346,002.81
5.	886314	<i>Akaun Amanah Pembelian Alat Kelengkapan, Kemudahan Dan Perkhidmatan Di Hospital Kerajaan</i>	224,987.91
6.	886334	National Health Institute Trust Fund (<i>Akaun Amanah Institut Kesihatan Negara</i>)	1,128,546.74
7.	886333	Short Term Projects Trust Fund (<i>Akaun Amanah Projek-Projek Jangka Pendek</i>)	102,093.67
8.	886305	South East Asian Minister Of Education Organization Tropical Medicine (SEAMEO TROPMED) Trust Fund (<i>Akaun Amanah South East Asian Minister Of Education Organization Tropical Medicine</i>)	662,558.98
9.	886327	National Health Institute Trust Fund (<i>Akaun Amanah Institut Pediatrik Hospital Kuala Lumpur</i>)	322,301.62
10.	886335	Hepar Transplant Service Trust Fund (<i>Akaun Amanah Perkhidmatan Transplan Hepar</i>)	8,999.66
11.	886301	<i>Akaun Amanah Bagi Menghadiri atau Menganjurkan Bengkel, Persidangan, Mesyuarat, Seminar, Kursus Serta Latihan Tempatan Dan Antarabangsa</i>	337,660.28
12.	886302	Welfare and Aid for Patients in Sarawak General Hospital Trust Fund (<i>Akaun Amanah Bagi Kebajikan Dan Bantuan Pesakit-Pesakit Hospital Umum Sarawak</i>)	56,762.60
13.	886338	Financing of Treatment, Medications and Device Cost for Cancer Patients Trust Fund (<i>Akaun Amanah Pembiayaan Kos Rawatan, Ubat-ubatan dan Peralatan bagi Rawatan Pesakit Kanser</i>)	35,897.36

No	Fund Code	Name of Trust Fund	RM
14.	886336	Food Handlers Programme Trust Fund (Akaun Amanah Program Latihan Pengendali Makana)	88,173.40
15.	886324	Akaun Amanah Rangkaian Negara Islam Bagi Perubatan Tropika Di Institut Penyelidikan Perubatan (IMR)	67,353.92
16.	886325	Akaun Amanah Anugerah Tempatan Bagi Projek Penyelidikan Dan Kajian Di Institut Penyelidikan Perubatan (IPP)	52,696.24
17.	875501	Akaun Amanah Terimaan Tidak Diperuntukkan (ATTD)	314,642.45
18.	886304	Akaun Amanah World Health Organization (WHO) Award Bagi Projek Penyelidikan Dan Latihan Di Institut Penyelidikan Perubatan (IMR), Kuala Lumpur	693.93
19.	886337	Effectiveness In Angle Closure Glaucoma, Of Lens Extraction (EAGLE) Trust Fund	0
20.	866305	Rajah Charles Brooke Memorial Hospital Trust Fund (Akaun Amanah Hospital Peringatan Rajah Charles Brooke)	0
21.	886343	Facilities Infrastructure Development Project Trust Fund (Akaun Amanah Projek Pembangunan Infrastruktur Di Fasilitas-Fasilitas)	0
22.	886342	National Blood Centre Trust Fund (Akaun Amanah Pusat Darah Negara)	2,000.00
23.	886345	Akaun Amanah Aktiviti Perawatan, Pemulihan Dan Kebajikan Psikiatri Di Kemudahan-Kemudahan Psikiatri Kerajaan	0
Total			24,369,807.60
Total Amount			85,192,168.82

Source: Account Division, MoH

DEPOSIT ACCOUNTS MANAGEMENT

MoH has 14 Deposit Accounts. **Table 12** shows the balance of Deposit Accounts under the Ministry as of 31 December 2017 which amounted to RM29,500,240.54.

Table 12
Deposit Accounts Balance as of 31 December 2017

No	Code	Deposit Account	RM
1.	872310	Quarters Deposit	4,748,500.51
2.	875537	Deposit for Payment to CDC	2,267.46
3.	876302	Deposit for Hospital Collateral Payment (Citizens)	-
4.	876303	Deposit for Hospital Collateral Payment (Non-Citizens)	4,591,578.45
5.	876307	Deposit for Hospital Collateral Payment - Full Paying Patients (Citizens)	12,241,242.49

No	Code	Deposit Account	RM
6.	876308	Deposit for Hospital Collateral Payment - Full Paying Patients (Non-Citizens)	3,080,428.31
7.	876908	Deposit for Patients Equipment	258,913.46
8.	879501	Deposit Am	-
9.	879502	Tender Deposit	1,181,049.02
10.	879503	Collateral Deposit	-
11.	879504	Canteen Deposit	642,116.66
12.	879505	Building Rental Collateral Deposit	63,745.30
13.	879507	Deposit of Implementation Guarantee Money	917,968.73
14.	879509	Property Actions Deposit	1,772,430.15
Total Amount			29,500,240.54

Source: Account Division, MoH

SUBSIDIARY ACCOUNTS

The Subsidiary Accounts Unit is responsible for managing and maintaining subsidiary accounts in MoH. Subsidiary Accounts comprise of Self Advance Account, Self Advance Account Under Treasury Instruction (TI) 59, Vehicle and Computer Loan Accounts and Overpayment Emolument Account under TI 327(b).

Self-Advances Account

A total of 107 applications for advances were processed and approved in 2017 which amounted to RM1,734,520.00. Various categories of self-advancement and advances processed by the Subsidiary Accounts Unit are as follows:

- Advances For Domestic Use (MoH Approval);
- Advances For Travel Abroad (MoH Approval);
- Advances for Loss of Public Money (approval by the Ministry of Finance of Malaysia); and
- Other Advances (approval by the Ministry of Finance of Malaysia).

As of 31 December 2017, a total of seven (7) remaining advances are as follows;

Table 13
Self-advancement/Other Advances (2017)

No	Types	Balance as at 01.01.2017		Advances Distributed (RM)		Advances Collected (RM)		Balance as at 31.12.2017	
		No	RM	No	RM	No	RM	No	RM
1.	Advances For Domestic Use	1	-400	39	48,470.00	43	48,970.00	3	900

No	Types	Balance as at 01.01.2017		Advances Distributed (RM)		Advances Collected (RM)		Balance as at 31.12.2017	
		No	RM	No	RM	No	RM	No	RM
3.	Advances for Loss of Public Money	1	48,568.32	0	0	0	0	1	48,568.32
4.	Other Advances	0	0	1	1,251,250.00	1	1,251,250.00	0	0
Total		21	172,871.20	107	1,734,520.00	133	1,865,822.88	7	55,568.32

Source: Account Division, MoH

Self-Advances Account under TI 59

Payments under TI 59 are payments for procurement of goods, services or works received by the government but breached the applicable financial procedures. Payment using this account is accounted to the Advance Fund Account under the name of the responsible officer. The account will later be adjusted according to the rules set out after obtaining approval from the Ministry of Finance, Malaysia. As of January 2017, balance of the account amounts to RM337,963.20 (seven (7) cases). Throughout 2017, there was an increase of two (2) TI59 cases amounting to RM69,932.00. This makes the Personal Advance Account balance under TI 59 as of 31 December 2017 amounting to RM 332,977.20 or six (6) cases as stated in **Table 14**.

Table 14
Advances Accounts under TI 59 Balance as of 31 December 2017

Details	Amount	
	No. of Cases	RM
Balance as at 1 January 2017	7	337,963.20
(+) Approval on AP59	2	69,932.00
(-) Adjustment	-3	-74,918.00
Balance as at 31 December 2017	6	332,977.20

Source: Account Division, MoH

VEHICLE AND COMPUTER LOAN ACCOUNT

Vehicle Loan Account

Vehicle Loan Accounts for civil servants have been taken over by Bank Simpanan Nasional (BSN) since end of 2005. Nevertheless, there are outstanding loans that have been approved from the previous years. As of 31 December 2017, the balance of Vehicle Loan Accounts for MoH officers is RM100,535.20 with 13 borrowers; who are either still serving in the public service or officers that have left the public service because of retirement, resignation, disciplinary action and others.

Computer Loan Account

Computer Loan Account is a facility provided by the government for civil servants to take computer loan up to a maximum of RM5,000 at any one time. The balance of Computer Loan Account for MoH officers as at 31 December 2017 amounted to RM16,570,425.95 with a total number of 5,828 borrowers. This

Computer Loan involves officers who are still serving in the public service as well as those who have left the public service for various reasons.

ACCRUAL ACCOUNTING

Generally, MoH is well prepared and ready for new Accrual Accounting system, which commences from 1 January 2018. **Table 15** lists several meetings conducted by the Ministry to discuss the preparation and implementation of Accrual Accounts in MoH.

Table 15
Accrual Accounting Meetings for 2017

No	Meeting	Chairman	Frequency
1.	<i>Mesyuarat Jawatankuasa Pelaksanaan Perakaunan Akruan Kementerian (JPPA)</i>	Dato' Seri Dr. Chen Chaw Min, Secretary General, MoH	Twice a year
2.	<i>Mesyurat Jawatankuasa Kerja Pengumpulan Data Aset & Liabiliti KKM</i>	Dato' Rosmah binti Ismail, Under Secretary, Account Division	3 times a year
3.	<i>Mesyuarat Jawatankuasa Kecil Pengumpulan Data Bahagian Akaun</i>	Dato' Rosmah binti Ismail, Under Secretary, Account Division	4 times a year

Source: Account Division, MoH

Account Division also held six (6) series of 1Gfmas Training Sessions for all PTJs under the MOH Headquarters to ensure the implementation of the 1Gfmas system from January 2018 went smoothly.

Image 6

Taklimat Program Kesiapsiagaan Proses Emolumen GFMS kepada PTJ Lembah Klang held on 23 January 2017 at National Cancer Institute Auditorium, Putrajaya



Source: Account Division, MoH

Image 7
Meeting Session between Dato' Mohd Shafiq bin Abdullah, Deputy Secretary General
with Account Division on 5 May 2017



Source: Account Division, MoH

Image 8
Deputy Secretary General, Dato' Mohd Shafiq bin Abdullah, at the opening ceremony for
Conference of Assistant Accountants at Hotel Seri Malaysia, Bagan Lalang, Sepang
from 20 to 22 August 2017



Source: Account Division, MoH

WAY FORWARD

In the midst of a challenging and constant changing economic environment, organisational effectiveness is vital to ensure Finance Sector's ability to fulfill its responsibilities with distinction at the highest level. 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 responsible to help individuals and community to achieve and maintain an optimum level of health by providing basic health care. To achieve that mission, the Programme provided services such as disease prevention and control, curative and rehabilitative care through integration in all levels of health service and to promote health so that it becomes a practice among all individuals and the people.

OFFICE OF DEPUTY DIRECTOR GENERAL OF HEALTH (PUBLIC HEALTH)

POLICY AND DEVELOPMENT OF THE PUBLIC HEALTH SERVICE

PUBLIC HEALTH POLICY & SERVICE SECTION

One of the core activities of the Public Health Development Division is to provide direction and policy requirements related to the formulation of policy development activities of the Public Health Service. This is to ensure thus policy compatible with the current situation and in line with the direction and goals of Ministry of Health in general.

Current platform used for the above purpose is through Public Health Program Exco & Policy Meeting chaired by Deputy Director General of Health (Public Health). Besides that, there is also public health policy formation which has been decided by “top down” of stakeholders from top management or “political masters” of national interest and in particular a direct impact on society.

In year 2017, a total of three (3) Public Health Program Policy Executive Committee Meeting has been successfully carried out in which a total of 11 papers were presented. General analysis found that five (5) policy papers were presented and approved. The breakdown of Policy Paper presentation in year 2017 is shown in **Table 1** below:

Table 1
Number of Policy Paper and Notification Paper Year 2017 per division

No	Division	No of Policy Paper	No of Notification Paper	Total
1.	Division of Disease Control	3	3	6
2.	Division of Nutrition	3	0	3
3.	Division of Engineering Services	0	1	1
4.	Pahang State Health Department	0	1	1
Total		6	5	11

Source: Public health Development Division, MoH

Table 2
Summary of Approved Public Health Policy Papers Year 2017

No	Title	Division	Date of Approval
1.	<p><u>Kertas Dasar 1/2016</u></p> <p><i>Cadangan Polisi Pemberian Susu Formula Kepada Bayi Berumur <6 Bulan Yang Mengalami Masalah Kekurangan Zat Makanan Melalui Preskripsi Klinikal</i></p> <p>By : Puan Zaiton binti Daud, Deputy Director (Nutrition Operational 1) , Division of Nutrition.</p>	Division of Nutrition	No. 1/2017 @ 25 January 2017
2.	<p><u>Kertas Dasar 2/2017</u></p> <p><i>Cadangan Peruntukan Bagi Setiap Sesi Demonstrasi Masakan Makanan Bayi Dan Kanak-Kanak Di Klinik Kesihatan Dan Komuniti</i></p> <p>By: En. Nazli Suhardi Ibrahim, Deputy Director, Division of Nutrition.</p>	Division of Nutrition	Nol. 2/2017 @ 25 Jan 2017
3.	<p><u>Kertas Dasar 3/2017</u></p> <p><i>Pelan Tindakan Pengurusan Kesihatan Akibat Jerebu</i></p> <p>By : Dr Anis Salwa binti Kamarudin, Pakar Perubatan Kesihatan Awam, Sektor Kesihatan Pekerjaan Dan Alam Sekitar, Bahagian Kawalan Penyakit, Sektor KPAS, Division of Disease Control</p>	Division of Disease Control	No. 3/2017 @ 3 May 2017
4.	<p><u>Kertas Dasar 4/2017</u></p> <p><i>Polisi Pembelian Susu Formula Kepada Bayi Yang Dilahirkan oleh Ibu MDR-TB Positif</i></p> <p>By: Dr Asmah binti Razali TB/Leprosy Sector, Division of Disease Control</p>	Division of Disease Control	No. 4/2017 @ 3 August 2017
5.	<p><u>Kertas Dasar 5/2017</u></p> <p><i>Cadangan Penggunaan Saranan Peningkatan Berat Badan Semasa Hamil Berdasarkan Indikator IOM (Institute of Medicine) 2009 di Peringkat Klinik Kesihatan.</i></p> <p>By: Puan Zaiton Daud, Division of Nutrition</p>	Division of Nutrition	No. 4/2017 @ 3 August 2017

No	Title	Division	Date of Approval
6.	<u>Kertas Dasar 6/2017</u> National Strategic Plan for TB Control (2016-2020) By: Dr Asmah binti Razali TB/Leprosy Sector, Division of Disease Control	Division of Disease Control	No. 4/2017 @ 3 August 2017

Source: Public Health Development Division, MoH

Other than that, the Public Health Programme Technical Meeting is an annual agenda held in two levels which are at state level with all State Health Deputy Directors (Public Health) and at district level with all District Health Officers. The objective of this meeting in general is to identify policy implementation and Public Health services running effectively and to discuss issues raised. This is to disseminate the programme's way forward and to share the best practices among states and districts in providing health services. Through dialogue sessions with the Deputy Director General of Health (Public Health), various issues and problems at the state and district levels were discussed in order to obtain results and solutions.

In 2017, three (3) Public Health Programme Technical Meetings with State Health Deputy Directors (Public Health) were successfully carried out. Papers/technical updates presented during these meetings are in **Table 3**.

Table 3
Papers Presented During The Public Health Programme Technical Meetings With State Health Deputy Directors (Public Health), 2017

Meeting	Title of Presentations	Presenter
No. 1/2017 (22 to 24 March 2017), KKM, Putrajaya	1. Public Health Organization	Division of Public Health Development, MoH
	2. Findings from Vaccine Study	Muar District Health Office
	3. SIA Measles	Division of Disease Control, MoH
	4. Planning of 2017	Division of Health Education, MoH
	5. Planning of 2017	Division of Disease Control, MoH
	6. Planning of 2017	Division of Nutrition, MoH
	7. Planning of 2017	Division of Family Health Development, MoH

Meeting	Title of Presentations	Presenter
No. 2/2017 (14 to 16 May 2017), Seremban, Negeri Sembilan	1. Public Health Research Circle	JKN Negeri Sembilan
	2. NSP-NCD, KOSPEN Updates, KOSPEN-Plus Updates	Division of Disease Control, MoH
	3. EnPHC	Division of Family Health Development, MoH
	4. I-jejak	JKN Negeri Sembilan
	5. Implementation of HPIA & HEPIA at Health Facilities	JKN Melaka
	6. Pre-Physician Training	Division of Public Health Development, MoH
	7. Monitoring of DrPH students at DHOs	Division of Public Health Development, MoH
	8. Physical Activity Enforcement at State/District Level	Division of Health Education, MoH
	9. Main Focus of 2017	Division of Family Health Development, MoH
	10. Updates and Implementation of Nutrition Activities 2017	Division of Nutrition, MoH
	11. KOSPEN Updates, KOSPEN-Plus, Verbal Autopsy	Division of Disease Control, MoH
No. 3/2017 (6-8 November 2017), KKM, Putrajaya	1. Implementation of the Smoking Habit Amongst Primary School Students, Education and Prevention Programme (Imfree)	Division of Health Education, MoH
	2. Presentation of the Health Programme KPI Achievement (January-Jun 2017)	Division of Public Health Development, MoH
	3. Suggestion to Create a Public Health Physician Strategic Post	Division of Public Health Development, MoH
	4. Suggestion of Public Health Physician <i>Parallel Pathway</i>	Division of Public Health Development, MoH
	5. Mid Term Review of the Eleventh Malaysia Plan, Core 2 "Improving Wellbeing for All"	Division of Public Health Development, MoH

Source: Public health Development Division, MoH

As for the Public Health Programme Technical Meeting with the District Health Officers, in 2017 only one session was successfully held in Seremban. Papers presented in the session are as in **Table 4**.

Table 4
Working Paper presented at the Technical Meeting with Public Health Program Officer of Health 2017

Meeting	Title of Presentation
16 to 17 May 2017 (Seremban, Negeri Sembilan)	1. Implementation of HPIA & HEPIA at Health Facilities JKN Malacca
	2. Pre-Physician Training Division of Public Health Development, MoH
	3. Monitoring of DrPH students at DHOs Division of Public Health Development, MoH
	4. Physical Activity Enforcement at State/District Level Division of Health Education, MoH
	5. Main Focus of 2017 Division of Family Health Development, MoH
	6. Updates dan Implementation of Nutrition Activities 2017 Division of Nutrition, MoH
	7. KOSPEN Updates, KOSPEN-Plus, Verbal Autopsy Division of Disease Control, MoH

Source: Public health Development Division, MoH

QUALITY

Continuous Quality Initiative is another important programme in Public Health Policy & Service Section. Main activities pertaining quality in Public Healthcare were monitored, such as National Indicator Approach (NIA) and Key Performance Indicator (KPI) for Deputy Director General of Health (Public Health) and KPI for District Health Officer MoH.

Table 5 and **6** below are the indicators for NIA, KPI for Deputy Director General of Health (Public Health) and the achievements for 2017.

Table 5
NIA achievement for year 2017

No	Indicator	Standard	Achievement
1.	Rejection Rate of X-ray Film (%)	< 2.5	0.75%
2.	Lab Turn Around Time (LTAT)	> 95%	96.7%
3.	Percentage of asthmatic patients received appropriate management of asthma at health clinics	Beating own standards	69.8%

No	Indicator	Standard	Achievement
4.	Percentage of clients perceived the service provided as Client Friendly	Beating own standards	97%
5	Percentage of visual defect cases detected among standard 1 school children (%)	> 5%	Dropped
6.	Sputum conversion rate	90%	90.33%
7.	Dengue outbreak control index (%)	100%	83.74%
8.	Dengue notification time Index (%)	100	90.25%
9.	Malarial Death	0 death	12
10.	HbA1C level – Proportion of T2DM patients with HbA1C level <6.5%	³ 30%	28.2%
11.	Incidence rate of needle stick injury per 1000 health care workers within MOH	0	7.12
12.	Incidence rate of severe Neonatal jaundice (NNJ) per 10000 estimated life birth	< 50	32.2
13.	Percentage of anaemic pregnant mother (haemoglobin less than 11gm % at 36 weeks gestation).	10%	6.4%

Source: Public health Development Division, MoH

Table 6
Deputy Director General of Health (Public Health) KPIs achievement for year 2017

No	Indicator	Standard	Achievement
1.	<i>Quit Smoking Success Rate</i>		
	(a) <i>At private facilities</i>	$\geq 30\%$	21.5%
	(b) <i>At Klinik Kesihatan</i>		41.1%
	(c) <i>At Government Hospitals</i>		42.8%
	(d) <i>Quit Smoking Success Rate = (a)+(b)+(c)</i>		36%
2.	<i>Number of Klinik Kesihatan with a new Primary Health Care (PHC) Team</i>	48	48
3.	<i>Percentage of Domiciliary Treatment Cases With Increase of Activity of Daily Living(ADL) within/after 3 months (Increase in Modified Barthel Score Index)</i>	55%	75%
4.	(a) <i>Tuberculosis Treatment Success Rate For Citizens</i>	$\geq 85\%$	84%
	(b) <i>Tuberculosis Treatment Success Rate For Non Citizens</i>	$\geq 60\%$	65%

No	Indicator	Standard	Achievement
5.	Notification rate of new HIV cases per 100,000	≤ 10.5	10.3/ 100,000 pop
6.	Number of environmental workplace setting that implementing the Kospen Plus Programme	120	194
7.	Percentage of workers under KOSPEN Plus at work place screened for NCD Risk Factor	$\geq 50\%$	72.7%
8.	Percentage of Senior citizen in intitutes (registered + non registered with Jabatan Kesihatan Masyarakat) doing health screening at least once a year and given appropriate interventions	$\geq 90\%$	90.81%
9.	Percentage of children with increasing body weight in the 'Program Pemulihan Kanak-Kanak Kekurangan Zat Makanan'	$\geq 47.5\%$	55.4%
10.	Percentage of schools implementing C-HAT	30%	42.2%
11.	Percentage of schools being monitored for food and beverages sales at school canteens	65%	71.4%
12.	Number of indigenous malaria cases	0	89
13.	Percentage of Diabetes Type 2 patients reaching HbA1c level of less and equal to 6.5% ($\leq 6.5\%$)	$\geq 30\%$	28%
14.	Percentage of measles immunization coverage for children aged 1-2 years old	$\geq 95\%$	92.08%
15.	Percentage of controlled Hypertension patients at Klinik Kesihatan wih TPC with blood pressure measuring BP<140/90mmHg	50%	39.4%
16.	Percentage of preschool children/ TABIKA KEMAS attaining ' telah maju ' in five basic skills regarding self health care in the Program Tunas Doktor Muda.	50%	85.9%

Source: Public health Development Division, MoH

SPECIAL PROGRAMME SECTOR

The Special Programme Sector is responsible to the policies development of Health Service with multiple Public Health activities and Inter-Agency stakeholders in its implementation. It is part of Policy and Public Health Service Section in Public Health Development Division. Its main function is looking into health policies related to Orang Asli Health Service and Institutional Health Service (Prison Health).

a. Orang Asli Health Service

The Orang Asli Health Service in MoH is formed in 2012 and placed under Office of Deputy Director General (Public Health). In August 2016, following an organizational-restructuring, Orang Asli Health Service is placed under the Special Programme Sector.

The MoH remains committed in providing quality services to the Orang Asli community all over Malaysia. Since the takeover of the Orang Asli Health Service from the Ministry of Rural and Regional Development, the MoH has strengthened the health care delivery to the Orang Asli population to a more comprehensive and holistic service.

The main approach of MoH in implementing health care delivery for Orang Asli community is by increasing the accessibility of health services for the community including Orang Asli that live in the rural area. This is in line with the 2nd Strategic Thrust under the 11th Malaysia Plan: Improving Well Being for All.

Several initiatives have been implemented such as:

- i. The Flying Doctor Service (FDS) 4-years contract has ended in 2017 and it is renewed for another two (2) years, until December 2019. This is to ensure continuity of health services to Orang Asli communities in remote areas of Gua Musang (Kelantan) and Hulu Perak (Perak). This FDS service covers 17 landing sites in the remote areas that cannot be accessed easily either through land or water.
- ii. In order to achieve Universal Access to Quality Health Care which is part of The 2nd Strategic Thrust of 11th Malaysia Plan - expanding healthcare services with emphasizes to rural and remote areas, the MOH has strengthened the Orang Asli Mobile Service. This is to ensure that the 2017 target of 80 per cent coverage for every five (5) weeks visits to the Orang Asli Villages in the rural area is achieved. Through this approach the rural Orang Asli community will enjoy regular comprehensive and optimal health services comparable to existing health services elsewhere in Malaysia.

In 2017, a total of **667,834** health seeking visits involving Orang Asli reported using a variety of health services offers under MOH Primary Care. (Table 7)

Table 7
Number of Health Seeking Visit Using MoH Primary Health Services
Related To Orang Asli in 2017

No	Health Services	Health Seeking Visits
1.	Outpatient	285,756
2.	Antenatal	48,690
3.	Postnatal	5,014
4.	Family Planning	92,283
5.	Children's Health	122,810
6.	Home Visits	113,281
Total		667,834

Source: Public Health Development Division, MoH

To further enhance the effectiveness of health service delivery to Orang Asli communities, the Ministry of Health has set a high-level meeting attended by both The Secretary General from The Ministry of Health and The Ministry of Rural and Regional Development was held on 19 December, 2017 (**Image 1**). The successful meeting discussed on how both ministries can contribute to further improve The Health Service for Orang Asli in Peninsular Malaysia.

Image 1
Inter-Ministeries Meeting On Orang Asli Health Services on 19 December 2017
Co-Chaired by The Secretary General of The Ministry of Health and
The Ministry of Rural and Regional Development



Source: Public health Development Division, MoH

A Survival Training Course was held from 9 to 12 October 2017 at the Post Senderut, Lipis, Pahang with a total of 70 participants representing 11 Orang Asli Mobile Teams from all over Peninsular Malaysia. The goal of this course is to provide knowledge and skills in order to build-in a culture of efficiency and friendliness among the health staffs involve in the delivery of health services to the Orang Asli rural communities. It also provides a basic knowledge of handling 4-wheel drive among the Orang Asli Mobile Team members.

Image 2
The Survival Training Course; 9 to 12 October 2017 Post Senderut, Lipis Pahang



Source: Public health Development Division, MoH

b. Institutional Health Service (Prison Health)

Institutional Health Service refers to services delivered on an outpatient basis by departments or other organizational units of, or sponsored by, such institutions. Presently, The Special Program Sector looks into the policy involve in the health services render to prisons all over Malaysia by The Malaysian Prison Department.

In order to strengthen the Institutional Health Service in Prison, the MoH has done Field Monitoring Visit to selected health facilities under The Malaysian Prison Department. Together with representatives from The Family Health Development Division, visit to The Muar Rehabilitation Centre and The Penor Prison in Kuantan Pahang was done on 17 August 2017 and 7 November 2017, respectively. The objective of the visit is to monitor the implementation of health services in prisons and to identify areas of improvement that can be done to ensure a comprehensive and optimal health service is provided in the prison.

To further enhance the effectiveness of health service in prison, a joint Technical Meeting on Prison Health Services between the MoH and with the Malaysia Prisons Department has been identified as part of annual activity. Representative from MoH include program officers from Disease Control, Family Health Development, Nutritional and Medical Development Division. The 1st meeting was held on 13 July 2017.

The MoH is also responsible to identify officers to fill the health personnel cadre posts in the prison's clinics all over Malaysia. The statistic of cadre posts and status of placement as in **Table 8**.

Table 8
Total of Cadre Post of Health Personnel in Malaysia Prison's Clinics 2017

Cadre Post	Number of Posts (a)	Post Placement (b)	Percentage of Placement (b/a x 100) (%)
Medical Officer	60	48	80
Dental Officer	11	5	45
Assistant Medical Officer	116	116	100
Assistant Pharmaceutical Officer	42	38	90
Staff Nurse	1	1	100

Source: Public health Development Division, MoH

THE SECTION OF PUBLIC HEALTH PROFESSION DEVELOPMENT

The Section of Public Health Profession Development is responsible for the development of policy in the Public Health Programme, so that all health servants in the Public Health Program met the standard of competency in the delivery of services to citizens. The activities include:

- i. Public Health Specialty Services
- ii. Development of Public Health Professions

- iii. Training and Continuous Professional Development (CPD)
- iv. Usage Monitoring of Public Health Training Facilities

By December 2017, the number of Public Health Specialist in Ministry of Health were 418. Since 2008, MPH 4-year program has been replaced by MPH+DrPH Training Programme. Currently, there are five (5) university that offer the program namely University of Malaya (UM), University of Science Malaysia (USM), University Kebangsaan Malaysia (UKM), University Malaysia Sarawak (UNIMAS) and University Putra Malaysia (UPM). In 2017, a total of 38 Medical Officers have been gazetted as a Public Health Physician compared to 26 Medical Officers gazetted in 2016.

This section is also responsible for developing the policy on the competency and direction of various professions in the Public Health Programme. Any proposal paper for profession development by any of the Profession Head, will be reviewed.

With regard to human resource training, in 2017, a total of 3882 courses were conducted throughout the country (value of RM7,425,056.30) compared to 6183 courses (value of RM14,125,992.60) in 2016. In 2017 a total of seven (7) staffs were sent abroad to attend short-term training courses. Overall achievement for in-service training program carried out in year 2016 and 2017 as shown in Table 1. Meanwhile, the performance of health staff attended training, for at least 7 days a year, in 2017, as shown in **Table 9, Figure 1 and 2.**

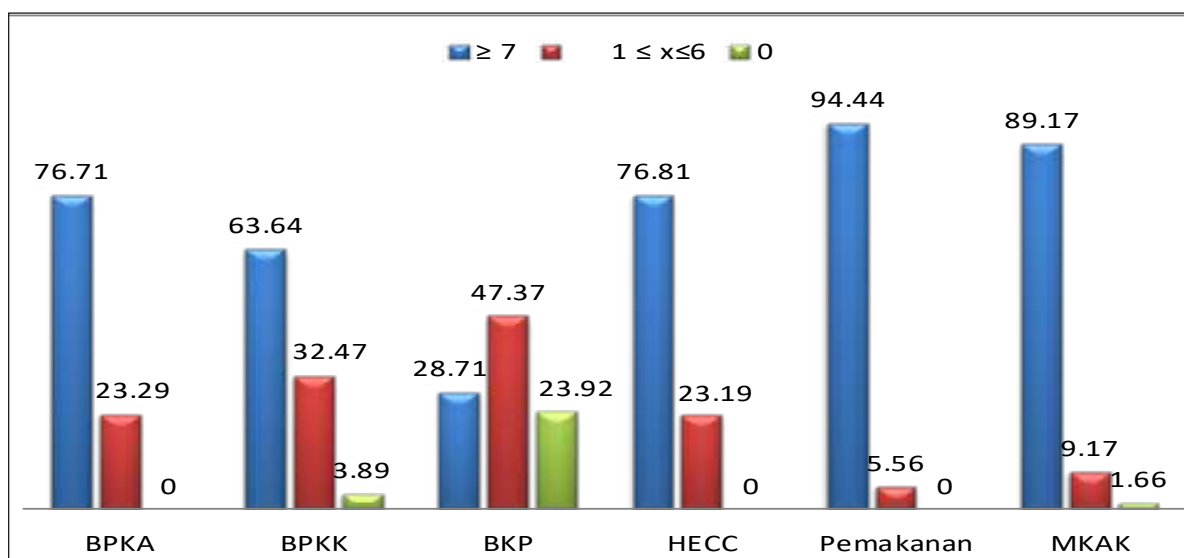
Table 9
Public Health Program: In-service Training Achievement, for 2016 and 2017.

	Achievement			
	Year 2016		Year 2017	
	No. Of Course Attended	Expenditure (RM)	No. Of Course Attended	Expenditure (RM)
Oversea	14	276,570.82 (79.20%)	7	132,000.00 (77.65%)
Local	6183	14,125,992.60 (98.54%)	3882	7,425.056.30 (99.23%)

Source: Public health Development Division, MoH

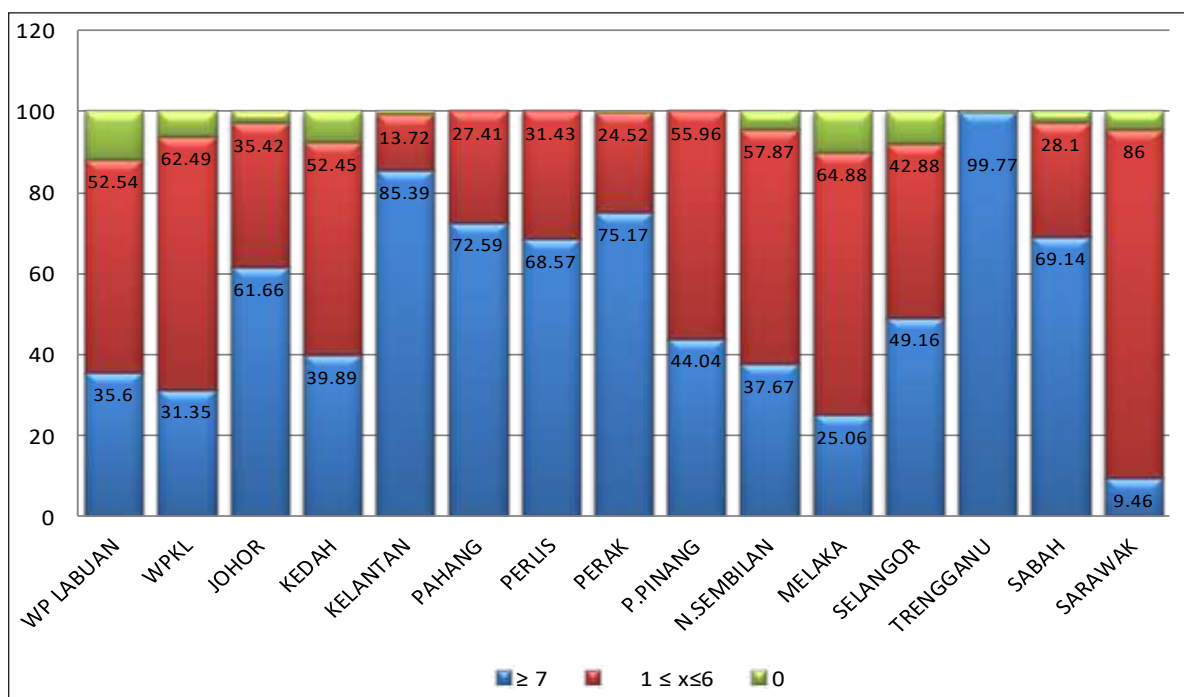
This section is also responsible for monitoring and processing all health facilities training application. Health facilities used for training, includes District Health Office, Health Clinics and Public Health Laboratory. In 2017, a total of 27 applications were approved either new use or renewal of MOA application involving 8 for Medical Program, 17 Program for Allied Health Sciences and two (2) Program for Nursing.

Figure 1
Performance of Health Staff Attended Training, for at Least 7 Days a Year in 2017 among Health Staff, Public Health Programme, Ministry of Health



Source: Public Health Development Division, MoH

Figure 2
Performance of Health Staff Attended Training, for at Least 7 Days a Year in 2017 among Health Staff, Public Health Programme, Ministry of Health, by State.



Source: Public Health Development Division, MoH

GLOBAL HEALTH SECTION

The Global Health Section had conducted several programmes and activities with the purpose of strengthening the role of the Ministry of Health Malaysia as an active advocate in the arena of global health diplomacy. The following are some of the achievements accomplished during the year of 2017 :

1. Monitoring of WHO Programme Budget 2016-2017

The Global Programme Budget 2016-2017 was approved at the 68th World Health Assembly held in May 2013 whereby we had been given the task to monitor the implementation of the activities for the biennium of 2016-2017. We are pleased to note that all 28 projects that had been proposed have been successfully implemented. The monitoring took place, as the Global Health team worked hand in hand with the WHO Country Office team, based in Cyberjaya.

2. 70th World Health Assembly (WHA) – Geneva

The 70th World Health Assembly was held from 22 to 31 May 2017 in Palais de Nations, Geneva, Switzerland. The delegation from Malaysia was led by the Honorable Minister of Health, YB Datuk Seri Dr. S. Subramaniam accompanied by three (3) senior officers from the Ministry of Health Malaysia. The theme for this assembly was “Building Better Systems for Health in the Age of Sustainable Development”. In this Assembly, the Global Health Section had played multiple roles as the technical coordinator and was part of the delegation. A total of 38 technical agenda items of health were discussed at this assembly. By the end of this assembly, a total of 18 resolutions were accepted to be adopted by all member countries present. A total of five (5) resolutions had a direct link to Malaysia whereby action was needed to be taken. These resolutions are in the field of the following:

- i. Global Vaccine Action Plan
- ii. Cancer
- iii. Non-communicable Diseases
- iv. Childhood obesity
- v. PIP

Image 3
70th World Health Assembly (WHA) – Geneva





Source: Public health Development Division, MoH

3. Official attachment of MoH Officers at WHO Headquarters – Geneva

The Global Health Section had identified three (3) senior officers within the Ministry of Health Malaysia to attend this attachment programme, which is an official training programme between MoH with the HQ of WHO, via the Training Division of MoH. This training had consisted of officers from the Disease Control Division, Pharmaceutical Services Division and the Public Health Development Division. The three corresponding technical units of WHO where they were based included : *Gender Equity & Human Right, Access to Vaccines and Medicines , Immunization Programme*.

Image 4

Official attachment of MoH Officers at WHO Headquarters – Geneva



Source: Public Health Development Division, MoH

4. 68th REGIONAL COMMITTEE MEETING Western Pacific Regional Office WHO

The Western Pacific Regional Committee Meeting is an annual event held in the month of October. For the year 2017, this meeting was held in Brisbane, Australia from 9 to 13 October 2017. This meeting was attended by 34 member countries and the delegation from Malaysia was led by the Honorable Minister of Health, YB Datuk Seri Dr. S. Subramaniam. The main agenda that was Malaysia's focus were :

- i. Measles and Rubella Elimination,
- ii. Non communicable Diseases,
- iii. Hepatitis B,
- iv. Sustainable Development Goals (SDGs); dan
- v. *Asia Pacific Strategy for Emerging Diseases and Public Health Emergencies (APSED III Framework)*

5. ASEAN 12th ASEAN Senior Officials Meeting on Health Development (SOMHD) Meeting, Brunei Darussalam

The 12th ASEAN SOMHD meeting was held in Brunei and the delegation from Malaysia was led by Dato' Dr. Chong Chee Kheong, and accompanied by Datin Dr. Faridah Aryani (Pharmaceutical Services Division), Dr. Juliana Sharmini Paul (Public Health Development Division) and Dr. Chin Cheow Keat (Food Safety & Kualiti Division). At this meeting, the Work Programme for ASEAN Health Clusters 1,2 and 3 was endorsed whilst the Work Programme for ASEAN Health Cluster 4 was endorsed ad referendum. During this meeting, Dr. Juliana Paul delivered a presentation to update members of the meeting on the achievements of Malaysia, as Lead Country (Chair) for ASEAN Health Cluster 2: Responding to All Hazards & Emerging Threats.

Image 5

ASEAN 12th ASEAN Senior Officials Meeting on Health Development (SOMHD) Meeting, Brunei Darussalam



Source: Public Health Development Division, MoH

6. ASEAN Health Cluster 2: Responding to All Hazards and Emerging Threats (August 2017)

Malaysia, as the Chair/Lead Country had hosted the 3rd Meeting of ASEAN Health Cluster 2 in August 2017, attended by nine (9) ASEAN Member States. This meeting was chaired by Dato' Dr. Chong Chee Kheong, Acting Deputy Director General of Health (Public Health). The targets and indicators for each of the projects within the Work Programme for Health Cluster 2 were discussed in detail at this meeting.

7. OIC Lead Country Coordinator Meeting (LCC) and the 12th Steering Committee Meeting (SCH)

This meeting was held from 5 to 7 November 2017 in Jeddah, Kingdom of Saudi Arabia. This meeting delegation comprised of Dr. Nik Jasmin Binti Nik Mahir (Public Health Development Division) and Pn. Siti Aida (Pharmaceutical Services Division). Malaysia, as the Lead Country for “Vaccines & Medicines” since the year 2014, was also involved in the capacity building between member states of OIC in the field of “training in Drug Regulatory Control on Post-Market Surveillance”. The other themes discussed at this meeting are as per the following:

Theme 1: Health Systems

Theme 2: Disease Control

Theme 3: Maternal & Child Health & Nutrition

Theme 4: Vaccines & Medicines

Theme 5: Emergency Health Response & Interventions

Theme 6: Information, research, education and advocacy

Image 6

OIC Lead Country Coordinator Meeting (LCC) and the 12th Steering Committee Meeting (SCH)



Source: Public Health Development Division, MoH

8. 6th ICHM – Islamic Conference of Health Ministers

The 6th Islamic Conference of Health Ministers (OIC) was held from 6 to 7 December 2017 in Jeddah, Kingdom of Saudi Arabia. The Malaysian delegation was led by the Honorable Deputy Minister of Health, YB Dato' Seri Dr. Hilmi bin Haji Yahaya and the delegation comprised of Dr. Nik Jasmin binti Nik Mahir (Public Health Development Division). At this meeting, Malaysia had been selected to be the co-chair along with Indonesia to lead the thematic activity of “Vaccines & Medicines”.

PUBLIC HEALTH LAW ENFORCEMENT

Public Health Law Enforcement is a tool in prevention and control of diseases. It is often used against people who are likely to endanger the health of the public. The main objective of public health enforcement is to protect public from health hazards. Enforcement of the Public Health Law in Malaysia includes legislation such as the Destruction of Disease-Bearing Insects Act 1975 (Act 154), Prevention and Control of the Infectious Diseases Act 1988 (Act 342), Tobacco Product Control Regulations 2004 and the Hydrogen Cyanide Act (Fumigation) 1953 etc.

Authorized Officers who enforces public health laws in Malaysia consists of Medical Officer of Health in a supervisory role and Assistant Environmental Health Officers as enforcement officers. Enforcement officers are authorized under subsequent legislations as above and enforcement actions may vary according to each law. Enforcement activity carried out towards public includes issuance of notices and compounding offences for offences such as breeding mosquitoes, smoking in gazetted non-smoking areas, selling tobacco product to minor including minors in possession of tobacco products. To control the spread of infectious disease or in case of massive mosquito breeding, premises are temporarily closed for the purpose of prevention and control activities.

Court proceedings are also taken against offenders who fail to pay any compound issued for certain offences that may be compounded under the law. For non-compoundable offences, prosecution in court is conducted from time to time by authorized officers. Public health law enforcement will continue to create awareness among public. The public need to understand that any shortfall in health may cause a negative impact on them and ultimately put them at risk of being infected.

Destruction of Disease-Bearing Insects Act 1975

The Health Ministry has carried out periodic enforcement operations in every state and district. In controlling the occurrence of vector borne diseases, enforcement under the Destruction of Disease-Bearing Insects Act 1975 has been enhanced by having more prosecution cases in court. Although the number of inspected premises has decreased from 5.5 million premises in 2016 to 4.6 million premises in 2017, court penalties have increased from RM 1.3 million to RM 1.8 million in both years as in **Table 10**.

Table 10
Enforcement of Disease Bearing Insects Act

Year	Premise inspected	Premise harbouring Aedes	Compound issued	Premise closure	No. of cases registered in court	Penalty paid for offences (RM)
2013	4,491,465	66,383	15,359	117	1,809	301,460
2014	5,419,476	79,863	25,095	243	2,414	318,242
2015	6,151,233	97,811	18,187	429	1,558	936,950
2016	5,502,748	116,756	18,017	314	1,885	1,293,140
2017	4,623,927	122,927	24,450	196	1,867	1,800,560

Source: Public health Development Division, MoH

The Enforcement of the Destruction of Disease-Bearing Insects Act 1975 focuses on problematic breeding areas such as construction sites, scrap metal premises, plant nurseries and industrial areas which in turn decreases the number of premises inspected. In previous years, residential premises were the main target of enforcement activities for vector borne diseases control.

Number of premises given closure order is in a decreasing trend in 2017 (196) compared to 2016 (314). Most of the premise occupiers has taken steps to ensure that their building is free from mosquitoes. For contractors who are still ignorant about this issue in construction sites, they were summoned to courts and prosecuting officers managed to obtain higher penalties in 2017 (RM1.8 million) compared to 2016 (RM1.3 million).

Penalty for creating conditions that may harbor disease-bearing insects is at RM 10,000.00 in case of a first offence. While for second or subsequent offence, the amount of fine is not exceeding RM 50,000.00 or imprisonment not exceeding five (5) years or both. The highest penalty for this offence was issued by Kuala Lumpur Court, Jalan Duta amounting to RM 45,000.00 to a company director.

Prevention and Control of Infectious Diseases Act 1988

Law enforcement in Infectious Disease Control has gained momentum in Malaysia with the rise in focused enforcement activities. Enforcement in this area includes inspection of nurseries that has been identified as harboring infectious disease. Whenever Food Poisoning, Hand, Foot and Mouth Disease, Leptospirosis or other infectious diseases are notified to a District Health Office, premise inspection will be carried out by authorized officers. Even though 1919 premises were inspected in the year 2017 compared to 7672 premises in 2016 as in **Table 11**, yet the number of premises given closure order has risen in percentage from 7.2 per cent in 2016 to 24 per cent in 2017. This indicates a focused enforcement activity under this Act.

Table 11
Enforcement of Prevention and Control of Infectious Diseases Act

Year	Premise inspected	Premise closure	Compound issued	Compound paid for offences (RM)
2013	2,106	318 (15%)	10	3,400
2014	5,055	368 (7.3%)	24	4,850
2015	8,737	275 (3.1%)	5	1,400
2016	7,672	555 (7.2%)	23	7,450
2017	1,919	461 (24%)	26	9,600

Source: Public health Development Division, MoH

Compounding of offenses was highest in 2017 with 26 compounds issued due to the failure to notify infectious diseases to the nearest Public Health Office. A total compound of RM 9600.00 was collected from the medical practitioners who committed the offense. In 2013, only 10 compounds were issued compared to 26 compounds in the year 2017.

Control of Tobacco Products Regulations 2004

The Control of Tobacco Products Regulations 2004 (CTPR) is a subsidiary law under the Food Act 1983. CTPR regulates among others the prohibition of advertising, promoting, sponsorship and free offer of tobacco products. Sale of tobacco products to minors is an offence which is granted as non-compoundable by the Attorney General Office. In a major prosecution, an offender was sentenced to jail terms for selling cigarette to school children. Other offences include selling cigarettes without prior approval, selling cigarette as loose sticks, online sale, smoking prohibition signage and sale of cigarettes without pictorial health warning.

A minor (under eighteen years old) is prohibited to possess any tobacco product. An act of a minor smoking tobacco products or chewing them is an offence under Regulation 13 of CTPR. Under these regulations, smoking in prohibited areas is an offence that is regularly monitored by enforcement officers. Highest number of offences under this rule was recorded in 2017 with 23,531 compounds issued and RM 2.5 million collected as compound payment.

Table 12
Control of Tobacco Products Regulations 2004

Year	Offences identified	Compound issued	Compound paid for offences (RM)
2013	31,255	17,263	1,729,898.00
2014	35,757	17,451	1,892,555.00
2015	34,778	19,198	2,041,698.00
2016	40,965	19,393	2,139,661.00
2017	45,799	23,531	2,511,621.00

Source: Public health Development Division, MoH

Sale of illicit cigarettes has been the main emphasis of the Ministry of Health in recent years. In the Control of Tobacco Product Regulations 2004, any cigarettes sold without price approval from the Ministry of Health is considered as an illicit cigarette. The sale of cigarettes without ministry approval is carried out secretly by sellers and in many cases, it was difficult to apprehend the culprits involved in this activity. Efforts are still ongoing to curb this activity including by conducting joint operations with other enforcement agencies such as Customs Department etc.

Public Health Enforcement is a challenging area of work. Often there are reports of authorized officers receiving threats from offenders. In some cases, officers were threatened by armed offenders. Almost all the offence under public health law is not amounting to a warrant case. Police officers must be alerted to arrest offenders and this will consume a lot of enforcement officers time of work. Time lost in handling certain heated situations may bring down the number of offences detected during enforcement activities.

DISEASE CONTROL DIVISION

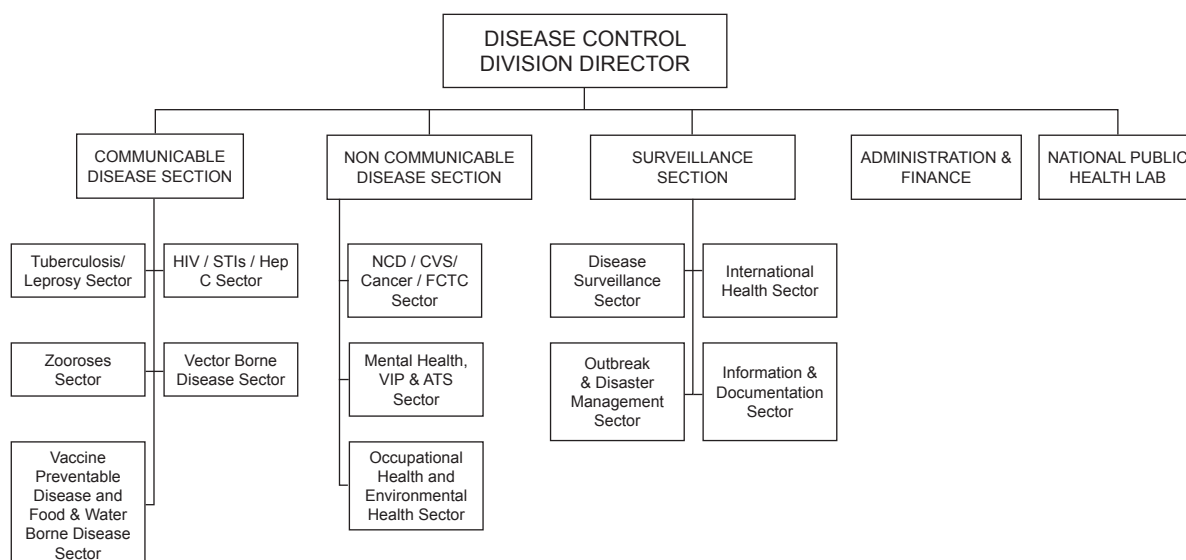
Malaysia has achieved considerable success in eradicating, eliminating or reducing specific infectious diseases over time. A shift in disease pattern from communicable to non-communicable diseases tends to occur as nation progresses from a developing to a developed status. To provide comprehensive health service for a wider community reach, this programme had gone through several evolution processes and has expanded dramatically. The Diseases Control activities in Malaysia had been initiated through specific programmes since 1961. The Epidemiology Unit was later established in 1971 under the Health Services Department. As part of the intended restructuring process, the existing Epidemiology Unit was reorganized and expanded in 1991. This transformation established the Disease Control Disease Division (DCD).

The main objective of the Disease Control Division is to reduce the occurrence of diseases and death due to communicable and non-communicable diseases as well as environment-related diseases, so that they will no longer pose a threat to public health. The other objectives include:

- i. To encourage a healthy lifestyle; a healthy, safe and hygienic work environment and workplace; suitable preventive measures; immediate detection and treatment; continuous monitoring and suitable rehabilitation services.
- ii. To encourage the participation of civil society and cooperation among agencies/sector to build a healthy and caring society.

All activities are implemented at the Ministry, State and District levels.

Figure 3
Disease Control Division Organization Chart



Source: Disease Control Division, MoH

KEY PERFORMANCE INDICATORS AND ACHIEVEMENTS IN 2017

In 2017, there are over 50 indicators monitored by Disease Control Division under various initiatives including 11th Malaysian Plan, MoH Strategic Plan, MoH Action Plan, Minister Focus Areas and Health Director General Focus Areas. **Table 13** is summary of main DCD's KPIs.

Table 13
Disease Control Division's Key Performance Indexes

No	Indicator	Target	Achievement	Comments
1a.	TB Success Rate for Malaysian	≥ 85%	84%	Minister KPI, Health Director General KPI, Health Deputy Director General (Public Health) KPI
1b.	TB Success Rate for Non-Malaysian	≥ 60%	65%	
2.	Notification Rate of New HIV cases per 100,000 population	≤ 10.5 new cases per 100,000 population	10.3	
3a.	Number of Work Place Setting Implementing KOSPEN Plus	120 settings	194	
3b.	Percentage of workers under KOSPEN Plus at work place screened for NCD Risk Factor	≥ 50%	73%	

No	Indicator	Target	Achievement	Comments
4.	Stop Smoking Success Rate	$\geq 30\%$	36%	Health Director General KPI, Health Deputy Director General (Public Health) KPI
5.	Number of Indigenous Malaria	0	89	Health Deputy Director General (Public Health) KPI
6.	Percentage of Type 2 Diabetes Mellitus achieve HbA1C $\leq 6.5\%$	$\geq 30\%$	28%	

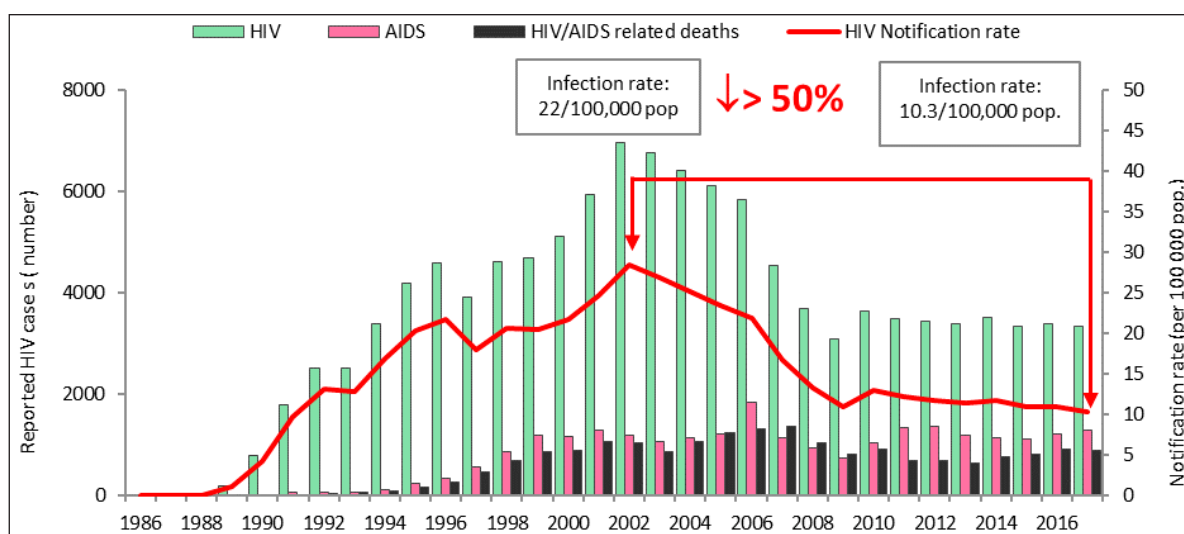
Source: Disease Control Division, MoH

HIV/STI/HEP C SECTOR

• HIV Epidemic snapshot

By end of 2017, HIV new infection in Malaysia has reduced by more than between 2002 to 2017, while the number of HIV/AIDS related deaths had been stabilized during the same period. Three (3) states with the highest notification rate (adjusted) for new HIV cases include Federal Territory of Kuala Lumpur, Selangor and Melaka. Key populations such as people with injecting drug use (PWID), female sex workers (FSW), transgender people (TG) and men who have sex with men (MSM) represent the most affected sub-population with infection rates exceeding 5 per cent. People living with HIV (PLHIV) in this country is still predominantly males (89 per cent), but gender pattern has progressively shifted towards increasing infection rates in female with male/female ratio declining from 9.6 to 6.3 between 2000 and 2017. Young people aged 20 to 39 made up 79 per cent of the infection while children under 13 had consistently remain approximately 1 per cent of HIV infections from 1986 to 2017.

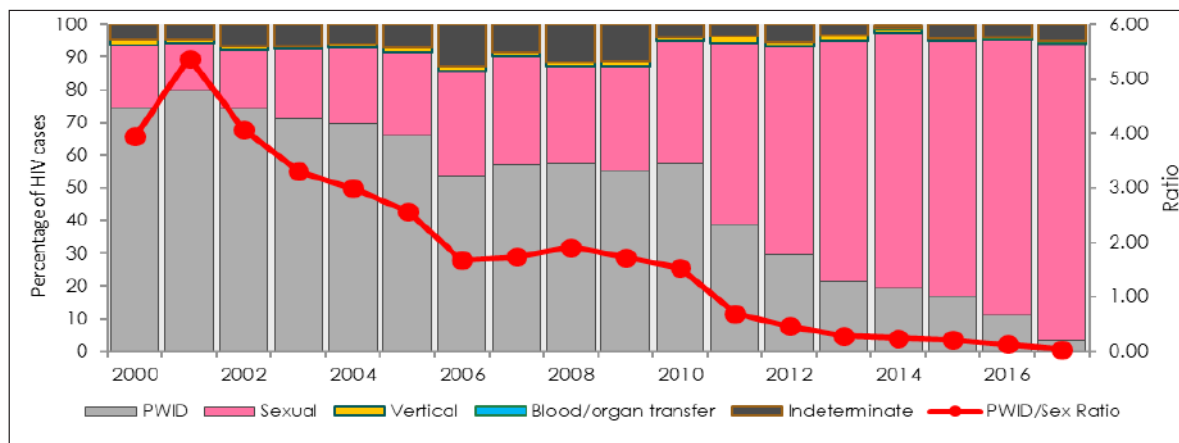
Figure 4
Reported HIV, AIDS and HIV/AIDS related deaths, Malaysia 1986 to 2017



Source: Disease Control Division, MoH

The HIV epidemic is largely among PWID, but this pattern has shifted to sexual transmission with PWID/sexual transmission ratio declining from 4 to 0.04 between 2000 and 2017 (**Figure 5**). The decline among PWID is the result of Harm Reduction programme incepted in 2006, whilst low condom use practices among other sub-populations has contributed to increasing infection through sexual transmission.

Figure 5
Reported HIV cases by mode of transmission and PWID/Sex ratio, Malaysia 2000 to 2017

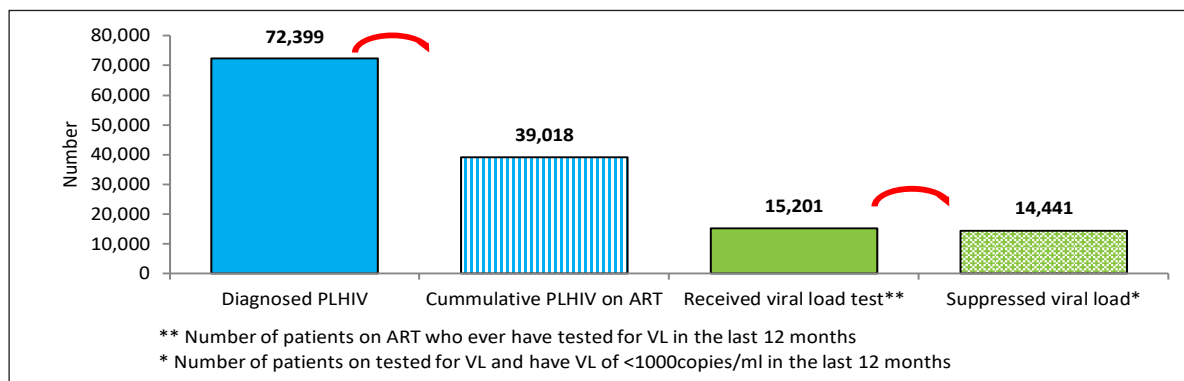


Source: Disease Control Division, MoH

• “Ending AIDS”: What Have We Achieved?

In line with the Sustainable Development Goals, Malaysia’s NSPEA (2016-2030) adopts “Ending AIDS” as its vision. It also adopts the UNAIDS strategic guidance on Fast Tracking to reach 90-90-90 by 2020 and Ending AIDS by 2030. “Ending AIDS” aims for 90 per cent of people living with HIV knowing their HIV status, 90 per cent of people who know their status receiving treatment and 90 per cent of people on HIV treatment having a suppressed viral load by 2020. By end of 2017, about 83 per cent (72,399) of PLHIV in Malaysia know their HIV status of whom 54 per cent (39,018) were on life-saving antiretroviral therapy (ART); women were more likely to get ART (92 per cent) compared to men (47 per cent). All children were put on treatment. Majority PLHIV receiving treatment was on 1st line therapy.

Figure 6
Treatment cascade, Malaysia 2017



Source: Disease Control Division, MoH

VACCINES PREVENTABLE DISEASE AND FOOD & WATERBORNE DISEASE SECTOR

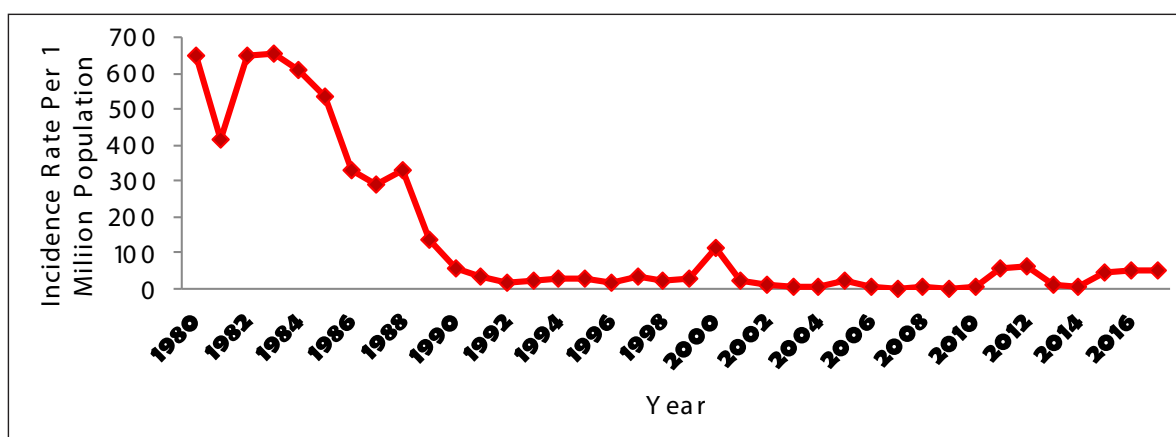
• Poliomyelitis

Malaysia was declared polio-free in October 2000. In 2010, Malaysia has fully utilized the inactivated polio vaccine (IPV) for immunization of children. On 20 September 2015, the Global Commission for Polio Eradication Certification declared that the Wild Polio Virus Type 2 (WPV2) has been successfully eradicated worldwide. The tOPV vaccine given to 7-year-olds in schools in Malaysia as an extra dose was discontinued and all the excess tOPV vaccines were centrally disposed at the Institute of Medical Research (IMR) in 2016. At the same time, a study was conducted nationwide to ensure no Wild Polio Virus type 2 (WPV2) or virus polio 2 that arises from the use of tOPV (VDPV2) is stored in any laboratory. In 2017, AFP surveillance has achieved AFP non-polio rates of 2.0 per 100,000 the population aged less than 15 years, exceeds the target set by WHO of 1 in 100,000. However, the quality of AFP surveillance is still substandard, especially the non-polio enterovirus isolation rate and the percentage of AFP cases with adequate stools.

• Measles

Malaysia has seen an increase in measles cases since 2014. In 2017, 1,709 cases were reported with an incidence rate of 52.84 per 1,000,000 populations, compared to 1,587 cases (IR 51.4) in 2016. As many as 31 per cent cases never received measles vaccine and 23 per cent cases were not eligible for vaccination (age less than 9 months)

Figure 7
Incidence of measles in Malaysia per 1 million populations, 1980 to 2017



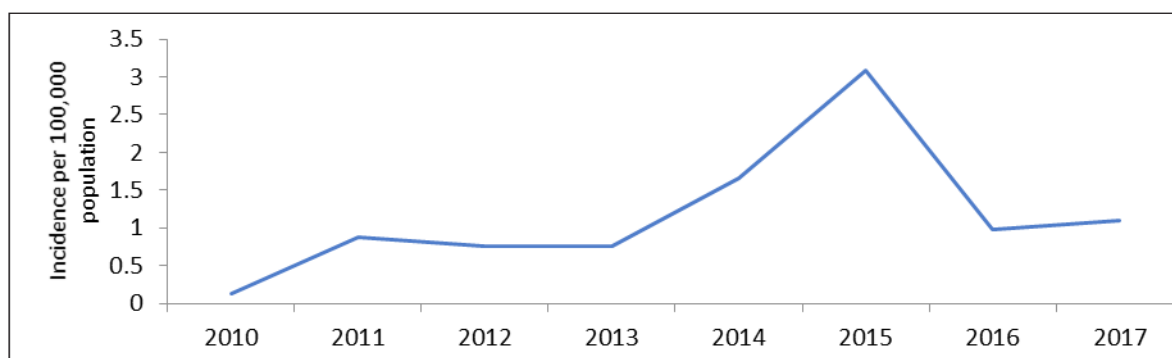
Source: Disease Control Division, MoH

In 2017, there was an increase in the number of measles outbreak (110 clusters), compared to 87 clusters in 2016. Most of the outbreaks occur among household members and in small numbers. There were only four (4) clusters involving more than 10 cases. The large number of cases of outbreak episodes demonstrated unsatisfactory community immunity and the implementation of ineffective prevention and control activities. There are two (2) measles deaths in 2017 and all are reported from Sabah. High-risk areas need to implement a supplementary measles vaccination programs to bridge the immunity gap in society. Up to 2017, measles was still endemic in Malaysia. The endemic measles virus genotypes were D8, D9 and B3.

- **Pertussis**

Pertussis has shown an increasing trend since 2010 following the use of PCR tests to diagnose cases. In 2017, number of cases increased to 353 cases compared to 298 cases in 2016. About 62 per cent of these cases were aged less than 5 months old. The number of death cases increased to 13 deaths compared to two (2) deaths in the previous year. Seven (7) of the death cases were infants who either were not eligible for pertussis immunization (1-month-old) or had not completed the primary vaccine doses (3 months old). 10 pertussis clusters were reported in 2017.

Figure 8
Pertussis incidence per 100,000 populations in Malaysia, 2010 to 2017

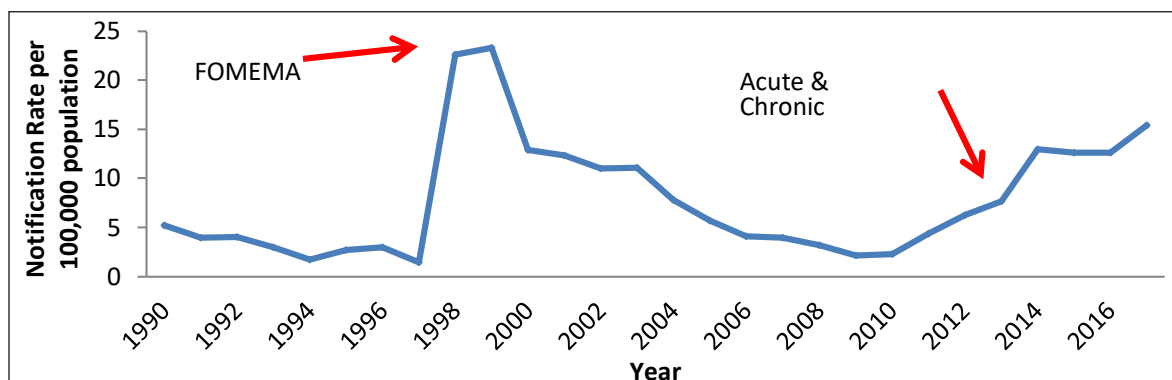


Source: Disease Control Division, MoH

- **Hepatitis B**

The increase in hepatitis B cases since 2012 was contributed by increased awareness among medical practitioners to screen and report hepatitis cases. The notification rate of Hepatitis B was 15.41 per 100,000 populations in 2017, higher than in 2016. The number of cases among Malaysians born after 1989 (year of the hepatitis B immunization started in national immunization schedule) was 265 in 2017 compared to 557 in 2016. Most Hepatitis B patients (97.9 per cent) were 18 years and older.

Figure 9
The notification rate of Hepatitis B per 100,000 populations in Malaysia, 1988 to 2017

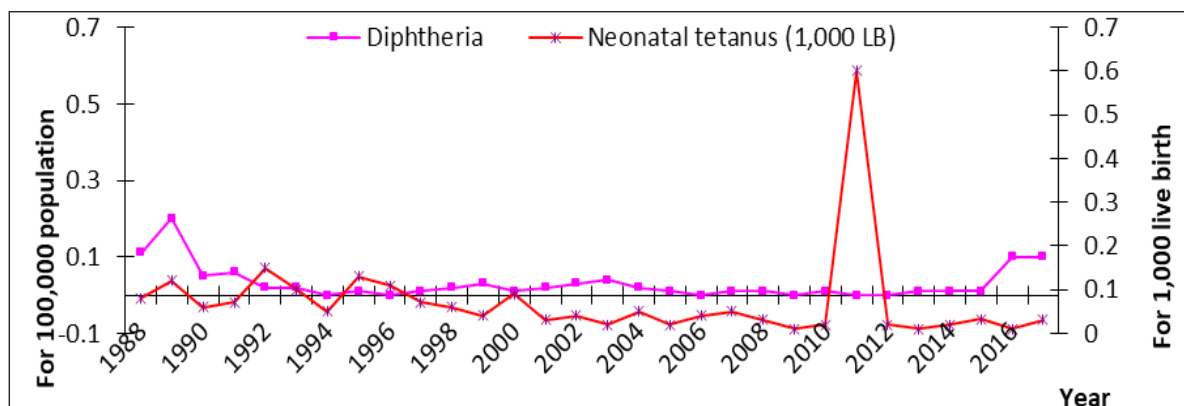


Source: Disease Control Division, MoH

- **Other Vaccine Preventable Diseases**

Neonatal tetanus and diphtheria incidence were successfully maintained at less than 1 per 100,000 populations for over 20 years. In 2017, there was an increase in the number of diphtheria cases to 32 cases with seven (7) deaths, compared to 31 cases and five (5) deaths in 2016. Six (6) diphtheria clusters among family members were reported in Kuala Lumpur, Sabah, Kedah and Johor. Most cases were among children who either did not receive diphtheria vaccine or incomplete immunization. However, there was no epidemiological linkage between the clusters. There was an increase in cases of neonatal tetanus from six (6) cases in 2016 to 16 cases in 2017. Majority of the cases were reported in Sabah (15 cases) among non-Malaysians. There were four (4) cases of neonatal tetanus deaths reported in 2017.

Figure 10
Incidence of Diphtheria and Neonatal Tetanus in Malaysia, 1988 to 2017



Source: Disease Control Division, MoH

Food and Waterborne Disease Control Program

In general, from 2011 to 2017, the Food and Waterborne Disease (FWBD) incidences showing a downward trend except in 2015, with an increasing trend for most of FWBD. In 2017, there was an increasing trend for typhoid and hepatitis A incidence and a downward trend for cholera and dysentery incidence.

- **Typhoid**

Typhoid incidence rate in 2017 increased slightly compared to 2016, contributed by high case incidence in Sabah, Kelantan, Selangor and Perak. Most cases of typhoid in Sabah were reported to occur in sea village settlements due to lack of clean water supply and sanitary facilities. Kelantan recorded six (6) outbreak episodes in 2017. The risk of typhoid infection still exists because most wells in the Kelantan are still unsanitary despite well chlorination activities were carried out. Typhoid outbreak in WPKL and areas around Selangor in 2015 were mainly contributed by food handlers who failed to comply with food hygiene practices.

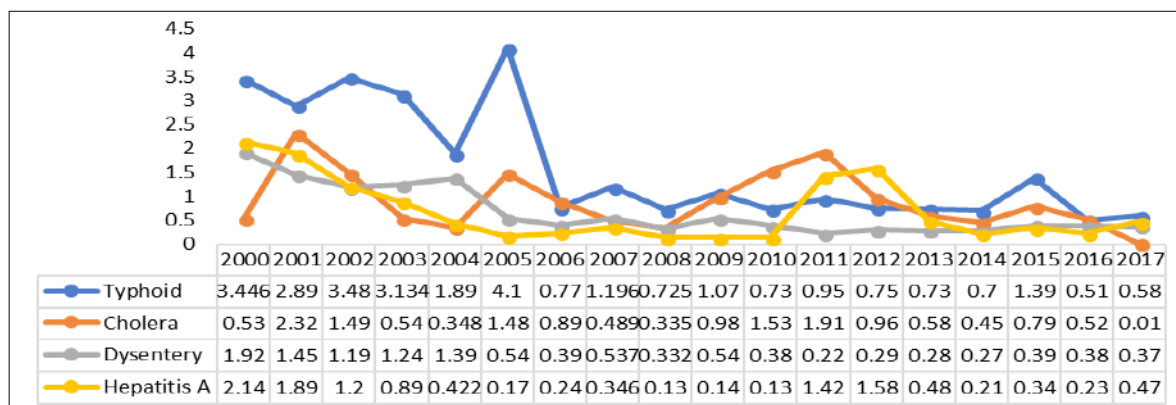
- **Cholera**

Cholera incidence in Sabah showed a cyclical trend where it peaked every 4 to 5 years. However, in 2017 the incidence rate declined abruptly with only two cases reported in Sabah, as compared to 170 cases in 2016. This was a result of prevention activities including prophylaxis in areas affected by outbreak in 2016 in Sabah. Main risk factors include access to insanitary water supply, poor hygiene and sanitation and the practice of consuming contaminated sea weed such as “latok” which is collected from the same area where sewerage effluents are discharged.

- **Dysentery**

Dysentery has always been under notified disease due to incomplete information to fulfil case definition criteria. In 2017, the incidence rate of dysentery slightly reduced to 0.37 per 100,000 populations from 0.38 per 100,000 populations in 2016.

Figure 11
Trend of Incidence of Typhoid, Cholera, Hepatitis A and Dysentery in Malaysia, 2000 to 2017

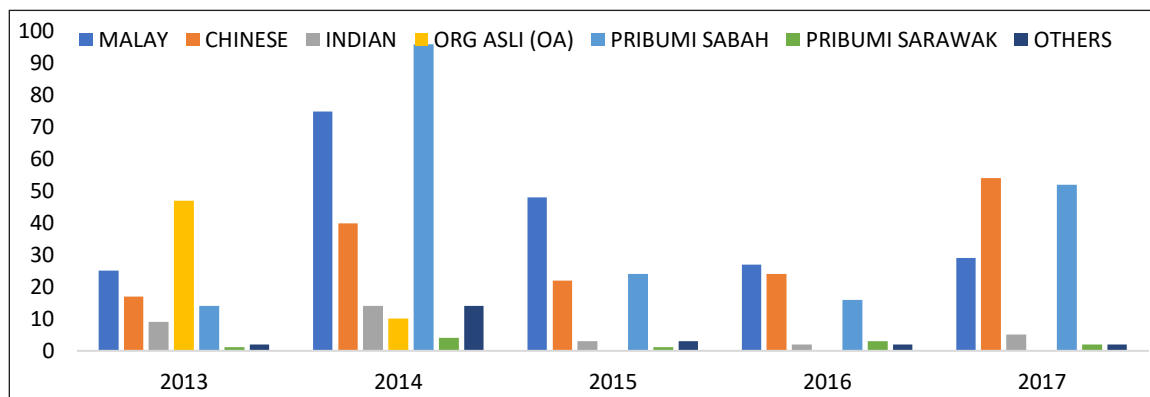


Source: Disease Control Division, MoH

- **Hepatitis A**

In general Hepatitis A has been on a downward trend since 2000 except in 2011 and 2012 where the incidence peaked at 1.42 and 1.58 per 100,000 population respectively. Perak recorded a large outbreak in 2012 from the consumption of contaminated toddy made by illegal backyard industry. Hepatitis A outbreaks are commonly associated with unsafe water supply and poor sanitation. Orang Asli (OA) communities were frequently affected with small outbreaks because of unsafe water supply. However, for 2015 to 2017, there was no OA communities were affected with hepatitis A. The incidence of Hepatitis A in 2017 has increased to 0.47 per 100,000 populations compared to 0.23 per 100,000 populations in 2016 with two (2) outbreak episodes in Sabah which contributed to the increase in cases of Hepatitis A throughout the country.

Figure 12
Comparison of hepatitis A cases among ethnic groups 2013 to 2017



Source: Disease Control Division, MoH

- **Food Poisoning**

The incidence rate of food poisoning per 100,000 populations has decreased to 42.25 in 2017 compared to 56.62 in 2016. This figure is within the 5-year median rates for food poisoning which is 49.79 per 100,000 populations. The total episode of food poisoning has also decreased to 404 episodes as compared to 526 episodes in 2016. The total episodes of food poisoning involving schools in 2017 have also decreased to 181 episodes as compared to 257 episodes in 2016. In 2017, from a total of 404 episodes of food poisoning nationwide, 181 (44.8 per cent) episodes took place in Ministry of Education's (MOE) schools. This represents an increase of 21.13 per cent from food poisoning episodes in 2016 at MOE school canteens and hostel kitchens.

Food Poisoning associated with 1Malaysia Milk Program (PS1M) has markedly reduced from 96 episodes in 2011 to four (4) episodes in 2017. Continuous monitoring of PS1M along the supply chain and supplier's compliance to Standard Operating Procedures set by Ministry of Health and Ministry of Education has significantly improved the management of PS1M.

- **Mortality Associated with Food Water Borne Disease**

Deaths due to Food Water Borne Disease are largely preventable. Mortality is commonly associated with delay in seeking treatment, toxicity of causative agents such as marine toxin and the presence of other co-morbid medical condition. Case Fatality Rate (CFR) has reduced to 0.08 in 2013 to 0.03 in 2017.

Table 14
Food and Waterborne Disease Mortality 2015 to 2017

Year	Number of Death Associated with					Total Deaths
	Food Poisoning	Cholera	Typhoid	Paratyphoid	Dysentery	
2015	2	2	6	1	0	11
2016	6	0	3	1	1	11
2017	4	0	4	1	1	10

Source: Disease Control Division, MoH

ZOONOSES SECTOR

The notifiable zoonoses diseases are Ebola, Leptospirosis, Nipah, Plague, Rabies and Avian Influenza. In addition, there are two non-zoonotic diseases monitored by Zoonoses Sector, which are Hand Foot and Mouth Disease (HFMD) and Melioidosis.

- **Leptospirosis**

In 2017, there were 4,365 cases of leptospirosis reported into the eNotifikasi system including 27 deaths; compared to 5,285 cases with 52 deaths in 2016. The incidence of leptospirosis reduced as well. 68 per cent of cases were men and 47 per cent were among the age group of 25 to 55 years. There were 16 leptospirosis outbreaks reported and most of them occurred in residential areas.

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

In 2017, a total of 29,359 HFMD cases was reported and no death cases. This showed a 38 per cent reduction of cases as compared to 2016 (47,008). There were 926 HFMD outbreaks reported in 2017, with 35 per cent reduction compared to previous year (1,431).

- **Rabies**

Since 1990, there was no rabies cases reported until 2017. There were six (6) cases including five (5) deaths reported in Serian with case fatality rate of 83 per cent. Five (5) of the six (6) cases were children aged between 4 to 7 years. Only a case survived, aged 7 years old boy, and was discharged from hospital with respiratory support. Prevention and control activities on animals were handled by Department of Veterinary Services. Surveillance in the animals noted 62 dogs and six (6) cats were positive rabies. They came from 28 localities in five (5) divisions in Sarawak and were declared as rabies outbreak areas. The Virology Unit, IMR sequenced the rabies virus isolated from a human case in Serian and noted that the virus has the highest genome sequence equation with the sequence of genome strains of rabies virus originating from Kalimantan and Sulawesi.

Table 15
Rabies outbreak areas by division in Sarawak

Division	Serian	Kuching	Samarahan	Sri Aman	Sarikei
No. of rabies outbreak areas	21	4	1	1	1

Source: Disease Control Division, MoH

- **Melioidosis**

In 2017, there were 492 cases reported with an incidence rate of 1.52 per 100,000 populations. The number of cases increased by 54.7 per cent as compared to 2016. The number of dead cases was increased by 75 per cent with 119 deaths as compared to last year. There was no melioidosis outbreak reported in 2017.

- **Avian Influenza**

Avian influenza was gazetted as a notifiable disease on 30 November 2016. In 2017, there was an outbreak among birds in six (6) districts of Kelantan i.e. Kota Bharu, Pasir Mas, Pasir Puteh, Bachok, Tumpat dan Tanah Merah. However, there was no human case.

- **Brucellosis**

In 2017, Bacteriology Unit of Institute for Medical Research (IMR) reported 42 lab-confirmed brucellosis cases. Selangor reported the most with 19 cases, followed by Perak with seven (7) cases and six (6) cases from Kelantan. In 2017, there were three (3) brucellosis outbreaks reported; which were two (2) from Selangor and one (1) from Kelantan. All cases had history of drinking unpasteurized goat milk; either they bought it online from a supplier (a cluster) or bought the milk from the collecting centre of goats' farm.

- **Ebola, Plague, And Nipah**

There was no Ebola, Plague and Nipah cases being reported in 2017.

TB & LEPROSY SECTOR

• National Tuberculosis Control Program

Malaysia is committed with WHO End TB Strategy to end the global TB epidemic by 2035. To strengthen this battle against TB, the National Strategic Plans (NSP) to Control TB (2016 to 2020) has been developed and shall be the national guiding principles in control of TB towards achieving The End TB Strategy goals.

Total number of notified TB cases for 2017 was 26,168 cases (NR 80.7 per 100,000 populations), increment two (2) per cent compared to 25,739 cases (NR 81.3 per 100,000 populations) in 2016. Number of TB deaths increased from 1,945 deaths (Mortality Rate (MR) 6.1 per 100,000 populations) in 2016 to 2,098 deaths (MR 6.5 per 100,000 populations) in 2017.

• Tuberculosis Surveillance

Of the 26,168 TB cases notified in 2017, 23,991 (91.7 per cent) were new cases, 1,479 (5.6 per cent) relapse cases, 593 (2.3 per cent) treatment after default cases and 105 (0.4 per cent) treatment after failure case. Of these 26,168 cases, 15,655 (59.8 per cent) were pulmonary TB smear positive cases, 5,757 (22.0 per cent) were either pulmonary TB smear negative, smear not done or not known cases, 3,913 (15.0 per cent) were extra-pulmonary TB cases and 843 (3.1 per cent) were pulmonary TB and extra-pulmonary TB.

Sabah contributed the highest number of TB cases i.e. 5,106 cases (19.5 per cent) followed by Selangor 4,916 cases (18.8 per cent) and Sarawak 2,797 cases (10.7 per cent). Highest proportion of TB cases are among age group are the age group of 25-34 years old with 4,862 cases (18.5 per cent). There were 3133 cases of TB among non-Malaysian which account for 12 per cent from total cases. TB cases among non-Malaysian increased from 2,978 cases in 2016 to 3,133 cases in 2017.

For 2017, 22,848 (87.3 per cent) among notified TB cases underwent HIV screening. Of these 22,848 cases, 1463 cases (6.4 per cent) were HIV positive. 379 of TB-HIV cases (26 per cent) received HAART and 110 cases (8 per cent) received CPT. Nearly one fifth of TB patients had co-morbid Diabetes. TB patients with diabetes increased from 4192 cases in 2014 to 4,404 (18.2 per cent) cases in 2015, 4,623 (18.0 per cent) cases in 2016 and 4959 (19 per cent) in 2017.

TB cases among Ministry of Health healthcare worker for 2017 were 289 cases compared to 286 cases in 2016. NR of TB among HCW was 118.0 per 100,000 HCWs in 2017 compared to 119.6 per 100,000 HCWs in 2016. There were 110 cases of MDR-TB notified in the year 2017 with proportion of 0.4 per cent of all notified TB cases in 2017.

• Tuberculosis Treatment Outcome Analysis

Cohort analysis of new and relapse cases from year 2013 to 2016 showed that treatment success rate had improved from 76.3 per cent (cohort 2013) to 81.8 per cent (cohort 2016). When analysed separately, treatment success rate among Malaysian for cohort 2016 was 84 per cent and among non-Malaysian was 65 per cent.

- **Tuberculosis Prevention and Control Activities**

There are several TB prevention and control activities, such as

- BCG Vaccination Programme - aim is to prevent severe TB disease during childhood especially TB meningitis and miliary TB. BCG coverage was above 98 per cent since year 2000 onwards with achievement of 98.5 per cent for 2017.
- Screening of Symptomatic TB Patients - In 2017, 603,671 patients (1,931 per 100,000 populations) were screened for TB symptoms and 15,649 patients had positive AFB direct smear examination.
- Screening of Contact of Index Case TB at First Visit - Proportion for contact to be screen was 1:10 for each index case of TB. Total of 188,642 (72.09 per cent) contacts were examined at first visit to healthcare facilities in 2017 (target 70 per cent). Contact cohort 2015 that were examined at fourth was 10.71 per cent.
- Screening of High Risk Group TB - Symptomatic screening and chest radiograph screened about 666,127 high-risk groups in 2017. Of these screening, 3631 (0.5 per cent) were found to have TB.

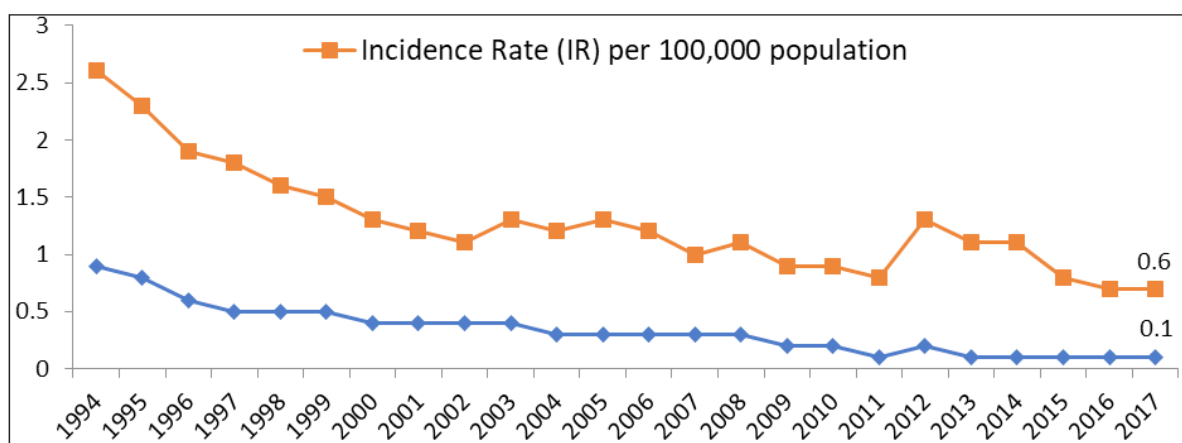
- **National Leprosy Control Program**

Malaysia National Leprosy Control Programme (NLCP) launched in 1969 to control and reduce leprosy burden in Malaysia. In 2017, total new leprosy cases were 214 cases which were slightly higher compared to 206 cases in 2016. National elimination status achieved in 1994 continues being maintained with the prevalence rate of leprosy in 2017 was 0.1 per 10,000 populations at the end of 2017.

From the total of 214 new registered leprosy cases in 2017, 73 per cent were in category case of Multibacillary and 27 per cent Paucibacillary. Cases of multibacillary normally having high bacteriological load and more prone as source of infection to others if untreated.

Most of our new leprosy cases among Malaysian is from remote geographical areas involving local community in Sabah, Sarawak and our aborigines in Peninsular Malaysia. States with highest reported cases were from Sabah (75 cases), Selangor (34 cases) and Pahang (19 cases). By district, Tawau, Sabah reported highest cases (19 cases) followed by Gombak (16 cases).

Figure 13
Incidence Rate (IR) and Prevalence Rate (PR) of Leprosy (2001 to 2017)



Source: Disease Control Division, MoH

Of the 214 new cases registered in 2017, 72 per cent were male and 28 per cent female. 6 per cent of all the cases were children aged 0 to 14 years old. New leprosy cases among children indicate the occurrence of recent or active disease transmission in local community. However, no new cases among children detected with Grade 2 Deformity.

There were 74 cases of leprosy among Non-Malaysian in 2017 (35 per cent from total cases). Persistently high cases detected among Non-Malaysian especially from Indonesia, Philippines and Nepal which contribute 91 per cent of new cases in 2018.

Since leprosy cases not always being detected in most of our community, leprosy tend to be neglected compare to other common diseases. There are still reported cases of grade 2 deformity due to delay in detection and treatment every year. In 2017, there were 8 cases of Grade 2 Deformity reported Sabah (3), Selangor (2), Perlis (2) and Labuan (1).

- **National Leprosy Programme/Activities**

Early diagnosis and complete treatment with MDT remain the key strategies for reducing disease burden due to leprosy. Our new National Strategic Plans (NSP) to Control Leprosy (2016- 2020) has been adapting WHO - Global Leprosy Strategy (2016 -2020) to further reduce leprosy burden in Malaysia. The NSP shall become a national guiding principle in control of leprosy towards achieving Malaysia Free Leprosy. Two (2) manual books were issued in 2017 in achieving this aim.

VECTOR BORNE DISEASE SECTOR

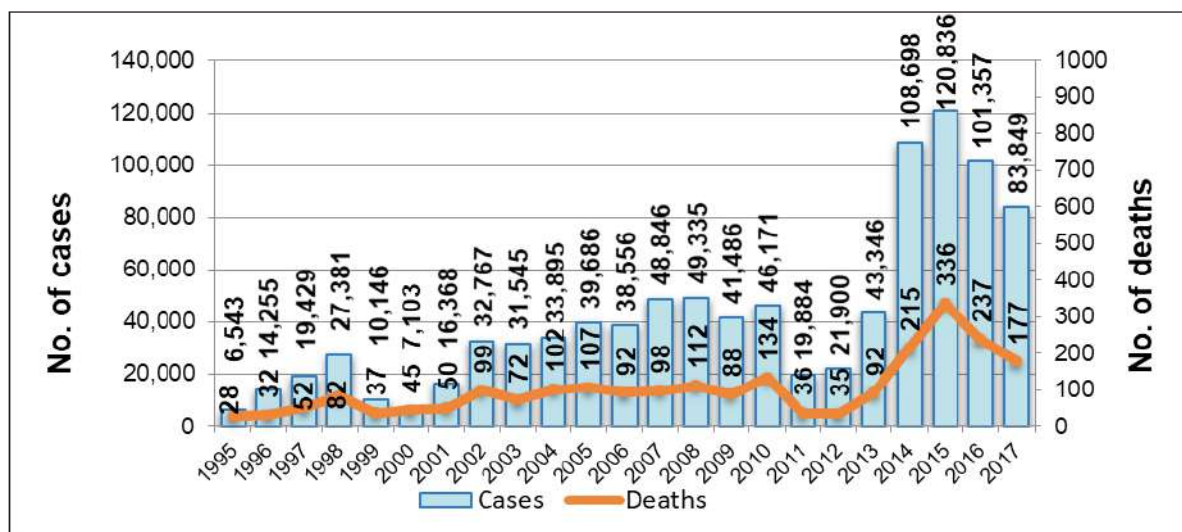
- **Dengue Control Program in Malaysia**

There are reported 83,849 dengue cases with 177 deaths in the year 2017, a decrease of 17.2 per cent of cases and 25.3 per cent of deaths as compared to the previous year. This is the second year in a row dengue cases had been reduced since its peak in the year 2015. In 2017, the incidence is 258 cases per 100,000 populations, while the Case Fatality Rate (CFR) was 0.21 per cent, a slight reduction compared to the previous year (0.23 per cent). The dengue outbreak localities also have shown downtrend pattern, in which 314 localities registered at the end of 2017, as compared to 698 localities registered in August 2017. From our observation noted a shift in Dengue serotype in the year 2017 where DEN3 was more dominated at the early if the year and shifted to DEN2 at the end of the year.

- **Integrated Management**

The remarkable accomplishment is the result of concentrated action from the various ministries, agencies as well as communities and people through the formation of National Dengue Special Task Force which was established in July 2014. The objective is to move the agency and society in the prevention and control of dengue. The task force included ministries from Ministry of Health (MoH), Ministry of Housing and Local Government, Ministry of Human Resource, Ministry of Education, Ministry of Higher Education, Ministry of Internal Affairs, Ministry of Defence, Ministry of Works and Ministry of Communication & Multimedia, including Local Authorities. All partners have their own jurisdictions which are beyond the health sector to deploy the strategy in combating dengue infection.

Figure 14
Reported Dengue Cases and Deaths in Malaysia (1995 to 2017)



Source: Disease Control Division, MoH

- **Environmental Management and Cleanliness**

Maintaining environmental cleanliness should go along with other preventive measures to prevent the spread of Dengue fever. Source eradication of mosquito breeding habitats remains the key to dengue prevention. Solid waste management by Local Authority was intensified. Major cleanliness campaign conducted twice this year covering 241 locations across the country as a proactive measure to stem dengue transmission. A major cleanliness campaign was jointly organized by the MoH, Ministry of Housing and Local Government, and the Department of National Unity and Integration in August 2017. Until end of 2017, there are 3,082 Communication for Behavioral Impact (COMBI) projects involving 63,000 volunteers. Besides that, MoH also celebrates ASEAN Dengue Day annually as a step in promoting Dengue prevention.

- **Malaria Surveillance**

In 2017, there were 4,114 malaria cases reported in Malaysia, an increase of 79 per cent compared to in 2016. The highest number of cases was reported in Sabah with 2,004 (48.7 per cent) cases, followed by Sarawak 1,442 (35.1 per cent) cases. The malaria incidence rate increased to 12.7 per 100,000 populations in 2017. Malaria infections in 2017 were dominated by *Plasmodium knowlesi* (3,614 cases; 88 per cent).

In 2017, there is 500 cases were human malaria. Among the human malaria cases, only 85 (17 per cent) cases were Indigenous Human Malaria. This is a reduction of 70 per cent cases compared to in 2016. The incidence of Indigenous Human Malaria reduced to 0.3 per 100,000 populations in 2017. Only Perak, Kelantan and Sabah recorded indigenous human malaria in 2017.

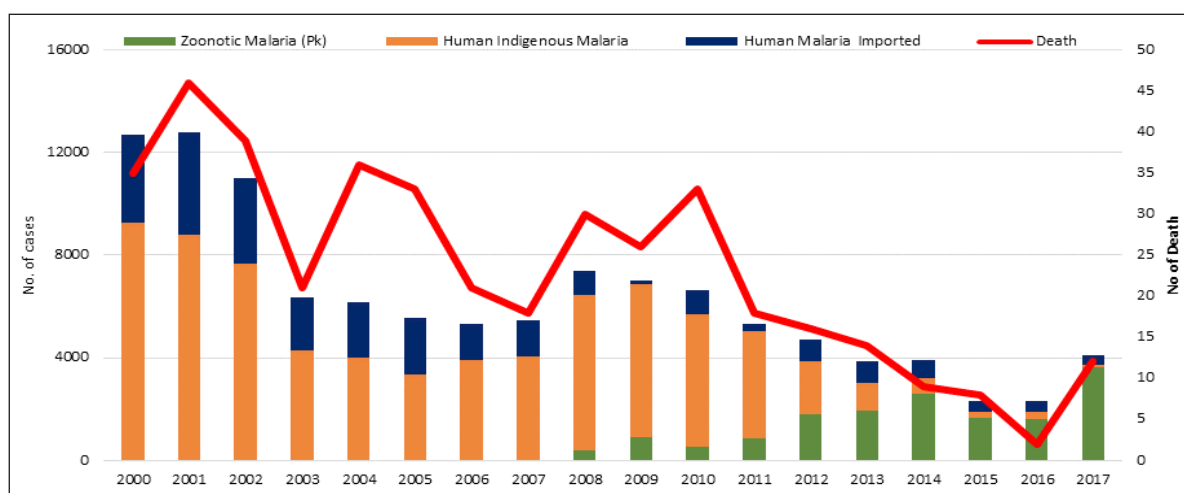
There were 3,614 cases of zoonotic malaria reported in 2017, a 125.9 per cent increase compared to in 2016. Of this total, 54.4 per cent were reported in Sabah, 33.9 per cent cases in Sarawak and the remaining 11.7 per cent cases reported from states in Peninsular Malaysia, except for Perlis and WPKL.

There were 415 imported malaria in reported 2017, with the highest number of imported malaria were Sarawak (52.2 per cent) Selangor (19.5 per cent) and Johor (8.2 per cent).

There were 12 malaria deaths reported in 2017, compared to two (2) deaths in 2016. The case fatality rate of malaria increased from 0.08 per cent in 2016 to 0.29 per cent in 2017. There were 11 death cases of malaria involving *P. knowlesi* infection and one death case involving *P. falciparum* infection. Malaria deaths were reported from Sabah (4 cases), Sarawak (3 cases), Selangor (2 cases) and one (1) case each from Pahang, Perak and Kedah.

Out of the 85 indigenous human malaria reported in 2017, 50 (58.8 per cent) cases occurred in previously active foci, 3 (3.5 per cent) cases in residual non-active foci and 32 (37.6 per cent) cases in cleared foci. This gives the current total of 33 active foci, 28 residual non-active foci and 42,272 cleared foci.

Figure 15
Distribution of Human Malaria (Indigenous & Imported), Zoonotic Malaria (*P. Knowlesi*) and Malaria Death, 2000 to 2017



Source: Disease Control Division, MoH

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

There are 127 endemic Implementation Unit (IU) or Red IU with microfilaria positivity rate greater than one (1) per cent involving eight (8) states Kedah, Perak, Johor, Pahang, Terengganu, Kelantan, Sabah and Sarawak. This involved total population of 1,117,733 people in endemic areas after mapping done in 2002. In the 2nd phase of elimination, mass drug administration (MDA) was given to the entire population in endemic areas, using combination of two drugs which are Diethylcarbamazine (DEC) and Albendazole. Target for coverage of MDA was set at 65 per cent of total population in the targeted IU.

Until 2017, there are 122 (96 per cent) Red IUs have achieved prevalence of antibody less than two (2) per cent with remaining 5 IUs in Sabah and Sarawak still having prevalence >2 per cent. Three states in Peninsular Malaysia (Kedah, Kelantan and Terengganu) have completed all three stages of Transmission Assessment Survey in 2017. A total of 308 filariasis cases were reported in 2017, an increase of 13.6 per cent as compared to the previous year. There were 139 cases (45 per cent) among immigrants and 169 cases (55 per cent) were locals.

Table 16
Distribution of Malaria cases in 2017

States	Number of cases		Case classification						Species					
			Human malaria			Zoonotic Malaria								
	2017		2017				2017							
	Case	Death	Indigenous	Imported	Indigenous	Imported	Pf	Pv	Pm	Po	Pk	Mixed		
Perlis	1	0	0	1	0	0	0	1	0	0	0			
Kedah	16	1	0	6	10	0	2	3	1	0	10			
Pulau Pinang	9	0	0	8	0	1	2	5	0	1	1			
Perak	130	1	46	8	76	0	3	51	0	0	76			
Selangor	105	2	0	81	24	0	34	47	0	0	24			
WPKL	12	0	0	12	0	0	8	4	0	0	0			
Negeri Sembilan	36	0	0	6	30	0	3	3	0	0	30			
Melaka	2	0	0	0	1	1	0	0	0	0	2			
Johor	81	0	0	34	47	0	3	31	0	0	47			
Pahang	85	1	0	8	77	0	2	4	0	2	77			
Terengganu	22	0	0	1	21	0	1	0	0	0	21			
Kelantan	168	0	20	13	133	2	8	25	0	0	135			
Sarawak	1,442	3	0	217	1,224	1	74	109	19	10	1,225			
Sabah	2,004	4	19	20	1,962	3	20	8	7	3	1,965			
WP Labuan	1	0	0	0	1	0	0	0	0	0	1			
Total	4,114	12	85	415	3,606	8	160	291	27	16	3,614			
											6			

Source: Disease Control Division, MoH

- **Japanese Encephalitis Control Programme**

In 2017, there were 23 reported Japanese Encephalitis cases in Malaysia, a decrease 53 per cent as compared to 2016. Sarawak contributed the highest number 43.5 per cent; followed by Kedah 13 per cent and Terengganu with 13 per cent. One (1) death recorded last year in Terengganu. The national incidence rate decreased from 0.16 per 100,000 populations the previous year to 0.07 in 2017.

- **Chikungunya Control Programme**

There was increase in Chikungunya cases in 2017 with 270 cases compared to 12 cases in 2016. Incidence rate of Chikungunya 0.83 per 100,000 populations. In 2017, there were outbreaks reported in Kedah and Selangor. Single case was reported in Kelantan, Johor, Sarawak and Perak.

CARDIOVASCULAR DISEASE (CVD), DIABETES MELLITUS (DM), CANCER & FRAMEWORK CONVENTION ON TOBACCO CONTROL (FCTC) SECTOR

- **Quality of Care of Diabetes at Primary Health Centres, Malaysia 2013 to 2017**

Diabetes clinical audit were carried out annually at all health clinics MoH that provide diabetes management services, to assess the adequacy of diabetes management at MOH health clinics and to determine the quality of care of diabetes patients using a standard quality assurance indicator. **Table 17** below shows the mean HbA1c and the percentage of patients reaching clinical targets for HbA1c. Mean HbA1c was fairly constant over 5 years with most patients recording HbA1c ranged between 8.0 per cent to 10.0 per cent. Assessed against the international treatment target of HbA1c <7.0 per cent, 39.4 per cent of patients in 2017 would be considered to have achieved good glycaemic control.

Table 17
Mean HbA1c and patients achieving glycaemic targets

HbA1c	2015	2016	2017
< 6.5% (%) **	30,680 (25.7)	34,619 (26.9)	37,612 (27.2)
< 7.0% (%)	45,368 (38.0)	49,773 (38.7)	54,512 (39.4)
< 8.0% (%)	67,827 (56.9)	73,714 (57.4)	80,552 (58.2)
≥ 10.0% (%)	23,449 (19.6)	25,064 (19.5)	25,836 (18.7)
Mean (%), 95% CI	8.1 (8.10-8.13)	8.1 (8.07-8.10)	8.0 (8.03-8.05)

**The denominator for the percentage achieving target was the number of patients with HbA1c test results*

***Good glycaemic control as defined by the Malaysian CPG on T2DM (2016)*

Source: Disease Control Division, MoH

- **Salt Reduction Strategy to Prevent and Control Non-Communicable Disease (NCD) For Malaysia (2015 to 2020)**

As a respond to the Nine Voluntary Global Targets on NCDs set by WHO in 2013, the Salt Reduction Strategy to prevent and Control NCD (2015 to 2020) was developed. It is one of the components of the overarching National Strategic Plan for Non-Communicable Diseases for Malaysia 2016 to 2025.

The M-A-P (Monitoring, Awareness and Product) strategies were mostly implemented by MoH in 2017 in collaborations with UK (University Queen of Mary London), WHO (World Health Organisation), WASH (World Action on Salt and Health), food industries, universities and different NGOS. Activities includes are:

- i. Monitoring
 - a. My Community Salt Study (My CoSS) 2017 – 2018 with collaboration with University Queen of Mary London.
 - b. My STARS (study to reduce salt intake) among health staff
 - c. Database of salt content of processed food at <http://myfcd.moh.gov.my/>
- ii. Awareness
 - a. Health Promotion: 3 workshop and 6 months intervention study
 - b. Incorporating salt reduction interventions into KOSPEN
 - c. Promotion through mass media and social media: World Salt Awareness Week 2017 in TV interview, facts sheets, e-banner, info graphic and guidelines.
- iii. Product
 - a. Product Reformulation of high salt content processed food: Maggi Hotmealz Kari Laksa & Kari Kaw by Nestle, Oyster Sauce by Lee Kum Kee Brand. Since 2011 to 2017, 51 products reformulated.
 - b. Labelling of sodium content in processed food: Amendment of regulation process.

• **Launching of the Guideline of Malaysian Healthy Plate**

The Launching Ceremony was attended by Deputy Director of Disease Control), Dr Omar bin Mihat and Prof. Dr. Winnie Chee Siew Swee as a President of MDA which was held in conjunction with the Dietitian Day Celebration on 19 September 2017. It was in collaboration between the Family Health Development Division, the Disease Control Division and Dietitian from Selangor State. This celebration was held at the Bait Al-Mawaddah Citizens Care Center, Jalan Kebun, Shah Alam. This guideline is available in MOH website (**Image 7**). There was a billboard on Key Messages of Malaysian Healthy Plate displayed in front of Block E3, Complex E, Putrajaya.

Image 7
The Guideline of Malaysian Healthy Plate



Source: Disease Control Division, MoH

- **Healthy Cafeteria**

Healthy Cafeteria is the initiatives taken by Ministry of Health in supporting healthy eating practice among Malaysians, awarded to cafeterias which prepare, serve and sell healthy, clean and safe food in accordance with Healthy Cafeteria Recognition Guidelines. In 2017, total of 166 cafeterias in government health facilities, six cafeterias in other government agencies, one public university, one private university and 19 cafeterias in private facilities have been recognized as healthy cafeterias

- **Colorectal Cancer Screening**

Colorectal cancer comprises about 13.2 per cent of all cancers in Malaysia, which has become the most common cancer among males and second among females. The Malaysia National Cancer Registry Report 2007 to 2011 showed most of the colorectal cancer (65 per cent) diagnosed late at stage III and IV. The colorectal cancer screening was implemented throughout the country in 2014 following an encouraging result of the pilot phase in 2013 and is going to continued and sustained. The objectives are to detect pre-lesion (colonic polyp) and colorectal malignancy at the earliest stage possible among asymptomatic population aged 50 – 70 years. The screening is carried out using immunological faecal occult blood test (iFOBT) followed by colonoscopy. In 2017 the number of clinics providing services has increased to 536, 13.1 per cent increased as compared to 2016. A total of 31,186 individuals or clients were screened in 2017, a 5.5 per cent increase compared to 2016.

Table 18
No of Patient Screened in 2017 (546 Clinics)

Item	n	%	Denominator
No. of individual screened	31,186		
Positive iFOBT	3,343	10.7	No. screened
Referred for scope	3,052	91.3	No. of positif iFOBT
Refused referral	264	7.9	No. of positif iFOBT
Not turned up for appointment	582	19.1	No. referred for colonoscopy

Source: Disease Control Division, MoH

- **Cancer Awareness Seminar 2017**

A 'Cancer Awareness Seminar for Public Servants' was organised on 23 May 2017 at the Auditorium Parcel E, Putrajaya. The seminar was conducted with the objectives to increase awareness and to disseminate knowledge on various types of cancer. It was attended by 523 public servants from all government agencies working in Putrajaya. The Breast Cancer Welfare Association (BCWA), National Cancer Society of Malaysia (NCSM), MAKNA and cancer survivors were invited to participate during the seminar, including exhibition, health screening, lectures and forum.

VERIFICATION OF NON-MEDICALLY CERTIFIED DEATH DATA IN MALAYSIA

Verification of Non-Medically Death Data system was implemented starting on 1 October 2017 with collaboration from Medical Record Office (MRD), Department of Statistic Malaysia (DOSM) and Royal Police Malaysia. The objective of the system is to reduce the percentage of Non-Medically Certified Death (NMCD) in Malaysia and to improve the cause of death (COD) of the NMCD. According to report published by DOSM, in 2016, 47.2 per cent of deaths in Malaysia were recorded as NMCD and about 60 per cent were coded as 'die of old age'.

NATIONAL STRATEGIC PLAN FOR TOBACCO CONTROL 2015 – 2020

In year 2017, implementation and surveillance for activities planned under National Strategic Plan for Tobacco Control 2015-2020 was strengthened. This strategic plan was developed in congruence with the WHO Framework Convention on Tobacco Control (FCTC), WHO Western Pacific Region al Action Plan for Tobacco Control and the WHO Global NCD Targets for 2025. Four pillar strategies have been formulated to guide national tobacco control activities towards achieving the targets.

- **Strategy 1 – Consolidation of Existing Tobacco Control Activities**

The objective of the first strategy is to increase the capacity mandate and decisions for national tobacco control activities through a national committee comprised of various governmental ministries and agencies. Malaysia signed the WHO FCTC treaty in 2003 and it was enforced since 2005.

- **Strategy 2 – Strengthening Tobacco Control Legislative and Enforcement Activities**

In 28 October 2016, Cabinet Meetings has decided that a new Act is to replace Control of Tobacco Product Regulations 2004 (CTPR 2004) within 2 years, called “Control of Tobacco Product and Smoking Act”. It is also to include monitoring towards electronic cigarettes and other smoking devices, enforcement towards sell, promotion, sponsorship, labelling related to health for liquid used for electronic cigarette without nicotine, enforcement towards the use of electronic cigarette in non-smoking area, as well prohibition of electronic smoking by minors. Currently, this Act is being reviewed by Legal Advisor Ministry of Health Malaysia, before to be passed to Attorney General Chamber of Malaysia for further action.

Various scheduled and planned periodic, thematic operations had been carried out and currently in progress nationwide which focuses upon provisions enlisted within the Control of Tobacco Products Regulation 2004. In year 2017, there were 10 E-Info Blast enforcement activities carried out by district and state enforcement officers nationwide, with total of 1,995 notices issued and total compound value of RM 527,600.

- **Strategy 3 – Community Empowerment and Intensifying Multi Sectoral Involvement in Tobacco Control**

Communities under KOSPEN are encouraged to generate as many smoke free settings (which are not gazetted under the CTPR 2004) as possible such smoke free homes (Rumahku Bebas Asap Rokok), shops, stalls and eateries. KOSPEN communities are also encouraged to do their public events such as smoke free weddings, public meetings and gathering. There are many other government agencies, society groups, private and non-government organizations who could advocate healthy life style without tobacco use, but it is essential that the messages conveyed by these groups are in line with the National Strategic Plan for Tobacco Control.

- **Strategy 4 – Strengthening Who FCTC MPOWER Implementation in Malaysia**

World Health Organization (WHO) Framework Convention on Tobacco Control (FCTC) has introduced MPOWER strategy to further strengthen the existing tobacco control in the country. The Malaysian National Strategic Plan (NSP) for Tobacco Control focuses on strengthening each element of MPOWER.

A. M – Monitor

“Translating Evidence Towards Tobacco Control Policy in Malaysia” was published in 2017, collaboration by the Scientific Studies Committee under FCTC Driving Committee, together with consultant from

Universiti Sains Malaysia (USM), Universiti Islam Antarabangsa Malaysia (UIAM) and Waterloo University, Canada. There were 36 authors involved in the production of this book, from Ministry of Health and local universities. They were given task to collect, analyse, and identifying the gap of literature related to tobacco, from researches that were conducted locally and internationally. The chapters written in this book was organized according to the MPOWER strategy. This report has been launched on 19 December 2017 in Swan Convention Centre, Sunway Medical Centre Subang Jaya.

B. P – Protect people from tobacco smoke

There is no safe level of exposure to second-hand tobacco smoke, and even brief exposure can cause serious damage. Several smoke free initiatives have been adapted in this strategic plan, to be implemented at the national, state and community level, such as:

- i. Smoke free Community: conducted through KOSPEN.
- ii. Smoke free City projects: In 2017, there were three (3) applications for Smoke Free Cities, each from Kuala Lumpur, Kelantan and Terengganu.
- iii. Two additional public places gazetted under Gazettement of Non-Smoking Area under Regulation 11 of CTPR 2004, which are Public Park and national/state Park. With this, there are 23 places gazetted as non-smoking area.
- iv. Blue Ribbon Campaign: Recognition to those who implement voluntary no smoking area other than places listed in regulation 11 of CTPR 2004. In 2017, there are 84 new premises certified as Blue Ribbon.
- v. Smoking room: Could be allowed in certain no-smoking area or place, if it strictly fulfils the required Standard Operating Procedure. There was no application for new smoking room in 2017

C. O – Offer help to quit tobacco use

The mQuit services was initiated on 27 November 2015 through a signing of Memorandum of Understanding between the MoH and several partners, followed by second phase of mQuit services with more partners. This MOU will be ended until 18 December 2020. There are total 168 private mQuit facilities until 2017, and total of 1,330 clients registered in USM Tobacco Quitline.

In enhancing offer to quit among the school children, the Tobacco Control Unit has worked together with the Dental division on a special program called KOTAK (Kesihatan Oral Tanpa Asap rokoK). KOTAK program is an enhancement of the existing school dental health program, where the dental healthcare provider will screen and intervene tobacco use among school children. 99 per cent of primary school children and 97 per cent of secondary school students were screened in this program in 2017.

Quit smoking services in the primary healthcare centres are managed by the Family Health Development Division and quit smoking clinics in the hospitals are managed by the Health Education Division. Quit smoking services were provided in 731 active health clinics and 43 government hospitals with Health Education Officers.

D. W – Warn people about the dangers of tobacco

Year 2015 and 2016 showed an active participation from the tobacco control community in mass media such as radio and television. In 2017, this trend is continued further, with various appearances on national radio and television stations remind the public about the dangers of cigarette smoke and vape.

E. E – Enforce bans on advertising, promotion and sponsorship

In enhancing the above implementation, enforcement on the promotion at point of sale was strengthened. In 2017, the ban on any tobacco products through advertising, promotion and sponsorship is further heightened. All standy counter had been instructed to be removed. Promotion through cigarette box also has been banned.

F. R – Raise tobacco tax

In 2017, there was no increment of tobacco taxation by the Ministry of Finance. The Tobacco Control Unit will continue to advocate and work with the Ministry of Finance to keep raising tobacco taxes to reduce the smoking consumption and prevalence in Malaysia and to achieve the target of 75 per cent tax over cigarette retail price, as set by WHO FCTC.

Image 8

Info graphic on gazettement of Public Park and National Park as non-smoking area



Source: Disease Control Division, MoH

Image 9
Tobacco control mass media appearances in 2017



Source: Disease Control Division, MoH

MENTAL HEALTH, ATS & VIP SECTOR

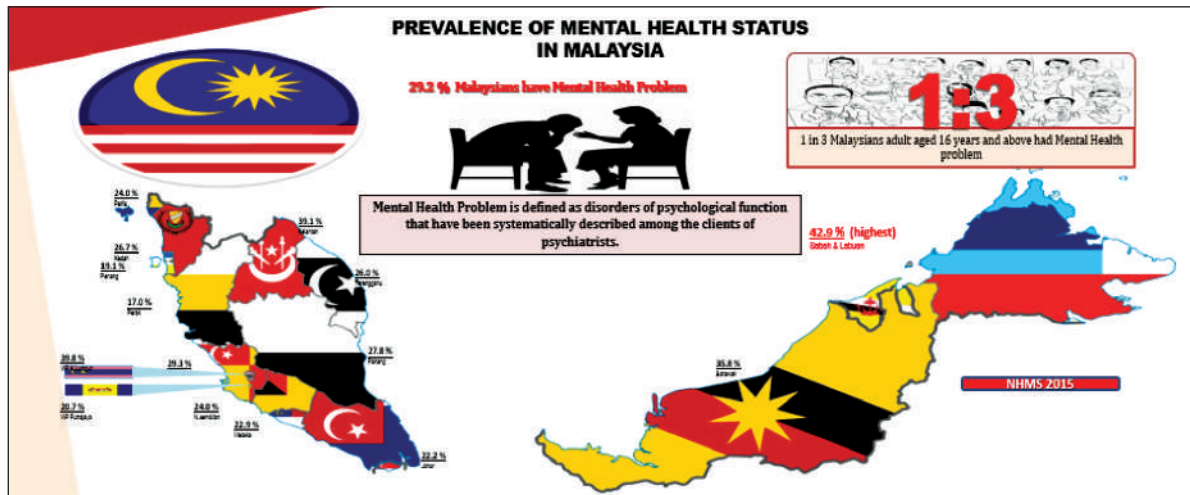
• Mental Health Unit

Malaysia's mental health related burden comprises of 37 per cent of total disability. The 2015 National Health Morbidity Survey (NHMS) revealed that 4.2 million Malaysians aged 16 and above suffered from the problem. Although much has been done to address the Mental Health burden in Malaysia, there are several challenges that need to be effectively addressed. Major challenge is to fight stigma of mental disorders, not only to improve the social status of mentally ill persons but also to encourage people to seek help early when encountering mental problems, to improve knowledge and to change attitudes toward mental health and mental illness in general.

The National Mental Health Policy formulated in 1998 further amended in 2012 has clear objectives to be a framework for the planning, development and implementation of strategies and mental health services. These objectives include;

- Implement strategies to reduce stigma.
- Improve services through mental health promotion
- Empower caregivers, families, community and relevant agencies for better care
- Promote awareness and develop broad base support for programs
- Promote and support training, research and evaluation

Figure 16
Mental Health Status Prevalence in Malaysia

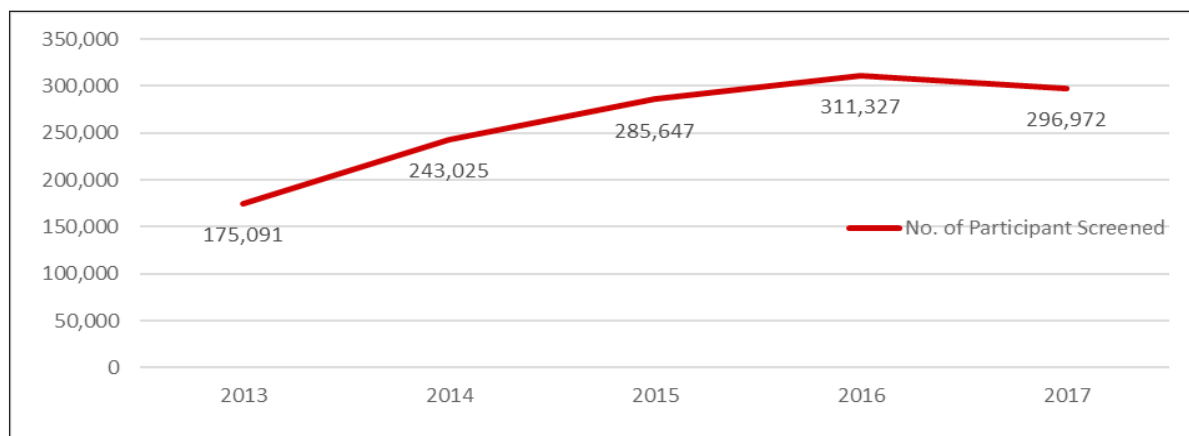


Source: National Health and Morbidity Survey 2015

- Mental Health Program at Primary Health Care (PHC)**

Figure 17 shows total of 296,972 participants were screened in 2017 and 4,969 (1.67 per cent) cases were detected to have mental health problems and were referred to a Family Medicine Specialist (FMS)/ Medical Officers. A target of 25 participants per month/Health Clinic is screened.

Figure 17
Number of participants screened from 2013 to 2017



Source: Disease Control Division, Ministry of Health

Based on 5 years trending analysis, no significant difference seen for the severe/very severe depression category in 2015 to 2017, there is a 0.36 per cent decrease in 2017 for severe anxiety category compared 2016 and no significant difference seen for the severe/very severe stress category from 2016 to 2017 (**Table 19**).

Table 19
Percentage of Cases from PHC Screening Program

Diagnosis	Severity	2013	2014	2015	2016	2017
Depression	Mild	6.22	5.84	5.07	5.17	4.39
	Moderate	2.10	1.99	2.00	1.65	1.32
	Severe & Very Severe	0.89	0.79	0.66	0.65	0.65
Anxiety	Mild	8.50	8.05	7.51	7.50	6.02
	Moderate	4.22	4.16	3.93	3.85	2.63
	Severe & Very Severe	2.17	2.79	1.83	1.71	1.35
Stress	Mild	8.15	7.25	6.09	6.28	6.01
	Moderate	3.33	3.25	2.53	2.34	1.96
	Severe & Very Severe	0.90	0.74	0.71	0.58	0.58

Source: Disease Control Division, MoH

As of December 2017, 1,936 new cases were detected to have mental health disorders. 51 per cent of the cases were diagnosed at Health Clinics predominantly patients diagnosed with Schizophrenia 21 per cent and mood disorders 16 per cent, while another 49 per cent were referred from Hospital, predominantly diagnosed with Schizophrenia 44 per cent. There are currently 21,137 cases that are on a follow up treatment for 2017.

Psychosocial rehabilitation services are provided to restore the community functioning, well-being and promote independent living of an individual diagnosed with mental health disorders. So far, a total of 187 cases had received psychosocial rehabilitation at 15 health clinics from the onset of implementing these services. A total of 11 PSR was upgraded into Community Mental Health Centre (CMHC) in accordance with the Mental Health Act 2001 and Mental Health Regulation 2010. There is an average of 12 patients handled per PSR. As of 2017, there are a total of 21 Community Mental Health Centres throughout Malaysia.

- **Mental Health Psychosocial Response to Disasters**

The National Security Council's directive number 20 has outlined that psychosocial support services for victims, family members and response workers are being provided by the Ministry of Health during disasters. As such the Ministry of Health through Mental Health Unit Disease Control Division with the input from Public Health Physicians, Psychiatrists, Family Medicine Specialist, Clinical Psychologists, Counsellors and NGO's has taken the initiative to develop a guideline on psychosocial response to disaster which can be used during a disaster situation in the community. These guidelines to facilitate a planned and coordinated mechanism in the management of Mental Health and Psychosocial Support (MHPSS) before, during and after disasters. Among Psychosocial First Aid (PFA) activities been carried out in 2017, is PFA activities in Flood Relief Centres Penang and Pre-deployment for Volunteers - Humanitarian Missions for Rohingya in Bangladesh.

- **Mental Health at Workplace (Under KOSPEN Plus)**

The mental health module/component in the KOSPEN PLUS program (scope 6) includes screening and addressing issues related to mental health at work. In 2017, three (3) training workshops have been conducted in the North Zone (Kubang Kerian), Central Zone (Ipoh) and the South Zone (Johor Bahru).

- **Mental Health at Schools (Minda Sihat)**

The Healthy Mind Program in Schools has been implemented in 2,343 secondary schools throughout Malaysia since 2011. In this program, Form 4 students are screened using the DASS (Depression, Anxiety, and Stress) questionnaire to measure the current prevalence of DASS within the students. Students found to have severe and very severe DASS will go through an intervention where a series of counselling and motivation workshops are conducted by trained counsellors. The second screening process is done again after the intervention to look for reduction in DASS. If the level of stress, anxiety and depression is found to be high, the students will be referred to counselling services or to health clinics for further treatment by family health specialists.

MENTAL HEALTH PROMOTION

- **World Health Day 2017 & World Mental Health Day 2017**

World Health Day, celebrated on 7 April every year to mark the anniversary of the founding of the World Health Organization, provides a unique opportunity to mobilize action around a specific health topic of concern to people all over the world. The theme of 2017 World Health Day campaign was 'Depression Let's Talk'.

World Mental Health Day is observed on 10 October every year, with the overall objective of raising awareness of mental health issues around the world and mobilizing efforts in support of mental health.

- **Sweat off Depression and Anxiety, Mental Health Promotion in Collaboration with the NGOs**

The Sweat off Depression & Anxiety (SODA) launch in conjunction with the World Mental Health Day at Management and Science University (MSU) was coordinated by the MSU School of Education and Social Sciences (SESS) Counselling and Guidance Club with MyPerintis MySchool of Life, and partners the Ministry of Health Malaysia, the Ministry of Youth and Sports, National Blood Centre, National Kidney Foundation, Malaysian Mental Health Association (MMHA), Light Up, National Cancer Society Malaysia, and National Transplant Resource Centre. The programme theme was "Purposeful Lifestyles, Youth Empowerment". Activities lined up for the day included talks on relaxation technique; standing up and speaking up, breaking the stigma of mental illness; and personal battles.

ALCOHOL AND SUBSTANCE ABUSE PREVENTION

The NCD national targets for Malaysia by year 2025 have included reduction of harmful use of alcohol as one of the nine voluntary global targets indicator for the prevention and control of NCDs. The prevention and minimizing the harmful effect of alcohol programme has been initiated since year 2014 nationwide involving screening and brief intervention programme (SBIRT: Screening, Brief intervention Refer to Therapy) targeted at pockets of population such as in Sabah, Sarawak, indigenous population and Indian community in estates. As to date, there are 225 health clinics identified implementing this programme. This screening and intervention programme also been done at community level. In 2017, total of 225 health clinics in 92 localities has implemented this program.

PREVALENCE OF ALCOHOL CONSUMPTION AMONG THE SECONDARY SCHOOL STUDENTS IN MALAYSIA- DATA FROM ADOLESCENT HEALTH SURVEY (AHS 2017)

Adolescent Health Survey (AHS) 2017 has been conducted by the Public Health Institute in 2017. The survey showed that the prevalence of current drinker among the secondary school students was 10.2 per cent which is 1.3 per cent higher than the findings in Global School Health Survey (GSHS)

conducted in Malaysia in 2012. The prevalence of ever drinker (ever consumed alcohol in their lifetime) in this survey was 19.3 per cent and was significantly higher among those from urban schools. The prevalence of ever drinker in AHS 2017 showed an increase by 2.0 per cent as compared to the findings in GSHS (Malaysia) 2012.

Among the students who ever consumed alcohol in AHS 2017, majority (76.4 per cent) of them had their first alcoholic beverages before the age of 14 years. The consequence of early alcohol drinking could lead to memory impairment causing low educational achievement and high absenteeism rates. The prevalence of drunkenness among the students in AHS 2017 was 6.1 per cent and was significantly higher in males (8.1 per cent) compared to females (4.2 per cent). The main source in obtaining alcoholic beverages among the current drinkers in AHS 2017 was from their own family members. Other sources of alcoholic beverages were by buying themselves from the stores or getting from their friends. Among the students who drank alcohol in AHS 2017, 4.7 per cent of them got into trouble with their family and friends, missed schools or got into fights one or more times as a results of drinking alcohol. These problems were significantly more common among males (5.8 per cent) compared to females (3.5 per cent).

PREVALENCE OF DRUG USE AMONG THE SECONDARY SCHOOL STUDENTS IN MALAYSIA- DATA FROM ADOLESCENT HEALTH SURVEY (AHS 2017)

Globally, marijuana or cannabis remains the world's most widely used drugs while amphetamines remain the second and is perceived to be increasing in many regions including most part of Asia. Adolescent Health Survey conducted in year 2017 also investigated the drug use among the secondary school students in Malaysia, showed that the prevalence of those who ever used drugs in their lifetime was 4.3 per cent. This was 2.5 per cent times higher compared to Malaysian GSHS 2012. The prevalence of current drug users was 3.4 per cent which was higher in males (5.3 per cent) as compared to females (1.5 per cent). Among the current users, about 25.9 per cent had bought drugs from someone else.

VIOLENCE AND INJURY PREVENTION (VIP) PROGRAMME

MoH provides a dedicated service for victims of domestic violence, child maltreatment and sexual assault cases, known as One Stop Crisis Centre (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.

- **Surveillance and Research of Violence and Injury Prevention Surveillance System (VIPSS)**

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:

- i. Health Informatics Centre (MoH Admission and Death Due to Injury).
- ii. One Stop Crisis Centre (Child Abuse and Domestic Violence Data) from MoH Hospitals
- iii. The Suspected Child Abuse and Neglect (SCAN) Team (Child Abuse Data) from MoH Hospitals

To strengthen SCAN data collection, a system called Violence and Injury Prevention Surveillance system (VIPSS) is being developed with the help of the Information Management Division. Currently it is on Field trial in 4 Hospitals. This web based computerized system will provide better quality data related to child maltreatment and will be based at all SCAN Team in MOH Hospitals. The plan is to expand this system to OSCC and other violence and injury related cases.

Analysis of NHMS 2017 showed that one in six adolescents was a recent victim of bullying and that boys were bullied more frequently (32 per cent) than girls (18 per cent). Bullying was experienced most amongst form 1. With regards to injuries 30 per cent of adolescents had been seriously injured in the last 12 months. Falls (35 per cent) were the most common cause of unintentional injuries sustained among adolescents

Figure 18
Violence Prevalence



Source: Public Health Institute < MoH

MULTISECTORAL APPROACH

As the focal point, VIP has actively involved in the relevant interagency committees and national level councils. VIP Unit is also a member of the National Road Safety Council. VIP works very closely with Ministry of Transport in road safety and has contributed in the development of Malaysian National Road Safety Action Plan 2014-2020. The Unit also represents MoH in the '*Majlis Jawatankuasa Keselamatan Aktiviti Air*' for drowning prevention.

VIP has worked together with various agencies via working committees namely:

- i. National Committee on Road Safety.
- ii. National Social Council
- iii. National Taskforce Committee on Child Social Services

Several Joint work plans have been developed namely:

- i. National Action Plan for Domestic Violence.
- ii. National Action Plan for Gender Based Violence

The unit together with Family Health Division of MoH has also developed several National Action Plans namely:

- i. National MoH POA for Violence against Women.
- ii. MoH Plan of Action of Violence and Injury prevention in Children

SAFETY AND HEALTH MONITORING OF NURSERIES

To enhance safety and health aspects of nurseries, Safety and Health Monitoring Guideline and Checklist had been produced. Guidelines for Child Minders to include aspects of health and injury prevention have also been developed in collaboration with PERMATA. This document outlines training on health and safety issues for child care centre operators.

RESEARCH

Research collaboration with the Public Health Institute has generated work covering a wide range of topics on Violence and Injury. These include the following topics:

- Postnatal Depression and Intimate Partner Violence: A Nationwide Clinic-Based Cross-Sectional Study in Malaysia
- Prevalence and Factors Associated with Intimate Partner Violence among Women Attending Government Primary Health Care Clinics in Malaysia
- Spare the Rod, Spoil the Child? Prevalence of Violent and Non-Violent Disciplinary Methods Among Malaysian Parents
- Inadequate Care of Children in Malaysia: Findings from NHMS 2016
- Child Discipline in Malaysia And Factors Associated with Violent Disciplinary Methods
- Intimate Partner Violence Against Women

OCCUPATIONAL HEALTH & ENVIRONMENTAL HEALTH SECTOR

Occupational Disease and Injury Surveillance

Occupational Health Unit had several surveillance programs, namely

- i. Sharp Injury Surveillance (SIS) among MOH Healthcare Workers (HCW)
- ii. Surveillance of Accidents and Injuries among Healthcare Workers (HCW)
- iii. Surveillance of Pesticide & Chemical Poisoning
- iv. Surveillance of Occupational Lung Diseases
- v. Surveillance of Occupational Skin Diseases
- vi. Surveillance of Occupational Noise Induced Hearing Loss (NIHL)
- vii. Investigation of Workplace Accident and Occupational Diseases
- viii. Screening of Tuberculosis among High Risk Healthcare Workers (HCW)

The findings of these surveillance program as in **Table 20**.

• Hepatitis B Immunization of Healthcare Workers (HCW)

Hepatitis B immunization among MoH's HCW was implemented in two designated groups. Group 1 consists of HCW who has never receive immunization before or Hepatitis B immunization were given but not completed, while Group 2 includes HCW who had received the complete hepatitis B vaccination before but do not know their immunization status.

In 2017, a total of 10,151 staffs have signed up for Group 1 and 6,321 (62.3 per cent) staffs were found to have completed 3 doses of vaccination. A total of 3,819 (60.4 per cent) staffs were screened for anti-HBs and 3427 (89.7 per cent) were anti-HBs reactive.

Total registered staff for Group 2 in 2017 was 35,704, with about 29,397 HCW were screened for anti-HBs. Of that total, 24,103 (82.0 per cent) were anti-HBs reactive. A total of 885 HCW were screened for HBsAg and 100 (11.3 per cent) of them were found to be HBsAg positive.

• Kospen Plus Programme

In year 2017, 194 government and private agencies implemented Programme KOSPEN Plus and 9,636 out of 13,247 workers were screened for NCD risk factors. This program has succeeded Health Minister's Key Performance Index (KPI).

Table 20
Occupational Disease and Injury Surveillance

No	Occupational Disease And Injury Surveillance	2016	2017	Misc.
1.	Sharp Injury Surveillance (SIS) among MoH Healthcare Workers (HCW)	1,587 cases	1,655 cases	70.3% cases were among staff aged 20-29 years old. Top Location: Ward (37.7%) & Operating Theatre (14.9%) Top 3 HCW: HO (31.8%), Nurses (17.6%), MO (11.5%).
2.	Surveillance of Accidents and Injuries among Healthcare Workers (HCW)	806 cases	1,453 cases	Excluding sharp injury. Top Location: Road (44.7%), ward (14.2%), health clinic (5.5%). Top 3 causes: MVA (45.9%), falls (10.3%), splash (10.5%).
3.	Surveillance of Pesticide & Chemical Poisoning	242 cases	111 cases	62.2% chemical, 37.8% pesticide Top Chemical: solvents, therapeutic drugs, household products Top 3 Pesticide: Organophosphates, Paraquat, Glyphosate
4.	Surveillance of Occupational Lung Diseases	154 cases	143 cases	Top 3 Diseases: Infectious diseases including tuberculosis (93.7%), allergic asthma (5.6%) and inhalation accident (0.9%).
5.	Surveillance of Occupational Skin Diseases	78 cases	88 cases	All cases are occupational contact dermatitis
6.	Surveillance of Occupational Noise Induced Hearing Loss (NIHL)	21 cases	61 cases	67.2% HCW 32.8% non HCW 86.8% chronic noise exposure, 13.1% acoustic trauma Top cause: fogging machines, CSSD machines, ambulance sirens, dental equipment and other machines.
7.	Investigation of Workplace Accident and Occupational Diseases	2,591 cases (investigated)	2,291 cases (investigated)	sharp injury (53.6%), accident & injury (42.8%), skin diseases (1.9%), other diseases (1.7%).
8.	Screening of Tuberculosis among High Risk Healthcare Workers (HCW)	-	41 HCW positive TB	In 2017, 183,533 HCW were high-risk groups 35,700 (19.5%) have been screened. 1,109 (3.1%) HCW screened showed positive Mantoux test. 41 HCW (0.1%) were identified as positive TB

Source: Disease Control Division, MoH

ENVIRONMENTAL HEALTH UNIT

The main functions of Environmental Health Unit (EHU) are to provide technical advice on environmental health by conducting assessments on various settings and institution, including natural disasters, to prevent and control diseases that may cause by environmental change. EHU also monitors the trends of environmental health diseases. This is also to prevent morbidity, mortality and disability caused by the diseases of occupation and environment. EHU also collaborate with other government agencies and research bodies in managing environmental issues.

Environmental Health Assessment

Environmental Health Assessment conducted by EHU was done at several premises, such as:

- Immigrant Depots Environmental Health Assessment
- Prison Environmental Health Assessment
- National Service Camp Environmental Health Assessment
- Police Lockups Environmental Health Assessment (based on request by Royal Malaysian Police)
- Other Institutions – Elderly, Universities and others.

Table 21
Environmental Health Assessment in Immigration Depots and Prisons

Type of Premise	2016			2017		
	No of Premis Assessed	Achievement		No of Premis Assessed	Achievement	
		>80%	<80%		>80%	<80%
Immigration Depot	13	8	5	15	6	9
Prisons	28	23	5	29	19	10

Source: Disease Control Division, Ministry of Health

Table 22
Environmental Health Assessment in National Service Camps

Year	Session 1		Session 2		Session 3	
	Before	After	Before	After	Before	After
2016	54 camps (76%)	65 camps (90.2%)	No Session 2		No Session3	
2017	19 camps (70.3%)	25 camps (92.5%)	19 camps (70.3%)	25 camps (92.5%)	44 camps (89.7%)	43 camps (86%)

Source: Disease Control Division, Ministry of Health

NATURAL DISASTER

• Flood

Malaysia was hit by 8 episodes of flood in 2017 (**Table 23**). The MoH had mobilised 2,218 teams (945 medical teams and 1,273 health teams). 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 centres. None of the health facilities have been affected by floods in 2017. A total of 32,524 flood victims get treatment and medication from MoH medical team. 12 death cases were reported due to the drowning during floods in 2017.

Table 23
Flood Episode Summary in 2017

Date	Affected state	No. of relief centres	No. of victims
1 – 3 Jan	Kelantan and Terengganu	208	23,547
19 Jan – 7 Feb	Kelantan, Terengganu, Perak, Pahang, Sabah and Johor	419	33,957
9 – 21 Aug	Sabah, Melaka dan Johor	25	1,519
18 – 29 Sept	Perlis, Pulau Pinang, Kedah dan Johor	48	5,539
5 – 11 Nov	Pulau Pinang, Kedah dan Perak	82	8,281
14 – 17 Nov	Johor, Kedah and Selangor	9	941
26 Nov – 9 Dec	Kelantan, Terengganu, Perlis, Perak, Pahang and Kedah	161	16,436
11 – 15 Dec	Sabah	6	1,857
Total		958	92,077

Source: Environmental Health Unit, Disease Control Division, MoH

- Haze**

In year 2017, no haze episode was recorded.

- Heat Wave**

In Malaysia, there was no heat wave episode occurred in 2017. However, there were 10 cases of heat related illness reported (**Table 24**).

Table 24
Heat related illness in 2017

Month	District	Facility	Cases		
			Heat Stroke	Heat Cramp	Heat Exhaustion
March	Langkawi	Hospital Langkawi (OPD)	-	-	4
March	Bukit Katil	KK Air Keroh, Melaka (OPD)	-	1	-
September	Mersing	Hospital Sultan Ismail, JB (Inpatient)	5	-	-

Source: Environmental Health Unit, Disease Control Division, MoH

HEALTH IMPACT ASSESSMENT OF AIR POLLUTION

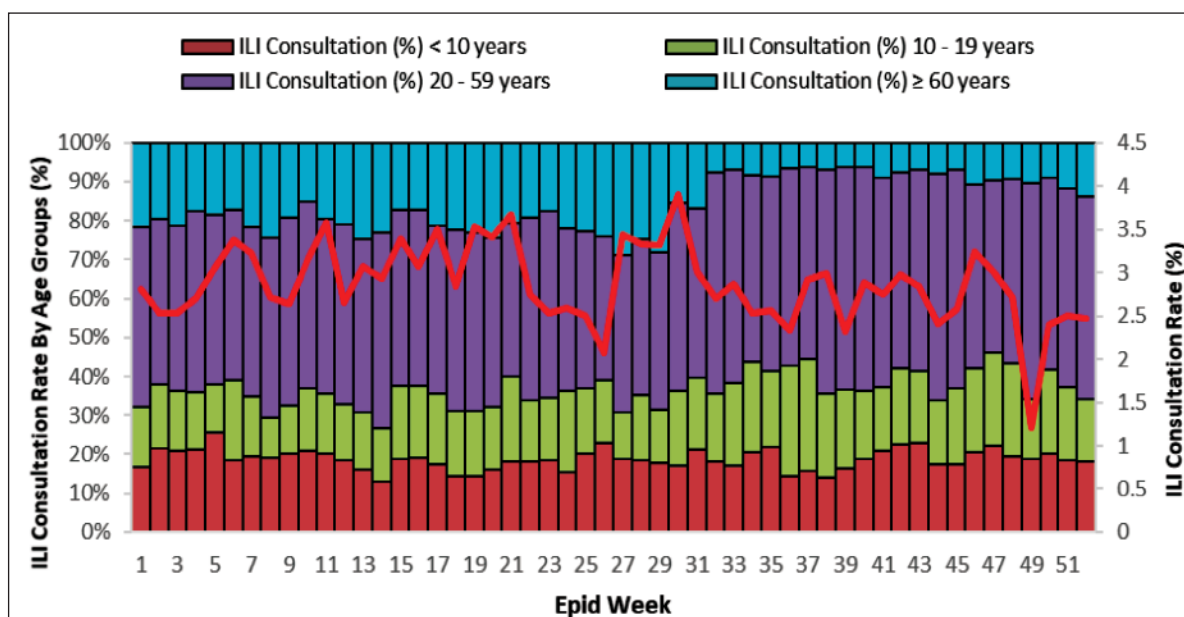
In 2017, EHU focus on capacity building for estimation of disease burden due to air pollution. In collaboration with WHO expert, EHU conducted a workshop on calculation of disease burden due to air pollution using software Air Q+ produced by WHO. In total 25 participants from state health department and local universities had attended the workshop. In collaboration with Thematic Working Group on Air Quality of Regional Forum, EHU had estimated the disease burden due to air pollution for four areas (Kuala Lumpur, Johor Bahru, Melaka Tengah, and Kuching). In addition, in 2017 EHU had conducted the health risk assessment of particulate matter (PM10) exposure during haze among adult population based on physical activity pattern. The aim of the health risk assessment was to determine the acceptable duration for performing outdoor physical activity during haze as measured by Air Pollutant Index (API) level.

DISEASE SURVEILLANCE SECTOR

• Influenza Surveillance Programme

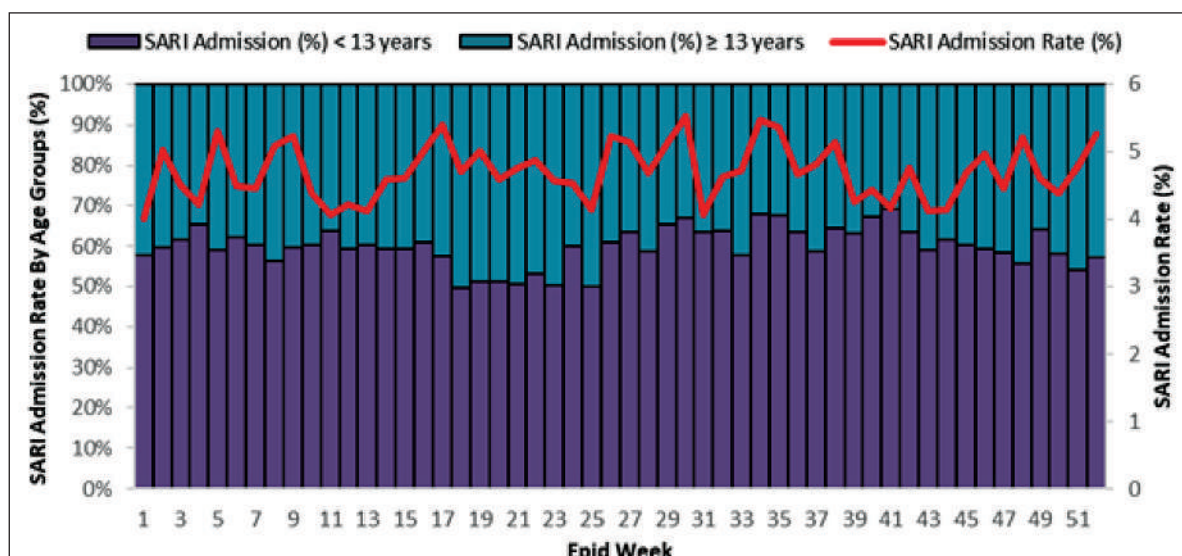
Throughout 2017, the influenza surveillance did not show any seasonal variation. For ILI surveillance, the highest ILI consultation rate was recorded during Epid Week 30/2017 (3.90 per cent) while the lowest ILI consultation rate was recorded during Epid Week 49/2017 (1.21 per cent). Based on age distribution, the commonest age group affected with ILI was age group ranging from 20 years to 59 years (**Figure 19**). In addition, the baseline activity for SARI admission rate ranges from 4.01 per cent to 5.54 per cent. For the age distribution, majority of SARI cases were seen affecting age group below 13 years (i.e. the paediatric age-group) as shown in **Figure 20**.

Figure 19
Malaysia ILI Consultation Rate (%) by Epid Week, 2017



Source: Disease Surveillance Sector, Disease Control Division

Figure 20
Malaysia SARI Admission Rate (%) by Epid Week, 2017



Source: Disease Surveillance Sector, Disease Control Division

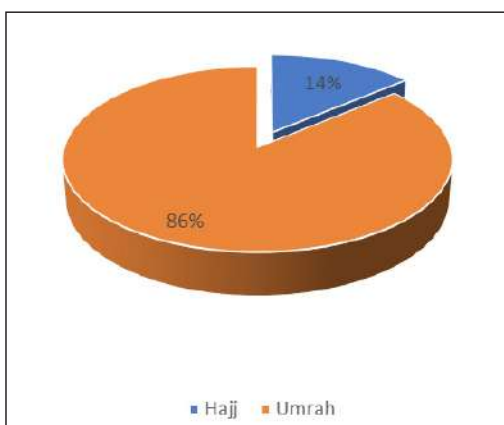
In 2017, a total of 3,414 laboratory samples for ILI surveillance were received by National Public Health Laboratory (NPHL) Sungai Buloh from the ILI sentinel sites nationwide for further analysis; of these, 16.0 per cent samples tested positive. Influenza A virus was the most dominantly isolated virus with 55.3 per cent positive isolates, followed by influenza B virus with 25.6 per cent isolates and Adeno virus with 7.5 per cent isolates. For SARI, the Institute for Medical Research (IMR) received a total of 1,175 samples from the SARI sentinel sites nationwide for testing. Of these, 39.1 per cent samples tested positive. The distribution of the results obtained were Adenovirus with 35.9 per cent samples, influenza A with 25.4 per cent samples, respiratory syncytial virus (RSV) with 12.4 percent samples, influenza B with 12.2 per cent samples, co-infection with 10.9 per cent samples, others with 2.2 per cent samples and parainfluenza virus with 1.3 per cent samples. Both the National Public Health Laboratory (NPHL) Sungai Buloh and Institute of Medical Research (IMR) received a total of 4,589 influenza samples for testing in 2017, out of which 14.2 per cent samples tested positive for influenza. Influenza A was predominantly tested positive with 67.8 per cent samples followed by influenza B with 32.2 per cent samples.

There were total of 99 respiratory associated outbreaks/clusters reported nationwide for year 2017. The highest number of clusters occurred at boarding school (30.3 per cent) followed by household (14.1 per cent) and primary school (13.1 per cent). For the respiratory cluster sample analysis, influenza A (58.6 per cent) was the most dominantly distributed followed by Influenza B (22.2 per cent), whereas 15 clusters (15.2 per cent) are negative for influenza.

- **Middle East Respiratory Syndrome (MERS) Infection**

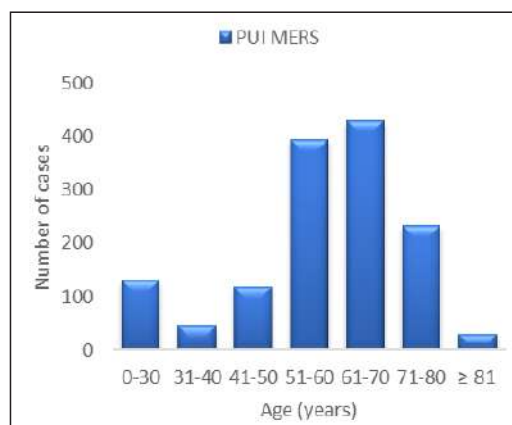
For the year 2017, there had been a total of 1,382 notified persons under investigation (PUI) for MERS-CoV. All the 1,382 notifications tested negative for MERS-CoV. There were more females (723 individuals; 52.3 per cent) notified as PUI MERS-CoV compared to males (576 individuals; 41.7 per cent).

Figure 21
Distribution of PUI for MERS-CoV
Notification, 2017



Source: Disease Surveillance Sector, Disease Control Division, MoH

Figure 22
Age Distribution of PUI for
MERS-CoV, 2017



Source: Disease Surveillance Sector, Disease Control Division, MoH

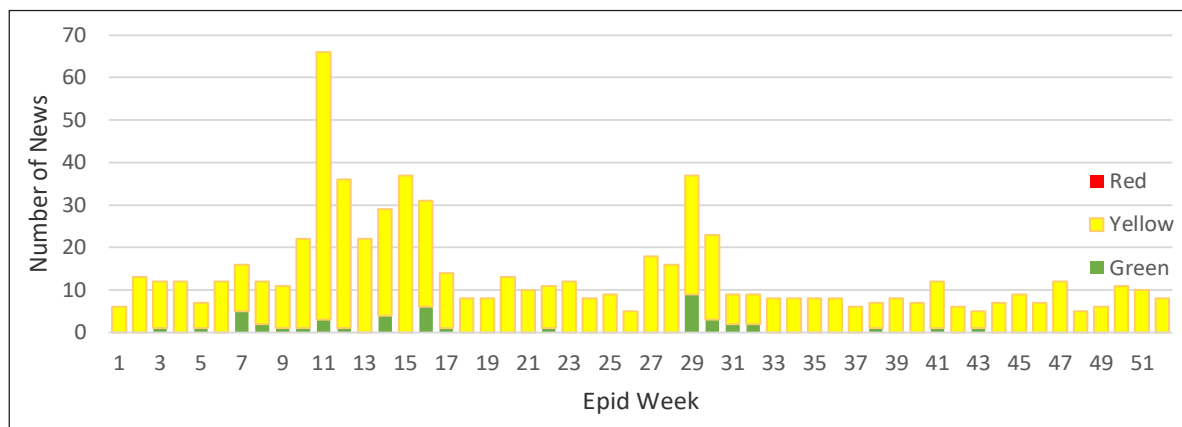
- Risk Assessment for Acute Public Health Event**

In 2017, two (2) Rapid Risk Assessment Reports were prepared following avian influenza (H5N1) outbreak among poultry in Kelantan (February 2017) and increasing trend of H7N9 human cases reported from Republic of China (March 2017).

- Event Based Surveillances (EBS)**

For 2017, a total of 712 news was recorded by rumour surveillance system. Among this news, 6.5 per cent news coded as green and 93.5 per cent news coded as yellow. There was no news coded as red (**Figure 23**). An event is screened using the Event Screening Risk Assessment (ESRA) tool and then coded as red (need to be verified within 72 hours of receiving it), yellow (circulated/shared with the intention to increase alertness) or green (recorded without the need to be circulated).

Figure 23
Distribution of News Screened According to Colour Coding, by Epid Week, 2017



Source: Disease Surveillance Sector, Disease Control Division, MoH

Additionally, the occurrences of clusters/outbreaks that are not included in the list of notifiable diseases are captured under Rumour Surveillance. For 2017, a total of 109 clusters of chicken pox, 23 clusters of scabies and five (5) clusters of conjunctivitis were reported.

OUTBREAK & DISASTER MANAGEMENT

• Surveillance of Outbreak and Event

In 2017, total of 1,889 outbreaks and 259 events reported to the Outbreak and Disaster Management Sector in 2017. **Table 25** show 5 most common disease outbreak and event reported in 2017.

Table 25
Most Common Disease Outbreak and Event Reported in 2017

No	Disease	No of Outbreak Reported	Event	No of Event Reported
1.	HFMD	907	Flood	144
2.	Food poisoning	403	Fire	50
3.	Measles	115	Storm	19
4.	Chicken pox	111	Mercury spillage	14
5.	ILI / URTI	91	Gas/chemical leakage	9

Source: National CPRC, MoH

• Activation of National Crisis Preparedness and Response Centre (CPRC)

In 2017, Crisis Preparedness and Response Centre (CPRC) had been activated three times. The activation of National CPRC are for floods, Avian Influenza among poultry in Kelantan and imported case of MERS-CoV in Klang, Selangor.

• National Dengue Operation Room (NDOR)

The National CPRC for Dengue has continued to be in the active surveillance mode till to date. National Dengue Operation Room (NDOR) monitor dengue outbreaks and coordinate respond for the whole country. NDOR conduct daily meeting related to dengue outbreaks and produce daily report which is distributed through email to all related parties. In 2017, Chikungunya outbreaks occurred in few states namely, Kedah, Perak and Kelantan. National Operation Room for Chikungunya was in-cooperated with National Dengue Operation Room.

• National Avian Influenza Operation Rrom (NAIOR)

National Influenza Operation Room (NAIOR) had been activated when avian influenza detected among poultry in Kelantan. This operation room monitored prevention and control activities implemented by affected districts to ensure that the disease not spread to humans.

• National Flood Operation Room (NFOR)

The National Flood Operation Room (NFOR) had been activated when flood hit few states in the month of January. This operation room monitored the food situation and disease control measures as well as activities at temporary relief centre by the medical and health teams.

- **National MERS-CoV Operation Room**

Following the detection of imported one case of MERS-CoV in Kelang, Selangor, National MERS-CoV Operation Room was activated at the end of December 2017. The operation room was closed when there was no case detected after 2 incubation periods.

- **Risk Communication**

CPRC Facebook (<https://www.facebook.com/kkmcprc>) was created to facilitate sharing of information amongst member of public and CPRC since 2013. Facebook is updated daily by designated staff and the activities were shown as in **Table 26**. Through Facebook, the information on DOCE related public health incidents could be conveyed and advices could be issue to the public to advocate health promotion and mitigate panic.

Table 26
CPRC Facebook Activities for Year 2017

Activity	Views	Likes	Comments	Shares	Private Message	Uploads
Number of activity	15,398	14,746	737	6,356	33	1,095

Source: National CPRC, MoH

MALAYSIAN FIELD HOSPITAL, COX'S BAZAR, BANGLADESH

In early September 2017, Malaysia has pledged to send an integrated humanitarian mission to help the Rohingya refugees sheltering at the Bangladesh - Myanmar border after fleeing alleged suppression by the Myanmar military. Among its humanitarian aid manifestations, a field hospital set up by the Malaysian Government in the area with the agreement by the Bangladesh authorities has been identified and approved. The mandate to run the Malaysian Field Hospital for three months has been given to the Ministry of Health supported by the Malaysian Armed Forces, National Security Council, Non-government organizations and Ministry Foreign Affairs. The National Crisis Preparedness and Response Centre, the Ministry of Health has been given a task to coordinate the planning, preparation, setting-up and operation of the Malaysian Field Hospital. A total of 155 personnel involved in the setting-up and providing services at the hospital in the period of three months from 20 November 2017 to 17 February 2018 (**Image 10**).

Image 10
Malaysian Field Hospital Preparation



Source: Disease Control Division, MoH

INTERNATIONAL HEALTH

International Health Sector plays important roles in implementing programmes related to International Health such as International Health Regulations (IHR) 2005, Travellers' Health, including Pilgrims' Health, monitoring of the health activities at all International Entry Points, Migrants' Health especially foreign workers and International Health collaborations.

• Implementation of The International Health Regulations (IHR) 2005

The International Health Sector monitored the implementation of IHR 2005 at the international Points of Entry (POE), District Health Offices, State Health Departments and Ministry of Health. Malaysia has achieved the core capacities requirements based on IHR 2005 before the end of 5 years set by WHO started from the date it was first entered into force on 15 June 2007. Nevertheless, Malaysia will continue to strengthen the core capacities requirements specified under Annex 1, IHR 2005. The activities under the IHR implementation as shown below:

i. Malaysia Strategic Work Plan for Emerging Diseases (MySED)

Malaysia Strategic Work plan for Emerging Diseases and Public Health Emergencies (MySED II (2017 to 2021) has been formulated to ensure regional and global health security to maintain its generic approach in preparedness and response for all hazards. This document formulated based on Asia Pacific Strategy for Emerging Diseases and Public Health Emergencies (APSED III) with the main objective to strengthen core public health functions as well as many key health system functions such as the health workforce, service delivery, information and technology systems, and leadership and governance and to support a more resilient health system. In 2017 the document was finalized to be used for the next five (5) years from 2017 to 2021 in strengthening the security of our countries in preparing and responding to all hazards.

ii. Points of Entry Supervisory Visits

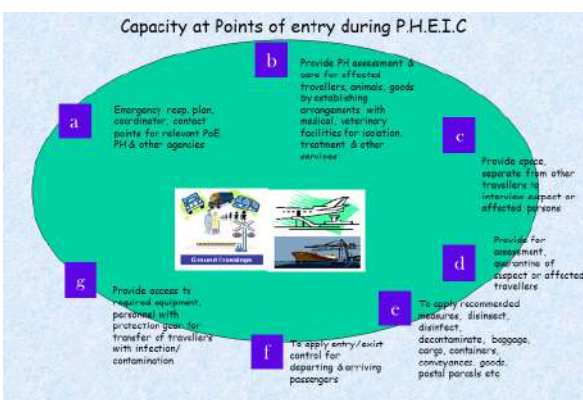
To ensure that the Points of Entry in the country fulfil the requirements of the IHR 2005, International Health Sector has conducted 55 supervisory visits during 2011 to 2017. The visit assesses the core capacities and their capabilities to manage Public Health Emergencies of International Concern (PHEIC). From the 55 supervisory visits conducted throughout the span of seven years, 24 points of entry were recognized as the designated Point of Entry which had conformed to the IHR 2005 regulations.

Figure 24
Core capacities requirement at Point of Entry



Source: Disease Control Division, MoH

Figure 25
Core capacities requirement during PHEIC



Source: Disease Control Division, MoH

- **Travel Advisory**

The International Health Sector prepares and reviews the Travel Advisory information uploaded in the Ministry of Health's MyHEALTH Portal at the <http://www.myhealth.gov.my/myhealth/>. In addition, the International Health Sector provides technical advice to the public on Travel Health enquiries through MyHEALTH Portal from time to time.

Activities at International Points of Entry

i. Screening of Travellers Arriving from Countries with Risk of Yellow Fever Transmission

Malaysia is still free from Yellow Fever. However, this country has a high risk of acquiring this disease. There are several routine activities implemented in this country in preventing Yellow Fever transmission, such as Yellow Fever vaccination is requirement entry, screening at the International Points of Entry and taking up quarantine measures and the activities as shown in **Table 27**.

Table 27
Yellow Fever Screening at Point of Entry

Screening	2016	2017
Visitors With Valid Certificate	31,923 (99.5%)	31,056 (99.6%)
Visitors Quarantined	135 (0.42%)	72(0.23%)
Visitors Under Health Surveillance	26 (0.07%)	6(0.02%)
Total Visitors Screened	32,090	31,184

Source: Health Information Monitoring System, MoH

ii. Importation and Exportation of Human Remains, Human Tissues, Pathogenic Organisms and Substances

The number of human remains that were exported and imported had been increasing annually from 2011 to 2017 from 1997 bodies in 2011 to 3800 bodies in 2017, which was an increase of 90 per cent. Similarly, the import and export of human tissues and any part thereof were also increased by 429 per cent from 205 consignments in 2011 to 1084 consignments in 2017. The import and export of pathogenic organism and substance remained quite stable from 101 consignments in 2011 to 121 consignments in 2017.

- **Pilgrims' Health**

Medical examination for all registered pilgrims done every year to ensure their health status before they depart to the Holy Land. Other than that, there will be a medical team from the Ministry of Health responsible to ensure that the pilgrims remain healthy and are able to perform their hajj. The most common cause of patients' attendance to the outpatient clinics was chest diseases, which accounted between 79.1 per cent in 2011 and 59.9 per cent in 2017 from all causes, followed by musculoskeletal problem and disease related to ear, nose and throat. The most common causes of hospital admissions among hajj pilgrims from 2011 until 2017 are chest diseases, cardiovascular diseases and metabolic disorders. However, the percentage of chest diseases among the hajj pilgrims, showed a decreasing trend from 56.7 per cent (2013) to 43.0 per cent (2017).

- **Foreign Workers' Medical Examination**

Foreign Workers Medical Examination Monitoring Agency (FOMEMA) was awarded a concession since 1997 by the Government of Malaysia to implement, manage and supervise a nationwide mandatory health screening programme for all legal foreign workers in Malaysia.

In 2017, total of 918,883 of foreign workers were screened. Out of those numbers, 2 per cent are medically unfit with various reason including those with communicable disease, non-communicable disease, drug abuse and pregnancy. Highest number of communicable disease is tuberculosis and hepatitis.

FAMILY HEALTH DEVELOPMENT DIVISION (FHDD)

MATERNAL HEALTH SERVICES

Malaysia has made great progress in improving maternal health care and services during MDG era and continues to strive towards achievement of SDG. Two main focus areas in 2017 were effective supervision and strengthening of pre pregnancy care. Reference documents developed for health staff include *Buku Panduan Penyeliaan Program Perkhidmatan Kesihatan ibu dan Perancang Keluarga di Klinik Kesihatan*, *Garis panduan Kriteria Kelayakan Perubatan & Soal Jawab Amalan Penggunaan Kaedah Kontraseptif* and *Manual Perkhidmatan Kesihatan Ibu & Anak bagi Anggota Kejururawatan di Perkhidmatan Kesihatan Awam*. Safe motherhood training was conducted in September 2017.

MATERNAL HEALTH CARE

The antenatal coverage for at least one visit increased from 78.1 per cent in 1990 to 95.4 per cent in 2017. The average antenatal visit per person has improved from 6.6 in 1990 to 10.8 visits in 2017. The coverage for tetanus toxoid immunization among antenatal mothers was 92 per cent in 2017. Proportion of deliveries conducted by skilled health personnel (safe deliveries) remained high above 98 per cent since 2010. (**Table 28**).

Table 28
Maternal Health Coverage in Malaysia, selected years 1990 to 2017

Item	1990	2000	2010	2012	2014	2016p	2017p
Estimated No. of Pregnant Mothers	676,382	691,664	587,479	580,536	592,489	599,306	597,906
Antenatal Coverage	528,029 78.1%	517,138 74.8%	483,136 82.2%	560,323 96.5%	575,604 97.2%	554,721 92.6%	570,632 95.4%
Average Antenatal Visits per Mother	6.6	8.5	10	10.0	10.6	10.8	10.8
Tetanus Toxoid Immunisation Coverage (2 nd & Booster Dose)	414,445 81.7%	449,608 86.8%	432,581 84.6%	466,666 92.44%	478,206 92.8%	466,903 89.6%	479,412 92.0%
Total Deliveries	476,196	507,891	439,447	455,650	461,220	443,432	450,846
Safe Deliveries	92.8%	96.6%	98.6%	98.7%	98.9%	99.5%	99.6%
Postnatal Coverage	318,953 67.0%	417,232 82.1%	428,140 97.4%	450,160 98.8%	467,522 101%	458,529 103%	458,529 101%

Note: Data for 2016 and 2017 is preliminary

Source: Health Informatics Centre, Ministry of Health Malaysia

The 2017 report on National Health and Morbidity Survey (NHMS) on Maternal and Child Health findings generally confirm the MoH administrative data on the coverage of maternal health care, i.e. antenatal coverage (99 per cent), safe delivery (99.5 per cent) and postnatal visit at 1 month (98.2 per cent).

FAMILY PLANNING SERVICES

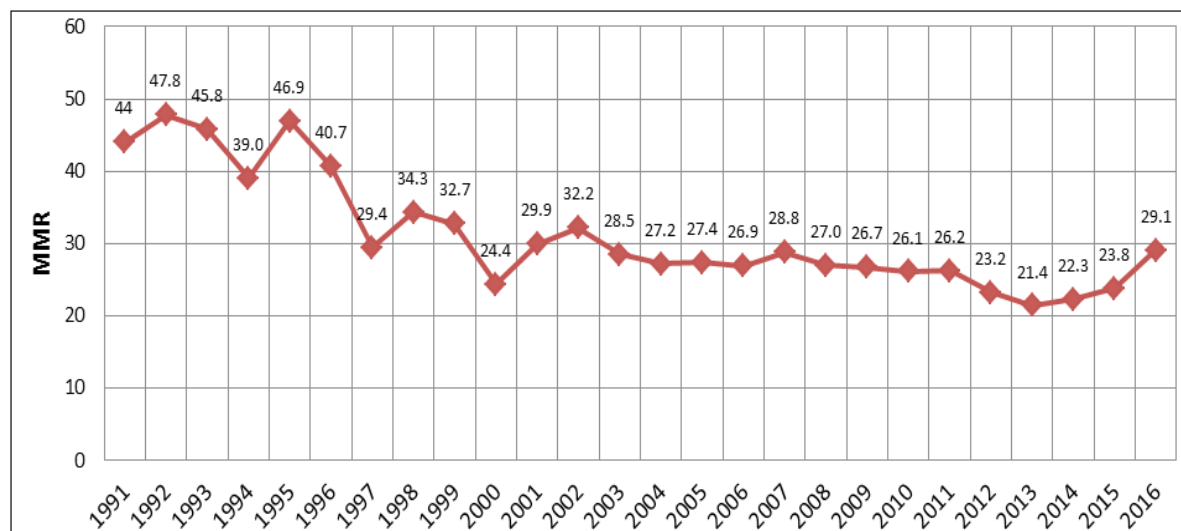
The Ministry of Health provides a wide range of contraceptive methods to cater for the different needs and suitability of woman. The most popular contraceptive method used in year 2017 was contraceptive pill (48.1 per cent) followed by progestogen-only injection (36.6 per cent), male condoms (8.2 per cent) and intrauterine device (2.9 per cent). The total of new family planning acceptors in 2017 was 115,760 and the number of active users was 337,913.

The use of family planning among high risk women was monitored using two indicators, i.e. practice indicator (percentage of high risk female clients who practised effective methods of contraceptive for 2 years) and quality indicator (percentage of those who continue practising family planning after 2 years). The targets are 80 per cent and 70 per cent, respectively. In 2017 the practice indicator was 83.9 per cent and quality indicator for cohort 2015-2017 was 79.8 per cent.

MATERNAL DEATH

Maternal Mortality Ratio (MMR) declined from 530 per 100,000 live births in 1950 to 29.1 per 100,000 live births in 2016. There has been a plateau at around 25 to 29 per 100,000 live births since year 2000 (**Figure 26**). Five common causes of maternal death were Associated Medical Conditions, Pulmonary embolism, Postpartum Haemorrhage, Hypertensive Disorders in Pregnancy (HDP) and Amniotic Fluid Embolism.

Figure 26
Maternal Mortality Ratio in Malaysia : 1991 to 2016



Source: Department of Statistics Malaysia.

CHILD HEALTH SERVICES

Child health services provided through the health facilities for children aged 0 to 6 years encompasses services ranging from health promotion activities, preventive services, growth and developmental screening for early detection and intervention, treatment and rehabilitation services. In 2017, 75.3 per cent of children aged below 1 year, 49.5 per cent of toddlers between 1 year to 4 years and 23.3 per cent of pre-schoolers (5-6 years) received services from MoH facilities.

The main focus of activities for child health in 2017 was aimed at improving quality of services by health staff and quality of supervision by the nursing supervisors through training. District level coordinators were identified and trained to do supervision of the child health programme using a structured guideline *Garispanduan Penyeliaan Program Kesihatan Kanak-Kanak 2016*. Coordinators submitted their reports on assessment of health clinics, identified weakness and carried out interventions. New guidelines were developed and old ones reviewed namely *Garispanduan Pelaksanaan Perkhidmatan Kesihatan Kanak-Kanak di Klinik Kesihatan dan Komuniti*, *Garispanduan Imunisasi*, *Garispanduan Imunisasi bagi Kanak-Kanak yang Cicir Imunisasi* and Guidelines in the *Garispanduan Management of Neonatal Jaundice*.

NATIONAL IMMUNISATION PROGRAM

The National Immunisation Programme, a preventive strategy to reduce vaccine preventable diseases implemented for more than 60 years. Malaysia has been declared as polio-free since 2000 and now aims to eliminate measles. Due to the increase of measles cases among children aged less than 1 year the National Immunisation Schedule was revised. Beginning 1 April 2016, MMR vaccination is given to children at ages 9 months and 12 months. Coverage for MMR is based on number of children receiving immunisation at 12 months of age. Coverage for all immunisations achieved the target of >95 per cent with the exception of MMR (**Table 29**).

Table 29
National Immunisation Coverage, Malaysia, 2011 to 2017p

Year	Immunisation Coverage									
	*DPT (3 rd dose)		*Polio (3 rd dose)		*Hib (3 rd dose)		*Hep.B (3 rd dose)		**MMR	
	No.	%	No.	%	No.	%	No.	%	No.	%
2011	489,104	99.54	489,035	99.53	489,083	99.54	477,312	97.14	471,442	95.24
2012	503,351	99.71	503,354	99.71	503,148	99.67	495,048	98.71	478,862	95.47
2013	499,341	97.77	499,341	96.92	499,341	96.92	496,228	96.32	484,814	95.25
2014	498,566	96.77	498,566	96.77	498,566	96.77	496,075	96.29	475,394	93.36
2015	506,939	99.04	506,940	99.04	510,349	97.93	508,112	98.62	486,917	93.07
2016	510,556	97.97	510,556	97.97	510,556	97.97	510,567	97.97	500,551	94.37
2017p	505,294	98.90	505,294	98.90	505,594	98.90	498,820	98.15	489,033	92.08

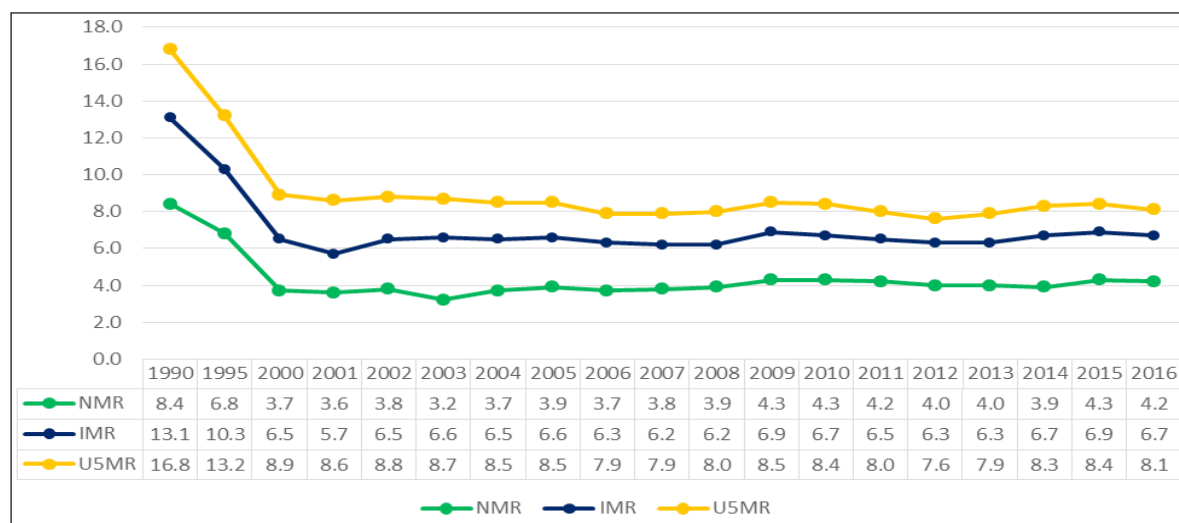
Source: Health Informatics Centre, Ministry of Health Malaysia

Denominator *Estimated live births. ** Denominator Estimated number of children 1-<2 years

UNDER-5 MORTALITY, INFANT MORTALITY AND NEONATAL MORTALITY

Under-5 and Infant Mortality Rates showed a decline from 1990 to 2000 but despite vigorous efforts by the Ministry of Health to achieve Millennium Development Goal (MDG) target, the rate had reached a plateau over the past 15 years (**Figure 27**). The year 2016 marks the beginning of Sustainable Development Goals as a continuation of the MDG. The overall target for child health under the SDG (Goal 3) is to end preventable deaths of newborn and children less than 5 years by 2030.

Figure 27
Under 5 Mortality Rate (U5MR) Malaysia, 1990 to 2016



Source: Department of Statistics, Malaysia

Due to the improvement in services and technology in medicine, death due to diseases and conditions previously not treatable can now be averted. However, the definitions of 'preventable' deaths vary across countries, depending on the availability of services. The Family Health Development Division has developed a standard guideline to redefine 'preventable' conditions in Malaysia and classify under 5 deaths into preventable and non-preventable deaths.

SCHOOL HEALTH SERVICES

The school health program was established in 1967 with the aim of maintaining the health of the students at optimum levels. Health services provided includes health education, screening and health screening, immunization, treatment and early referral.

SCHOOL HEALTH SERVICES COVERAGE

In 2017, the School Health Teams have provided health services to a total of 2,314,917 children from pre-school, Year 1, Year 3, Year 6, Form 1, Form 3 and Form 4 students. The number of students received school health services increased by 7 per cent compared to 2016. Details on the number of school children received health services between 2012 to 2017 is shown in **Table 30**

Table 30
Number of Students Receiving School Health Services, 2012 to 2017

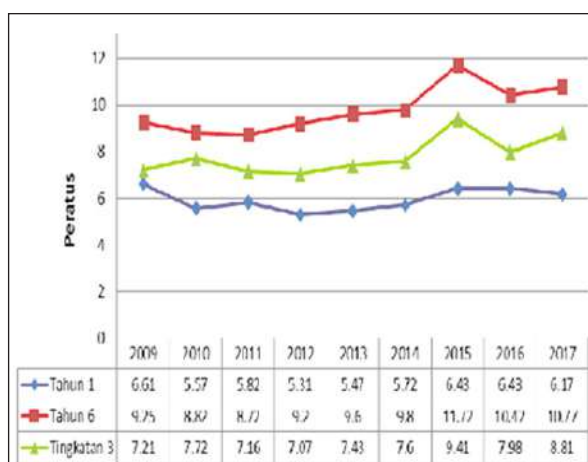
Class	2012	2013	2014	2015	2016	2017
Pre School	416,928	440,885	465,827	486,277	495,754	521,968
Standard 1	451,264	442,859	447,624	432,314	428,840	460,631
Standard 3		2,456	2,523	3,246	3,186	4,102
Standard 6	465,025	460,233	453,667	415,755	407,657	440,380
Form 1	232,705	243,681	226,237	220,789	215,090	215,604
Form 3	455,017	445,259	450,243	450,967	404,108	429,258
Form 4					208,381	242,974
Total Students examined	2,020,939	2,035,73	2,046,121	2,009,348	2,163,016	2,314,917

Source: Health Informatics Centre, MoH (2017)

MORBIDITY IN SCHOOL CHILDREN

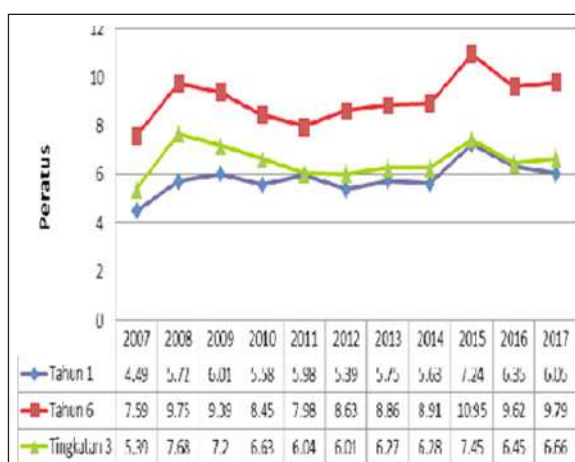
Figure 28 and **29** described the trends of overweight and obesity among Year 1, Year 6 and Form 3 students between the periods of 2009 to 2017. It was observed that the percentage of school children with overweight and obesity were highest during Year 6 school year and declined when the students reached Form 3. This is likely due to the growth spurt during adolescent period.

Figure 28
Trend of Students with Overweight by Classes, 2009 to 2017



Source: Health Informatics Centre, MoH (2017)

Figure 29
Trend of Students with Obesity by Classes, 2009 to 2017



Source: Health Informatics Centre, MoH (2017)

Table 31 showed that Visual Acuity Defect as the most common health problem detected with prevalence of 63.4, 25.4 and 27.1 for every 1,000 standard 1, standard 6 and form 3 examined. The reduction in trend of detection for standard 6 and Form 3 indicates that students may have received intervention after being detected during the year 1.

Health problems related to personal hygiene, such as head lice and scabies are still occurring in Malaysia, especially among primary school children. The trend decreases when students enter secondary school.

Table 31
Prevalence Of Morbidity For Every 1,000 Students Examined

Morbidity	Standard 1			Standard 1			Form 3		
	2015	2016	2017	2015	2016	2017	2015	2016	2017
Visual Acuity Defect	53.8	59.5	63.4	37.7	38.1	25.4	30.3	25.4	27.1
Scabies	1.7	1.6	1.5	1.4	1.6	1.3	1.0	0.8	0.9
Head Lice	29.5	27.4	23.4	24.7	25.3	22.3	6.1	6.2	4.7
Other Skin diseases	12.9	12.5	11.6	20.5	19.5	18.9	13.1	14.1	11.1

Source: Health Informatics Centre, MoH (2017)

A total of 3205 Year 3 school children were diagnosed to have learning disability in 2017. Of these, school children with Intellectual Disability had the highest incidence followed by those with Specific Learning Disability, Multiple type of Disability and Attention Deficit Hyperactive Disorder. Since 2013 until 2017, intellectual disability has been the most common type of learning disability detected and diagnosed among school children.

SCHOOL HEALTH IMMUNISATION SERVICES

HPV immunization for Form 1 pupils began in 2010 with the goal of preventing cervical cancer amongst HPV immunization recipients. The trend of parental consent exceeding 98.0 per cent since 2012. The immunization coverage for dose 1 and complete immunization among those with written permission remained above 99 per cent since 2012. In 2017 the DT and MR booster immunization coverage for Standard 1 and ATT booster immunization coverage for Form 3 students exceeded than 95 per cent.

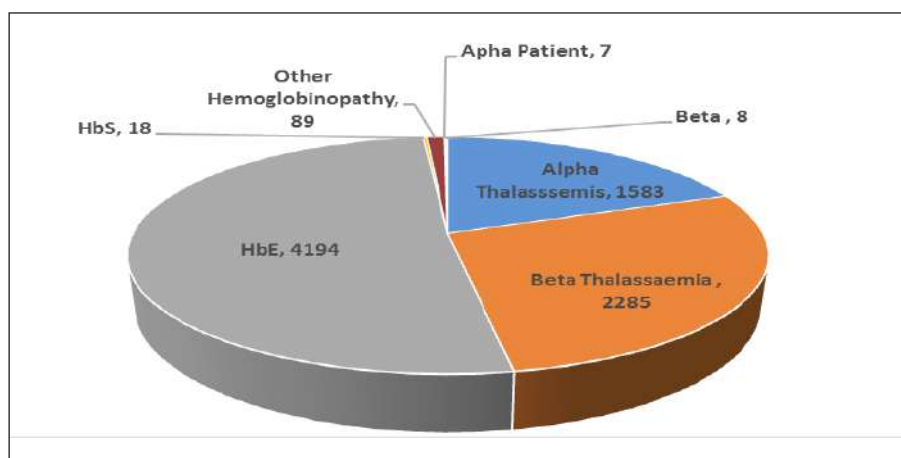
FORM 4 THALASSAEMIA SCREENING

Form 4 Thalassaemia screening was introduced in 2016 with the intention to increase number of students who were aware of their thalassaemia status and hence prevent carrier marriage among this population. In 2017, of the total of 408,899 Form 4 students enrolled with the Ministry of Education, 302,091 students (74.0 per cent) were offered Thalassaemia screening. A total of 255,545 or 84.6 per cent of the parents agreed for their children to be screened. Among those with parental consent, 242,794 students (95.1 per cent) were screened. Johor and Perak were two states with the lowest coverage while Perlis, Negeri Sembilan, Sarawak and Wilayah Persekutuan Labuan managed to offer thalassaemia screening to all Form 4 students in their state.

It was found that 25.3 per cent of students were identified as suspected carrier and Sabah, Kedah and Perlis showed higher number of students at risk of thalassaemia carrier. Based on the screening

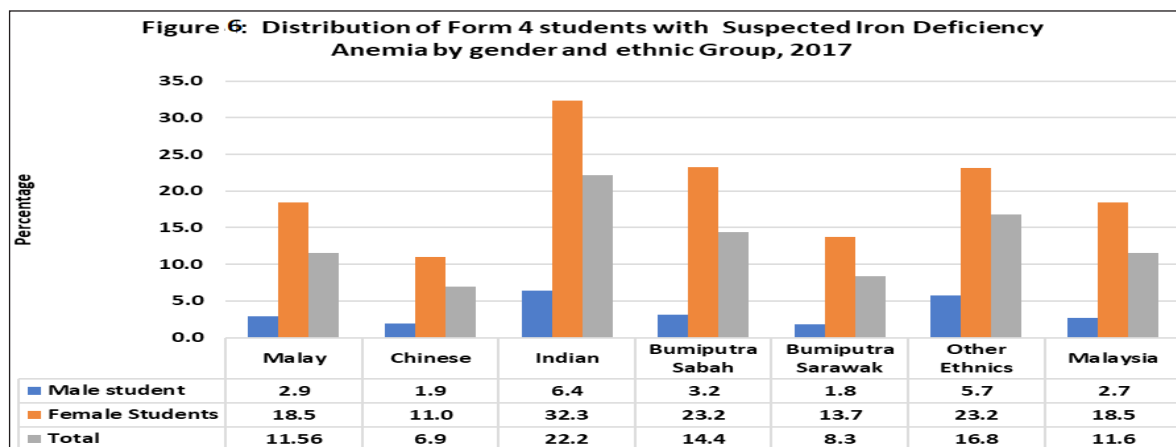
result, 35,694 blood samples were further analysed for Thalassaemia carrier confirmation. As of 31 December 2017, health clinics have received a total of 25,644 (71.8 per cent) test results for Hb Analysis and molecular diagnosis. Of this, 8,169 (3.5 per cent) Form 4 students have been diagnosed as Thalassaemia carriers and another 15 students were diagnosed as Thalassaemia patients. Among the carriers, 4,194 were HbE carriers, 2,285 Beta Thalassaemia Carrier, 1583 Alpha Thalassaemia Carrier and 86 hemoglobinopathies (Figure 30).

Figure 30
Thalassaemia patients and Carrier, HB E and Haemoglobinopathies detected during Form 4
Thalassaemia Screening as of December 2017



Source: Family Health Development Division, 2017

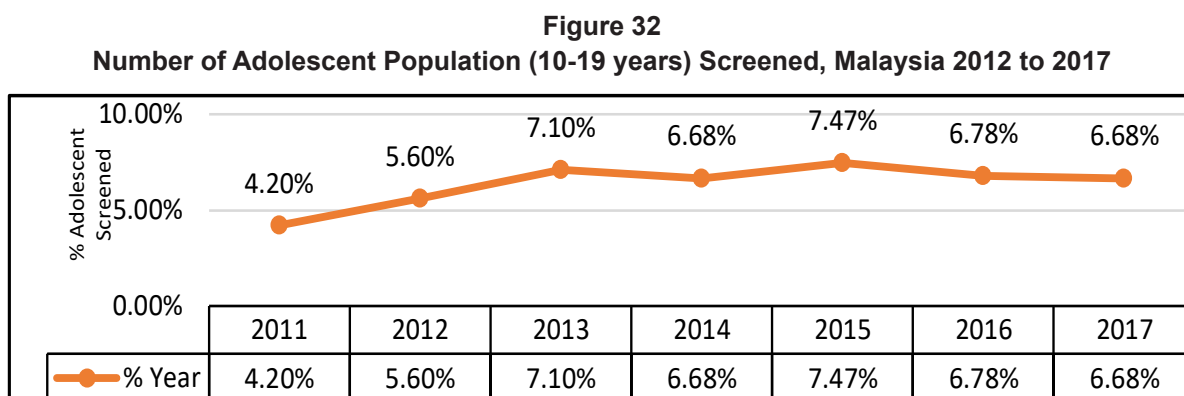
From the screening activity it was found that 11.6 per cent were suspected detected as having Iron Deficiency Anaemia (IDA). It was noted that female students have higher incidence of IDA at 18.5 per cent compared to boys at 2.5 per cent. Among female students, Indians had the highest suspected Iron Deficiency Anaemia at 32.3 per cent followed by the Bumiputra Sabah and other ethnic group at 23.2 per cent. (Figure 31).



Source: Family Health Development Division, 2017

ADOLESCENT HEALTH SERVICES

Adolescent Health Programme was established in 1996 as one of the expanded scope of Family Health Development Division (FHDD). This program aims to develop and strengthen health services for the adolescent population. In 2017, the total adolescent population (10-19 years) is 5,452,400 or 17 per cent of Malaysia's population. A total of 366,377 (6.68 per cent) of the adolescent population were screened (**Figure 32**).

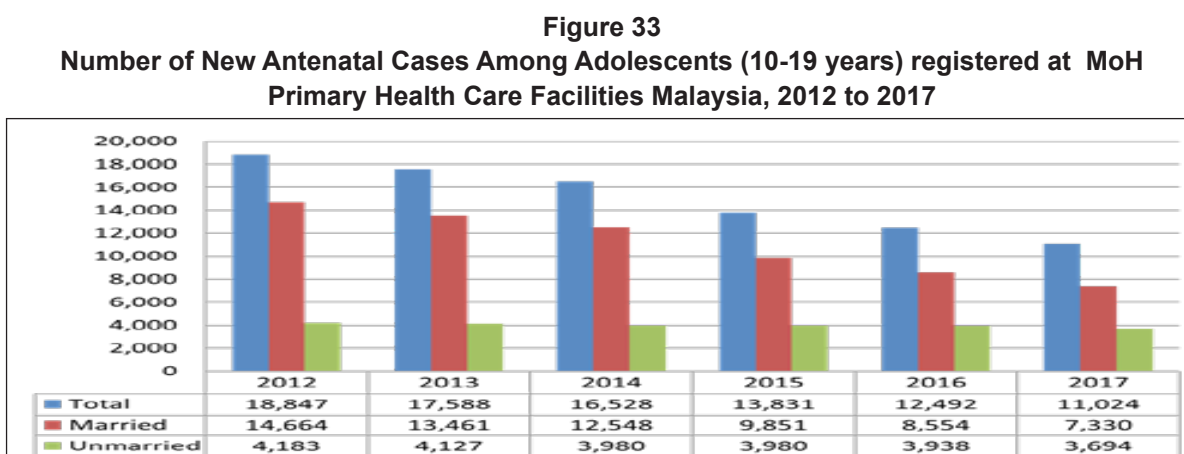


Source: Health Informatics Centre, MoH (2012-2017) , **Preliminary Data 2017

Among those screened, majority had nutrition problems 35,034 (9.56 per cent) followed by risky behaviours 12,584 (3.43 per cent), physical problems 5,191 (1.41 per cent), sexual reproductive health (SRH) 4,499 (1.22 per cent) and mental health problems 3,491 (0.95 per cent).

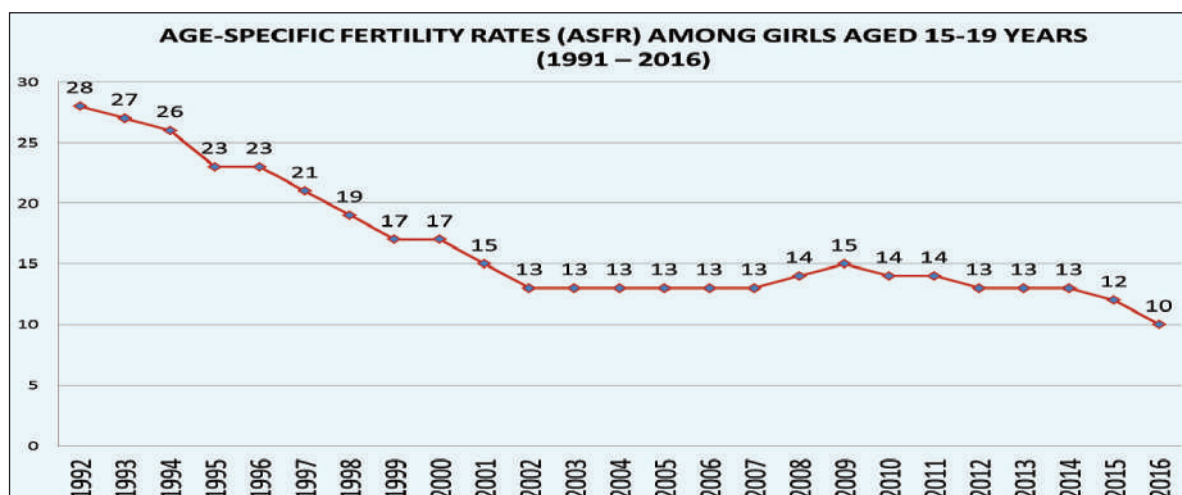
SEXUAL REPRODUCTIVE HEALTH

Figure 33 shows a decreasing trend of new antenatal cases among adolescents registered at government primary health care facilities from 18,847 (2012) to 11,024 (2017). The Age Specific Fertility Rate (ASFR) among adolescent girls 15-19 years has also declined from 28/1000 girls (1992) to 10/1000 (2016) as in **Figure 34**. This decline reflects the efforts that have been done by various stakeholders in dealing with teenage pregnancy.



Source: Family Health Development Division, MOH (2012-2017)

Figure 34
Number of New Antenatal Cases Age Specific Fertility Rate (ASFR) among adolescent girls 15 to 19 years



Source: Department of Statistics, Malaysia, 2016

The issue of teenage pregnancy was brought up in multiple national level platforms such as the National Social Council; State Ministers/Chief Ministers Meetings chaired by Deputy Prime Minister as well as 240th Council of Rulers Conference. DYMM Raja Zarith Sofiah Binti Almarhum Sultan Idris Shah officiated the Ministry of Health launch of the 'Generasiku Sayang' Programme (GKS) in 2015, an initiative to create awareness and commitment among the public and relevant agencies to work together in addressing the issue of teenage pregnancy.

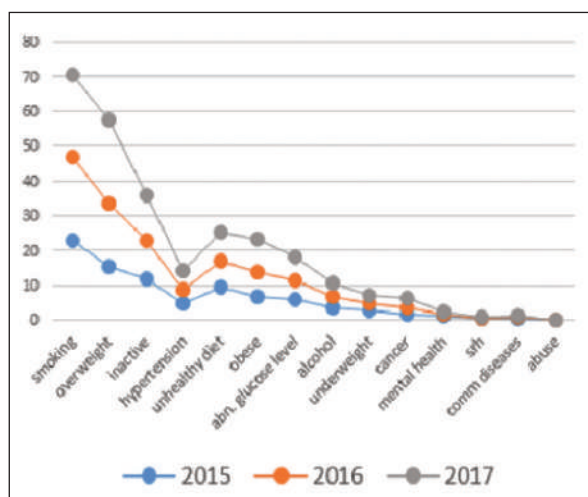
Currently, Johor and Kelantan have established the '*Pusat Generasiku Sayang*', while Sarawak has developed 'One Stop Teenage Pregnancy Committee' (OSTPC). Perlis, Pulau Pinang, Kedah, Perak, Pahang, Selangor, Melaka and Sabah have integrated the GKS concept in existing institutions under the Social Welfare Department or private NGOs.

In 2017 a second national video competition was held to tap the young minds on SRH related matters. This topic was divided into 3 scopes, in which 70.5 per cent submissions were on Cybersex; 22.4 per cent were on Gender and Sexuality and 16.3 per cent were on Reproductive Health. The winning videos were uploaded and shared in MoH websites, FHDD Youtube channel and Facebook page. MoH has established a National Technical Committee on Adolescent Health chaired by Deputy Director General Public Health to monitor implementation of the National Adolescent Health Policy and Plan of Action 2016-2020 (NAHPOA).

ADULT HEALTH SERVICES

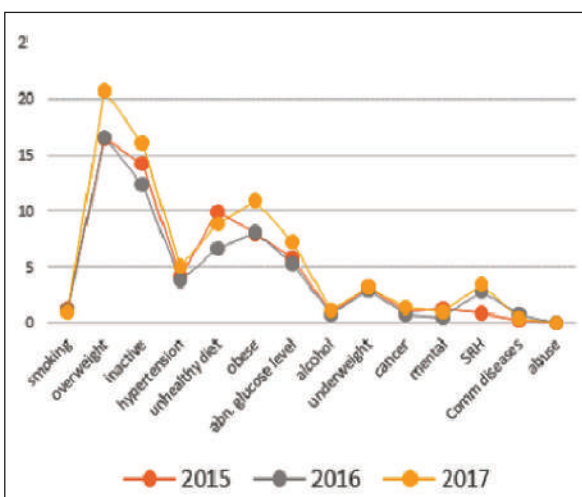
Health services for adult since 2009 focus on comprehensive and tailored health risk screening for earlier detection of diseases and risk factors to facilitate earlier treatment and intervention. Health screening is implemented in every health clinic and the target for this activity has been set at 5 per cent of all total adult population aged 20-59 years. Coverage for screening activity for 2017 is currently still below target at 4.7 per cent for women and 3.6 per cent for adult male. **Figures 35** and **36** describe the health risks detected in men and women respectively for the past 3 years.

Figure 35
The Health Risk in Man (2015 to 2017)



Source: Family Health Development Division,
Reten BSSK (Primer) 2017

Figure 36
The Health Risk in Women (2015 to 2017)



Source: Family Health Development Division,
Reten BSSK (Primer) 2017

NATIONAL PAP SMEAR SCREENING PROGRAM

Cervical cancer screening is an opportunistic screening offered to all sexually active women between the age of 20 to 65 years. Beginning 2017 the criteria was changed to include women aged 30 to 65 years following reports of incidence of cancer cervix and the National Strategic Plan For Cancer Control Program 2016-2020. The coverage set for 2017 was 40 per cent of women screened for cervical cancer of the total number of women between 30 to 65 years. There was an increase in percentage of screening coverage from 23.0 per cent in 2016 to 26.3 per cent in 2017. Coverage for pap smear screening decreased for women aged 50 to 65 years from 23.5 per cent (2016) to 22.5 per cent (2017).

The percentage of unsatisfactory slides remains below targeted level, 1.4 per cent in 2017 (target <2.5 per cent). In 2015, a new quality indicator was introduced, i.e. 'percentage of absent endocervical cells for Pap smear slides' with the target of <20 per cent. Percentage of absent of endocervical cells for Pap smear slides reduced from 23.35 per cent in 2016 to 19.9 per cent in 2017.

BREAST CANCER PREVENTION PROGRAMME

Breast Health Awareness Campaign which began in 1995 focused on encouraging women to perform breast self-examination (BSE). In 2009, this campaign evolved to emphasize clinical breast examination (CBE) by health providers as a modality for early detection of breast cancer among general women population. The percentage of CBE done among clients aged 20 years and above has increased from 25.8 per cent in 2016 to 27.9 per cent in 2017.

Abnormality was detected in 0.22 per cent of these clients and referred for further investigation. Among the 23,631 high risk women registered (new cases), 13,616 (57.6 per cent) were referred for mammogram screening. Only 11,701 (49.5 per cent) of the referred cases underwent mammography and 115 (0.98 per cent) of the women were confirmed to have breast cancer.

HEALTH SCREENING FOR SINGLE MOTHERS (NBOS 7)

Under NBOS 7, activities for single mothers focus on building resilience of single mothers which include mental health assessment, health risk screening, counseling and stress management. In 2017, a total of 18,757 single mothers was screened and 41.6 per cent (7,799) was identified to have health risks and 69.6 per cent (5,428) was referred for further management. The most common health risks identified were hypertension 77.5 per cent (6,043), diabetes 38.6 per cent (3,011) and overweight 32 per cent (2,503).

MEN'S HEALTH

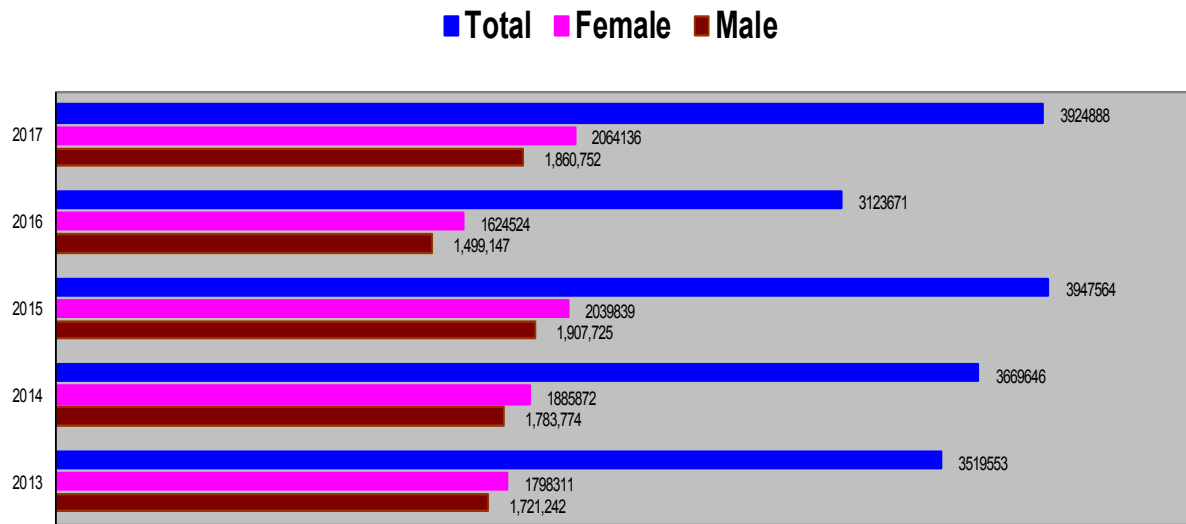
Premature death is high among men at the age group of 15 to 65, doubled as compared to women (National Health Morbidity Survey). The main reason for the mortality was due to cardiovascular risk factors such as heart disease and stroke. MoH is developing a National Plan of Action for Men's Health with the objective to increase the quality of life and to achieve the gender equity and better health for men. MoH has collaborated with other agencies including Social Security Organization (SOCSO), Ministry of Women, Family and Community Development (KPWKM), universities to further discuss on development and plans to improve men's health. Apart from that, The Malaysian Men's Health Clearing House has been developed in collaboration with University Malaya Medical Centre. The clearing house is the source of information on men's health which includes study and research, health information, policies, guidelines and others.

HEALTH CARE SERVICES FOR THE ELDERLY

The health care service for the elderly was first introduced under the Seventh Malaysian Plan. The services are in line with The National Healthcare Policy for Older Person and include health education and promotion, screening and assessment, consultation and referral, home visit and homecare nursing, rehabilitation and social, recreation and welfare activities through the '*Kelab Kesihatan Warga Emas*'.

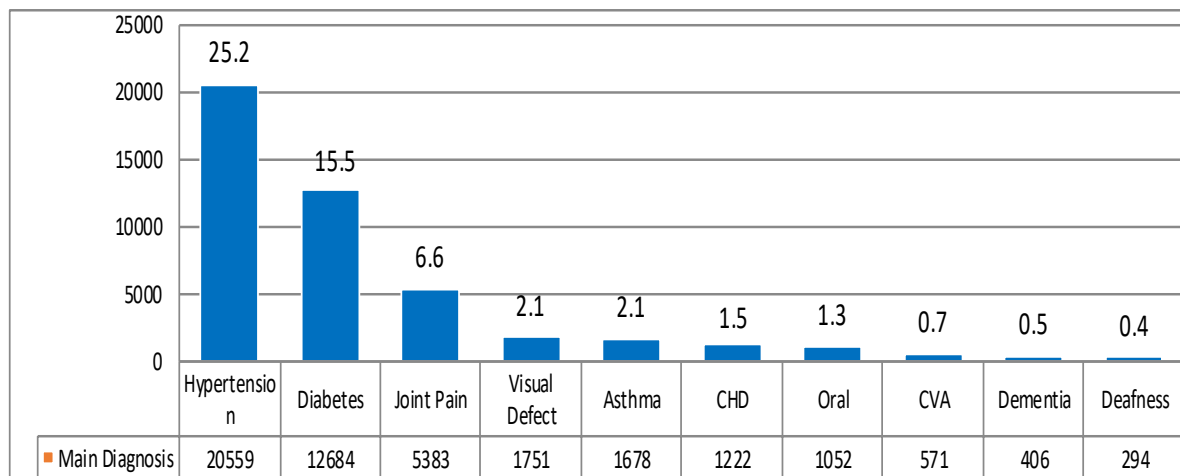
In 2017 the cumulative number of elderly registered at the health clinics nationwide is 2,376,384 or 80.4 per cent of the estimated total elderly population in the country (**Figure 37**) almost achieving the target set at 85 registration by 2025. Currently 5.3 per cent of total estimated elderly population in Malaysia have been screened using the elderly screening format (BSSK). The ten most common morbidities among the elderly detected as shown in **Figure 38**.

Figure 37
Elderly Attendances at Health Clinics, 2013 to 2017



Source : Family Health Development Division, Reten PKWE 201 A

Figure 38
Top Ten Diagnoses Among The Elderly Detected During Visit To Health Clinics, 2017.



Source: Family Health Development Division, – Reten WE 1/2012

In 2017, a total of 32,559 health personnel have been trained in the Care for the Elderly were and in addition, another 28,811 caregivers from institutions, NGOs, voluntary bodies and other agencies were also trained. Under the National Blue Ocean Strategy (NBOS) 7 – “1Malaysia Family Care” program a total of 10302 or 93 per cent elderly in institution and 1719 elderly living at home have been screened and treated. **Table 32** shows achievements of activities under the NBOS 10: 1Pesara Initiative.

Table 32
Achievements of Activities under NBOS 10: 1Pesara, 2017.

No	Activities	2017	2016
1.	Number of health clinics implement R-Lane.	706	701
2.	Number of clients using R-Lane.	2,085,507	1,620,508
3.	Number of pensioners using R-Lane.	343,915	277,472
4.	% of pensioners using R-Lane.	16.5 %	17.1 %
5.	Number of health talks given.	931	345
6.	Number of participants attended the health talks.	6,061	9,943
7.	Number of pensioners attended the health talks.	1,902	2,652
8.	% of pensioners attended the health talks.	31.4 %	26.7 %

Source – Family Health Development Division, Reten NBOS 10

All health clinics provide health services for elderly and 233 or 23 per cent of health clinics have initiated Elderly Health Club. The aim is to encourage the elderly to actively participate in the community activities for them to maintain their physical functions and healthy minds.

HEALTH SERVICES FOR PERSONS WITH DISABILITIES (PWDS)

Health care programmes for Persons with Disabilities (PWDs) has been planned and implemented in line with The Plan of Action of Health Care for PWDs 2011-2020, National Plan of Action for PWD 2016-2022, PWD Act 2008 and The Convention on The Rights of PWD 2008. Rehabilitation services at primary health care setting was first initiated in year 1996 with focus on services for Children with Special Needs, elderly and intervention for psychosocial problems. Rehabilitation services which first began with visiting therapist from hospitals, improved with placement of therapist in selected health clinics throughout Malaysia in 2003. As of 2017, there are 325 Physiotherapist, 242 Occupational Therapist and 2 Speech Language Therapist in 263 (30 per cent) health clinics all over Malaysia. Scope of services increased to include rehabilitation services for all age groups at health clinics and outreach rehabilitation services in the community including services in institutions, Community Based-Rehabilitation Centres, schools and at patient's home.

EARLY DETECTION OF DISABILITIES IN CHILDREN

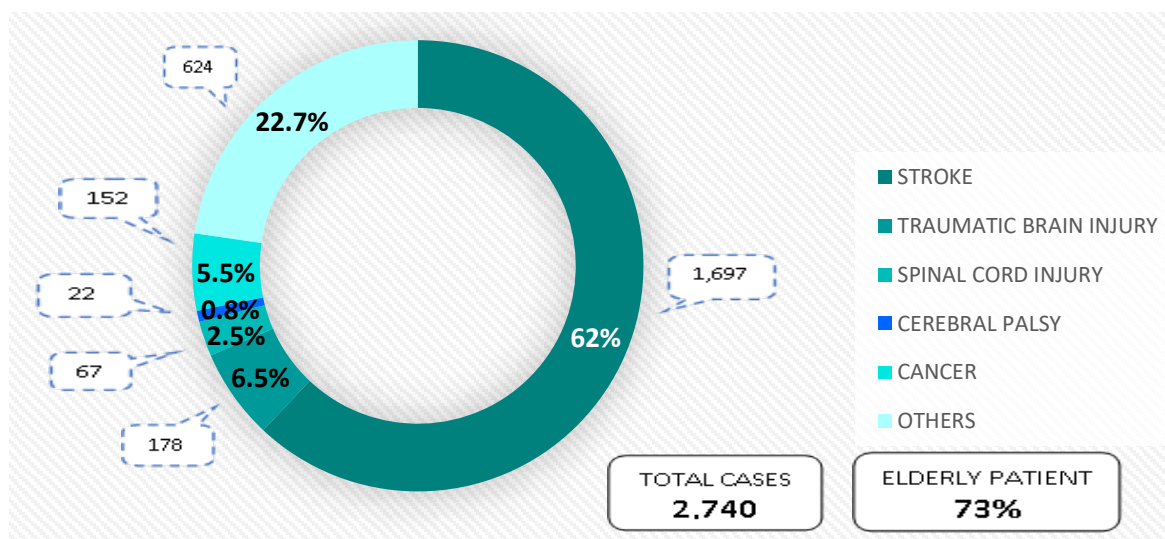
Percentage of children 0-1 year detected with disabilities has increased over past few years from 0.11 in 2014 to 0.19 per cent in 2017 as a result of increased training of nursing staff in the area of normal development. Children identified with disabilities are given early stimulation and intervention and referral to specialist in related areas for required investigation, assessment, treatment and rehabilitation.

HEALTH SERVICE FOR ADULT PWDS: DOMICILIARY HEALTH CARE SERVICES (DHC)

The objectives of DHC services are to ensure seamless and continuous care is given to stable bedridden patients discharged from the government hospitals, to empower and support caregivers / family members in the care of bedridden patients and to educate the patient on improving their self-care through quality care in their home.

Figure 39 shows total of 2,740 cases registered for Domiciliary Health Services in year 2017 and stroke is the commonest cases seen (62 per cent). The DHC outcome indicator, “Percentage of cases receiving Domiciliary Health Care Services showing improvement in self-care within/after 3 months of intervention”, achieved a record of 75.4 per cent far exceeding the proposed target of ≥60 per cent. This indicator was also one of the key performance indicators (KPI) of the Minister of Health for the year 2017.

Figure 39
Cases Registered For Domiciliary Health Care Services, 2017



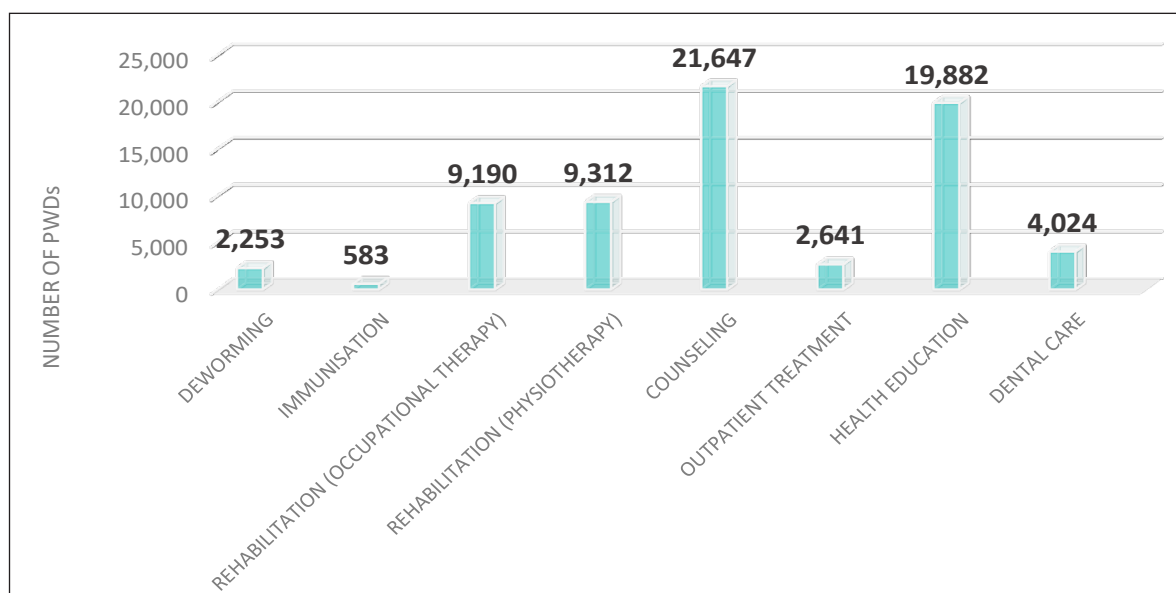
Source: Family Health Development Division, PPD 201/Pind.2016 (Malaysia, Tahun 2017)

Public Service Department (JPA) conducted a survey between February to March 2017 on 1,452 respondents who had received DHC services. This survey showed that this initiative by Ministry of Health has had a significant impact on service delivery to the people.

NBOS 7 INITIATIVE: 1MALAYSIA FAMILY CARE

“PDK Ku Sihat” is an activity under the National Blue Ocean Strategy NBOS 7: 1Malaysia Family Care where outreach services are provided to PWDs attending Community-based Rehabilitation Centre (CBR). In 2017, health care personnel provided service to 530 CBRs out of the 534 CBRs in operation and a total of 17,834 (92 per cent) PWDs attending CBR were screened for health status. The services provided by the health staffs include early intervention, rehabilitation for fine motor and gross motor problems, physical activity and exercises, activities of daily living skills, nutritional advice, vocational training and others (**Figure 40**). CBR trainers/caregivers were trained and empowered to conduct basic exercise with the PWDs.

Figure 40
Treatment Received by PWDs in CBR Centers, 2017



Source: Family Health Development Division, PDK 201A/Pind. 2017 (Tahun 2017)

PRIMARY POLICY DEVELOPMENT

FAMILY DOCTOR CONCEPT (FDC)

Family Doctor Concept (FDC) is one of the initiatives to strengthen primary health care service in Malaysia under the Ministry of Health Transformation Program. Started with 14 health clinics in 2014 and the set target 48 health clinics yearly, 170 clinics had implemented FDC and established primary health care (PHC) team out of 969 health clinics. The PHC team of Family Medical Specialist (FMS), Medical Officer, Assistant Medical Officer, Nurses, Occupational therapist, Physiotherapist, Dietitian & Nutritionist formed a multi-disciplinary team providing integrated services. To ensure a universal coverage, population enrolment is key in FDC and ICT support is crucial for effective monitoring and profiling the health status of the population coverage.

EXTENDED HOUR SERVICES

Services are provided to increase access and help reduce congestion in the Green Zone of Emergency and Trauma Department of nearby Hospitals. Two (2) additional health clinics providing the service are KK Kuala Lumpur and KK Tawau, bringing the number of clinics operating after office hours to 73. List of clinics as in **Table 33**. State of Selangor still recorded the highest of number of clinics and highest number of attendances using this service.

Table 33
List of Extended Hour Clinics

Perlis (2)	WPKL&P (4)	Melaka (5)	Pahang (4)	Sarawak (5)
KK Kangar	KK Putraiava P. 9*	KK Peringgit	KK Bdr Kuantan	KK Jln Masjid
KK K. Perlis	KK Jinjang*	KK Ayer Keroh	KK Bdr Mentakab	KK Miri
Kedah (5)	KK Kg. Pandan*	KK Masjid Tanah	KK Maran	KK Lanang
KK Bdr Alor Setar	KK K. Lumpur*	KK Jasin	KK Jaya Gading	KK Sarikei
KK Bdr Sg Petani	Selangor (12)	KK Merlimau	Terengganu (4)	KK Bintulu
KK Kulim	KK Puchong*	N. Sembilan (3)	KK Bt. Rakit	Sabah (8)
KK Kuah	KK Taman Medan*	KK Seremban*	KK K. Berang	KK Inanam
KK Pdg Matsirat	KK Sek. 7. S. Alam*	KK Port Dickson	KK K. Dunggun	KK Luyang
P. Pinang (2)	KK Sek. 19. S. Alam*	KK Bahau	KK Bt. 2 1/2	KK Menggatal
KK Sbrg iaya	KK Sg. Buloh*	Johor (8)	Kelantan (4)	KK Penampang
KK Bayan Baru	KK Selavang Baru*	KK Sultan Ismail*	KK Bdr Kota Bharu*	KK Putatan
Perak (7)	KK Kaiaang*	KK Kulai Besar*	KK Bachok*	KK Sandakan
KK Greentown	KK Ampang*	KK Mahmoodiah	KK Wkf Bharu*	KK Lahad Datu
KK Tapah	KK Bdr Baru Bangi*	KK Bt. Pahat	KK Bdr Pasir Mas*	KK Tawau
KK Tg. Malim	KK Anika*	KK Mengkibol		
KK Kamunting	KK Pandamaran*	KK Pontian		
KK Taiping	KK Bdr Botanik*	KK Bdr Maharani		
KK Tlk Intan		KK Paya Mas		
KK Sitiawan				

Note:

* **Extended hour clinics with dengue outbreak**

Source: Family Health Development Division, MoH

Extended Hours services help provide management for dengue fever in some locality identified. Of the above 73 health clinics, 23 of them monitored cases of fever. Monitoring of attendance for fever and dengue cases was conducted for clinics that expanded their operating hours during the dengue epidemic.

HEALTH CLINIC ADVISORY PANEL (PPKK)

PPKK membership has increased to 14,489 people and the number of health facilities establishing PPKK also increased of 29 new PPKKs in 2017 (856 PPKKs out of 1064 KKS plus KKIAs). Each PPKK received an allocation of RM5,000 each year to carry out health activities that were channeled through direct account of PPKK or warrant. PPKK also performed the following indicators:

- Percentage of pupils who managed to lose weight by 5 per cent within 6 months
- Percentage of TB health promotion activities and sputum sampling conducted by PPKK in the community
- Percentage of senior citizens (elderly) registered with health clinics and receiving elderly health services
- Percentage of reproductive health promotion activities conducted by PPKK on adolescents in the community

The 8th National PPKK Convention was held on 2 to 4 May 2017 at the Mahkota Melaka Hotel with the theme "*Panel Aktif Komuniti Sejahtera*". The attendance of more than 600 participants has provided support to the highlights of PPKK's oral and poster contest by all states. First place winner for oral presentation was KK Kampung Gial, Perlis with title *Peningkatan Aktiviti Promosi Saringan Tuberkulosis (TB) Dalam Komuniti*, followed by runner-up KK Paitan, Sabah (*Program Saringan Penglihatan Terhadap*

Warga Emas Intervensi Katarak Di Kampung Tanjung Nipis, Paitan) and third place won by KK Batu Rakit, Terengganu (*Meningkatkan Aktiviti Promosi Kesedaran Dan Saringan Tuberkulosis Dalam Komuniti Di Mukim Batu Rakit, Kuala Nerus, Terengganu*).

For poster presentation, the winner was KK Masjid Tanah, Melaka (*Intervensi Penurunan Berat Badan Di Kalangan Sekolah Rendah Di Masjid Tanah*), followed by KK Paya Mas, Johor (*Program Pengurusan Berat Badan Dikalangan Murid Sekolah Rendah Di Tangkak Tahun 2016-2017*) and third place won by KK Telok Datok, Selangor (*Remaja Bersama Panel : Katakan Tidak Kepada Seks Bebas*). First place winner won a prize of RM2,500 whilst runner-up won RM1,500 and third place won RM1,000. All other entries received RM100 consolation prize each.

INSTITUTIONS OUTSIDE MoH

Health services were provided at the National Service Training Program involving 20,000 trainees in 79 camps from 18 March to 28 November 2017. Modified modules incorporating skills training have been implemented. The duration of the program has been reduced to two (2) months for every intake. In order to curb the spread of infectious diseases and reduce morbidity and mortality, health services were also provided in temporary detention centers. In 2017, there were 18 out of 19 temporary detention centers operating and receiving visits from nearby health clinics. One (1) detention center in Kemayan closed for renovation.

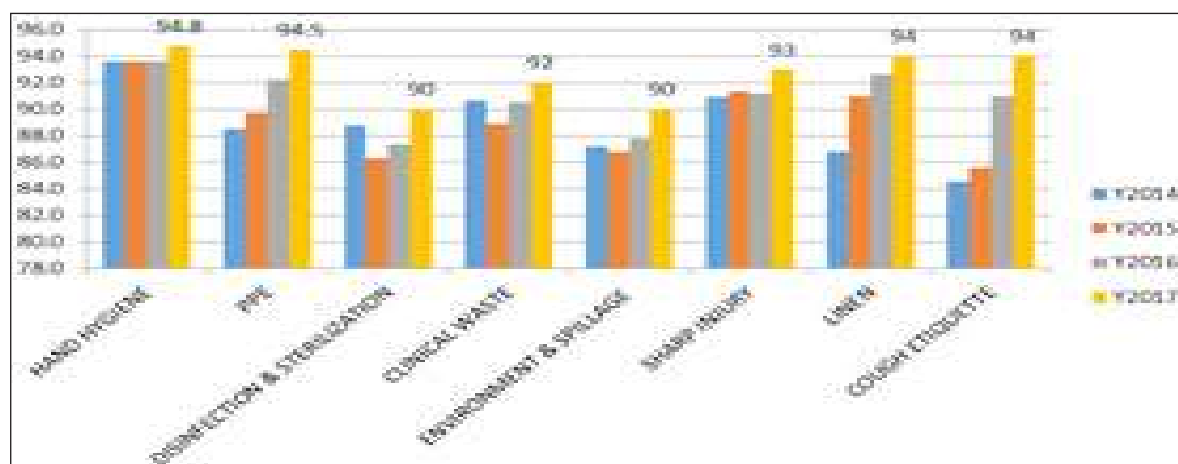
MOBILE HEALTH SERVICES

Mobile health services are provided as an outreach program from the static clinics as efforts towards universal health coverage especially to the population in remote areas and marginalized groups. In 2017, there were 239 mobile teams providing such health services. They were using customized vehicles such as boats or buses, functioning as on site clinics (for 1Malaysia Mobile Health Clinic), four (4)-wheel drives, small boats and flying doctor services. The achievement for mobile health services had increased from 491,778 in 2016 to 500,830 in 2017 due to increased number of vehicles and localities covered. A National Technical Meeting on Mobile Health Services was held on 26 September 2017 to emphasise issues pertaining to the quality in the services delivery. A survey had been conducted on mobile health services to determine the level of satisfaction among users of Ministry of Health (MOH) mobile clinic (*Klinik Bergerak*, KB) services and job satisfaction among staff that involved in the services. The findings were 99.4 per cent of clients and 98.2 per cent of staff were satisfied with the implementation of the services

INFECTION CONTROL IN PRIMARY HEALTHCARE

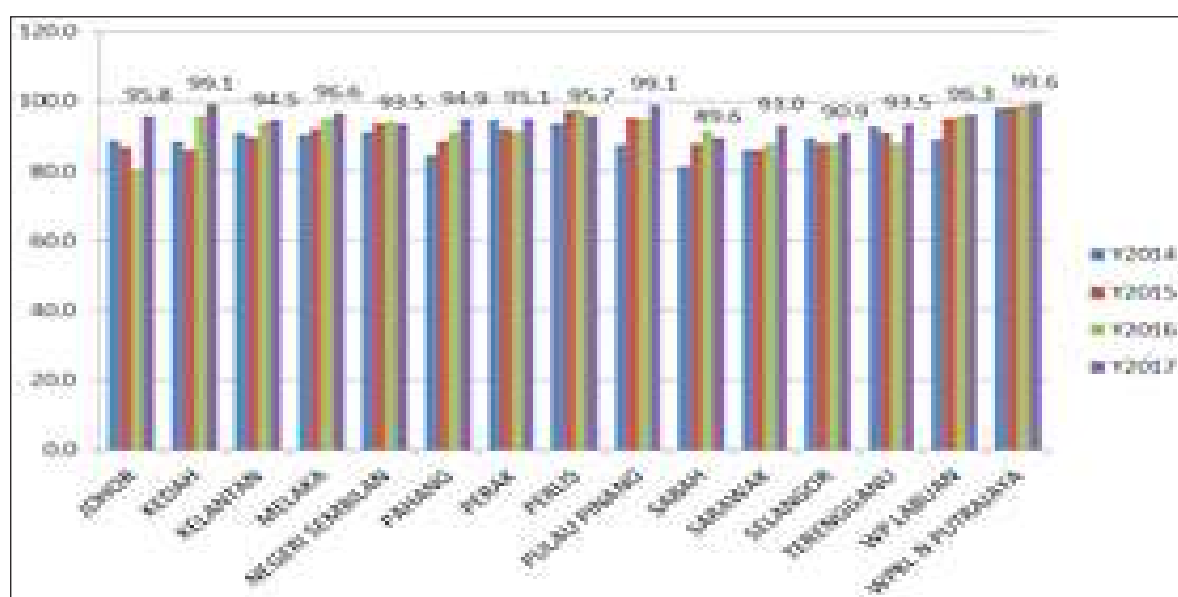
The Primary Healthcare Infection Control Audit has been implemented since 2012. After six years of implementation, all states except Kedah has reached 100 per cent facilities (health clinic, community clinic, mobile clinic and 1Malaysia Clinic) audited. Percentages of compliance increased in all domains as compared to 2016. Compliance rate of more than 90 per cent were shown in effective hand hygiene, clinical waste, cough etiquette, PPE, management of sharp injuries and linen (**Figure 41**). 13 states showed improvement in overall achievement in 2017. Wilayah Persekutuan Kuala Lumpur and Putrajaya shown the highest achievement followed by Kedah and Pulau Pinang (**Figure 42**).

Figure 41
Audit Findings of Standard Precaution Implementation in Primary Healthcare, 2017



Source: Family Health Development Division, MoH

Figure 42
Overall Achievement Percentage of Standard Precaution Practice by States 2014 to 2017



Source: Family Health Development Division, MoH

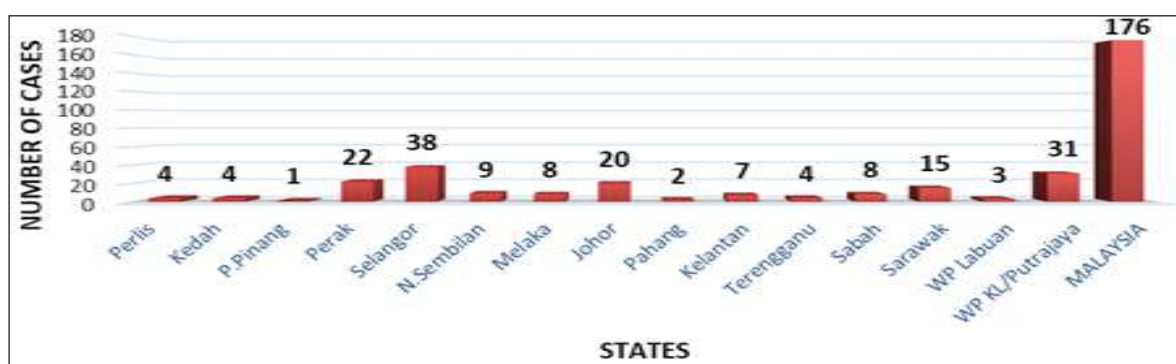
MALAYSIAN PATIENT SAFETY GOALS (MPSG) AND INCIDENT REPORTING AND LEARNING SYSTEM

Since its first implementation in 2013, all health clinics and stand-alone maternal and child health clinics have been required to implement applicable patient safety goals, which are; implementing clinical governance, ensuring medication safety, reducing patient falls and incident reporting and required to report their performance annually through 'e-goals patient safety' web-based reporting system. The

root cause of the incidence that may occur due to a breach in the service delivery system could be identified through reporting and investigating of the incidence so that the weaknesses in the system could be overcome.

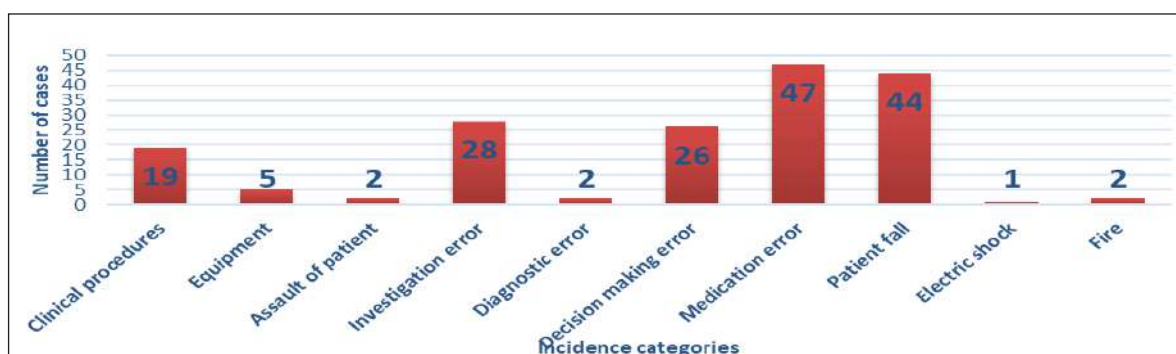
In 2017, 90 per cent of the clinics had reported their performances, which is 1.9 per cent lower than that of 2016. Selangor, Wilayah Persekutuan Kuala Lumpur and Putrajaya and Perak reported high number of incidences which are 38, 31 and 22 respectively (**Figure 43**). Medication error was found to be the highest incidence reported in 2017, followed by patient fall and investigation error (**Figure 44**). However, the rate of incidences reported to the total number of attendances to the health clinics is still considered low.

Figure 43
Total Number of Incidents Reported in Health Clinics by States, 2017



Source: Malaysian Patient Safety Council, MoH

Figure 44
Number of Incidence Reported by Categories in 2017



Source: Malaysian Patient Safety Council, MoH

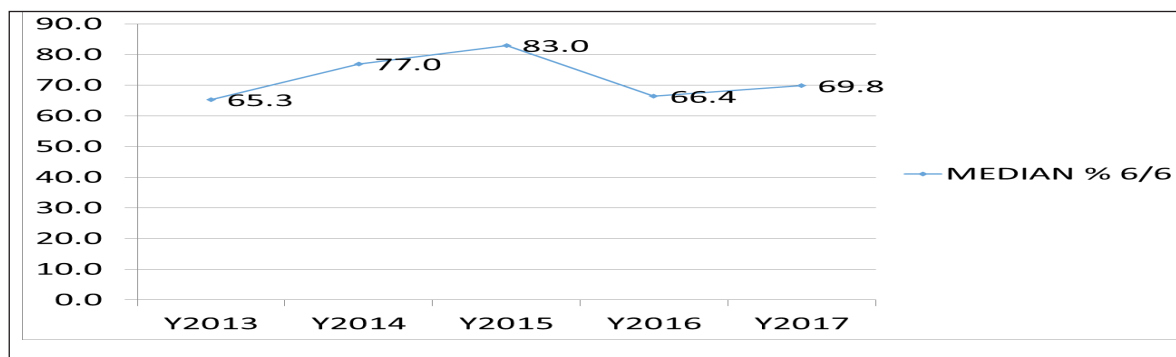
QAP CLIENT FRIENDLY CLINIC AND QAP APPROPRIATE MANAGEMENT OF ASTHMA

The implementation of Client Friendly Clinic and Appropriate Management of Asthma have been continued with the reviewed and improved web-based PHC QAP survey and reporting system for second year. Series of newly designed trainings on the use of the system, survey methodologies and

the asthma management were conducted in collaborations with six (6) State Health Offices, namely JKN Sabah, JKN Terengganu, JKN Kedah, JKN Perak, JKN Melaka and JKN Selangor between April and September 2017, which had involved about eighty to one hundred of several categories of staff from each state.

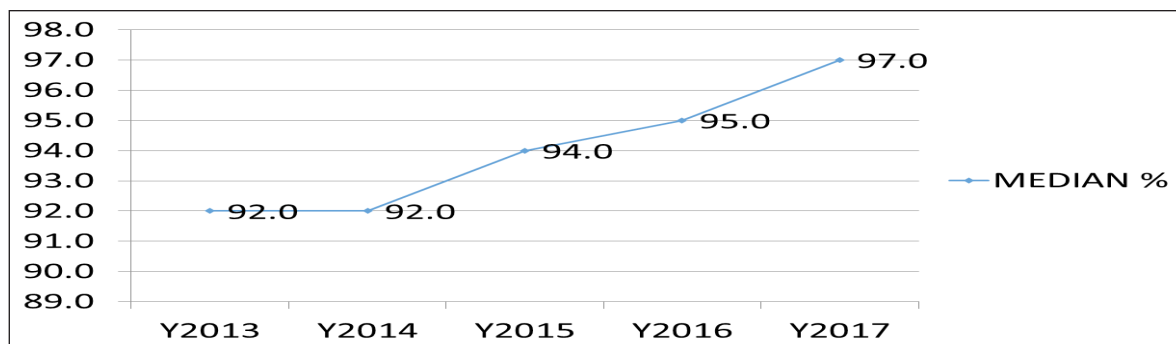
The national performance in QAP Friendly Clinic showed an increased by 2 per cent from 95 per cent to 97 per cent in the median of the percentages of respondents with 80 per cent marks, and by 4.7 per cent in the percentage of nationwide participating clinics from 87.4 per cent to 92.1 per cent (**Figure 45**). The national performance in QAP Appropriate Management of Asthma also showed an increased in both median of the percentages of respondents with 6/6 marks from 66.4 per cent to 69.8 per cent and percentage of participating eligible clinics from 77.1 per cent to 80.1 per cent (**Figure 46**). The eligible clinics for implementation of QAP Asthma survey was determined by the availability of doctors and adequate number of moderate to severe asthmatic patients.

Figure 45
QAP Client Friendly Clinic's medians of percentages of respondents with 80% marks
2013 to 2017



Source: Family Health Development Division, MoH

Figure 46
QAP Asthma's median of the percentages of respondents with 6/6 score
2013 to 2017

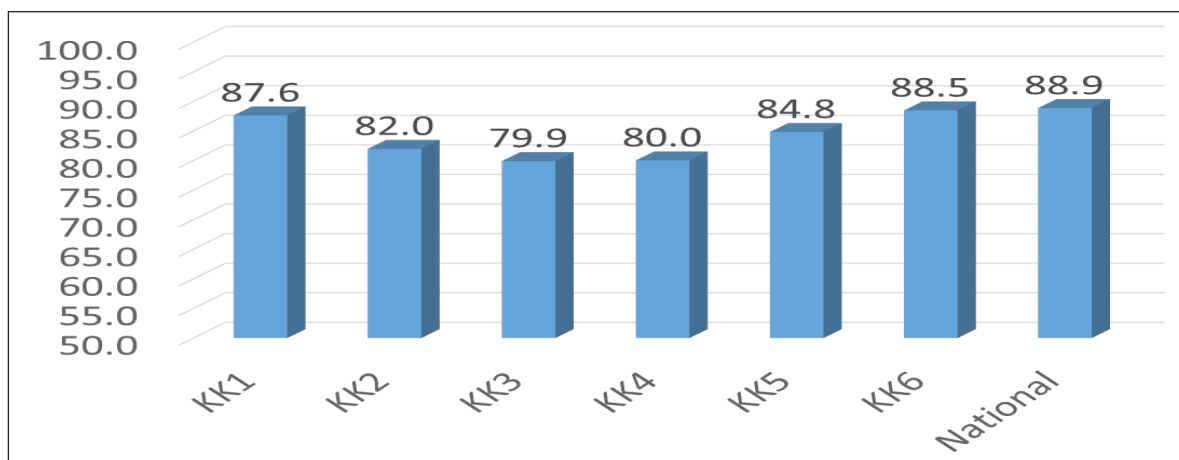


Source: Family Health Development Division, MoH

CLINIC WAITING TIME MONITORING (TPC HEALTH CLINICS)

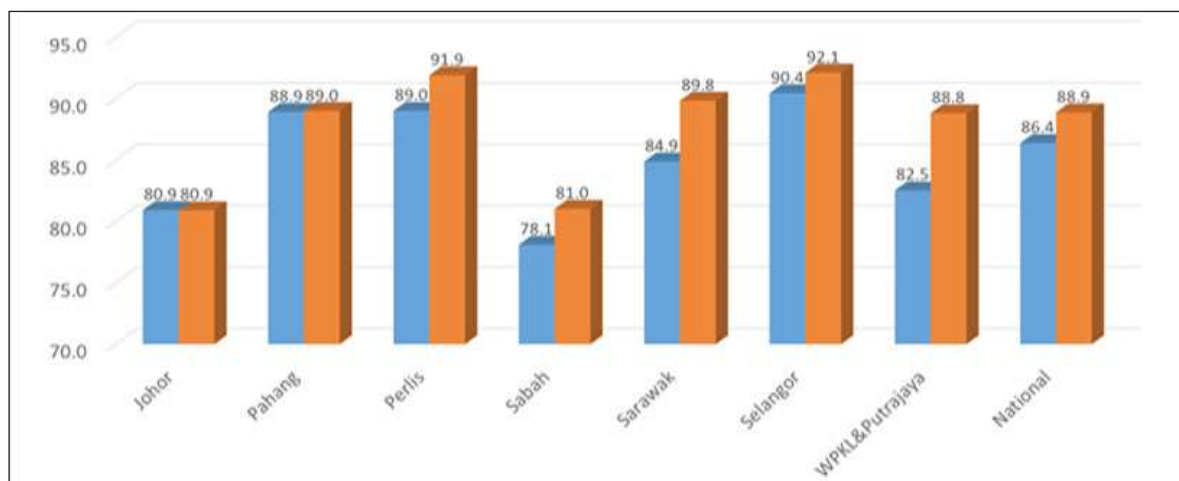
Waiting time is monitored nationally through analysis of patient records retrieved from the TPC system of the 89 TPC enabled clinics and the eMASA for all other clinics. Generally, the percentage of patients seen by doctors within 90 minutes in the TPC health clinics ranged between 80.9 per cent and 92.1 per cent and nationally 88.9 per cent. Type 6 Clinics achieved the highest performance and closely followed by Type 1 Clinics (**Figure 47**). The waiting time performance has increased by 2.5 per cent and the total patient records retrieved also increased by 14.2 per cent nationally as compared to those of 2016 (**Figure 48**).

Figure 47
Percentages of 90 Minute Waiting Time by Types of Clinic 2017



Source: Family Health Development Division, MoH

Figure 48
Percentages of 90 Minute Waiting Time by States 2016/2017



Source: Family Health Development Division, MoH

PRIMARY EMERGENCY MEDICAL CARE

The provision of emergency services at primary healthcare facilities continued to put emphasize on the importance of delivering quality services. The ambulance fleet was further strengthened with the allocation of 175 new ambulances for health clinics. This is to ensure a modern fleet is available that is reliable and prepared to meet the gruelling demands of a 24-hour emergency services. In 2017, 12 ambulances were delivered to Melaka (8) and Negeri Sembilan (4). The remaining 163 ambulances will be distributed in 2018.

More than 350 health clinics were in Medical Emergency Coordinating Centres (MECC) network. Focus on safety of health staff accompanying patients in the ambulance was issued to all the states in the form of a circular *Surat Pekeliling Ketua Pengarah Kesihatan Bilangan 5/2017 Keselamatan Anggota Yang Mengiringi Pesakit Dalam Ambulans Kementerian Kesihatan Malaysia Rujukan KKM 600-30/12/30 Jld.2(213)* dated 26 July 2017.

100 per cent of emergency cases were attended within less than one (1) minute during office hours. The target for emergency response within 15 minutes after office hours was set at 95 per cent and the achieved rate was 97.1 per cent in 2017. Currently, 533 clinics have been connected with the Emergency Alert System. In 2017, 30,943 cases as compared to 20,328 cases in 2016 were attended through this system. Training in Basic Life Support (BLS) for the Assistant Medical Officers (AMO) is a Key Performance Indicator for the District Medical Officer of Health. The percentage of AMOs with a valid BLS certificate increased from 89.4 per cent in 2015 to 97 per cent in 2017.

PRIMARY HEALTH CARE INFORMATICS

TELEPRIMARY CARE (TPC)

Teleprimary Care (TPC) is a Health Information System that connects primary and secondary healthcare facilities. The backbone for this system is the TPC application developed by the Ministry of Health Malaysia. The application caters to patient care from registration, consultation, order management, referral and allocation of follow-up appointment at the ambulatory care setting. Since 2005, TPC is being used in 89 primary health care facilities and specialist outpatient clinics in 6 hospitals. This accounts for only 9 per cent of primary care facilities. TPC will be migrated to Teleprimary Care-Oral Health Clinical Information System (TPC-OHCIS) in phases starting from 2018 onwards. **Table 34** shows transaction Summary of TPC from 2010 to 2017

Table 34
Transaction Summary of TPC (2010 to 2017)

Year	Transaction Type		
	Total no. of new patients registered	Total no. of visits	Total no. of medical records (Care plan)
2017	665,065	8,538,313	4,495,770
2016	633,410	6,638,760	5,689,326
2015	540,947	6,925,753	3,290,237
2014	708,487	7,224,046	2,474,012
2013	685,399	660,6017	2,332,243

Year	Transaction Type		
	Total no. of new patients registered	Total no. of visits	Total no. of medical records (Care plan)
2012	749,116	635,6628	2,043,262
2011	860,415	611,5264	1,390, 212
2010	808,785	470,2686	881,162

Source: Data source acquired as input by healthcare providers from TPC database.

DEVELOPMENT OF THE TELEPRIMARY CARE-ORAL HEALTH CLINICAL INFORMATION SYSTEM (TPC-OHCIS)

The decision to assimilate the two existing systems of TPC and OHCIS resulted in a collaborative project between MoH and MIMOS which kicked off in December 2014. The project was funded by a research grant allocated by MOSTI. The development phase was completed in the middle of 2016. The application subsequently underwent a few cycles of vigorous user acceptance testing. Activities of Provisional and Final Acceptance Tests were completed in the first half of 2017. The new system is currently piloted at 6 Health Clinics in Seremban district, Negeri Sembilan. In 2017, the total numbers of newly registered patients were 132,890 patients, while total numbers of visits were 367,386 visits (Table 35).

Table 35
Transaction Summary TPC-OHCIS (2017)

No	Health Clinic	Transaction Type	
		No. of Newly Registered Patients	No Of Visits
1.	Ampangan	19,974	54,725
2.	Mantin	9,834	34,089
3.	Senawang	27,948	67,401
4.	Seremban	39,647	108,776
5.	Seremban 2	23,633	66,457
6.	Sikamat	11,854	35,938
Total		132,890	367,386

Source: TPC-OHCIS Database

OTHER PRIMARY CARE ICT INITIATIVES

The use of HiData system was implemented at all the K1M clinic by August 2016. This is specifically a data entry system for digital collection of clinical patient data. It is an interim system developed to cater to the need of timely data collection until the rollout of TPC-OHCIS

PRIMER INFRASTRUCTURE DEVELOPMENT

The number of primary health care facilities has increased in line with continuous effort to improve health care accessibility and equity to the population. In 2017, there were 3226 static clinics (compared to 3223 static clinics in 2016) and 244 mobile health clinics. The static clinics comprised of 975 health

clinics, 90 maternal and child health clinics, 1797 community clinics and 364 1Malaysia clinics (K1M); while the mobile health clinics comprised of 244 mobile health teams (by land – 179 teams, by river (boat) – 33 teams and by air (helicopter) 12 teams) and 20 teams operating 11 1Malaysia mobile clinics (KB1M) consisting of seven buses and four boats (**Table 36** and **37**). There was also a total of 6 development projects for primary health care facilities which had been approved under RMK-11, Rolling Plan Two (2017) which consisted of 6 health clinics (Klinik Kesihatan Type 3 Bagan Datoh Water City, Klinik Kesihatan Jenis 3 Tanah Merah, Klinik Kesihatan Type 3 Siburan, Klinik Kesihatan Type 4 Daro, Klinik Kesihatan Type 4 Rompin and Klinik Kesihatan Type 7 Inarad).

The Medical Brief of Requirement (MBOR) prepared for RMK-9 projects were reviewed in 2017 to accommodate for the advancement in the medical equipment and technologies, expansion of the scope of services and the outfit manpower by types of clinics. This MBOR will be used as reference for new clinics that will be developed under RMK-11 projects. Meanwhile the standard design for each type of clinics has also been developed. To assist in the planning of building up new clinics in RMK-11, the standard design for Type 2, 3, 4 and 5 have been finalised. However, the standard design for Type 7 is being reviewed.

Clinic Support Services [*Perkhidmatan Sokongan Klinik (PSK)*], a new initiative in outsourcing the maintenance of health clinics was implemented since 1 July 2015, with currently a total of 171 health clinics were involved. The selected health clinics enrolled to receive these services are mainly Type 1 to Type 4 health clinics by standard design and also by average daily attendances. The services carried out by PSK are Facility Engineering Maintenance Services (FEMS), Cleansing Services (CLS) and Clinical Waste Management Services (CWMS)

Table 36
Number of Statics Health Facilities by States, 2017

No	States	Districts	Health Clinics		Maternal And Child Health Clinics		Community Clinics		1Malaysia Clinics (K1M)		Total	
			2016	2017	2016	2017	2016	2017	2016	2017	2016	2017
1.	Perlis	1	9	9	0	0	30	30	4	4	43	43
2.	Kedah	11	58	58	6	6	218	218	24	24	306	306
3.	P.Pinang	5	30	30	6	6	59	59	24	24	119	119
4.	Perak	11	85	85	11	11	233	233	25	25	354	354
5.	Selangor	9	75	77	4	4	116	115	47	47	242	243
6.	WPKL dan Putrajaya	5	16	17	8	7	2	0	28	28	54	52
7.	N.Sembilan	7	47	49	0	0	98	96	17	18	162	163
8.	Melaka	3	29	29	1	1	59	59	20	20	109	109
9.	Johor	10	95	95	3	3	261	261	35	36	394	399
10.	Pahang	11	84	84	5	5	239	239	21	21	349	349
11.	Terengganu	8	46	46	1	1	128	128	16	16	191	191

No	States	Districts	Health Clinics		Maternal And Child Health Clinics		Community Clinics		1Malaysia Clinics (K1M)		Total	
			2016	2017	2016	2017	2016	2017	2016	2017	2016	2017
12.	Kelantan	10	84	85	0	30	176	175	23	22	282	283
13.	Sabah	26	105	105	22	2	168	167	39	39	330	333
14.	Sarawak	31	205	205	24	4	7	7	35	37	273	274
15.	W.P Labuan	1	1	1	0	0	10	10	1	1	13	13
Total		149	969	975	91	90	1,802	1,797	360	364	3,223	3,226

Source: Family Health Development Division, MoH

Table 37
Number of Mobile Clinics/Teams by States, 2017

No	States	Districts	Mobile Teams			1Malaysia Mobile Clinics (KB1M)		Total
			Land	Water	Air	Team (Bus)	Team (Boat)	
1.	Perlis	1	0	0	0	0	0	0
2.	Kedah	11	3	1	0	0	0	4
3.	P.Pinang	5	0	0	0	0	0	0
4.	Perak	11	17	1	1	2 (1 Bus)	0	21
5.	Selangor	9	12	0	0	2 (1 Bus)	0	14
6.	W.PKL dan Putrajaya	5	0	0	0	0	0	0
7.	N.Sembilan	7	8	0	0	0	0	8
8.	Melaka	3	0	0	0	0	0	0
9.	Johor	10	19	2	0	2 (1 Bus)	0	23
10.	Pahang	10	20	0	0	4 (2 Buses)	0	24
11.	Terengganu	8	1	0	0	0	0	1
12.	Kelantan	10	4	0	0	0	0	4
13.	Sabah	26	31	4	2	1	4 (2 Boats)	42
14.	Sarawak	40	64	25	9	1	4 (2 Boats)	103
15.	W.P Labuan	1	0	0	0	0	0	0
Total		158	179	33	12	12 (7 Buses)	8 (4 Boats)	244

Source: Family Health Development Division, MoH

PRIMARY MEDICAL CARE

Primary Medical Care Sector is responsible to ensure that medical services at the health clinic are integrated throughout the components of health promotion, disease control and emergency services.

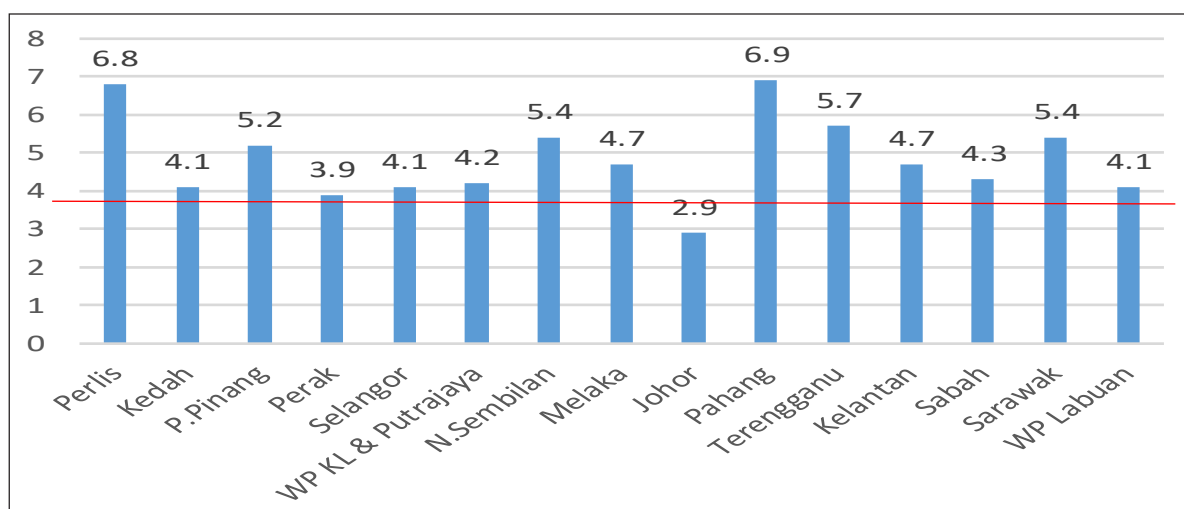
This sector cooperates with various divisions in the Ministry of Health such as Disease Control Division at the execution and monitoring the quality of the clinical program conducted at health clinics.

INTEGRATED HEALTH RISKS SCREENING

Screening is carried out using the Health Status Screening Form (BSSK) for adolescents aged between 10 and 19, men and women between 20 and 59 years old and senior citizens aged 60 years and above. This integration allows effective screening and health risk interventions by age distribution, teenagers, adults and senior citizens.

In 2017, a total of 1,204,031 people or 4.5 per cent of the population were screened from 27,052,000 citizens, the estimated population of Malaysia in 2017 aged 10 years and over. An analysis of this report was made from health screening and health risk interventions from January to December 2017. Data sources are obtained from reports received from 13 State Health Departments and 2 Federal Territory Health Departments on a monthly basis. A total of 6 states, namely Perlis, Penang, Negeri Sembilan, Pahang, Terengganu, and Sarawak, have achieved the target of 5 per cent of the screened population as shown in **Figure 49**.

Figure 49
Percentage of population screened by States, 2017



Source: BSSK Screening, Family Health Development Division, MoH, 2017

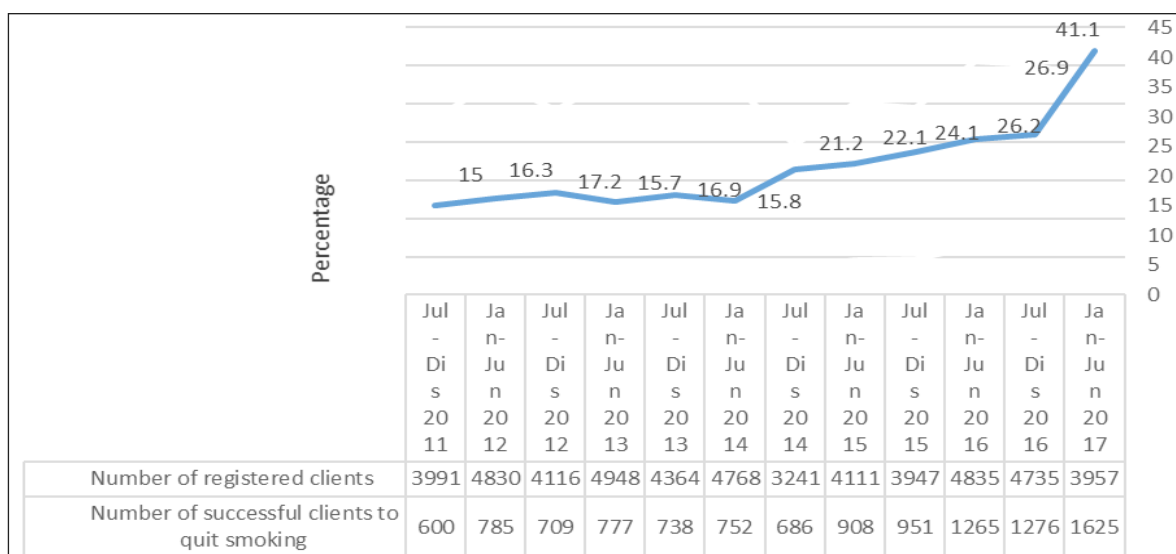
From the screening done, 3.6 per cent people were found out to have health risk. Three major risks identified were overweight (13 per cent), physically inactive (13.3 per cent) and unhealthy eating (8.3 per cent). Various health risk interventions have been conducted.

QUIT SMOKING SERVICES

Quit smoking service was started in the health clinic since 2010. To this day, there are 731 health clinics which provide quit smoking services. Health clinics which are active in quit smoking services have been increasing year by year, from 467 clinics in 2013 increased to 614 clinics in 2017 (84 percent increase).

The success rate of quitting smoking also showed an increase of 5 per cent for July to December 2014 cohort and an increase of 2 per cent for each cohort beginning January to June 2015 until now. The quitting rate for cohort January to June 2017 rose to 41.1 per cent where successful customers quit smoking were 1,625 clients from 3957 clients registered. **Figure 50** shows the trend in stop smoking rates.

Figure 50
Trend in Quit Rate, Year 2011 to 2017 (January to June)



Source: Stop Smoking Rate Data, Family of Health Development Division 2017

Health promotion for quit smoking services has been expanded with a mQuit channel where clients can seek treatment at either a health clinic, a private hospital or a registered pharmacy. It is hope that with this effort, more clients will be enrolled in quit smoking services and hence will enable Malaysia to achieve the WHO Global NCD 2011 to 2025 target in reducing smoking prevalence by 30 per cent.

COMMUNICABLE DISEASES MANAGEMENT IN PRIMARY HEALTH CARE

HIV management is one of the services in primary health care which 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 2017, 259,392 premarital screening and 36,027 anonymous screening were done.

Anti-Retroviral therapy (ARV) for HIV patients at the health clinics was started in 2000, managed by trained Family Medicine Specialist (FMS). In 2017, 312 FMS were trained by Infectious Disease Specialists in designated hospitals and 299 (95.83 per cent) of them had initiated ARV treatment. Currently, a cumulative total of 6,556 patients had received ARV treatment from health clinics.

Methadone Maintenance Therapy (MMT) was started in health clinics in 2005. In 2017, 398 health clinics provided MMT with 2,330 new patients registered and a retention rate of 67.5 per cent.

MENTAL HEALTH SERVICES IN PRIMARY CARE (HEALTH CLINICS)

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.

a) Mental Health Screening

Screening for detection of mental health problems is carried out using DASS (Depression Anxiety Stress Scales). A total of 296,972 have been screened using DASS (Depression Anxiety Stress Scales). Out of this, 25,402 (8.6 per cent) has risks of stress 29,713 (10.0 per cent) has risks of anxiety, and 18,919 (6.4 per cent) has risks of depression.

b) Treatment of Stable Mental Health Patients in Health Clinics

For the year 2017, a total of 23,058 cases received treatment at health clinics. Out of this, 8.4 per cent (1936) were new cases. 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 2017, the defaulter rate was 2.3 per cent (531 cases) which is within the WHO standard of not more than 10 per cent.

c) Psychosocial Rehabilitation Centre in Health Clinics

There are 15 psychosocial rehabilitation centres in operation in the health clinics from a total of 27 centres previously. These psychosocial rehabilitation centres will be upgraded into community mental health centres manned by hospitals which will provide more comprehensive services (screening, intervention, treatment and rehabilitation) for those with mental health problems. Currently, 11 psychosocial rehabilitation centres have been upgraded into Community Mental Health Centres (CMHC).

HEMODIALYSIS SERVICE IN HEALTH CLINICS

Hemodialysis services are provided in selected health clinics to make this service accessible for those in remote areas. In 2017, there were 13 health clinics that provided hemodialysis services (Klinik Kesihatan Simpang Renggam, Johor; Klinik Kesihatan Kodiang, Kedah; Klinik Kesihatan Song, Sarawak; Klinik Kesihatan Sungai Lembing, Pahang; Klinik Kesihatan Mahligai, Bachok; Klinik Kesihatan Debak, Betong, Sarawak; Klinik Kesihatan Bestari Jaya, Selangor; Klinik Kesihatan Bandar Mas, Johor; Klinik Kesihatan Chiku 3, Kelantan; Klinik Kesihatan Batu Niah, Miri, Sarawak Klinik Kesihatan Tatau, Bintulu, Sarawak and Klinik Kesihatan Lenggong, Perak).

PRIMARY HEALTH CARE DIETETIC SERVICES

Primary Health Care Dietetic is in its seventh year of providing services. Initially with 11 posts in health clinics, it has involved to 66 health clinics. Primary Health Care Dietetics initially offers Medical Nutrition therapy (MNT) for referred case especially non-communicable diseases such as diabetes, hypertension, morbid obesity and dyslipidaemia. At present the dietetic scope has extended to cover nutrition support therapy for bedridden patients in domiciliary health care services and also managing MNT for disable children in Community Based Rehabilitation Centre. Dietetic workload was increased tremendously more than 500 per cent in 7 years.

Reduction of HbA1c among diabetes patients receiving MNT within six (6) month was monitor as dietetics' indicator. It was start in 2015 and targeting 60 per cent of patients reduced one (1) per cent of

HbA1c in stipulated period. Percentage of 1 per cent reduction in HbA1c within 6 months post dietetic consultation was 63.5 per cent (target is 60 per cent)

KLINIK 1MALAYSIA

The establishment of Klinik 1Malaysia is aimed at improving accessibility of primary health care to the urban poor. In 2017 there are a total of 367 Klinik 1Malaysia nationwide, providing basic healthcare services not only to the intended target group but surrounding community as a whole. Throughout the year, focus has been made to enhance management of Chronic Non-Communicable Diseases (NCD) at Klinik 1Malaysia. A total of 83 Klinik 1Malaysia now offer such treatment. Medical Officers now serves in 102 Klinik 1Malaysia nationwide.

2017 also marks a major milestone as 21 Klinik 1Malaysia were upgraded into Klinik Kesihatan. These were 19 Klinik 1Malaysia UTC (Urban Transformation Center), Pasir Pekan, Kelantan and Bagan Pinang, Port Dickson (Negeri Sembilan). With these improvements, the number of clients receiving treatment at Klinik 1Malaysia increased to over 6.5 million in 2017.

CLINICAL SUPPORT SERVICES

HUMAN RESOURCE DEVELOPMENT IN PRIMARY HEALTH CARE

Human resource development is critical in ensuring the delivery of a comprehensive, quality and efficient primary health care service. Thus, continuous efforts have been made to increase the overall number of posts in each category, create more promotional posts and addition of new categories of professional staff in line with service expansion in primary care. These include allied health science professionals such as Medical Social Worker, Dietitian, Physiotherapist, Occupational Therapist and Optometrist.

The percentage of posts filled by healthcare professionals in health clinics has increased slightly compared to 2016 as shown in **Table 38**. However, this number is still inadequate to address the population health needs in primary care. Out of 975 health clinics in 2017, the percentage of health clinics with Family Medicine Specialist was 28.2 per cent, Medical & Health Officer was 83.5 per cent, 76.2 per cent for Medical Lab Technologist and 19.8 per cent for Radiographer. Emphasis was also given for the enhancement of Continuous Professional Development (CPD) through the introduction of a new degree program for public health nursing and formalization of a parallel pathway for Family Medicine Specialist training program. A medical and health science degree program in primary health care for Assistant Medical Officer (AMO) is also currently being developed.

Table 38
Status of post filled by category (2015 to 2017)

No	Category	2015	2016	2017
1.	Family Medicine Specialist	281 (124%)	329 (107%)	395(129%)
2.	Medical and Health Officer	3643 (98.5%)	4929 (110%)	4689 (119.98%)
3.	Pharmacist	1846 (84.8%)	2149 (98.9%)	2142(97.8%)
4.	Assistant Medical Officer	4294 (90.0%)	4374 (92%)	5045 (96%)

No	Category	2015	2016	2017
5.	Nurse	10,943 (87.4%)	11,122 (94.02%)	11,752(98.13%)
6.	Pharmacist Assistant	1950 (95.0%)	2016 (98.3%)	1991(96.7%)
7.	Medical Lab Technologist	1856 (92.4%)	1860(92.9%)	1883(94.0%)
8.	Radiographer	410 (95.3%)	399 (92.79%)	402(99.75%)
9.	Community Health Nurse	13837 (90.8%)	13,853 (97.2%)	13,331(93.59%)
10.	Medical Social Worker*	20 (95.2%)	20 (95.2%)	19(85.71%)
11.	Occupational Therapist*	215 (81.4%)	215 (81.4%)	242(96.03%)
12.	Dietitian*	60 (92.0%)	59(91%)	63(95.5%)
13.	Physiotherapist*	308 (86.8%)	332(93%)	312(98.7%)
14.	Optometrist*	1(100%)	1(100%)	2(100%)

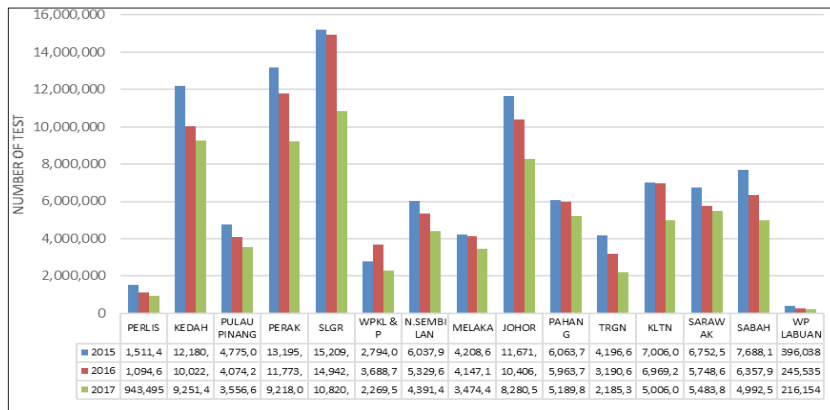
*Additional category monitored under Primary Care since 2015.

Source: Family Health Development Division, MoH

LABORATORY SERVICES

There are currently 743 laboratories in primary health care, an increase of 2 per cent from 729 laboratories in 2015. Meanwhile, the number of Medical Laboratory Technologist also had increased slightly (1 per cent) to 1883 in 2017, as compared to 1860 in the previous year as shown in Table 12. The workload for the past three years shows a decreasing trend from 103,686,785 in 2015 to 75,279,630 in 2017 as presented in **Figure 51**. This is due to a new workload calculation format introduced by the National Pathology Services in 2016. Continuous improvement initiatives have been implemented to further enhance the quality of laboratory services. There is an increase in the percentage of laboratories participating in the QAP programme (lab turnaround time, LTAT) from 90.1 per cent in 2016 to 92.7 per cent in 2017 as shown in **Table 39**. The performance for lab turnaround time (LTAT) for the year 2015 to 2017 is shown in **Figure 52**. Overall, all the states have achieved above 95 per cent of set target except for Sabah. Sabah achieved 94.1 per cent and 83.3 per cent in 2016 and 2017, respectively. Problem identified were insufficient staff and frequent power trip in the concerned facilities.

Figure 51
Workload of Laboratory Services in Primary Care (2015 to 2017)



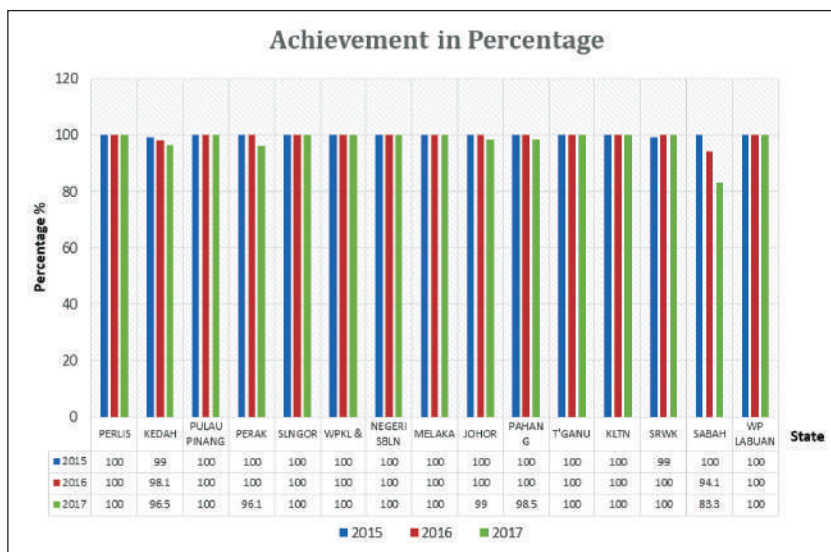
Source: Family Health Development Division, MoH

Table 39
Number of Laboratories participating in QAP (2015 to 2017)

Item	Performance		
	2015	2016	2017
Number of labs with Haematology Analyser	670	677	690
Number of labs participating in QAP	594 (88.6%)	610 (90.1%)	640 (92.7%)

Source: Family Health Development Division, MoH

Figure 52
QAP Achievement of Laboratory Services in Primary Care (2015 to 2017)



Source: Family Health Development Division, MoH

RADIOLOGY SERVICES

The national performance for quality assurance program in Radiology Services had achieved the set target of less than 2.5 per cent. The Percentage of Film Rejection had declined from 0.84 per cent in 2016 to 0.83 per cent as indicated in **Table 40**. The film processing method is being gradually improved with the replacement of Conventional Processor to Computerized Radiography (CR) system.

Table 40
QAP of Radiology Services in Primary Care (2015 to 2017)

Parameter	Year (Standard <2.5%)		
	2015	2016	2017
Total No. of KK participating	187/ 187 (100%)	195/ 195 (100%)	212/ 212 (100%)
No. of KK achieve standard	183/187 (97.86%)	193/ 195 (98.97%)	212/ 212 (100%)
Total Percentage of Reject Film	0.95 %	0.84%	0.83 %

Source: Family Health Development Division, MoH

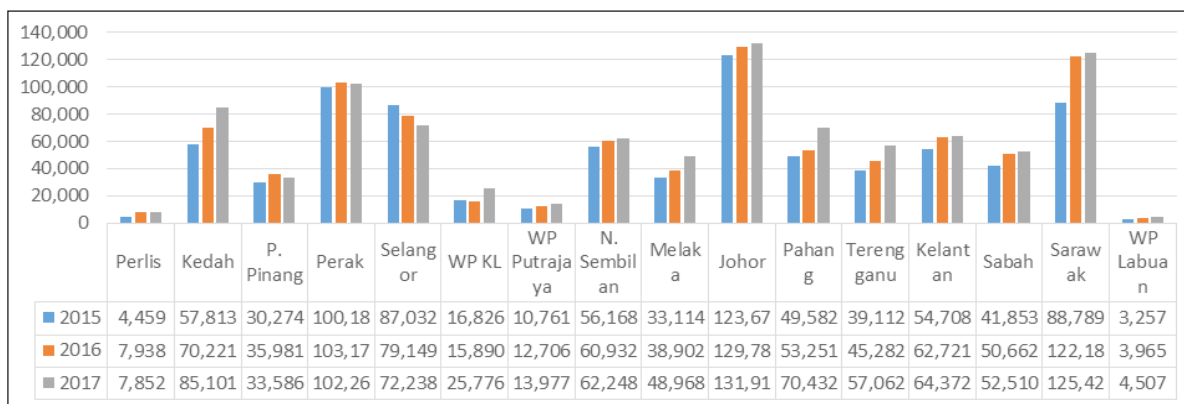
The number of health clinics with CR system had significantly increased from 28 (2015) to 49 (2017) clinics (**Table 41**). In addition, another 34 units will be procured under the Medical Equipment Enhancement Tenure (MEET) project for the next three years. The Health Clinic with Radiology Services had increased by 13.37 per cent from 187 (2015) to 212 clinics. Similar trend was also observed in the workload whereby the number of x-ray examination had increased by 19.02 per cent from 805,122 (2015) to 958,230 (**Figure 53**).

Table 41
Number of facilities with CR System and Mini PACs (2015 to 2017)

Equipment Year	Conventional System	Computerized Radiography System (CR)	CR System With Mini PACs	Total
2015	159	21	7	187
2016	154	34	7	195
2017	163	41	8	212

Source: Family Health Development Division, MoH

Figure 53
Workload of Radiology Services in Primary Care (2015 to 2017)



Source: Family Health Development Division, MoH

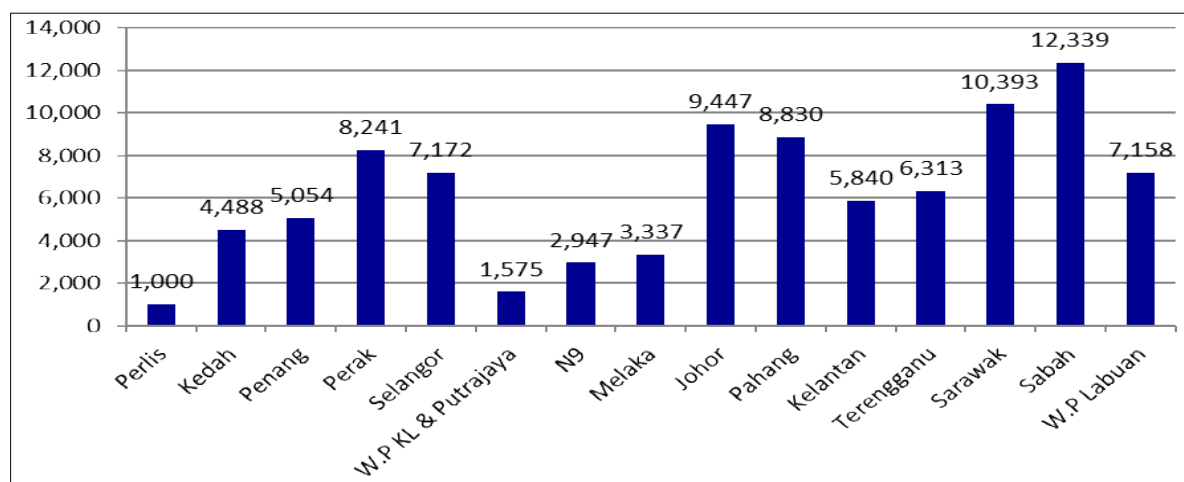
HEALTH EDUCATION DIVISION

HEALTHY LIFESTYLE PROMOTIONAL PROGRAMME

1. Nak Sihat Camp

Nak Sihat Camp is an outreach programme designed specifically for the community with the aim of delivering messages and skills related to healthy lifestyles. The long-term impact of this program is to reduce the prevalence of non-communicable diseases such as hypertension, diabetes and stroke. *Nak Sihat* Camp is a forum for the community to acquire knowledge, skills and undergo health screenings to practice healthy lifestyle. It is a platform for community to empower themselves in cultivating a healthy life. In 2017, 151 *Nak Sihat* Camps were implemented nationwide with 94,134 community involvements (Figure 54 and Image 11).

Figure 54
Number Of *Nak Sihat* Camps By State For Year 2017



Source: Population Wellbeing Section, Health Education Division, MoH

Image 11
Nak Sihat Camp Physical Activity and Health Screening

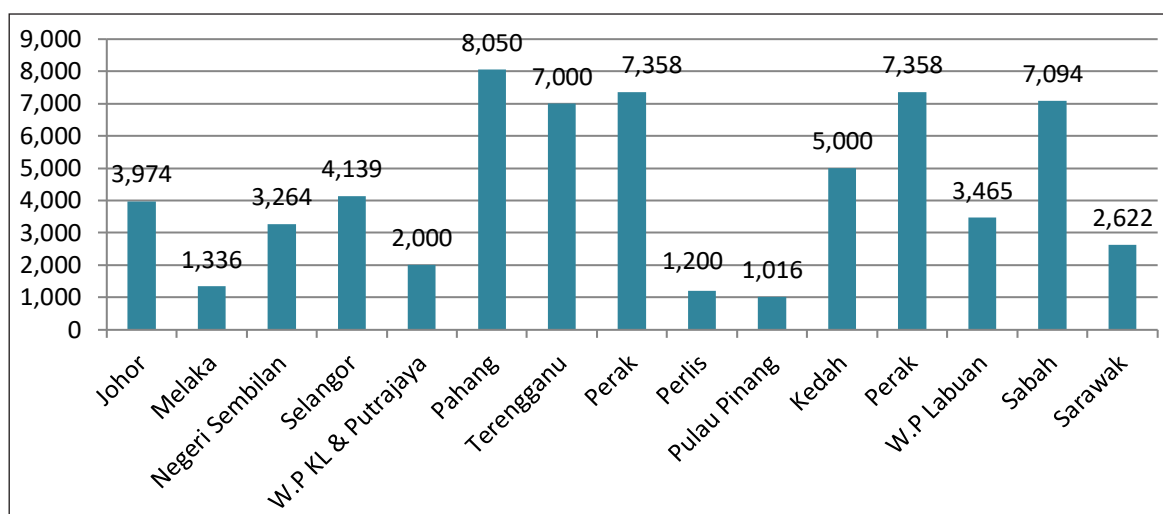


Source: Population Wellbeing Section, Health Education Division, MoH

2. 10,000 Steps Event In Conjunction With The *Merdeka* Month (National Day)

This 10,000 Steps event is an annual special event held since 2012. This activity is conducted throughout the month of August and September in conjunction with the *Merdeka* Month and Malaysia Day celebration. At the national level, this programme was held on 10 September 2017 at Smart School Complex, Presint 8 (1) Putrajaya. The launching ceremony was officiated by YB Deputy Minister of Health and had been attended by a total of 5,775 participants. Overall, total participations from around the country were 64,876 (Figure 55 and Image 12).

Figure 55
Number of Participants of 10,000 *Merdeka* Steps by State for Year 2017



Source: Population Wellbeing Section, Health Education Division, MoH

Image 12
National Level 10,000 Merdeka Steps Celebration 2017



Source: Population Wellbeing Section, Health Education Division, MoH

3. Fitness Course And Training

In order to empower and develop individual, family, community and organisational efforts in adopting healthy and more active way of life, the division had taken the initiative to organise series of trainings and courses throughout 2017. It aims to strengthen the knowledge and skills of the fitness team and enhance the sustainability of the physical activity programmes (**Image 13**).

Image 13
Fitness Course and Training



Course for Sweat Wednesday Fitness Instructor



Course for Community Fitness Instructor



Training of Trainers for KOSPEN Physical Activity



Source: Population Wellbeing Section, Health Education Division, MoH

4. MoH's Healthy And Fit Programme in Conjunction with The National Sport Day 2017

MoH Healthy and Fit Programme was implemented in conjunction with the National Sports Day 2017. The programme is in line with the Ministry of Health's vision to promote active and productive lifestyles. At the national level, MOH Healthy and Fit Programme was held on 14 October 2017 at Taman Rimba Alam, Presint 15, Putrajaya. The launching ceremony was officiated by YBhg. Dato 'Seri Dr. Chen Chaw Min, the Secretary General of the Ministry of Health, Malaysia (Image 14).

Image 14
MoH's Healthy and Fit Programme



Launching ceremony by YBhg. Dato 'Seri Dr. Chen Chaw Min,
Secretary General of Ministry of Health Malaysia



Natural Forest Exploration



Lucky Draw Winner



Fitness Vaganza

Source: Population Wellbeing Section, Health Education Division, MoH

5. Exercise And Fitness Programmes For MoH Headquarter's Staff (Sweat Wednesday)

MoH-HQs' Staff Program which is called the *Sweat Wednesday* has been organized since 23 April 2014. This programme is a structured physical activity programme which is held every Wednesday after the Cabinet Meeting at MoH Headquarters, Putrajaya. Among the exciting activities during the sessions are 10,000 steps, aerobics, cardio workout, biking and tabata (**Image 15** and **16**).

Image 15

MoHHQ Fitness Instructor for Sweat Wednesday Programme



Source: Population Wellbeing Section, Health Education Division, MoH

Image 16
Sweat Wednesday Activity every Wednesday 4.30 pm



Source: Population Wellbeing Section, Health Education Division, MoH

6. Anti Smoking Campaign

a. Media Campaign

The main purpose of the Anti Smoking Media Campaign is to educate the target groups on the following aspects:

- Effect of passive smoking on health
- The rights of cigarette smoke victims (passive smokers)
- Say 'no' to cigarettes
- Do not start smoking
- Smokers intention to quit smoking

This anti smoking media campaign was promoted through several major media channels with the specific messages:

- 60 slots on television
- 4 slots on the radio
- 1 article writing in magazines
- 1 television interview session

b. Quit Smoking Campaign During Ramadan

The campaign was held during the month of Ramadan to invite the Muslim community to quit smoking. Campaign was held at places of interest such as the bazaar Ramadan, shopping malls, mosques and suraus in all states. Various activities were conducted such as media talks, talk shows on TV and radio, road shows, seminars, exhibitions, health education materials distributions, Friday sermon and various other interventions.

c. Quit Smoking Infoline

Infoline is a advisory services and tips for quitting smoking through telephone. In addition, this line distributes information related to Quit Smoking Clinic throughout Malaysia. About 67 per cent of the callers have taken positive steps to quit smoking.

d. IMFree Programme (Anti-Smoking Programme at the Primary School)

IMFree is an educational anti-smoking programme among primary school children. The program is a joint effort between the Ministry of Health Malaysia and the Ministry of Education Malaysia with the aim of achieving a non-smoking generation by 2025. The official launching of the IMFree Program was held on 5 October 2017 at Sekolah Kebangsaan Sungai Pinang, Penang, by the YB Deputy Minister of Education 1 and YB Deputy Minister of Health. Up to 2017, there were 350 primary schools implemented the IMfree Programme nationwide (**Image 17**).

Image 17

Fagestrom Test by YB Dato 'Seri Dr. Hilmi Bin Haji Yahaya, Deputy Minister of Health



Source: Population Wellbeing Section, Health Education Division

7. The Community Health Promotion Centre (CHPC)

The Community Health Promotion Center is a community facility that provides comprehensive, intensive and organised health promotion services. It focuses on improving the knowledge and practice of healthy lifestyle among the local communities. To date, there are 18 CHPC throughout the country.

As a proactive step, the Health Education Division has taken the opportunity to develop health promotion services in the community through the establishment of Community Health Promotion Center at the Urban Transformation Centre (UTC). This government Initiative coincides with the Blue Ocean Strategy introduced to improve service quality through strategic collaboration between Government agencies and the private sector. UTC Community Health Promotion Center is operated by several skilled volunteers in the related field and are supervised by the Health Education Officer. Programmes related healthy lifestyle skills training are provided on a scheduled and periodic basis. This UTC Community Health Promotion Center complements the Community Transformation Programme in ensuring the Government's services, initiatives and programs can maximise benefits to the people in line with the goals outlined in the Sustainable Development Goals (SDGs) (**Image 18**).

Image 18
Activities conducted at the UTC Community Health Promotion Centre



Source: The Community Health Promotion Centre, Perlis Health Department

8. Weight Management Intervention Programme At The Community Health Promotion Centre (CHPC)

The Community Health Promotion Centre (CHPC) has been implementing the *10 on 10* Weight Management Interventions nationwide. This intervention involves the weight management of obesity and overweight systematically, healthy and safe through organised physical activities and exercise. This weight loss programme is expected to improve the health level, quality of life and the functioning of the participants. The weight management intervention this year was conducted in 15 CHPCs and was attended by 260 participants (**Image 19**).

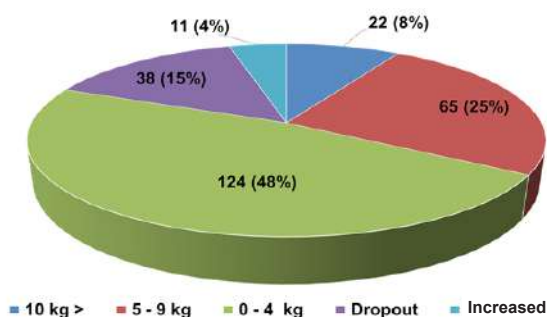
Image 19
Weight Management Intervention Programme



Source: Population Wellbeing Section, Health Education Division, MoH

Figure 56 shows that only eight percent of participants managed to lose weight up to 10 kilograms. About 48 percent of participants were able to lose weight by four kilograms followed by 25 percent of participants experiencing a five to nine kilograms weight loss following the 10 on 10 Programme. 15 percent of participants opted out of the program and only four percent of participants had weight gain.

Figure 56
Weight Loss Analysis At Community Health Promotion Centre



Source: Population Wellbeing Section, Health Education Division, MoH

HEALTH PROMOTION PROGRAMMES AT THE EDUCATIONAL INSTITUTIONS

• Junior Young Doctor Programme (TUNAS DR MUDA)

The Ministry of Health Malaysia through the National Blue Ocean Strategy (NBOS) has worked with the Ministry of Education, the Ministry of Rural and Regional Development (through the Community Development Department (KEMAS)) and Universiti Putra Malaysia to implement the Junior Young Doctor Programme. Up to 2017, a total of 707 KEMAS preschools and 498 other preschools have implemented the Junior Young Doctor Programme. Through the implementation of this programme, a total of 32,679 pupils received exposure to health care messages in schools (**Image 20**).

Image 20
Some of Health Education Activities and Materials for Junior Young Doctor



Source: Population Wellbeing Section, Health Education Division, MoH

- **Primary School Young Doctor Programme (Dr Muda)**

As of 2017, 3,011 primary schools throughout the country have established the Young Doctors Club with an increase of 230 new schools. Through this program, a total of 77,794 pupils were appointed as a Young Doctor. Comparing this number with the total number of pupils in the country of 1,308,091 students, almost 6 per cent of primary school children have received basic health education through the Young Doctor Club and 76,516 peer education activities have been implemented in all schools (**Image 21**).

Image 21
Primary School Young Doctor Members



Source: Population Wellbeing Section, Health Education Division, MoH

- **Secondary School Young Doctor Programme**

As a continuation of the Primary School Young Doctor Programme, the establishment of the Young Doctor Club is extended to the Secondary School level. By the end of 2017, 422 secondary schools across the country have established the Young Doctor Club. There are 7,034 newly appointed Secondary Young Doctor Members in 2017 and cumulatively there are 13,466 secondary school members of Young Doctor Club in the country (**Image 22**).

Image 22
Secondary School Young Doctor Club



Source: Population Wellbeing Section, Health Education Division, MoH

Various activities were carried out throughout the year 2017 as follow:

- i. Training of Trainers (TOT) Fitness Instructor for Secondary School Young Doctor Club
- ii. Training of Trainers (TOT) Secondary School Young Doctor Club
- iii. Publication of Secondary School Young Doctor Club Fitness Instructor Module
- iv. Young Doctors Healthy Week
- v. Young Doctor's Children TV Show (Astro *Ceria* Channel)
- vi. Young Doctor and IM4U Community Programme

- **Siswa Sihat Programme (PROSIS)**

Siswa Sihat Programme (PROSIS) is a smart collaboration of the Ministry of Health Malaysia together with the Ministry of Higher Education and the Ministry of Education to empower students in Higher Education Institutions (IPTs) to practice a healthy life style. The program started as a pilot project in 2011 and was extended to private universities, community colleges, polytechnics, matriculation colleges and Teachers Institute of Education. As of December 2017, 42 health education institutons have embarked on this programme nationwide. Through the Training of Trainers (TOT) Trendy U Fitness Instructor, 13 successful fitness teams are created as fitness instructors (**Image 23**).

Image 23
***Siswa Sihat* Programme Activities Program (PROSIS)**



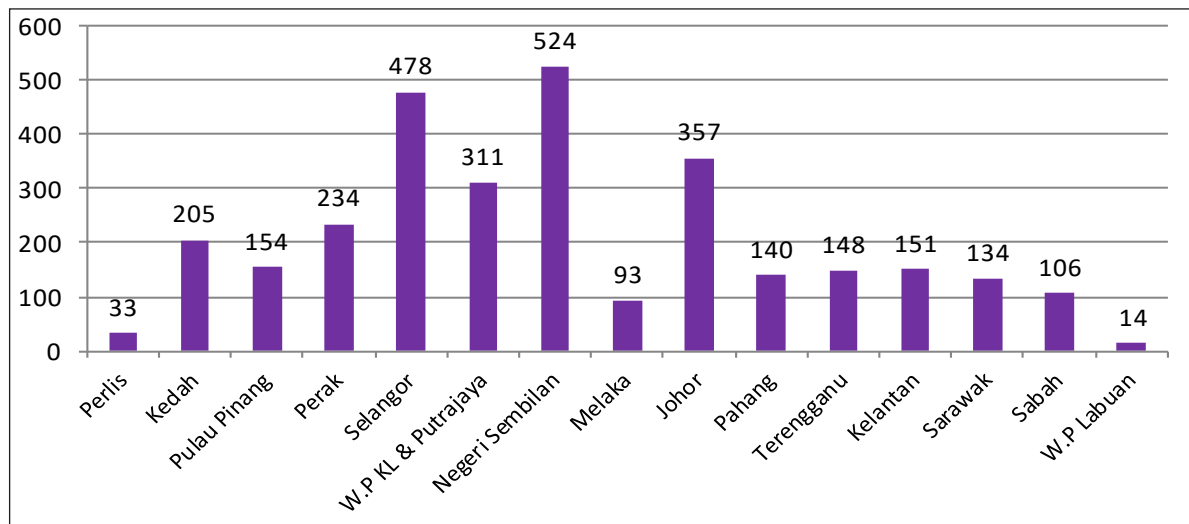
Source: Population Wellbeing Section, Health Education Division, MoH

COMMUNITY MOBILISATION PROGRAMME

- **Dengue Communication for Behavioral Impact (COMBI)**

COMBI is an approach to mobilising the community to take preventive action against dengue. The establishment of 1 District 1 New COMBI is the KPI for each state. In 2017, a total of 216 new COMBI teams have been set up. As of December 2017, there are 3,082 localities with COMBI teams with 63,000 volunteers nationwide (**Figure 57**).

Figure 57
Numbers of COMBI Localities by State Year 2017



Source: Community Mobilisation Section, Health Education Division, MoH

The division also diversifies other initiatives to help prevent and control Dengue as:

- Establishment of the COMBI Committee, State and District (District and States)
- COMBI Leadership training
- Smart Partnership Intervention (cooperation with government agencies and non-governmental organisations)
- COMBI information dissemination through Whatsapp application
- COMBiS Information Development Training

Image 24
COMBI Volunteers



Source: Community Mobilisation Section, Health Education Division, MoH

HEALTH PROMOTION PROGRAMME AT HOSPITAL

- **Patient Education Session**

Throughout the year 2017, a total of 40,742 patients and their family members attended the patient education classes related to Diabetes, Hypertension, Asthma and Renal through 22,753 sessions of patient education class, as shown in **Table 42**:

Table 42
Numbers of Patient Education Activities And Patient/Family Attendance
According to Patient Education Modules of 2017

No	Module	Total of Activities	Total of Attendance
1.	Diabetes	14,884	26,721
2.	Hipertension	4,586	8,068
3.	Asthma	1,915	2,787
4.	Renal	1,368	3,168
Total		22,753	40,744

Source: Community Mobilisation Section, Health Education Division, MoH

- **Quit Smoking Clinic**

In 2017, there were 39 Quit Smoking Clinics established at the government hospitals led by Health Education Officers. Through the clinic, 1,546 clients received consultation regarding smoking cessation. Out of the total, 658 clients (42.6 percent) have successfully quitted smoking for at least within 6 months period (**Table 43**).

Table 43
Achievement of Quit Smoking Clinic for 2017

Number of clients set the date to quit smoking	Number of clients successfully quit smoking	Percentage of clients successfully quit smoking
1,546	658	42.6

Source: Community Mobilisation Section, Health Education Division, MoH

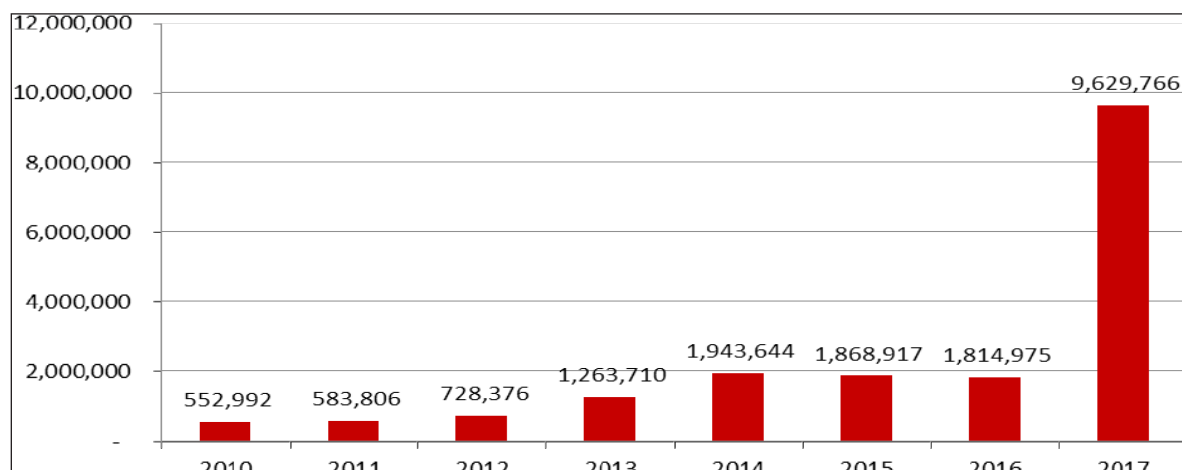
HEALTH MEDIA

- **MyHEALTH Portal**

The target for visitors hits to MyHEALTH Portal in 2017 is 2 million hits. Nevertheless, the achievement of visitors hits to the MyHEALTH Portal for the whole of 2017 has surpassed the target with 9,629,766 hits (**Figure 58**). The MyHealth Portal also receives recognition from HONCode, an international organisation that provides ratings to websites that provide health information.

Figure 58

Myhealth Portal Hits from Year 2010 to 2017



Source: Health Media Section, Health Education Division, MoH

MYHEALTH Social Media

Along with the development of communication technology, the use of social media needs to be optimised in promoting social advocacy and social influence among the community towards better health behaviours. The achievement of health promotion through MyHealth social media in 2017 is as in **Figure 59**:

Figure 59

Health Promotion Achievement Through MyHealth Social Media



Source: Health Media Section, Health Education Division, MoH

WAY FORWARD

Health Education Division will go along the upcoming years with more effective and productive health promotional programmes. This division will continue to identify appropriate approaches and channels to convey health information and messages to all levels of society. This division will strive in creating a healthy and conducive environment for the community to practice healthy lifestyle throughout their life span.

NUTRITION DIVISION

Nutrition activities in Ministry of Health Malaysia began in the '50s where it was integrated into the service of Maternal and Child Health Care. In 1974, the post of Food Nutrition Science Officer (PZM) was first established under the Unit Maternal and Child headquarters level, Ministry of Health. Starting in 1977, the post of Food Nutrition Science Officer (PZM) grew and established even at State Level. With a background degree in Nutrition, Food Nutrition Science (PZM) profession becomes the key driver to nutritional programs in Malaysia.

The Nutrition Branch was established in 1995 under the Family Health Development Division. The branch then, has three (3) units:

- i. Nutrition Planning and Development Unit
- ii. Nutrition Rehabilitation Unit
- iii. Nutrition Promotion Unit

The Nutrition Branch has been upgraded to the Nutrition Division from October 16, 2009, led by the Director of the Division. The establishment of this division is to improve the quality and availability of nutritional services to all segments of society.

Beginning in 2017, in tandem with the development of nutritional services, two (2) existing branches, the Nutrition Planning and Development Branch and Nutrition Operational Branch have grown into three (3) branches. These three (3) branches are:

- i. The Planning & Nutrition Policy Branch - consists of the National Coordinating Food & Nutrition Policy Sector, Professional Development, Standard and Quality Sector, Policy and Global Nutrition Sector, and Nutrition Surveillance Sector
- ii. The Family Nutrition Branch - consists of the Nutrition Maternal Sector, the Infant & Young Child Feeding (Under 5 Years) Sector, the Nutrition for Children and Adolescents Sector and the Adult and Elderly Nutrition Sector.
- iii. The Community & Inter Agency Nutrition Branch - comprises of the Obesity & Non-Communicable Disease Related to Nutrition Sector, Industry Collaboration Sector, Institutional Nutrition Sector, and Nutrition Advocacy and Service Sector

FUNCTION OF DIVISION

- Plan, develop, implement, monitor and evaluate nutrition programs in four aspects, namely, planning, monitoring, promoting and rehabilitating nutrition.
- Development, advocacy and implementation of the National Nutrition Policy.
- Implementation, monitoring and evaluation of the National Plan of Action for Nutrition in Malaysia (NPANM).
- Provides comprehensive nutritional services to individuals, families and society to encourage healthy nutritional practices.

PLANNING & NUTRITION POLICY BRANCH

ADVOCACY ACTIVITIES OF NATIONAL PLAN OF ACTION FOR NUTRITION OF MALAYSIA (NPANM) III, 2016-2025

NPANM III, 2016-2025 is the 10 years plan of action developed to address nutrition problem and challenges in the country through trans and multi-sectoral approach. Therefore, focus for the first three years of NPANM III, 2016-2025 implementation is to conduct the advocacy activities at intra and inter-agency level with involvement of various stakeholders. Until 2017, about 22 advocacy activities have been conducted to 112 agencies/ministries/professional bodies/universities/food industries and others.

The main advocacy activity that has been conducted by Nutrition Division in 2017 was Round Table Discussion of NPANM III, 2016-2025 Enabling Strategy 5: Sustaining Food Systems to Promote Healthy Diet. This roundtable discussion was held on 12 September 2017 chaired by the Deputy Director General of Health (Public Health) and attended by 40 people from related ministries and agencies. This advocacy activity was the first to discuss the issues related to implementation, challenges and constraints for activities under this strategy. Furthermore, the commitment from other ministries and agencies on the implementation of the activities under this strategy were also presented (**Table 44**).

Table 44

List of Presentations during Round Table Discussion of NPANM III, 2016-2025 Enabling Strategy 5: Sustaining Food Systems to Promote Healthy Diet on 12 September 2017

No	Title	Ministries/agencies
1.	FAMA's Initiatives Towards Sustainable, Resilient And Efficient Production Of Fruit And Vegetables For The Population	Federal Agricultural Marketing Authority (FAMA)
2.	Food Industries' Role and Commitment In Producing More and Healthier Food and Beverage Options to the Population	Malaysian Food Manufacturing Group (FMM MAFMAG)
3.	Use of Economic Tools (Tax, Incentives, Subsidy, Zero GST) in Creating Supportive Environment for Healthy Diets: Milestones and Challenges population	Ministry of Finance

Source: Nutrition Division, 2017

In addition to the roundtable discussions, four advocacy activities were conducted separately to the School Management Division & Matriculation Division (Ministry of Education), agencies under Ministry of Agriculture and Agro-Based Industry, MARA Education Division and United Nations University at the headquarters level. Moreover, NPANM III, 2016-2025 advocacy activities were also conducted at the state level such as Seminar of National Plan of Action for Nutrition of Malaysia (NPANM) III, 2016-2025 Penang State Level and Johor Scientific Meeting involving health professionals.

1ST NATIONAL MOH NUTRITIONIST'S SYMPOSIUM 2017: NUTRITIONIST AND WELL BEING OF MALAYSIANS

The biennial symposium was held on 13 to 14 May 2017 at Pearl International Hotel, Kuala Lumpur attended by 350 Nutritionists throughout Malaysia. The symposium was launched by YBhg. Datuk Dr. Lokman Hakim b. Sulaiman, Deputy Director General (Public Health). The theme for the first symposium was Nutritionist and Well-Being of Malaysians. Activities carried out during this symposium were oral presentation, research posters exhibition and the Potpourri Nutrition sessions (**Image 25**).

Image 25

Launching of 1st National MOH Nutritionist's Symposium 2017: Nutritionist and Well Being of Malaysians by YBhg. Datuk Dr. Lokman Hakim b. Sulaiman



Source: Nutrition Division, 2017

THE LAUNCHING OF RECOMMENDED NUTRIENT INTAKE (RNI) FOR MALAYSIA 2017 AT 1ST SOUTHEAST ASIA PUBLIC HEALTH NUTRITION (SEA-PHN) CONFERENCE

RNI 2005 was revised with the involvement of multi agencies, universities, professional bodies and institutions. The revision of RNI was one of the main activities under the Facilitating Strategy in National Plan of Action for Malaysia, 2016 – 2025, which is to provide standard nutrition guidelines for various target groups.

The revised RNI, RNI 2017 was launched by the Minister of Health on 15 May 2017 at the Opening Ceremony of 1st Southeast Asia Public Health Nutrition (SEA-PHN) Conference (**Image 26**). It was later uploaded to www.nutrition.gov.my and can be downloaded for latest reference.

Image 26

Launching Of Recommended Nutrient Intake (RNI) For Malaysia 2017 at 1st Southeast Asia Public Health Nutrition (SEA-PHN) Conference



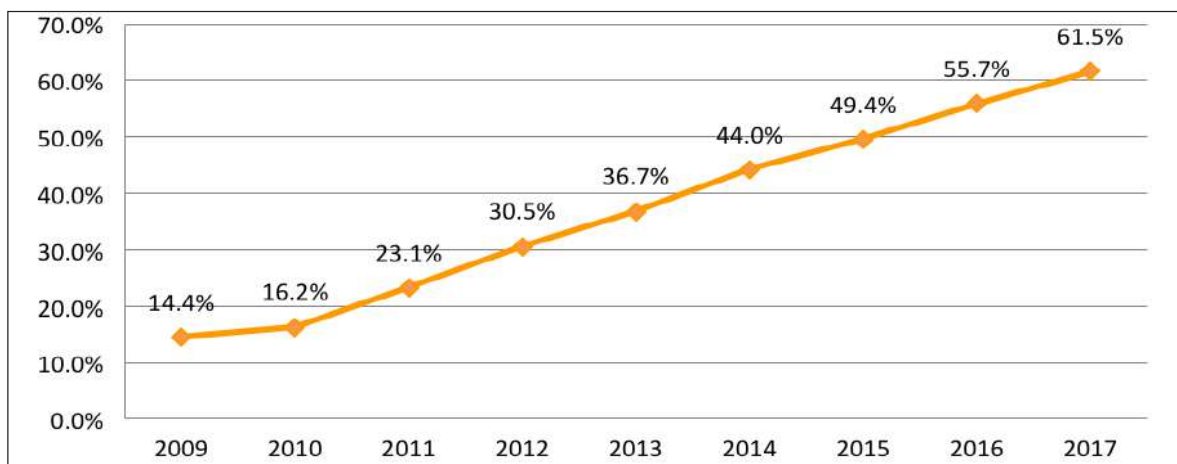
Source: Nutrition Division, 2017

FAMILY NUTRITION BRANCH

INFANT AND YOUNG CHILD FEEDING

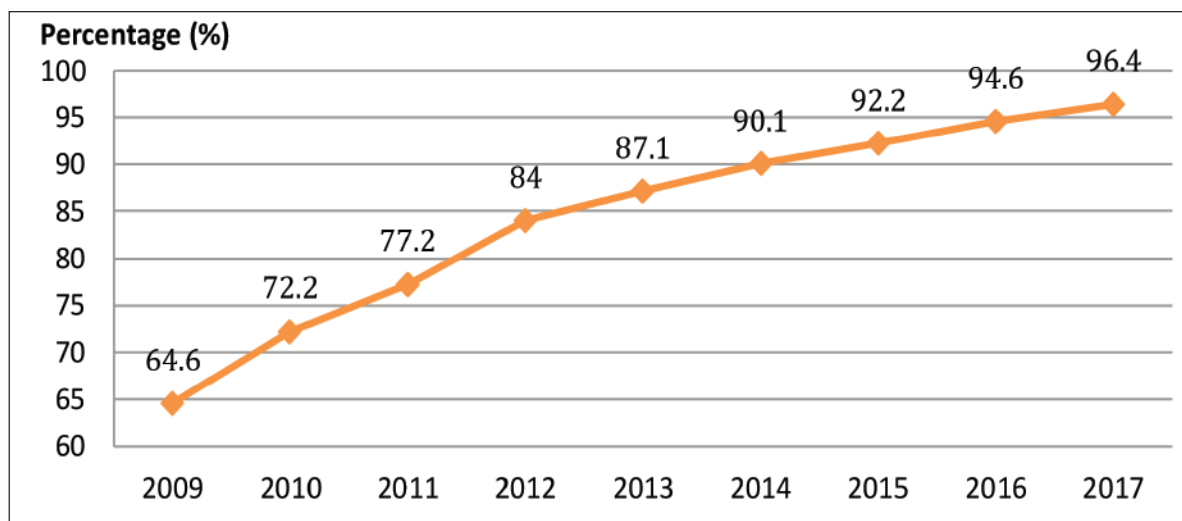
For optimal growth and development of infants and young children in Malaysia, all infants should be breastfed exclusively from birth until six months of age. Complementary foods should be introduced at the age of six months while continuing to breastfeed to two years. Feeding of all infants and young children should be timely, adequate, safe, appropriate and proper. Since 2009, breastfeeding rates in Malaysia have continued to increase. Exclusive breastfeeding at 6 months had increased from 55.7 per cent in 2016 to 61.5 per cent in 2017 (**Figure 60**). The timely initiation of complementary feeding in Malaysia at 6 months had increased from 94.6 per cent in 2016 to 96.4 per cent in 2017 (**Figure 61**).

Figure 60
Exclusive Breastfeeding Practices at 6 Months



Source: State Health Department, 2017

Figure 61
Timely Complementary Feeding Practice at 6 months

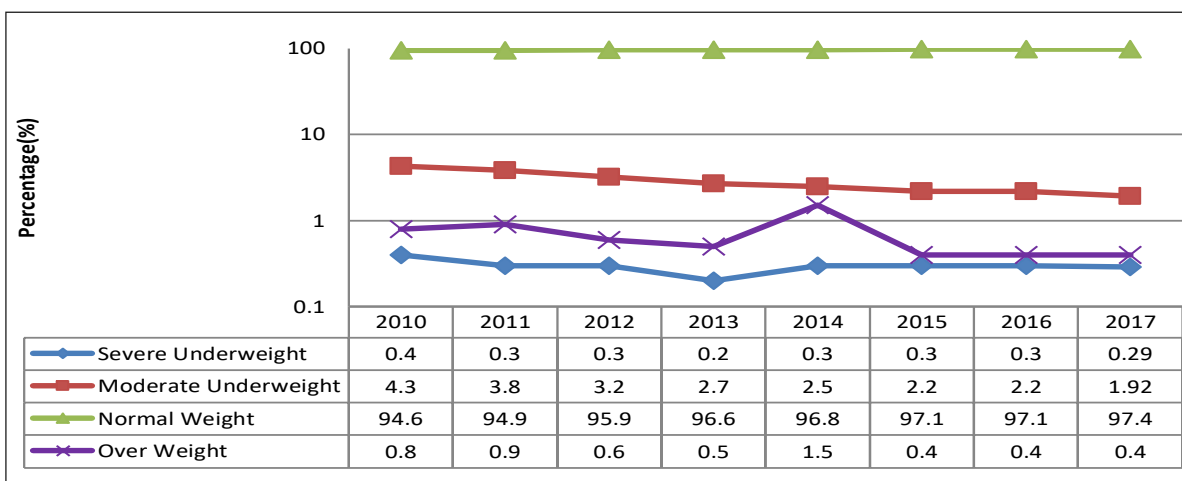


Source: State Health Department, 2017

NUTRITIONAL STATUS FOR CHILDREN UNDER 5 YEARS IN MALAYSIA

The Ministry of Health Malaysia monitors the nutritional status of children under five years old through the National Nutrition Surveillance System (NSS) under the Health Management Information System. **Figure 62** shown us the nutritional status of children below five years old from 2010 until 2017. There is a slight increase of the nutritional status of under five children for 2017 compared to 2016, 97.4 per cent of the children are in the normal weight classification, while for severe and moderate underweight showed a decline compared to 2016 to 0.29 per cent and 1.92 per cent and the percentage of overweight children in 2017 is 0.4 per cent same as 2016.

Figure 62
Nutritional Status of Children Under 5 Years in Malaysia, 2010 to 2017



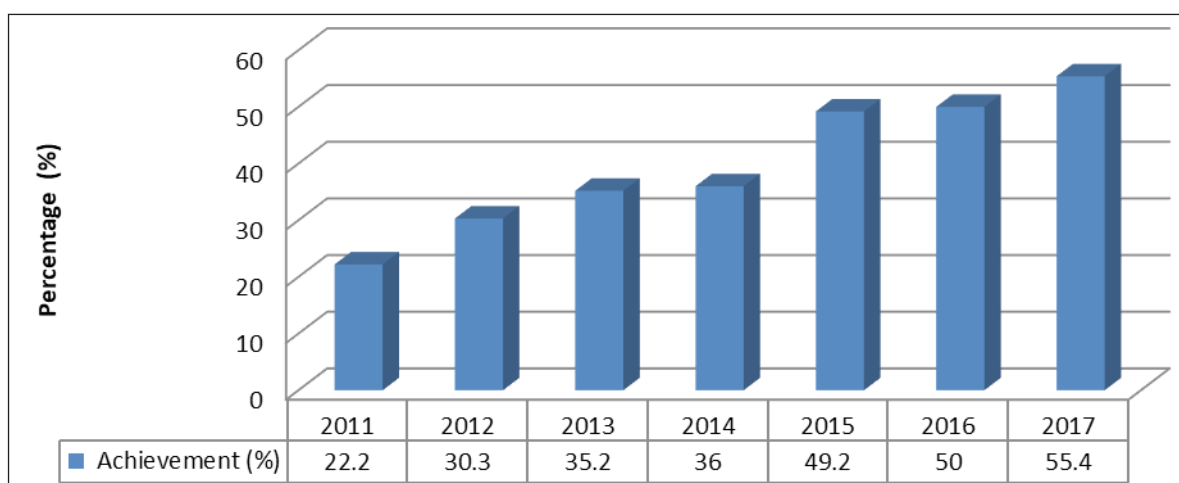
Source: Health Informatics Centre, 2017

REHABILITATION PROGRAMME FOR MALNOURISHED CHILDREN

Rehabilitation Programme for Malnourished Children is a government's effort to improve the nutritional status of malnourished children aged 6 months to below 6 years among low-income households and poor families. The Rehabilitation Programme for Malnourished Children, is also known as the Food Basket Programme.

A total of 10,189 malnourished children from households with the monthly income below RM2000 received the food baskets in 2017. Based on **Figure 63** below, 55.4 per cent have managed to increase weight during the assessment period in 2017. This percentage is increasing from 2016.

Figure 63
Percentage of Malnourished Children With Increased Body Weight, 2011 to 2017



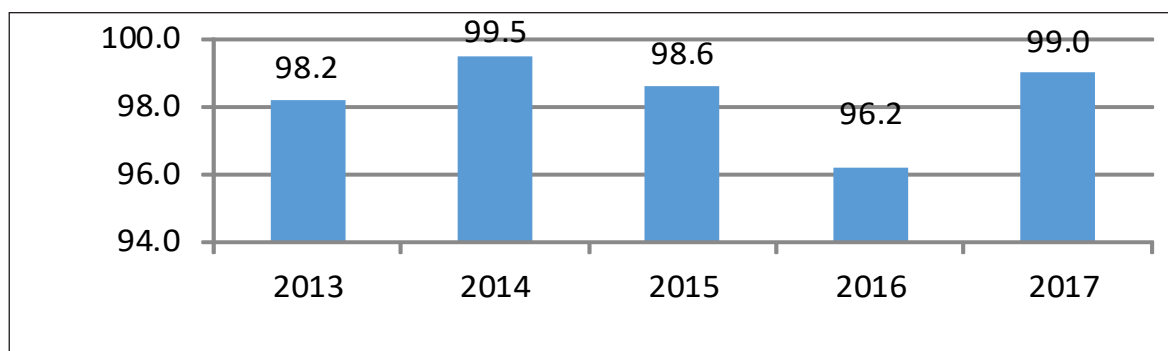
Source: State Health Department, 2017

COMMUNITY FEEDING PROGRAMME (PCF)

Community Feeding Programme was started since 2013 in few states in Perak, Pahang, Kelantan and Sarawak. This programme is a complementary programme to strengthen the implementation of Rehabilitation Program for Malnourished Children, which had been implemented since 1989 to increase the nutritional status of children aged between 6 months to 6 years from hard core poor households. This programme has been identified under the National Key Result Area-Low Income Household (NKRA-LIH) Government Transformation Plan (GTP 2.0) for the indigenous 2013-2015.

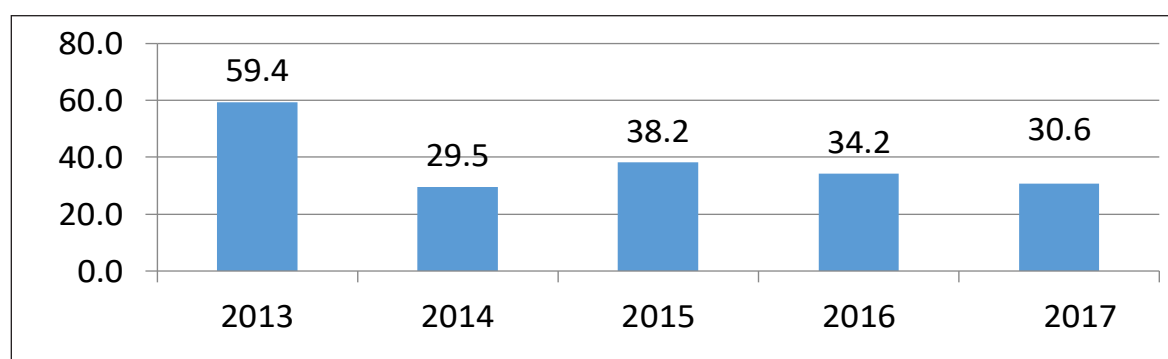
There are 46 centres in Perak, Pahang, Kelantan and Sarawak since 6 years of this programme implemented. In 2017, a total of 181 of indigenous children were involved and the percentage of coverage increasing from 96.2 per cent (2016) to 99.0 per cent (2017) (**Figure 64**). The percentage of recovered cases also showed over the target stated ($\geq 25\%$) which is 34.2 per cent (2016) and 30.6 per cent (2017) (**Figure 65**).

Figure 64
Percentage of Coverage for Malnourished Children In Community Feeding Programme in 2013 to 2017



Source: State Health Department, 2017

Figure 65
Percentage of Recovery for Malnourished Children After 6 Months in the Programme in 2013 to 2017



Source: State Health Department, 2017

BABY FRIENDLY HOSPITAL INITIATIVE (BFHI)

Baby Friendly Hospital Initiative (BFHI) is a global initiative by the World Health Organization (WHO) and UNICEF that aim to give every baby the best start in life by creating health care environment in supporting breastfeeding as the norm. BFHI was launched in Malaysia in 1992 and has been recognized by WHO as the third country in the world with 100 per cent government hospitals recognized as baby friendly in 1998.

As of December 2017, there were 153 hospitals in Malaysia attained the Baby-Friendly status as shown in **Table 45**. A total of 62 out of 70 hospitals (89 per cent) re-assessed using the new WHO/UNICEF 2009 global criteria in 2017 had successfully retained their Baby Friendly Hospital status.

Table 45
Distribution of Baby Friendly Hospitals in Malaysia

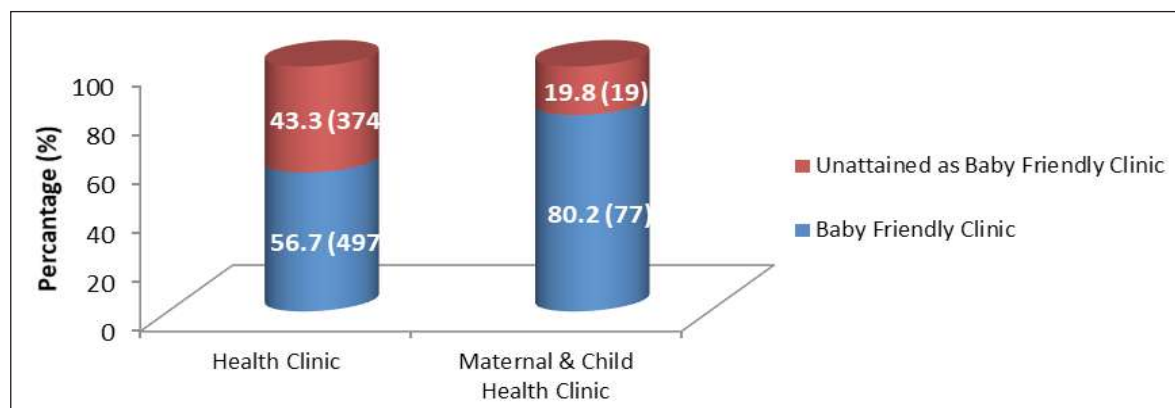
No	Hospitals	Numbers of Hospital
1.	Hospitals under the Ministry of Health	130
2.	Hospitals under the Ministry of Higher Education	3
3.	Hospitals under the Ministry of Defence	3
4.	Private hospitals	17
Total		153

Source: Nutrition Division, 2017

BABY FRIENDLY CLINIC INITIATIVE (BFCI)

Baby Friendly Clinic Initiative is an initiative that complements the implementation of Baby Friendly Initiative in the hospitals. The objective of BFCI is to provide services and environment that support the breastfeeding practices. One of the main reasons for the implementation is because more than 90 per cent of the antenatal and postnatal services are being carried out at maternal and child health clinics. In 2017, there were 574 out of 967 (59.4 per cent) health clinics and maternal and child health clinics attained the Baby Friendly Clinic status (**Figure 66**).

Figure 66
Percentage of Health Facilities Attained The Baby Friendly Clinic Status



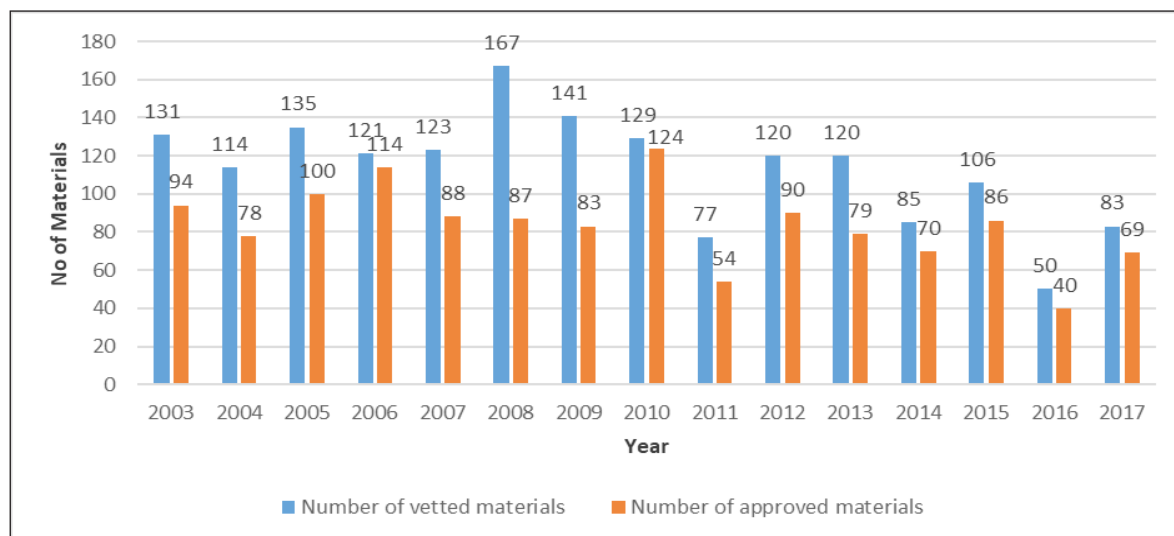
Source: Nutrition Division, 2017

CODE OF ETHICS FOR THE MARKETING OF INFANT FOODS AND RELATED PRODUCTS

The Vetting Committee on the Code of Ethics for the Marketing of Infant Foods and Related Products is responsible to vet information materials and product labels related to the designated products and complementary foods submitted by milk industries. Approval codes are given to materials that comply with the Code of Ethics for the Marketing of Infant Foods and Related Products.

In 2017, there were 83 educational materials and product labels related to infant foods and related products vetted by the committee. Out of these, 69 (83.1 per cent) materials were given approval codes (**Figure 67**).

Figure 67
Vetting Trends of Educational Materials and Product Labels Related to Breastmilk Substitutes and Complementary Foods (2003 to 2017)



Source: Annual Report of Code of Ethics for Marketing of Infant Food and Related Products' Materials Vetting, 2017

NUTRITIOUS SCHOOL MEAL PROGRAMME (HiTS)

Nutritious School Meal Programme (HiTS) is a package of nutritious meals consisting of carbohydrate and protein sources, vegetables and fruits. It fulfills the calorie and nutrients requirement of the pupils during meal time at school. The healthy menus are developed by nutritionist for one-month cycle. The objectives of the programme are to ensure pupils get nutritious meals according to their needs, improve their knowledge and healthy eating habit, and also to provide an environment that supports healthy eating habit among the pupils.

In 2017, 38 schools in Selangor, Kuala Lumpur, Putrajaya, Negeri Sembilan, Johor and Sabah have voluntarily implemented HiTS Programme. Besides that, promotional activities for this programme were carried out such as the creation of HiTS logo, info graphics and production of animation video for HiTS Programme. On top of that, Nutrition Division and Health Education Division had collaborated in the production of video on HiTS Programme Implementation at SJK (C) Chin Kwang Wahyu, Muar, Johor. All these promotional materials have been disseminated through social media. CDs pertaining to these materials have been distributed to all State Health Departments and Ministry of Education Malaysia. These materials can be accessed in facebook: Ministry of Health Malaysia and Nutrition Division, Ministry of Health Malaysia (**Image 27**).

Image 27
Nutritious School Meal Programme (HiTS) 2017



Logo of Nutritious
School Meal
Programme (HiTS)



The visit of Former Deputy Director General of Health (Public Health) with Director of Nutrition Division to SJK (C) Chin Kwang Wahyu on 16 May 2017



Promotional materials that have been developed for HiTS Programme

Source: Nutrition Division, 2017

SALES ON FOOD AND DRINKS AT SCHOOL CANTEEN

The Healthy School Canteen Management Guide published by the Ministry of Education Malaysia (MOE) in 2011, has been revised in 2016. As a result, only two (2) categories of food and drinks were outlined in the guide, i.e. food and drinks that can be sold and not allowed to be sold at school canteen. This is different from previous guide which underline three categories which are food and drinks that can be sold, not allowed to be sold and not encouraged to be sold.

MOE has circulated a letter on the Prohibition of Food and Drinks that are Not Encouraged to be Sold in School Canteen effective on 15 March 2017, to all State Education Departments. The letter was forwarded to all State Health Departments as a reference and in 2017, the canteen operators was guided closely by nutritionist on the new policy during the monitoring at school canteen.

Monitoring on food and drinks sold at school canteen were conducted by Nutritionist, Environmental Health Officer and Environmental Health Assistant Officer. The implementation of food and drinks sold at school canteen based on MOE's policy was monitored. As of November 2017, 71.4 per cent (5,951) schools with canteen which had food and drinks sold at their canteen were monitored throughout Malaysia. The achievement of the monitoring activities exceeds the annual target which is 65 per cent for 2017.

Furthermore, the developments of info graphics and animation video which emphasized on food and drinks that can be sold and not allowed to be sold at school canteen were carried out in 2017. In tandem to that, these educational materials have been disseminated through social media. While CD's containing these materials have been distributed to all State Health Departments and MOE.

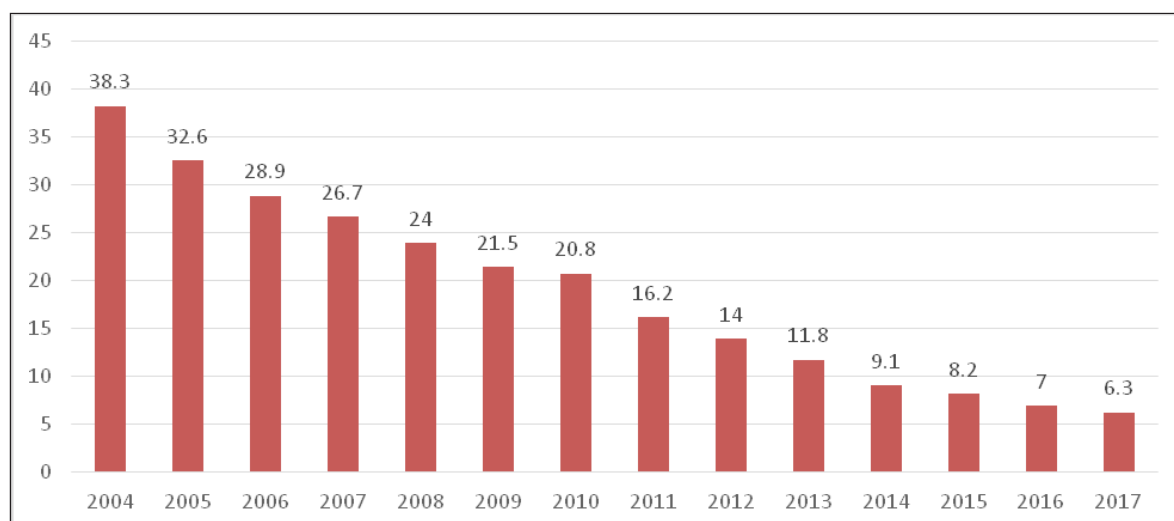
PREVENTION AND CONTROL PROGRAMME FOR ANAEMIA AMONG PREGNANT MOTHERS

Iron deficiency anaemia (IDA) is the common cause of anaemia among pregnant mothers. It occur due to the demand for iron and other vitamin is increase for the development of fetus and the physiological changes that happens during pregnancy stages. If a pregnant mothers have a low iron storage in body before pregnancies and failed to meet the required level for iron during pregnancies, the risk to have iron deficiency anemia will be much higher. IDA in pregnancy is often associated with increased fetal and maternal mortality, low birth weight, premature delivery and maternal morbidity.

Since 2015, prevention and control programme for Anaemia has been one of the Quality Assurance Indicator for National Indicator Approach in Ministry of Health. Percentage of anemic pregnant mothers at \pm 36 week were the indicator that need to be monitored by all Health State Department in this Quality Assurance (QA) process. Various intervention programme in state or district level has been developed to suit local anaemia issues that has been identify during the evaluation process of QA. In general, pregnant mothers are given haematinics with iron (ferrous fumarate), folic acid, vitamin C and vitamin B Complex for both prophylactic and curative measure. Health education and nutrition counseling are also been given to encourage mothers to consume food high in iron and to increase vitamin C intake in their daily diet.

In 2017, prevalence of anaemia among antenatal mothers (Hb < 11gm %) attending government health clinics was 6.3 per cent. It was a significant reduction as compared to 38.3 per cent in 2004 and lower than year before which is at 7 per cent in 2016 (**Figure 68**).

Figure 68
Percentage of Anaemic Among Antenatal Mothers (Hb < 11gm %) Attending Government Health Clinics, 2004 to 2017



Source: Health Informatics Centre, 2017

HEALTHY CATERING TRAINING

Objective of Healthy Catering Training is to increase knowledge and skills among food handlers in Malaysia on healthy eating and clean, healthy and safe food preparation. The implementation of this initiative started in 2004. It was targeted to all operators and food handlers such as restaurants, food stalls, cafeterias, fast food restaurants and canteens.

Topics as in Healthy Catering Module:

- i. Unit A: Healthy Eating Principle
- ii. Unit B: Serving Healthy Meal
- iii. Unit C: Food Safety and Cleanliness
- iv. Unit D: Effect of Unhealthy Eating and Preparation of Unclean and Unsafe Food

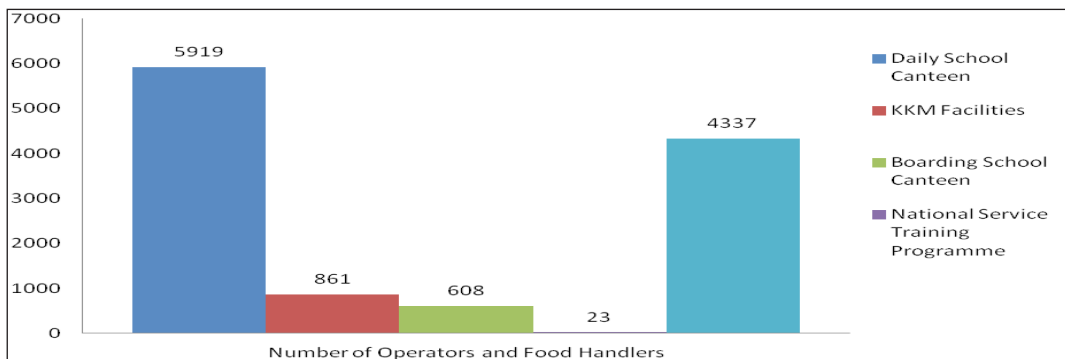
In 2017, two trainings had been conducted by the Nutrition Division involved operators and food handlers who provides food services in SMK Taman Tun Dr Ismail and SMK Jinjang. These school canteens later received the Healthy Cafeteria recognition). Meanwhile, at states level, 118 districts/regions/divisions had each conducted minimum of two (2) trainings. Total of 11,748 operators and food handlers had participated in this training for 2017 (**Image 28**). The distribution of Healthy Catering Training based on settings is as shown in the **Figure 69** below:

Image 28
Healthy Catering Training Sessions



Source: Nutrition Division, 2017

Figure 69
Healthy Catering Training Distribution Based on Settings 2017



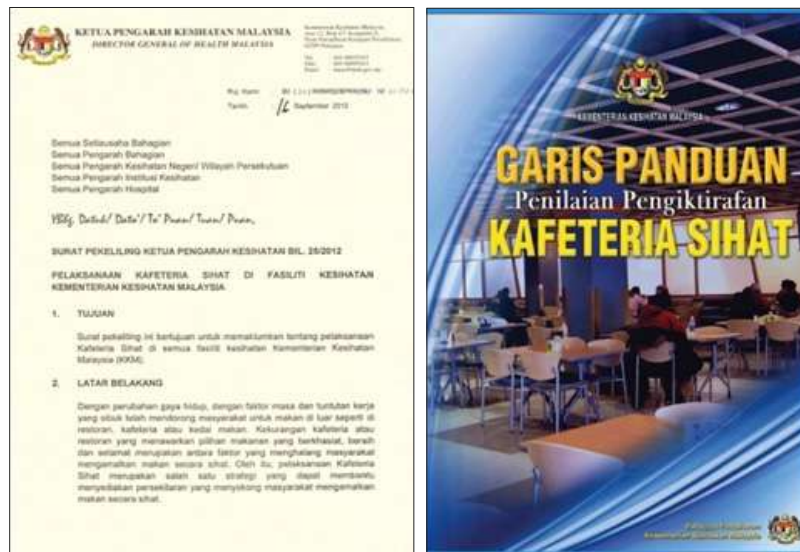
Source: Nutrition Division, 2017

HEALTHY CAFETERIA

Healthy Cafeteria recognition is one of the initiatives taken by Ministry of Health in supporting healthy eating practice among Malaysians. This recognition is awarded to the cafeterias which prepare, serve and sell healthy, clean and safe food in accordance with Healthy Cafeteria Recognition Guidelines (Image 29).

In 2017, total of 166 cafeterias in health facilities and six (6) cafeterias in other government agencies have been recognized as Healthy Cafeterias. Apart from that, 19 cafeterias in private facilities have been recognized as healthy cafeterias which include food premises under Tenaga Nasional Berhad, Bank Rakyat and private institute of higher education. Cafeterias under Sarawak Malaya University and International Medical University, Kuala Lumpur have become the first government and private Institute of Higher Education recognized as Healthy Cafeterias.

Image 29 Healthy Cafeteria Recognition Guidelines



Source: Nutrition Division, 2017

HEALTHY FOOD PREPARATION DURING MEETINGS (PHSSM)

Healthy Food Preparation During Meetings (PHSSM) is an initiative by Ministry of Health (MOH) in encouraging healthy eating practices in work place by serving healthier food choices in the meetings. To enhance PHSSM in MoH and other public sector, Nutrition Division have conducted PHSSM briefing sessions to all caterers who have been providing catering service to meetings and official events organized by Head Quarter Ministry of Health and other public sector. Two (2) sessions involving 22 caterers have been conducted in Head Quarter MOH (**Image 30**).

Image 30 Healthy Food Preparation during Meetings Briefing Session



Briefing Session

Sample of Calorie Tagging For Buffet

Source: Nutrition Division, 2017

COMMUNITY & INTER AGENCY NUTRITION BRANCH

SMARTPHONE APPLICATION 'MYNUTRIDIARI'

MyNutriDiari is a smartphone application which helps public to monitor their daily calorie intake. It was officiated by the Honourable Minister of Health Malaysia on the 18th February 2015. The development of this apps is in line with the minister's aspiration to create a calorie conscious society among Malaysians. The main objective of the development is to enhance the knowledge of the public on healthy eating using the latest medium of social communication. As of December 2017, we have more than 55,000 downloaders for this apps.

Starting by November 2017, MyNutriDiari is undergoing an upgrading process to better improve the quality of the system and it is expected to be completed by June 2018.

Image 31
MyNutriDiari Promotion Activity



MyNutriDiari Promotion Activity

MyNutriDiari

Source: Nutrition Division, 2017

NUTRITION INFORMATION CENTRES AND HEALTHY COMMUNITY KITCHENS

Nutrition Information Centre (NIC) functions as a centre to disseminate reliable, accurate and updated nutrition information to the public. On the other hand, Healthy Community Kitchen (HCK) is a facility used to carry out nutrition promotion, nutrition educational and health-related activities that focus on practical and hands on activities. There are 19 NICs and 45 HCKs nationwide.

The main NIC is located at Level 1, Block E3, Nutrition Division, Ministry of Health, Putrajaya. In 2017, a total of 1327 female and 499 male clients have visited the center to do nutritional status screenings and get nutrition advices.

As for HCKs, a total of 22,336 visitors were involved in the activities carried out such as cooking demonstrations, healthy recipe modifications, gardening activities, cooking classes, health talks and physical activities (**Image 32**).

Image 32
Nutrition Information Centres And Healthy Community Kitchens



Nutrition Information Centre in Labuan



Healthy Community Kitchen in Linggi Port
Dickson

Source: Nutrition Division, 2017

SUKU SUKU SEPARUH' CAMPAIGN (MALAYSIAN HEALTHY PLATE)

The Malaysian Healthy Plate was designed as a visual tool to assist Malaysian in their daily food intake in the form of a plate. It shows the correct portion sizes for each food group that need to be taken in every main meals. 'Suku Suku Separuh' or 'Quarter Quarter Half' means a quarter of the plate should be filled with carbohydrate sources such as rice, noodles, bread or grains, another quarter for fish, poultry, meat or legumes and another half of the plate filled with fruits and vegetables.

The 'Suku Suku Separuh' Campaign was carried out intensively nationwide starting August 2017. The kickoff of the campaign was officiated by the Minister of Health Malaysia with the presence of the Deputy Minister of Education at Sekolah Kebangsaan Setiawangsa, Kuala Lumpur (**Image 33**). This campaign involved various agencies that includes government, private and professional bodies. Main focus was given to the promotion through various media channels, the schools and the communities (KOSPEN localities, supermarkets and Rest n Service Area along the highways).

Image 33
Launching of 'Suku Suku Separuh' Campaign at Sekolah Kebangsaan Setiawangsa, Kuala Lumpur



Source: Nutrition Division, 2017

The objective of this campaign is to increase the awareness and skills of Malaysians on healthy eating and to reduce the risk of non-communicable diseases related to nutrition by practicing the concept of Healthy Plate in their daily food intake.

HEALTHIER CHOICE LOGO (HCL)

The Healthier Choice Logo (HCL) Malaysia initiative has been launched by YB Dato' Seri Dr. Hilmi Haji Yahaya, Deputy Health Minister in AEON Mall Shah Alam, Selangor on 20 April 2017. HCL is intended to assist the consumers in making informed food choices by just refer to the front panel of the product as well as to instill the habit of reading nutrition labelling. In addition, HCL also encourages the food and beverages industries to reformulate and produce healthier products which lead to create a supporting environment for healthy eating. And, it is in-line with the strategy of the National Plan of Action for Nutrition Malaysia (NPANM) III 2016 – 2025 to promote healthy eating and active living for all. There are 158 products from 8 total HCL categories (*Cereals, Fruits & Vegetables, Meat & Poultry, Fish & Fish Products, Dairy & Dairy Products, Beverages, Soup, Sauces & Recipe Mixes and Fats & Oil*) have been awarded certificates of authentication HCL from Ministry of Health, MoH (**Image 34**).

Image 34
The Healthier Choice Logo (HCL) Malaysia



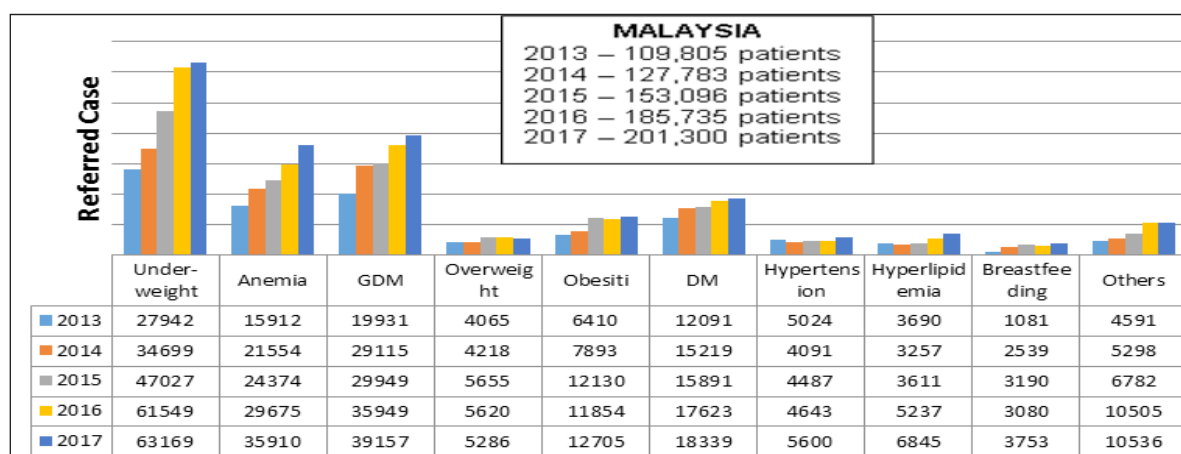
Source: Nutrition Division, 2017

NUTRITION CONSULTATION SERVICES IN HEALTH CLINICS

Nutrition Consultation Service is one of the important services given by Nutritionist to patients whom are being referred by Family Medicine Specialist (FMS) or Medical Officer in the health clinic.

Overall, there is an increase trend of cases being referred annually for nutrition consultation services. A total of 201,300 patients have been received nutrition consultations in 2017 compared to 185,735 patients in 2016 (an increase of 8.4 per cent). Nutrition counselling services were given to 63,169 cases for underweight children (31.4 per cent), 39157 cases (19.5 per cent) for gestational diabetes mellitus (GDM), 35,910 cases for anaemia (17.8 per cent), 18,339 cases for diabetes mellitus (9.1 per cent) and the remaining 44,725 cases (22.2 per cent) were for overweight and obesity cases, hyperlipidaemia, hypertension, breastfeeding and other nutrition-related problems.

Figure 70
Number and Type of Patients Given Nutrition Consultation by Nutritionist from 2013 to 2017



Source: State Health Department, 2017

WAY FORWARD

Throughout 2017, the planning, implementation, monitoring and evaluation of the diseases prevention and control programmes and activities were conducted as planned. Even though the achievements for these activities 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 diseases scenarios and health problems.



5 MEDICAL

INTRODUCTION

The Medical Program is responsible for matters relating to services provided in hospitals headed by the Deputy Director-General of Health (Medical). The programme consists of five (5) divisions: Medical Development, Medical Practice, Allied Health Sciences, Nursing and the Traditional and Complementary Medicine.

ACTIVITIES AND ACHIEVEMENTS

MEDICAL DEVELOPMENT DIVISION

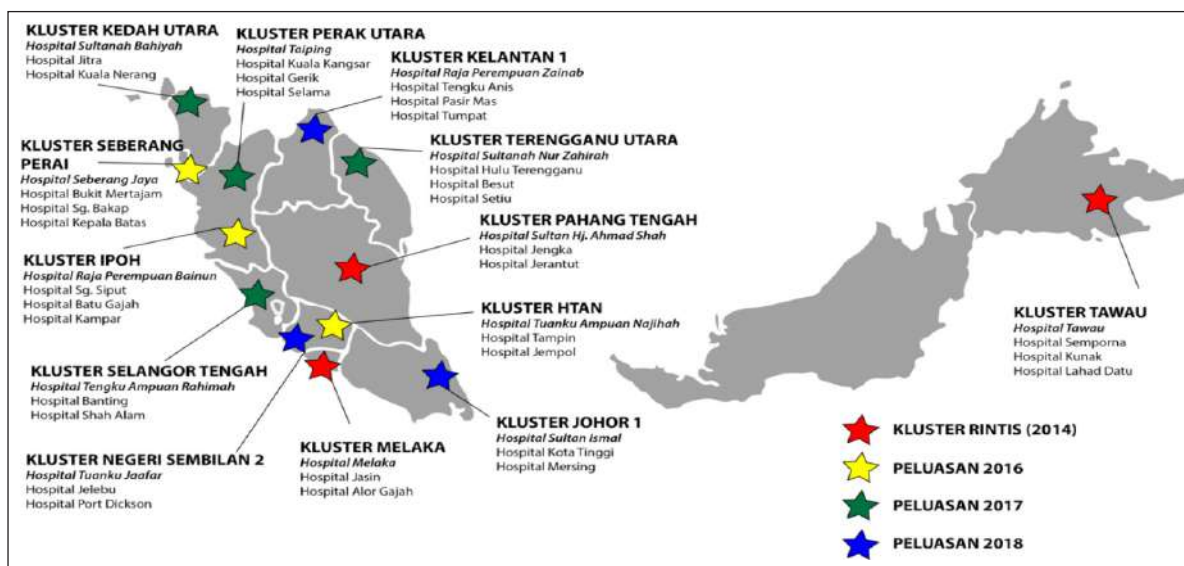
SERVICES DEVELOPMENT SECTION

a. Hospital Services Management Unit

CLUSTER HOSPITAL

Cluster Hospital comprised of at least two MoH hospitals (one Specialists and one Non-Specialists); located within the same geographic area providing specialist services to patients in these areas where human resources, facilities, and other resources will be shared between hospitals in the cluster. Under MOH's Transformation of Healthcare System, Hospital Cluster has been actively implemented as a pilot project since 2014 in three States; Pahang, Melaka and Sabah. From 2016 to 2020, Hospital Cluster will be expanded nationwide to with the establishment of three new Clusters Hospital per year. In 2017, a total of 10 Cluster Hospitals have been implemented in nine states involving 36 hospitals; out of these, 15 are specialist hospitals and 21 are non-specialist hospitals.

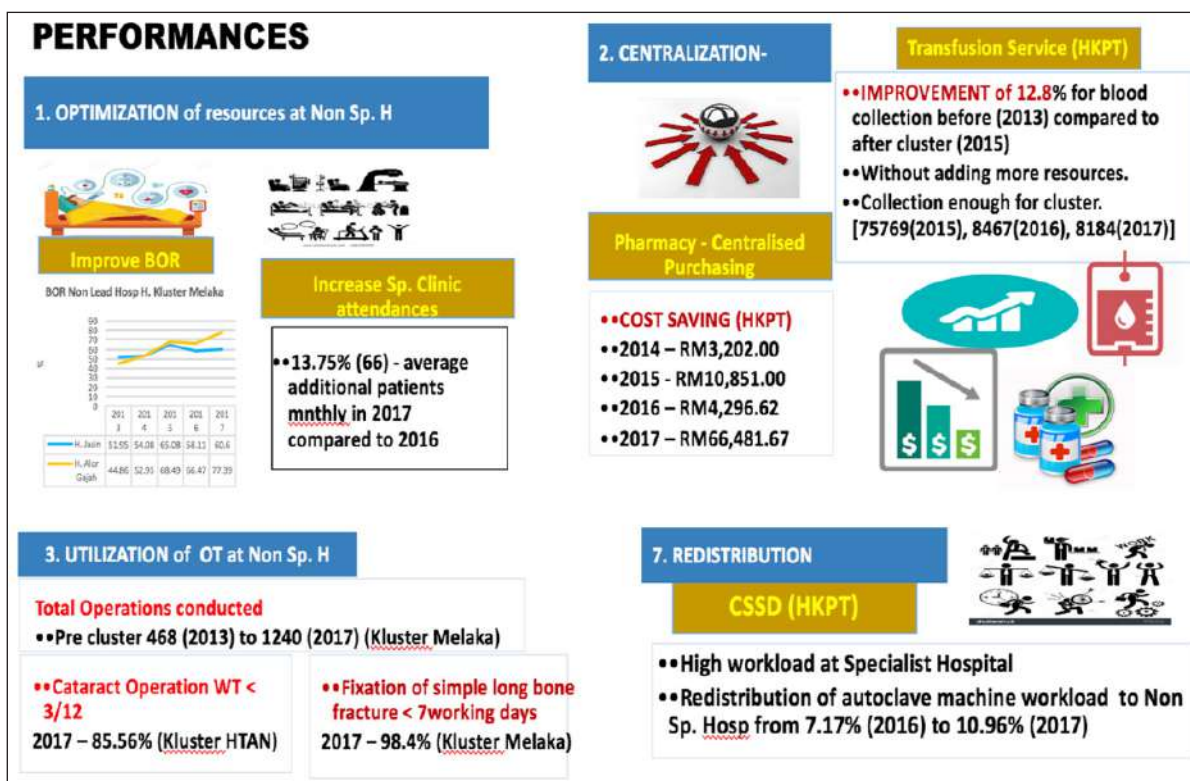
Figure 1
Expansion Plan of Cluster Hospitals, 2014 to 2018



Source: Hospital Services Management Unit, Medical Development Division, MoH

Improving utilization of non-specialist hospitals is one of the objective for clustering. For overall achievement, there was an average of 13.75 per cent increase in attendances in Specialist Clinic visits in non-Lead Hospitals in all Cluster Hospitals in 2017 compared to 2016. Improvement of the bed utilization are significantly seen at Kluster Melaka, both Hospital Jasin and Hospital Alor Gajah. Whereby clustering and availability of more sustainable specialist care at these non-specialist hospitals, utilization of beds has improved significantly. The numbers of hospital beds are also expanded from 70 to 90 beds in 2016 to cater for increasing number of patients. The Bed Occupancy Rate (BOR) increased from 51.95 per cent at Jasin Hospital and 44.86 per cent at Alor Gajah in 2013 to 60.60 per cent and 77.39 per cent respectively in 2017. Performance for fixation of simple long bone fracture in less than seven days achieved 98.4 per cent in 2017 for Kluster Melaka by utilizing OT at Hospital Jasin. (standard is 90 per cent). Whereas, in Kluster Hospital Tuanku Ampuan Najihah, Kuala Pilah (HTAN), the waiting time for Cataract Operation is shortened to less than 3 months when conducted at Hospital Tampin. By clustering an amount of RM3,000.00 to RM66,000.00 are saved by centralised pharmacy local order purchased at Kluster Pahang Tengah in 2014 to 2017. Clustering is also seen as an opportunity to do more with less, by centralizing transfusion service at Kluster Pahang Tengah, 12.8 per cent more blood collected in 2015 (after clustering) compared to 2013 (before clustering). In conclusion, clustering is an efficient and innovative approach to share and redistribute workload as well as optimize utilization especially where resources are limited.

Figure 2
Summary of Performances of Cluster Hospital



Source: Hospital Services Management Unit, Medical Development Division, MoH

LEAN HEALTHCARE INITIATIVE

As part of the transformation agenda in the public service delivery transformation, Ministry of Health (MoH) continues to expand the Lean Healthcare initiative to 16 hospitals in 2017. These hospitals are mainly Major Specialist Hospitals. Emergency Department (ED) and Medical Ward (MW) of these 16 hospitals were chosen as part of the Agile Approach. List of hospitals involved are as follow;

- i. Hospital Bukit Mertajam
- ii. Hospital Kepala Batas
- iii. Hospital Seri Manjung
- iv. Hospital Pekan
- v. Hospital Segamat
- vi. Hospital Kluang
- vii. Hospital Sri Aman
- viii. Hospital Bintulu
- ix. Hospital Sibul
- x. Hospital Kapit
- xi. Hospital Port Dickson
- xii. Hospital Sandakan
- xiii. Hospital Keningau
- xiv. Hospital Lahad Datu
- xv. Hospital Tawau
- xvi. Hospital Banting

Apart from ED and MW, MoH has also embarked on Hospital Kuala Lumpur transformation projects includes Medical Record and Hospital Support Service. Both projects are piloted at seven (7) clinical departments namely Emergency Medicine, Medical, Orthopedics, Ophthalmology, Neurology, Nephrology and Pediatrics with the aim to improve work processes. These two projects are at its final phase of analysis of the findings.

Other than that, two new projects involving work levelling at all specialist clinics in Hospital Sg Buloh and optimization of operation theatre in Hospital Sultan Ismail were also started at the end of 2017. These two projects are expected to complete in 2018.

The performances of ED and MW are graded according to the standard matrices that were developed by Medical Development Division, which includes seven performance matrices. The 16 hospitals overall performances are as below:

CASEMIX SYSTEM

Up-grading of Casemix System, MalaysianDRG application

- **Development of new modules**

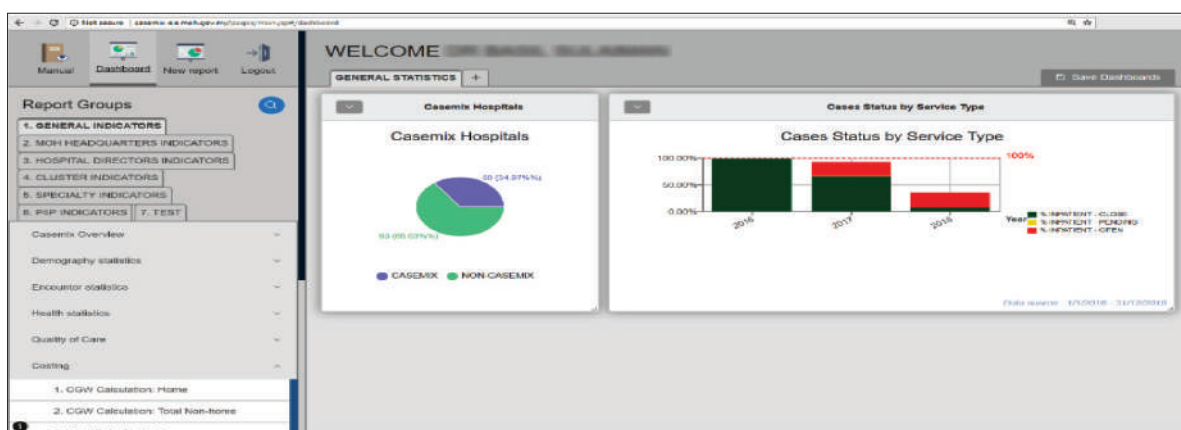
Three (3) new modules have been developed in the MalaysianDRGV2 application, namely (i) Pay-For-Performance (P4P), (ii) Malaysian Health Mortality Information System (MHMIS), and (iii) Executive Information System (EIS) apart from the two (2) main Casemix System modules that are the clinical and costing modules.

Figure 3
Overall Achievements for Lean Healthcare for 16 Hospitals in 2017



Source: Hospital Services Management Unit, Medical Development Division, MoH

Figure 4
Example of Report table – Casemix Index (CMI), generated from EIS



Source: Hospital Services Management Unit, Medical Development Division, MoH

Information derived from the P4P and EIS modules will allow MOH to ascertain the health service achievements compared to the identified benchmarks; whereas the MHMIS module makes the Underlying Cause of Death for mortality cases to be derived easier.

• **Launch of MalaysianDRG V2**

The MalaysianDRG was launched on 18 September 2017, by Yang Berhormat Datuk Seri Dr S Subramaniam, Minister of Health Malaysia, at the National Cancer Institute, Putrajaya. With the development of MalaysianDRG V2, it is hoped that the MoH's goal of developing a national health services tariff in a more effective, efficient manner and can be used for disbursement of funds to MoH hospitals, will become reality.

Image 1
**Launching MalaysianDRG V2 by Yang Berhormat Datuk Seri Dr S Subramaniam, at the
National Cancer Institute, 18 September 2017**



Source: Hospital Services Management Unit, Medical Development Division, MoH

2017 Expansion of the Casemix System, MalaysianDRG

Utilisation of Casemix System, MalaysianDRG for Inpatient Service was expanded to twelve (12) other hospitals in 2017. This is in line with implementation of Cluster Hospital initiative at the same hospitals. This expansion involved four (4) states, namely Kedah, Perak, Selangor and Terengganu. The hospitals involved are listed in **Table 1**.

Table 1
Casemix System Expansion 2017 Hospital List

No	State	Hospital
1.	Kedah	i. Jitra Hospital
		ii. Kuala Nerang Hospital
2.	Perak	iii. Taiping Hospital
		iv. Kuala Kangsar Hospital
		v. Selama Hospital
		vi. ParitBuntar Hospital
		vii. Gerik Hospital
3.	Selangor	viii. Shah Alam Hospital
		ix. Banting Hospital
4.	Terengganu	x. Hulu Terengganu Hospital
		xi. Besut Hospital
		xii. Setiu Hospital

Source: Hospital Services Management Unit, Medical Development Division, MoH

Casemix System for Daycare Services Pilot Project

After gaining the success in the implementation of the Casemix Sistem for in-patient service, the Ministry of Health intends to expand the implementation of Casemix System to Daycare Services. A Pilot Project was carried out at two (2) hospitals, namely Raja Permaisuri Bainun Hospital, Ipoh and Sultanah Nur

Zahirah Hospital, Kuala Terengganu, throughout 2017. Following the Pilot Project report, Casemix System for Daycare Services will be expanded to 50 hospitals starting January 2018. Simultaneously, several findings from the pilot project shall be used for further improvements.

Director-general of Health Key Performance Indicator 2017 - Clinical Documentation and ICD-10 Coding Accuracy for Main Diagnosis

Starting from 2017, the clinical audit findings for accuracy of Main Condition Documentation and Coding were listed as part of the Director General of Health's KPI for Medical Programme. The clinical audit report findings, from 38 hospitals implementing Casemix System, showed an encouraging overall result, which was 82.4 per cent for Main Diagnosis documentation accuracy and 89.3 per cent for Main Diagnosis ICD-10 coding accuracy, as shown in **Table 2** below.

Table 2
Clinical Documentation and ICD-10 Coding Accuracy for Main Diagnosis Results

No	State	Hospital	% Main Condition Accuracy	% Main Condition ICD-10 Code Accuracy
1.	FT Kuala Lumpur & Putrajaya	Kuala Lumpur Hospital	73.5	86.0
		National Cancer Institute	36.3	70.9
2.	Perlis	Tuanku Fauziah Hospital, Kangar	82.9	84.8
3.	Kedah	Sultanah Bahiyah Hospital, Alor Setar	77.5	85.8
4.	Pulau Pinang	Penang General Hospital	89.2	90.8
		Seberang Jaya Hospital	77.7	93.6
		Bukit Mertajam Hospital	77.6	85.7
		Kepala Batas Hospital	70.4	97.3
		Sungai Bakap Hospital	87.4	98.2
5.	Perak	Raja Permaisuri Bainun Hospital, Ipoh	85.7	89.0
		Slim River Hospital	98.4	89.8
		Batu Gajah Hospital	87.2	88.8
		Kampar Hospital	85.7	91.2
		Sungai Siput Hospital	78.1	93.2
6.	Selangor	Tengku Ampuan Rahimah Hospital, Klang	73.3	93.3
		Serdang Hospital	90.0	98.4
		Kajang Hospital	89.7	94.5
		Tanjong Karang Hospital	91.3	97.8
7.	Negeri Sembilan	Tuanku Ja'afar Hospital, Seremban	74.2	89.7
		Port Dickson Hospital	89.8	96.6
		Tuanku Ampuan Najihah Hospital, Kuala Pilah	89.4	95.2

No	State	Hospital	% Main Condition Accuracy	% Main Condition ICD-10 Code Accuracy
		Jempol Hospital	94.6	86.0
		Tampin Hospital	92.0	95.6
8.	Melaka	Melaka Hospital	79.3	65.8
		Alor Gajah Hospital	74.7	95.3
		Jasin Hospital	82.8	87.2
9.	Johor	Sultanah Aminah Hospital, Johor Bahru	82.4	90.5
10.	Pahang	Sultan Haji Ahmad Shah Hospital, Temerloh	88.3	99.3
		Tengku Ampuan Afzan Hospital, Kuantan	78.2	85.0
		Jerantut Hospital	80.1	96.5
		Jengka Hospital	92.2	96.3
11.	Terengganu	Sultanah Nur Zahirah Hospital, Kuala Terengganu	78.8	91.4
12.	Kelantan	Perempuan Zainab II Hospital, Kota Bharu	87.6	93.2
13.	Sarawak	Sarawak General Hospital	84.9	96.4
		Sarawak Heart Centre	76.3	82.8
14.	Sabah	Tawau Hospital	89.6	90.9
		Kunak Hospital	NOT DONE	NOT DONE
		Semporna Hospital	NOT DONE	NOT DONE

Source: Hospital Services Management Unit, Medical Development Division, MoH

INFORMATION TECHNOLOGY (ICT)

Sistem Pengurusan Pesakit (SPP) is the operational Hospital Information System in Ministry of Health (MoH) hospitals since 2008. In 2017, ICT Subunit, UPPH strategic focus was in software development to enhance SPP towards HIS@MoH. MoH aspiration is to use government owned applications for our hospitals.

Development of systems towards HIS@MoH

Various projects are being developed towards achieving our own HIS , which include:

No	Projects	Activities
1.	Development of Clinical Documentation and Enhancement of SPP	Preparation of SRS, SDD, Program Specification, Change Management (CM) and Benefit Realization activities (BR)
2.	HIS@KKM Phase 1- LIS, OTMS, CenSSIS	Preparation of SRS, SDD
3.	HIS@KKM Phase 1- RIS/PACS HRPZII	Preparation of SRS
4.	Blood Bank Information System (BBIS)	Programming, data migration, integration, deployment by phases

Enhancement of HIS@MOH via procurement of service-specific systems in individual ICT Projects

Specific intricate clinical systems shall be procured and further integrated with HIS@KKM. Examples include application used in Anesthesiology and Oncology fraternity.

No	Projects	Activities
1.	Implementation of Critical Care Information System (CCIS) – HKL	Warranty period
2.	Implementation of Critical Care Information System (CCIS) – 11 State Hospitals	Preparation of specifications and acquisition process
3.	Implementation of Oncology Information System HKL	Preparation of specifications and acquisition process

Involvement of ICT Subunit, UPPH with proprietary HIS

The existing proprietary HIS in MoH are obsolete and require upgrading/replacement with HIS that are on par, to enhance system efficiency in rendering services by health care providers. Among these are:

No	Projects	Activities
1.	Replacement of Selayang Hospital HIS and Maintenance of HIS for 3 years	Installation of hardware, data migration, system integration, UAT (User Acceptance Test)
2.	Upgrading of PACS and Replacement of Thin Client in Sultan Ismail Hospital	Installation was completed within the warranty period

Collaboration of hospital related ICT projects

These are the ICT projects developed by other units/sections that require medical domain input from ICT Subunit, Hospital Management Services Unit, Medical Development Division:

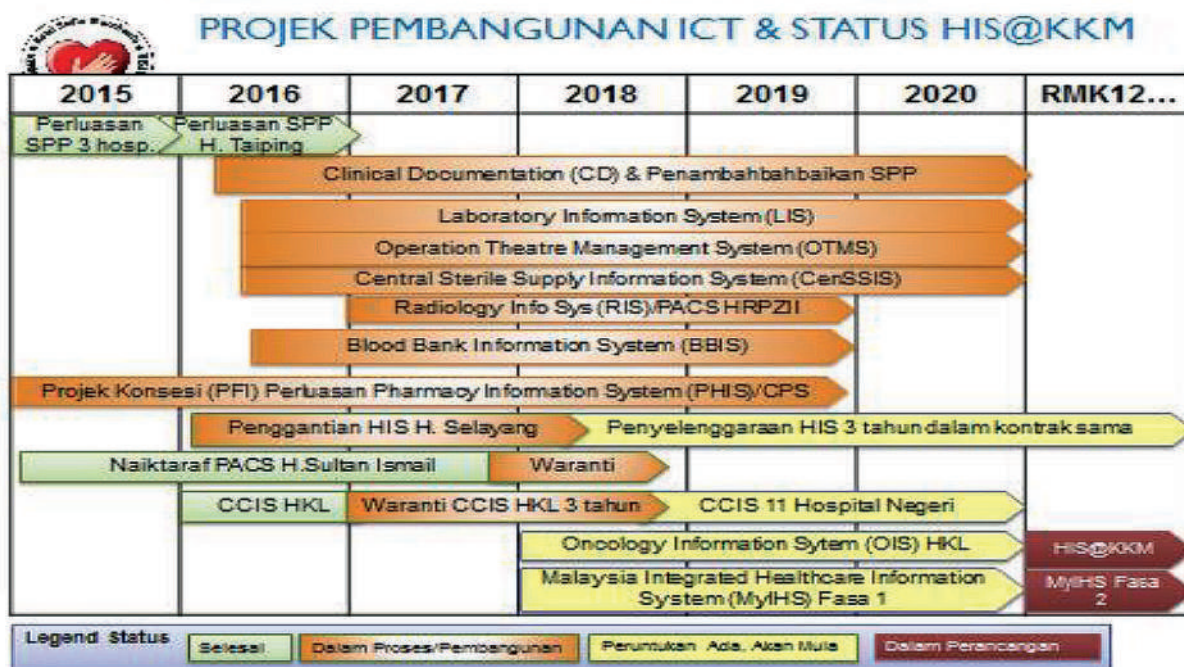
- Pharmacy Information System (PhIS) and Clinic Pharmacy System (CPS) KKM – Pharmacy Practice & Development Division*
- Teleconsultation (TC) projects - eHealth Planning Section, Planning Division
- MyHIX Projects - eHealth Planning Section, Planning Division
- SMRP, MyHDW & PRIS Projects - Health Informatics Centre (PIK), Planning Division
- e-Notifikasi - Disease Control Division

ICT projects in new hospitals under construction

In 2017, new hospitals under construction that will be equipped with ICT/HIS are:

- Women and Children's Hospital Kuala Lumpur (WCH KL) - Business Process Development (BPD) and system testing.
- Cyberjaya Hospital - Preparation for Medical Brief

Figure 5
Overview of ICT projects under Eleventh Malaysia Plan (11MP) with involvement of ICT Subunit throughout 2017 in the *Projek Pembangunan ICT & Status HIS@KKM*



Source: Hospital Services Management Unit, Medical Development Division, MoH

Malaysian Cabinets approval dated 24 March 2017 marks a starting trail of consecutive activities for the MyIHS Projects, including setting up a task force prior to a proper governance structure, attainment of various levels of technical ICT approvals, delineation of project scope, value management evaluation etc. following all standard procedures. MyIHS shall focus on Malaysian Integrated Health Care System and shall be the primer projects for ICT in all MoH Health Facilities, rolled out in phases if the pilot project deemed successful. SPP Cluster shall be developed in this project and to be implemented to Melaka Cluster Hospital.

HOSPITAL MESRA IBADAH PROGRAMME

Program Hospital Mesra Ibadah was launched in 2014 at Hospital Sungai Buloh along with the ibadah educational material for patients. Cadre from *Jabatan Kemajuan Islam Malaysia* has been posted to 55 hospitals (state and specialist hospitals; and special medical institution) and their numbers was 62 in 2017. To enhance the programme, special courses were conducted for medical doctors, paramedics and religious officer in collaboration with other agencies like universities and private sector.

The implementation guidelines on *Program Hospital Mesra Ibadah (Perspektif Islam)* and the generic implementation policy on Program Hospital Mesra Ibadah were published in 2017.

FULL PAYING PATIENT SERVICES

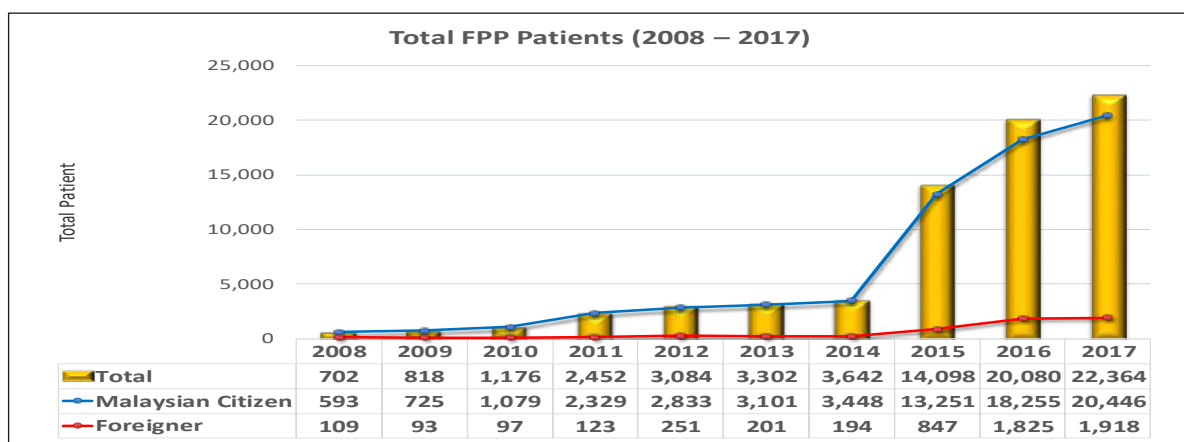
Full Paying Patient Services (FPP) has been introduced at the Ministry of Health Malaysia (MoH) selected hospitals since 2007. This service offers additional incentives to MoH specialists as part of a retention package to reduce the problem of government specialists' migration to private hospitals. FPP patients treated by a selected FPP specialist will be charged fully without subsidies from the government. The revenue collected by the hospital through these services will be given to specialists registered under this service and the Government.

Currently, 10 MoH hospitals have implemented this service. Hospital Selayang and Hospital Putrajaya as Pilots FPP Hospitals, with 8 Phase 1 FPP Hospitals (Hospital Ampang, Hospital Serdang, Hospital Sungai Buloh, Hospital Pulau Pinang, Hospital Queen Elizabeth II, General Hospital Sarawak Heart Center, Hospital Sultan Ismail, and Hospital Sultanah Aminah).

After 10 years of implementation, data shows an increasing trend of number of patients and involvement of MoH specialists in FPP services. By December 2017, there were 342 registered FPP specialists compared to 71 FPP specialists in year 2009. There were 22,364 patients opting for this service in 2017 which contributed to more than RM19 Million revenue from FPP Services from January to December 2017.

An evaluation of FPP services' effectiveness had been carried out in 2017, whereby MoH will continue to improve the services through Action Research methodology before FPP services can be extended to other MoH hospitals

Figure 6
FPP Patients Trend by Citizenship, Year 2008 to 2017



Source: Hospital Services Management Unit, Medical Development Division, MoH

MEDICAL RECORD

The Medical Record Sub-unit carries out medical record management in all Medical Records Department in MoH hospitals. This unit provides and coordinates medical records management practice policies. Among the guidelines that have been issued are:

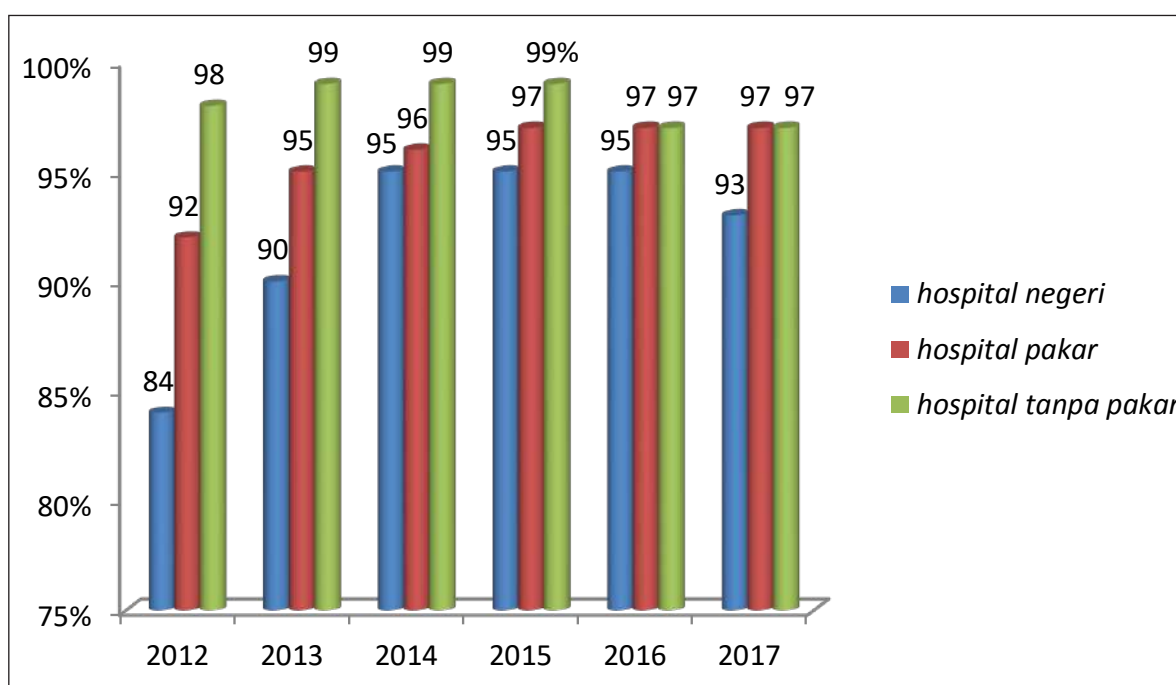
- i. Guidelines on the Establishment of the Medical Board in MoH Facilities 13/2017
- ii. Report of Medical Record Disposal 2016 in MoH facilities
- iii. Reporting Medical Reporting Circulation bills 16/2010
- iv. Report of Medical Record Management Guideline bills 17/2010.

A guideline of Medical Records and Medical Report Preparation is currently being reviewed and need to be updated to meet latest requirements of medical record services management.

Medical Records Centres for centralized records storage have been proposed and the centres will be established in phases based on allocation. Hospital Permai is the pioneer of centralized storage location for the state of Johor. Another two centres have been proposed to serve as centralized record storage for Kelantan and HKL.

In 2017, 229,241 medical report applications were received, and 213,645 medical report applications were completed within stipulated period.

Figure 7
Medical Report Achievements for 2012 to 2017



Source: Hospital Services Management Unit, Medical Development Division, MoH

The Medical Records Management demands are rising every year due to increase in patients coming to the hospital for various treatments. The types of medical records managed by the Record Department including Internal Patient Records, Outpatient Records and Day Care Services Records.

Table 3
Number of Internal Patient Records, Outpatient Records and Daily Treatment
Records for 2012 to 2016

No	Types of records	2012	2013	2015	2016
1.	Outpatient Records	19,139,614	19,621,326	20,376,769	21,048,221
2.	Internal Patient Records	2,314,862	2,163,092	2,526,205	2,571,880
3.	Day Care Services Records	-	-	1,260,440	1,420,174

Source: Hospital Services Management Unit, Medical Development Division, MoH

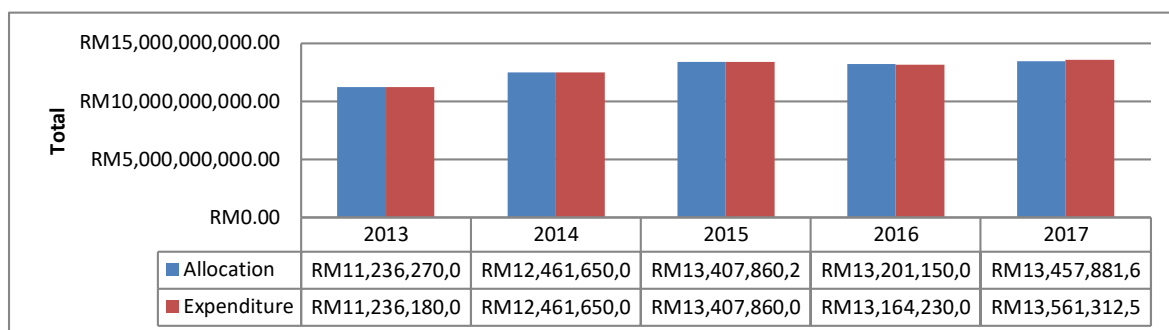
“Lean Medical Record” has been implemented to improve medical records management. This project aims to reduce the patient record tracking time by reducing the unnecessary processes involved in tracking the patient’s records. Cluster Hospital Project has also brought a new paradigm for the management of medical records. In Cluster Hospital, as the patient being transferred, the patient’s record will be transported together with the patient to ensure continuity of treatment.

b. Medical Resource Unit (Usp)

MEDICAL PROGRAMME EXPENDITURE AND BUDGET

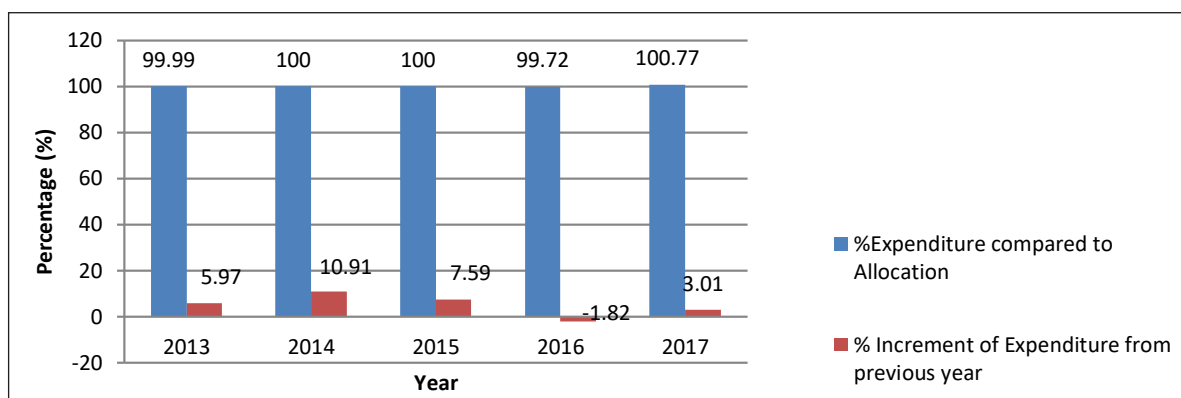
Management Expenditure

Figure 8
Total Allocation and Expenditure Consumables/Medications/Vaccines/Reagents (2013 to 2017)



Source: Finance Division MoH

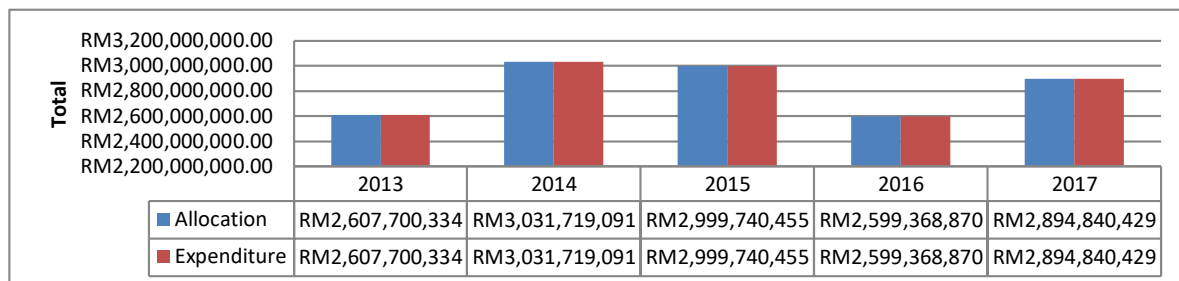
Figure 9
Percentage of Difference Between Expenditure and Allocation & Percentage of Increment of Expenditure from Previous Year for Management (2013 to 2017)



Source: Finance Division MoH

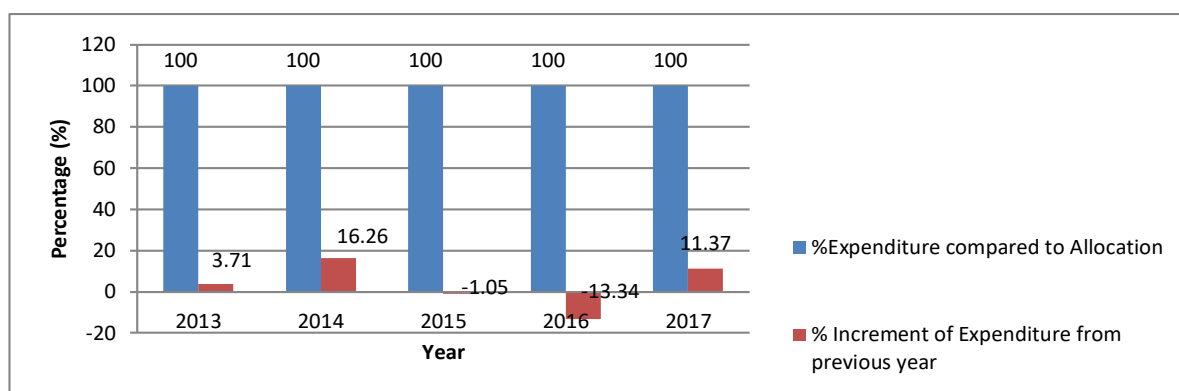
Consumables/Medications/Vaccines/Reagents

Figure 10
Total Allocation and Expenditure of Consumables/Medication/Vaccines and Reagents (2013 to 2017)



Source: Finance Division MoH

Figure 11
Percentage of Difference Between Expenditure and Allocation & Percentage of Increment of Expenditure from Previous Year for Consumables/Medications/Vaccine/ Reagents (2013 to 2017)



Source: Finance Division MoH

PROCUREMENT

Medical Equipment

In 2017, a total of 27 project tenders had been conducted by USP with overall cost of RM84,361,673.87. Of this amount, USP had assisted the Planning Division and Development Division to conduct 12 project tenders for the new hospital, Hospital Kuala Krai with the value of RM14,644,514.00. Through all these procurement of medical equipment by central tender, this unit managed to achieve savings of RM12,496,854.63. USP also conducted the procurement of 739 units of medical equipment for *South East Asia* (SEA) Games with the cost of RM3,369,519.08 funded by The Malaysian Organising Committee (MASOC).

Consumables

There are six (6) centrally procured consumable items which are managed by USP. These items are tendered every 2-3 years. All of these items are monitored closely to ensure that the supplied items complied with the specifications, terms and conditions as stated in the contract. In 2017, tenders were completed for 3 items which include Arteriovenous Fistula (AVF) Needles (contract valued RM 2,899,410.00), Sterile Blood Lines (contract valued RM 18,058,500.00), and Blood Glucostrips and Glucometer (contract valued RM 23,509,275.00). These items will be supplied for the year 2017 to 2019/2020. Apart from that, retendering of Disposable Twin Bag Integrated Disconnect Peritoneal Dialysis System (CAPD) was also conducted in 2017.

USP is also involved in conducting the procurement of tenders for reagents and consumables as well as instrument placement for Hb Analysis using Capillary Electrophoresis (CE) method valued RM11,476,000.00 and High Performance Liquid Chromatography (HPLC) method valued RM8,786,20.00. These items will be used by KKM Hospitals Pathology Departments.

This unit also collaborates with the MoH Procurement and Privatization Division to monitor the pharmaceuticals and consumable products services privatization under Pharmaniaga Logistics Sdn. Bhd. In 2017, tender were on-going for 336 products for 2017 to 2019 Approved Product Purchased List (APPL) supply.

Offtake Program

Offtake Program is one of the government initiatives to help local industry to develop and be competitive at the international level, which may contribute to the Gross National Income (GNI) through investment and job creation for the people. Medical Resource Unit is involved in product selection, to identify the quantity required by MoH, specification development and technical evaluation of the Offtake Program products. In 2017, 3 products were conducted; wound wash solution, surgical sutures and hospital beds (electrical, manual and hydraulic).

MONITORING AND AUDIT

The goal of Audit is to ensure the medical equipment and consumable complies with the specification, meets the standard and the quantity of equipment received by the end-users in MoH hospitals. USP is responsible to monitor all medical equipment in MoH hospital and to ensure they are in used.

PRODUCT DEMONSTRATION (MEDICAL EQUIPMENT AND CONSUMABLES)

In 2017, there were 60 medical products presentations conducted. Clinicians as well as officers from other relevant Divisions/Sections/Units in MoH were invited to give technical and financial inputs regarding the products involved.

HOSPITAL SUPPORT SERVICES

USP is also involved as one of the committee members in collaboration with the MoH Engineering Division, to monitor the privatized hospital support services which are rendered by concession companies. These support services include the Facility Engineering Maintenance Services (FEMS), Biomedical Engineering Maintenance Services (BEMS), Clinical Waste Management Services (CWMS), Cleansing Services (CLS), and Linen & Laundry Services (LLS). As a committee member, this unit

is responsible to give advices and opinions to enhance services provided to the end-users in MoH hospitals.

GOODS AND SERVICES TAX (GST)

Since 2015, applications for GST exemptions certificates for medical devices started to be managed by the respective State Health Department (JKN). Nevertheless, this unit is still monitoring the process done by them.

c. Medical Services Unit

The Training of Trainers with regards to the Guidelines on the Management of Aggressive Patients in the Ministry of Health Facilities was held on 25 April 2017 at Hospital Bahagia Ulu Kinta. The objective of this course was to train representatives from every state in Malaysia who in turn would conduct echo-training at the state and hospital level.

1. The numbers of Community Mental Health Centres (MENTARI) have increased in number from the initial 11 to 32 centres nationwide. Out of these 32 centres, 22 centres have been gazetted, with the remaining 10 to be gazetted in 2018.
2. The Enhanced Primary Health Care Programme, (Enhanced PAC), is a collaborative programme in Selangor and Johor between the Medical Development Division, the Family Health Development Division and Performance Management Unit and Implementation Unit (PEMANDU) in the Prime Minister's Office. The programme involves the integration between selected hospitals and health clinics in terms of reference of non-communicable disease cases, continuation of treatment after discharge from hospital and feedback from both health facilities. To ensure the success of this programme, visits were conducted to selected hospitals in both states involved in this programme and discussions held with the concerned hospital staff so as to solve any issues that were hindering the programme.
3. The National Dengue and Arbovirus Infection Conference which was officiated by Datuk Dr Jeyaindran Tan Sri Sinnadurai, Deputy Director General of Health (Medical) was successfully held on the 12 to 13 of August 2017 at Berjaya Times Square Hotel, Kuala Lumpur with the theme, "Are We Winning the Battle?" This conference which was attended by almost 600 participants nationwide served as a platform for healthcare providers to discuss and address the various issues and challenges related to the management of mosquito-borne viral diseases. The conference was conducted as part of efforts to improve management of dengue and to reduce dengue mortality.
4. The National Palliative Care Development Technical Committee Workshop was successfully held on the 18 April 2017 at the Ministry of Health, Putrajaya. Participants for this one day workshop included participants from both government and non-governmental organizations. In total there were 35 invited participants who attended this workshop. Professor Wee Bee Leng, a professor of Palliative Medicine at Oxford University, United Kingdom (UK), Chair of the NICE Quality Standards Advisory Committee and also the National Clinical Director for End of Life care, NHS England was invited as a speaker during this workshop. She shared an overview of the development of palliative care in the UK and some of the challenges faced in the UK in developing palliative care. She also highlighted some recent developments in terms of the current national strategic plan for palliative care in the UK namely 'Ambitions for Palliative Care and End of Life Care'. She also shared her experience with regards to quality care and standards where she highlighted the basic principles of quality management and how this had been applied in the UK.

5. The dengue clinical audit is an initiative to strengthen the clinical management of dengue in the healthcare facilities of the Ministry of Health (MoH). The format of the dengue clinical audit was prepared during a workshop held from the 15 to 17 December 2017 at the Concorde Hotel, Shah Alam. The workshop was successfully conducted by the Medical Services Unit and the Clinical Audit Unit, MoH. It included representatives from the Disease Control Division, Deputy State Health Directors (Medical), representatives from the public health units of hospital, infectious disease physicians, anesthesiologists, gynecologists and pediatricians.

d. Obstetric & Gynaecology And Pediatric Services Unit

Obstetrics & Gynaecology Services

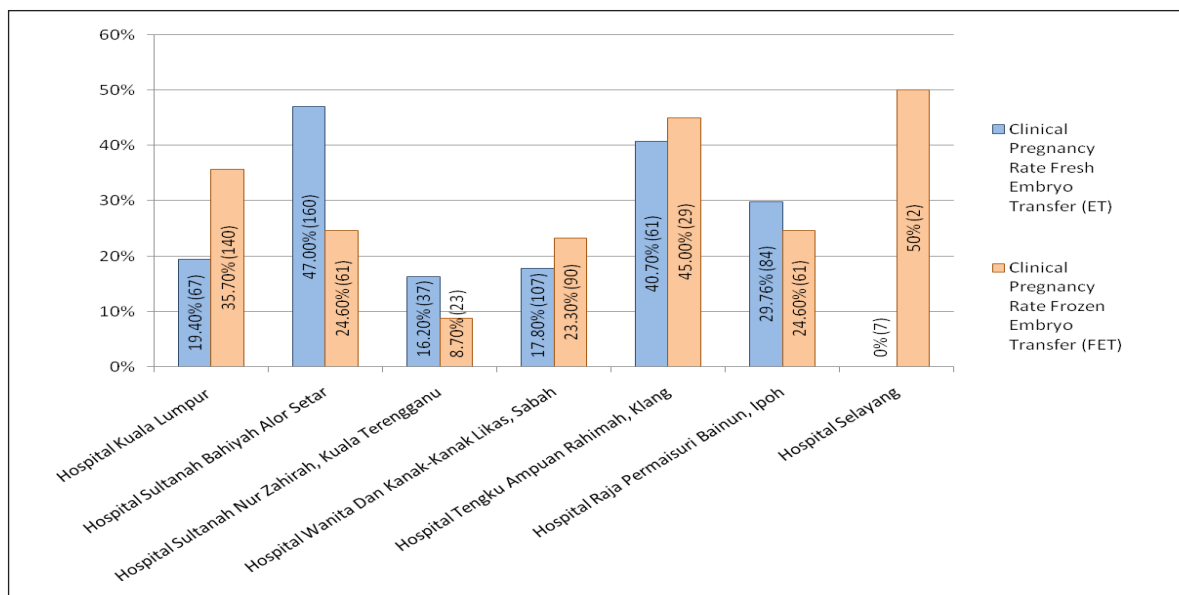
The table and chart below showed the number of patients that underwent Assisted Reproductive Technology (ART) procedures in Government Hospitals in 2017 using both fresh and frozen embryo transfer technique. **Table 4** shows the success rate of using the frozen embryo transfer technique is higher in comparison to the fresh embryo transfer technique. 4 out of 7 hospitals showed a higher success rate using the frozen embryo transfer technique, i.e Hospital Kuala Lumpur, Hospital Wanita dan Kanak-Kanak Likas, Hospital Tengku Ampuan Rahimah, Klang and Hospital Selayang.

Table 4
Number of Assisted Reproductive Technology (ART) Patients with Clinical Pregnancy Rate in Government Hospitals and Institutions, Malaysia 2017

Hospital		Number Of Cases		Clinical Pregnancy Rate (%)	
		Fresh Embryo Transfer (ET)	Frozen Embryo Transfer (FET)	Fresh Embryo Transfer (ET)	Frozen Embryo Transfer (FET)
Hospital Kuala Lumpur	Regional Center	67	140	19.40	35.70
Hospital Sultanah Bahiyah Alor Setar		160	61	47.00	24.60
Hospital Sultanah Nur Zahirah, Kuala Terengganu		37	23	16.20	8.70
Hospital Wanita Dan Kanak-Kanak Likas, Sabah		107	90	17.8	23.30
Hospital Tengku Ampuan Rahimah, Klang	Satellite Center	61	29	40.70	45.00
Hospital Raja Permaisuri Bainun, Ipoh		84	61	29.76	24.60
Hospital Selayang		7	2	0	50

Source: O&G and Paediatric Services Unit, Medical Development Division, MoH

Figure 12
Clinical Pregnancy Rate of Assisted Reproductive Technology (ART) Patients in Government Hospitals and Institutions, Malaysia 2017



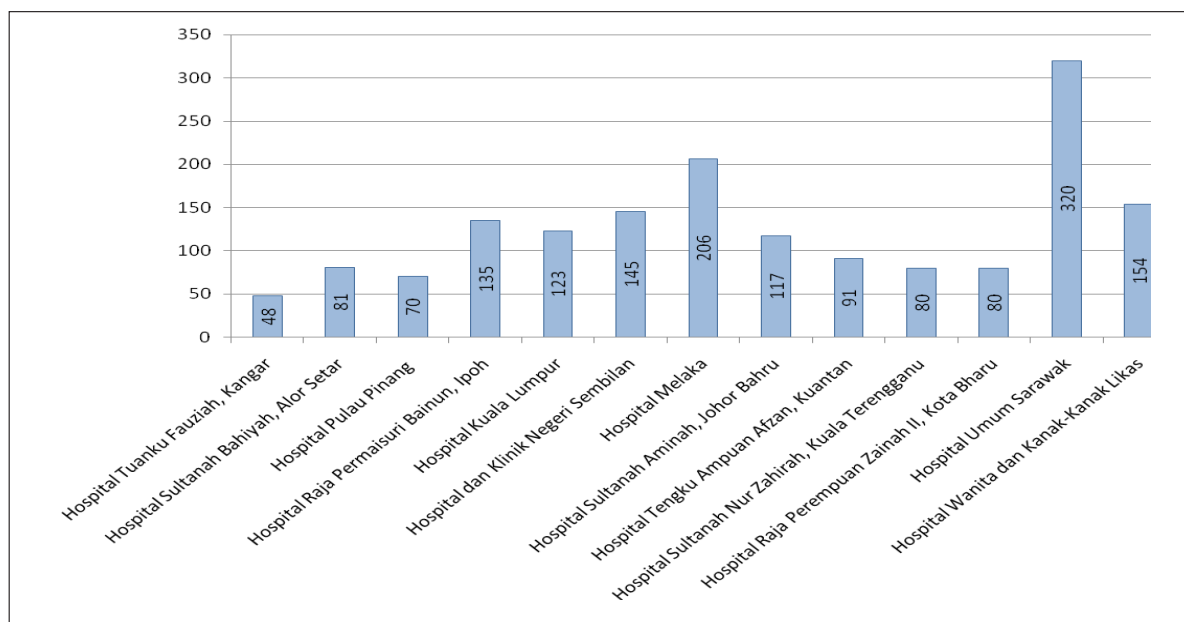
Source: O&G and Paediatric Services Unit, Medical Development Division, MoH

1,647 MoH personnel consisting of O&G specialists, medical officers, house officers, staff nurses and others were trained through the Obstetric Life Saving Skills Training Programme. The hospitals with the highest number of Obstetric Life Saving Skills trained staff were from Sarawak General Hospital, Malacca Hospital Melaka and Likas Women and Child Hospital. The objective of this programme is to increase the skills and knowledge of the staff in managing obstetrics emergency cases through hands-on experience using specialized mannequins (**Figure 13**).

The O&G and Paediatrics Services Unit conducted the first Training Of Trainers Course for the 'Garis Panduan Penilaian Dan Pengendalian Kesihatan Mental Untuk Pengguguran (Termination Of Pregnancy)'. The objective of this course is to provide healthcare workers with the required skills and knowledge of mental health assessment, counselling, social services support and referral system required for women who request for termination of pregnancy.

The Low Risk Birthing Center, Alor Setar was launched by the Minister of Health Malaysia on the 5 November 2017. The objective of this pilot project is to serve the obstetric needs of women with low risk pregnancies while decongesting the obstetric ward at Hospital Sultanah Bahiyah, Alor Setar. This will also allow high risk pregnancy cases to have a more focused care by O&G specialists at the hospital. This pilot project is a collaboration between the Medical Development Division, MoH with the Kedah State Health Department.

Figure 13
Number of staff trained in Obstetric Life Saving Skills Programme, 2017



Source: O&G and Paediatric Services Unit, Medical Development Division

Paediatric Services

Paediatric specialty services are available in almost all Ministry Of Health hospitals. Emphasis on improving service delivery was given to certain areas such as thalassaemia, stem cell, genetics and intensive care services in paediatrics in 2017.

1. Activities in 2017 were :

11 research assistants from 9 hospitals were appointed to assist in data entry for MyThalassaemia Registry programme. Based on unpublished data from MyThalassaemia Registry in the year 2017, there were 7,636 thalassaemia patients in Malaysia with 4,463 transfusion-dependant thalassaemia patients requiring treatment from iron chelating agents. Since Malaysia is in the 'thalassaemia belt' which stretches from Mediterranean to South East Asia, there are approximately 142 new thalassaemia patients being diagnosed in year 2017. Improvement in compliance was noted among patients using the iron chelating agents and consequently the life expectancy of the thalassaemia patients in Malaysia has also improved. As a result of this improvement, 50.7 per cent of these patients are in the adolescent group aged between 10 to 19 years old.

2. A workshop on the National Thalassaemia Registry was carried out on 23 to 26 November 2017 at The Pullman Hotel, Putrajaya. This workshop was a collaboration between Medical Development Division with Clinical Research Malaysia (CRM) and Malaysian Society of Paediatric Haematology and Oncology (MASPHO) . With the theme of "Health Economics of Thalassaemia", the aim of this workshop is to discuss on the action plan of the thalassaemia program and giving focus on the burden of disease, health outcome measures and health economics of thalassaemia.
3. In the year 2017, The National Stem Cell Research and Ethics Committee (NSCERT) approved with recommendations to the Medical Research and Ethics Committee (MREC), research proposals on clinical trials using stem cell for various studies. These are :-

- i. 'A Randomized, Double Blind, Placebo Controlled, Phase-II Dose Finding Study Assessing The Safety And Efficacy Of Epicardial Injection Of Adult Human Bone Marrow Derived, Cultured, Allogeneic Mesenchymal Stromal Cells In Patients With Ischemic Heart Disease With Low Ejection Fraction'
- ii. Phase I Clinical Study on Safety of Intravenous Allogeneic Umbilical Cord Derived Mesenchymal Stem Cells Infusion in Healthy Volunteers
- iii. 'Transplantation of Autologous Limbal Stem Cells Via Contact Lens Delivery In Severe Ocular Surface Disease (Multicentre Trial)
- iv. Wound Healing Properties Of Local Implantation Of Autologous Peripheral Blood Mononuclear Cells, Autologous Bone Marrow Mononuclear Cell And Allogeneic Cord-Derived Mesenchymal Stem Cells: A Prospective, Multicentre, Randomized Trial'
- v. Clinical Trial To Determine The Efficacy of Autologous Anti-Cd 19 Chimeric Antigen Receptor T Cells (Yk-Car-T/Cd19) In Patients With Relapsed Or Refractory Cd16+ Leukemia And Lymphoma
- vi. Cytopeutics® Umbilical Cord Mesenchymal Stem Cells (Cyto-Msc) For Patients With Grade ii-iv Acute Graft-Versus Host Disease: A Phase ii Randomized Controlled Clinical Study
- vii. A Multicenter, Randomized, Open-Label, Standard Treatment-Controlled Parallel Group Phase 2 Study To Evaluate Efficacy And Safety On Intra-Articular Injections Of Autologous Peripheral Blood Stem Cells And Hyaluronic Acid Adjuvant Therapy Following Subchondral Drilling Surgery For The Treatment Of Articular Cartilage Injury In The Knee With An Optional Open-Label Extension For The Standard Treatment-Controlled Group
- viii. Production And Safety Evaluation Of GMP-Grade Human Umbilical Cord-Derived Mesenchymal Stem Cells For Potential Clinical Applications

e. Surgical And Emergency Medicine Services Unit

Surgical Services

The outpatient attendances to surgical (specialty) clinics shown in **Table 5** indicated an increased in number of the patients in almost all surgical discipline except hand and microsurgery.

Table 5
Number of Outpatients at Surgical (Specialty) Clinics, 2016 and 2017

Disciplines	No. of Outpatients		% +/- difference between 2016/2017
	2016	2017	
General Surgery	796,744	850,332	6.3
Orthopedic	1,042,599	1,047,699	0.4
Ophthalmology	1,172,236	1,270,559	7.7
Otorhinolaryngology	680,193	736,713	7.6
Urology	148,826	158,970	6.3
Neurosurgery	50,104	55,438	9.6
Cardiothoracic surgery	30,274	32,135	5.7
Plastic Surgery	54,854	60,416	9.2
Hand & Microsurgery	6,599	10,913	39.0
Hepato-pancreatico-biliary	NA	NA	
Total	3,982,429	4,223,175	

NA = Data not available

Source: Health Informatics Centre, MoH

The numbers of inpatients in all surgical (specialty) wards are shown in **Table 6**. Like surgical outpatient attendees, there was an overall increment in admission in 2017 as compared to 2016.

Table 6
Number of Beds, Inpatient and Bed Occupancy Rate of Surgical (Specialty) Ward, 2016 and 2017

Discipline	No. of Beds		No. of Inpatients		% +/- Inpatient Difference Between	Bed Occupation Rate	
	2016	2017	2016	2017		2016	2017
General Surgery	3,567	3,591	220,598	197,160	-11.8	60.29	54.02
Orthopaedic	3,221	3,301	141,411	130,566	- 8.3	67.15	65.10
Ophthalmology	628	620	40,162	35,365	- 13.5	44.41	41.21
Otorhinolaryngology	423	426	23,862	23,405	- 1.9	53.38	52.10
Urology	252	317	16,454	13,199	- 23.5	63.06	49.53
Neurosurgery	298	439	12,000	13,637	12.0	70.28	66.00
Cardiothoracic	137	227	2,786	3,793	26.5	51.16	57.75
Plastic Surgery	121	149	3,951	4,429	10.7	51.33	47.65
Hand & Microsurgery	18	18	117	NA	-	12.83	-
Total	8,734	9,088	461,341				

Source: Health Informatics Centre, MoH

The core activity of all the surgical specialties were operations performed as shown in **Table 7** below. Included in the table are operations by subspecialties which were previously not available, as in asterisk. Overall, there was an increase in number of total operation performed in 2017 as compared to 2016.

Table 7
Number of Elective and Emergency Operation Performed, 2016 and 2017

Disciplines	No. of Operation Performed					
	2016			2017		
	Elective	Emergency	Total	Elective	Emergency	Total
General Surgery	79,568	226,815	306,383	62,419	172,419	235,055
Orthopedic	88,684	201,277	289,961	72,660	138,639	211,299
Ophthalmology	97,244	8,103	105,347	63,201	4,103	67,214
Otorhinolaryngology	52,595	14,531	67,126	38,544	7,263	45,807
Urology	17,064	9,408	26,477	15,436	6,946	22,382
Neurosurgery	2,729	8,609	11,338	2,435	8,189	10,624
Cardiothoracic Surgery	2,245	1,215	3,460	1,455	735	2,190
Plastic Surgery	8,206	2,636	10,842	7,408	2,662	10,070
*Hand & Microsurgery	362	827	1,189	566	1,219	1,785
*Paediatric Surgery	5,131	2,336	7,467	4,150	1,484	5,634
*Hepatobiliary Surgery	2,636	985	3,531	3,531	1,676	4,802
*Breast & Endocrine Surgery	3,065	229	3,294	2,618	224	2,842
*Vascular Surgery	3,218	600	3,818	2,550	388	2,938
*Colorectal Surgery	848	1,097	2,035	1,367	1,367	2,734
Total	363,595	475,505	842,268	277,935	345,150	625,376

Source: Health Informatics Centre, MoH

Highlights of 2017 are:

1. Paediatric Cardiothoracic Surgery Programme (Sending paediatric congenital Heart cases for operation in Narayana Hrudayalaya Hospital Bangalore) continued until 31 December 2017, successfully operated on 126 patients (sent in 21 batches). This project collaboration started in 2008 with the aims to reduce waiting time in pediatrics cardiothoracic surgery.
2. Medical Development Division successfully funded 32 medical officers and specialists to attend Advanced Trauma Life Support Course (ATLS) for Provider and Instructor; which was recognized by American College of Surgeon. This is a very essential course to equip our medical officers in managing trauma cases in Malaysia.
3. Touch Point Critical Health Intervention For Rakyat Project, a special programme under Cabinet Away Day chose 2 programmes by the surgical discipline in which patients with impaired vision due cataract and patients with hearing impairment (among the elderly and children with learning disability) have benefitted. Under these programme;
 - i. 2,367 cataract operation were performed, whereby 2,217 intra ocular lense for adult were used and 150 intraocular lense were used) (special fund were given for purchasing the intar ocular lense)
 - ii. Screening for hearing impairment were done and selected patient are given hearing aid (special fund are allocated for purchasing of Tools for Screening hearing impairment and buying hearing aid). 200 adult and 120 children with hearing impairment were given hearing aid. Both of these programme were completed by November 2017.
4. Continuation of Cochlear Implant Surgery Programme in 2017, whereby until December 2017, the Cochlear Implant Team have successfully operated on 330 cases (cumulative cases done since the Programme started in 2008). The Cochlear Implant Service is one of the important specialty services provided by otology surgeons, audiologist, auditory verbal clinician and speech therapist for hearing impaired patients.
5. To increase awareness and enhance knowledge of Ministry of Health specialist, medical officer and medical staff about Day care Surgery practices, one day symposium on Day Care Surgery was organized by Day Care Surgery Unit at Cyberjaya University College of Medical Sciences (CUCMS) on 5 September 2017.
6. Operationalization of Neurosurgery service in Tuanku Jaafar Hospital started since early 2017.
7. Paediatric Cardiothoracic Surgery Services in Ministry of Health Hospital will be strengthened by collaboration with Children Heart Link, a United State base international organization that specializes in training for pediatric cardiothoracic surgery by bringing a team from Birmingham Children Hospital to train local medical staff (comprising of specialist, medical officer and staff nurses) in treatment and caring for paediatric cardiac cases.

Anesthesiology Services

Anesthesiology Services consist of Anaesthetic Operation Theatre Service, Intensive Care Service and Pain Service. In 2017, there were MoH hospitals providing anaesthetic services with having resident specialists with an increase in number of hospitals having such service as compared to 2016. In the rest of the hospitals, the services were given by anesthetic medical officers and visiting specialists.

Workload for the Anaesthesiology Services in 2016-2017 is depicted in **Table 8**. Number of anaesthetic given, inclusive of all modalities, showed an increasing trend. This is also seen in attendances at anaesthetic clinic and chronic pain clinic as well as in intensive care unit admissions in 2015.

Table 8
Workload For The Anaesthesiology Services In 2016 and 2017

No	Items	2016	2017
1.	No. of Anesthetic Administered	409,723	421,523
2.	No. of Attendance at Anaesthetic Clinic	108,414	123,138
3.	No. of ICU Admissions	41,488	39,561
4.	No. of Attendance at Chronic Pain Clinic	15,670	21,169

Source : Anesthesiology Census 2016 and 2017, MoH

For the Intensive Care Service, there were 55 general intensive care units in MoH Hospitals in 2017 (with 693 functional beds) as compared to 2016 where there were 54 General Intensive Care Unit available (with 689 functional beds)

Transplant Services

By 31 December 2017, there were 21,826 patients waiting for new kidneys. At the rate of 80-100 kidney transplants a year, it could not keep up with the organ demands the country is facing at the moment. Hence, Malaysia is facing a big socioeconomic burden due to this.

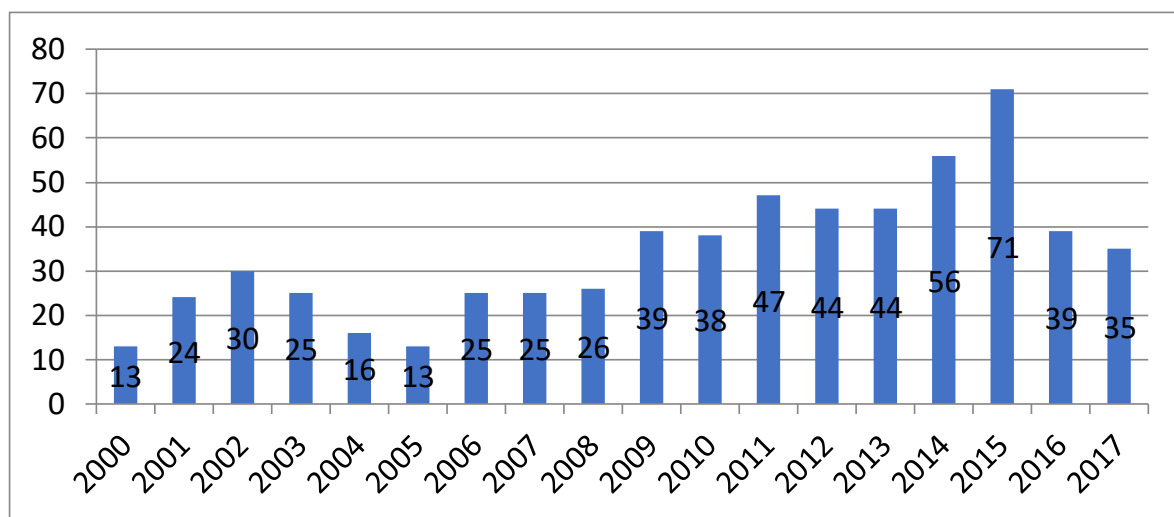
These were among activities conducted throughout the year:

- i. Organ Donation Awareness Week was launched by YB Dato' Seri Dr Hilmi Hj Yahaya on 8 October 2017 at Laman 1 Malaysia, Precinct 2, Putrajaya during the "Let's Save Lives Charity Fun.Run. Jog.Walk" event. The event was co-organised with Department of Health Federal Territory of Kuala Lumpur and Putrajaya, National Cancer Institute, Putrajaya Hospital and Putrajaya District Health Office in conjunction with Breast Cancer Awareness Month and "Kem Nak Sihat".
- ii. Organ Donation Awareness Forum titled "Derma Organ: Ada Aku Kisah?" was also held on 4 October 2017 at Parcel E Auditorium, Putrajaya. The event also involved an Organ Donation Ambassador, Dr Ezani Farhana Md Monoto as one of the panellist for the program.
- iii. Organ Donation Roadshow was held in Kelantan and launched by YBhg Tan Sri Lee Lam Thye at Perkarangan Pasaraya Giant, Kubang Kerian, Kota Bharu, Kelantan on 28 October 2017. Street campaign was also held throughout Kelantan during Organ Donation Awareness Week.
- iv. Establishment of another two Proteam in Kelantan and Negeri Sembilan.
- v. Increasing organ and tissue transplantation rate:
 - Advanced Course in Donor Management and Transplant Coordination
 - Tissue Procurement Workshop
 - Grief Response in Organ Donation Course
 - National Brain Death Workshop (2nd edition)

Achievement in organ and tissue donation throughout the year:

- i. In 2017, there are a total of 35 organ and tissue donors. (Refer **Figure 14**). From these 35 donors, 26 kidneys, a heart, three (3) livers, one lung, 47 corneas, 35 bones and 11 heart valves were donated.

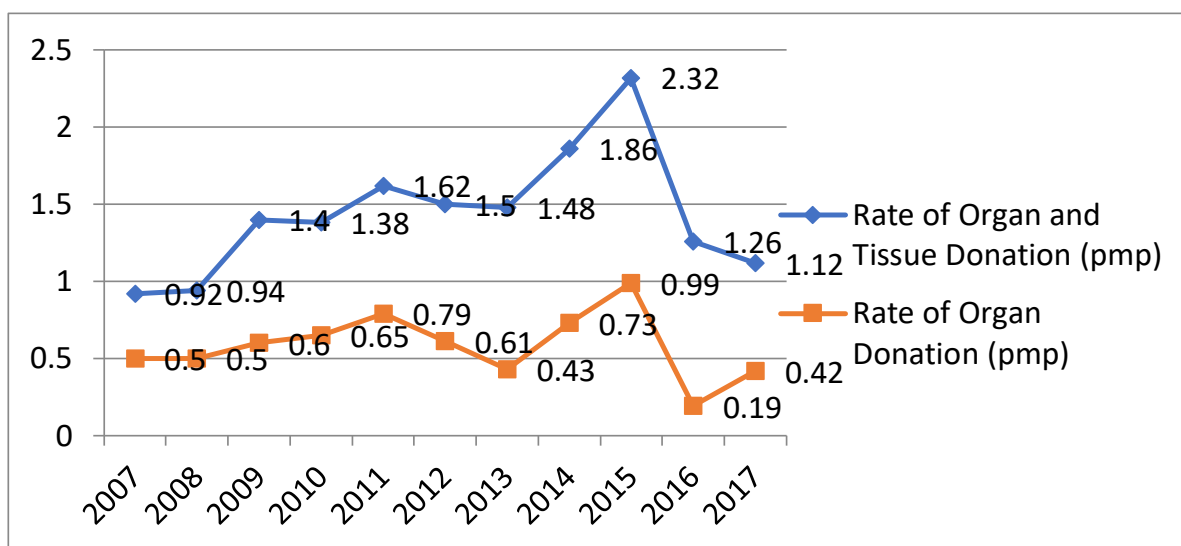
Figure 14
Total number of Organ and Tissue Donor (2000 to 2017)



Source: National Transplant Resource Centre

Based from the data received from National Transplant Resource Centre for 2017, the rate of organ and tissue donation for Malaysia is 1.12 per million population (pmp), while the rate for organ donation is 0.42 pmp.

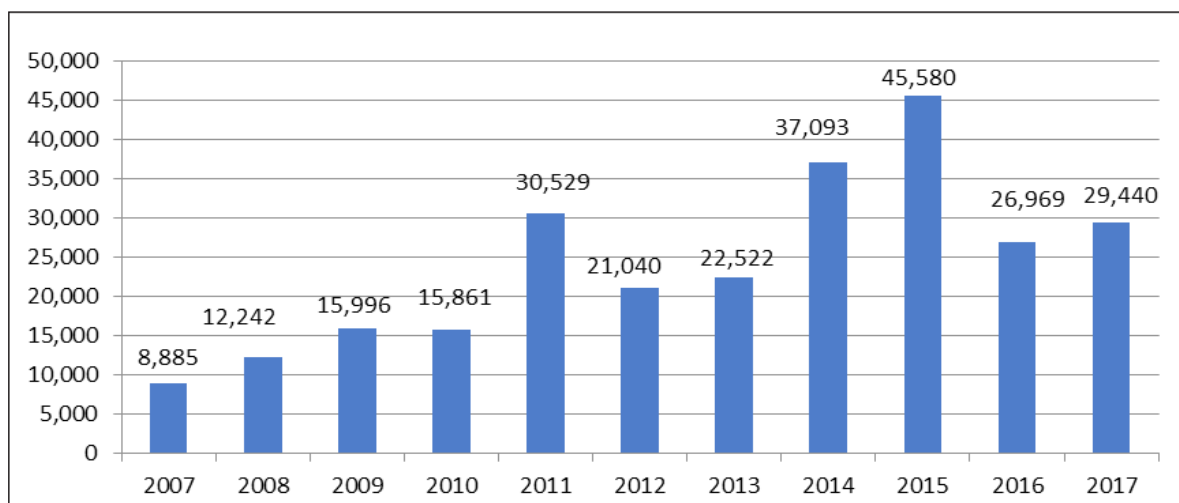
Figure 15
Rate of Organ and Tissue Donation in Malaysia (2007 to 2017)



Source: National Transplant Resource Centre

The number of new pledgers who signed up for cadaveric donation has increased in 2017 which is 29,440 pledgers (**Figure 16**) where 23.83 per cent is from Chinese, 45.53 per cent from Malays, 17.44 per cent is from Indians while 13.2 per cent is from other races.

Figure 16
New Organ Donation Pledgers (2007 to 2017)



Source: National Transplant Resource Centre

f. Clinical Support Services Unit

Radiology Services

Activities includes:

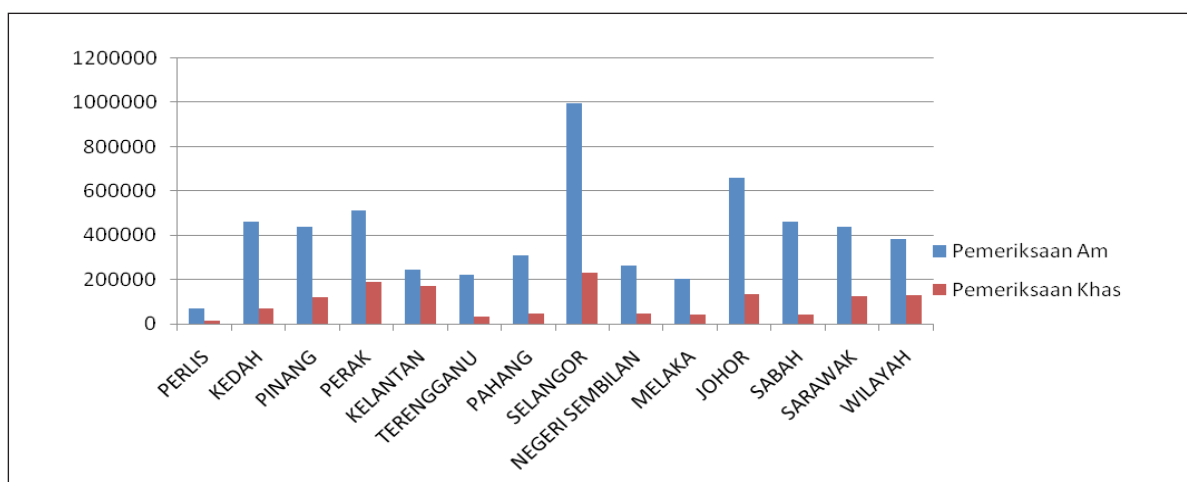
1. Organize courses at Departmental level all over the country.
2. Meetings of the National Radiology Services that was held twice in 2017.
3. Radiology Specialty Training (Masters and FRCR) where 42 new specialists graduated in 2017.
4. Radiology Subspecialty Training where 6 radiologist specialists completed their training. (2 Interventional Radiologist (IR), 2 Cardiac, 1 Musculoskeletal (MSK), 1 Head and Neck)
5. Replacement of Radiological equipment all over country in stages.
6. Celebration of Pink October (Breast Cancer Awareness Month)
7. Celebration of International Day of Radiology
8. Development of Radiology module in SMRP (*Sistem Maklumat Rawatan Pesakit*)

Achievements:

1. Involvement in International Conferences:
 - 5th WHO-IRPA-IOMP Regional Workshop For Asian And Pacific Countries On - Radiation Safety Culture In Healthcare And International Atomic Energy Agency (IAEA)
 - Regional Workshop On Dose Optimization-Analysis & Interpretation Of Patient Dose Data at IKN

- Poster presentation at Korean Congress of Radiology titled:
 - Endovascular Coiling of Ruptured Intracranial Aneurysms - How Do We Fare and
 - Role of PRP in Partial ATFL & IFL Tear with Pain & Instability-Sungai Buloh Hospital.
 - Speaker in International Conference Radiation Protection di IAEA Vienna on December 2017.
2. Achievement in Innovation:
 - Won first place in Technology Innovation at MoH level. (Selayang Hospital)
 - Won first place in Technology category in Hari Inovasi Profesional Sains Kesihatan Bersekutu KKM (27.4.2017). Project name: MyXsir (Sistem Pengurusan Maklumat Bersepadu Radiologi) - QEII Hospital
 - Won the first place and the Best Presenter in International Conference of AAR 2017 (Asean Association of Radiology) for Body Imaging category.
 3. Implementation of RIS PACS HIS@KKM system phase 1 for Picture Archiving and Communication System (PACS) and improvement of Radiology module in Sistem Pengurusan Pesakit (SPP) at Raja Perempuan Zainab II Hospital, Kota Bharu.
 4. Received a visit from International Atomic Energy Agency (IAEA) Ms May Abdel Wahab on 12 December 2017.

Figure 17
Malaysia Radiology Statistic 2017



Source: Medical Development Division, MoH

Pathology Services

Activities:

1. Meetings of the National Pathology Services

This meeting was held three times in 2017 to discuss the implementation of programs and activities for the annual planning. The meeting was attended by all heads of service, profession and pathology services committee.

2. **Pathology National Conference**

The annual National Pathology Conference was held on 15 to 16 August 2017 in Swiss Garden Hotel, Kuantan with the title 'The Changing Face of Pathology'.

3. **Strengthening and development of Pathology Services**

The Pathology services have taken over the TDM reporting from the pharmacy side. Besides TDM reporting, the reagent procurement in Pathology Department is being done by the Pathology Services in the respective MOH Hospitals starting from April 2017,

Achievements:

A new subcommittee was formed, which was the **Research Committee** headed by Dr. Munirah Razak, Dr. Hakimah Mahsin is elected as the Head of Reagent Procurement Committee.

The **Workload Committee** has also come out with a standardized template for report and calculation of the pathology services workload that is distributed to all the Pathology Services in MoH.

The **QA and Accreditation Committee** had successfully organized a workshop on MEQAS in collaboration with the Medical Development Division on 1 to 2 November 2017 in Institute of Health Management, Bangsar

NUCLEAR MEDICINE SERVICES

Activities:

Nuclear Medicine Service encompasses the following 3 main divisions, which are:

1. Clinical Division: Diagnosis and Treatment
2. Radiopharmaceutical Division
3. Physics Division

Clinical Division is the division which receives all diagnostic or therapeutic referrals from hospitals or clinics.

Radiopharmaceutical Division, plays an important role in providing quality assurance of the drugs in particularly the radiopharmaceuticals/radiotracers and assure they are safe to be used on patients

Physics Division provides services on QC/QA of the instruments and monitoring on the radiation safety level for the patients, staff and members of the public.

Over time, the total number of cases in Nuclear Medicine have increased up to a point of maximum saturation. The waiting time for PET-CT appointment at the center region was recorded at 40 days (acceptable duration within 14 days). In addition, it was noted that the down-time for the existing old SPECT machines at HKL & HPP (all 4 units beyond 10 years of operation) was over 30 days, due to the aged machines and poor maintenance services provided by the concessionaires.

Achievements:

1. **Continuous Professional Development (CPD) and Training**

HPP had successfully organized the National **Nuclear Medicine Conference 2017, "A focus on Nuclear Neurology"** on 25 to 27 September 2017. Immediately following this, **HKL** had continued

with a **Technical Training and Workshop for Nuclear Neurology (Brain Imaging)** on 28 to 29 September 2017. Both the above events were held with expert mission from **Osaka University, Japan**, Prof Dr Jun Hatazawa & Dr. Hiroki Kato through IAEA Project RAS 6083.

Nuclear Neurology services, especially for investigation of epilepsy have been started in HKL.

2. Replacement & Upgrading

Though with delay since 2012, the old SPECT cameras in HSAJB and HUS have been replaced successfully with cardiac dedicated SPECT and a SPECT-CT respectively. Term and condition (T&C) were completed in Jun for HSAJB and August for HUS.

Table 9
Workload Summary for Nuclear Medicine Services 2017

No	Services	IKN	HKL	HPP	HSAJB	HUS	HWKK
1.	Gamma /SPECT	2396	3874	2000	2946	1152	697
2.	CT add-on to SPECT*	1409	667			97	
3.	PET-CT	2164		795			
4.	Other add-on#	455	269			142	
5.	Dx-non-imaging	141	54				
6.	Tx	726	755	568	75	469	406

*CT add-on to SPECT are for the purpose of lesion localization, attenuation correction and quantification

#Other add-on include dosimetry calculation, post-therapy scintigraphy, intra-operative gamma probe support service

Source: Medical Development Division, MoH

TRANSFUSION MEDICINE SERVICES

Activities:

1. Routine activities done include blood collection, blood and blood products processing and production, blood and blood products usage as well as plasma derived products (**Table 10**).

Table 10
Routine Tests and Procedures done in Transfusion Medicine 2017

No	Test and Procedures	Total
1.	Total blood collection	180,651
2.	Total blood screening test done:	
	a) Serology	583,522
	b) Nucleic Acid Testing	452,699
3.	Total number of blood and blood component produced (red cell, plasma product and platelet).	596,358
4.	Total number of blood components issued to hospital within Klang Valley	410,461
5.	Total number of plasma derived medicinal product received (vials)	
	a) Biostate (Factor VIII)	17,575
	b) Prothrombinex VF(PCC)	11,472
	c) Albumex (Albumin)	38,627
	d) Intragam (IVIG)	75,141

Source: Pusat Darah Negara 2017

2. Cord Blood activities as shown in **Table 11**

Table 11
Cord Blood Procedures and Activities 2017

No	Procedures and Activities	Total
1.	Total number of bankable cord blood	568
2.	Total number of HLA typing done	
	a) SSO and SSP	1,010
	b) SBT	11
	c) HLA antibody	14
3.	Total number of stem cell search done by NSCCC	320
4.	Total number of cord blood transplant	2

Source: Pusat Darah Negara 2017

3. Organized National Surveillance. From the surveillance, 26 cases found to be incorrect blood component transfusion.
4. Training at national level:
 - a. Patient Blood Management Conference in October 2017 in Sabah
 - b. Patient Safety on the Lab perspective, May & August 2017 in Sarawak
 - c. *Kursus Pemantapan Perolehan Darah Di Tabung Darah Seluruh Negara*, October 2017 in National Blood Centre.

Achievements:

1. National Blood Transfusion Committee Meeting (NTBC) was held on 4 April 2017. This National committee is led by the Director of Medical Development Division. The members are Directors of the Division of Medical Practice, Nursing, Allied Health Sciences, Head of Services and Transfusionist form the National Blood Centre and States Transfusion Medicine experts.
2. World Blood Donor Day celebration with Selangor as the host in August 2017 and was officiated by YB Health Minister.

MEDICAL PROFESSIONAL DEVELOPMENT SECTION

1. Housemanship Programme

Housemanship Training Programme is a period of apprenticeship for 2 years which consisted of 6 postings before medical graduates are given Full Registration to practice independently as medical doctors. The Medical Qualifying Committee (MQC) which is established under jurisdiction of the Medical Act 1971 (Amendments 2012) is the highest level committee that is responsible to oversee housemanship training programme. Modified Flexi Working Hour System 2014 is improved to give a balance working duration. e-Houseman online system was introduced in March 2015 for placement of new housemanship officer (**Table 12**). There are 46 Housemanship Training Hospitals with Kuala Lipis Hospitalis expected to be a housemanship training centres in year 2018 (**Table 13**). In Budget 2017 presentation, the Government had announced appointment of contract housemanship officer. Ministry

of Health have appointed 4,903 medical graduates as contract officer until for year 2017. Currently, the MoH have implemented the method of assessing the competency by using the component and weightage in Certificate Completion of Posting/Certificate of Completion of Housemanship Training since 2017.

Table 12
Number of New House Officers Appointed (2006 to 2017)

No	Year	No. Of Housemen
1.	2013	4,991
2.	2014	3,860
3.	2015	4,140
4.	2016	4,360
5.	2017	4,903

Source: Medical Professional Development Section, Medical Development Division, MoH

Table 13
List of Accredited Houseman ship Training Hospitals in 2017

No	Hospital	No	Hospital
1.	Hosp. Tuanku Fauziah, Kangar	24.	Hosp. Batu Pahat, Johor
2.	Hosp. Sultanah Bahiyah, Alor Setar	25.	Hosp. Sultan Ismail, Johor
3.	Hosp. Sultan Abdul Halim, Sungai Petani	26.	Hosp. Tengku Ampuan Afzan, Kuantan
4.	Hosp. Kulim, Kedah	27.	Hosp. Sultan Haji Ahmad Shah, Temerloh
5.	Hosp. Pulau Pinang	28.	Hosp. Sultanah Nur Zahirah, K. Terengganu
6.	Hosp. Seberang Jaya	29.	Hosp. Kemaman
7.	Hosp. Taiping	30.	Hosp. Raja Perempuan Zainab II, Kota Bahru
8.	Hosp. Raja Permaisuri Bainun	31.	Hosp. Kuala Krai
9.	Hosp. Teluk Intan	32.	Hosp. Tanah Merah
10.	Hosp. Seri Manjung	33.	Hosp. Umum Sarawak
11.	Hosp. Kuala Lumpur	34.	Hosp. Sibu
12.	Hosp. Putrajaya	35.	Hosp. Miri
13.	Hosp. Tengku Ampuan Rahimah, Klang	36.	Hosp. Queen Elizabeth
14.	Hosp. Selayang	37.	Hosp. Tawau
15.	Hosp. Kajang	38.	Hosp. Duchess Of Kent, Sandakan
16.	Hosp. Serdang	39.	Pusat Perubatan Universiti Malaya
17.	Hosp. Ampang	40.	Pusat Perubatan Universiti Kebangsaan Malaysia
18.	Hosp. Sungai Buloh	41.	Hosp. Universiti Sains Malaysia
19.	Hosp. Tuanku Jaafar, Seremban	42.	Hosp. Segamat
20.	Hosp. Tuanku Ampuan Najihah, Kuala Pilah	43.	Hospital Kluang
21.	Hosp. Melaka	44.	Hospital Bintulu
22.	Hosp. Pakar Sultanah Fatimah, Muar	45.	Hospital Angkatan Tentera Malaysia (ATM)
23.	Hosp. Sultanah Aminah, Johor Bahru	46.	Hospital Shah Alam

Source: Medical Professional Development Section, Medical Development Division, MoH

2. Specialist Training Programme

2.1 Masters of Medicine

Within MoH Malaysia, the general training administration of this programme is under the purview of the Training Management Division of MoH. The Medical Development Division of MoH is responsible in providing medical or technical input for the planning and development, implementation and monitoring of the training programme. As in 2017, there are 23 areas of specialty training currently being offered in the Master of Medical Programme (**Table 14**).

For 2017/2018 intake, 1000 slots had been offered to eligible candidate to undergo Master of Medical Programme (Open and Closed System). 21 candidates had declined the offer and subsequently 10 additional offers were accepted by candidates from the reserve list. Hence, there were 980 candidates who had accepted the scholarship offer to pursue specialty training via Master of Medical Programme. There are 33 MoH hospitals in 2017 that are accredited by universities as training centres for the Master of Medical Programme as compared to 28 MoH hospitals in 2016 (**Table 15**).

Table 14
Number of Slots for Specialty Training via Masters of Medicine Offered and Number of Trainees for 2013/2014 to 2017/2018 Intake

Disciplines	2013 / 2014 Session		2014 / 2015 Session		2015 / 2016 Session		2016 / 2017 Session		2017/ 2018 Session	
	No. of Offers	No. of Acceptance	No. of Offers	No. of Acceptance	No. of Offers	No. of Acceptance	No. of Offers	No. of Acceptance	No. of Offers	No. of Acceptance
Anaesthesiology	84	84	89	86	101	100	104	103	121	120
Clinical Oncology	6	6	5	5	12	11	11	11	18	17
Emergency Medicine	56	56	50	48	70	67	62	60	68	68
Family Medicine	77	74	66	56	60	53	66	65	70	66
General Surgery	54	51	60	59	45	44	51	47	58	57
Internal Medicine	64	53	72	67	82	68	62	60	78	68
Neurosurgery	7	7	10	10	11	11	13	12	15	15
Nuclear Medicine	6	6	6	5	6	6	4	4	4	4
Obstetrics & Gynaecology	34	34	31	29	51	49	40	39	51	50
Ophthalmology	34	34	46	45	53	52	55	55	57	57
Orthopaedic	50	50	63	62	70	68	69	68	67	67
Otorhinolaryngology	29	29	31	31	38	38	34	34	46	46
Pathology	54	54	73	70	86	83	77	76	69	69
Paediatric	41	37	46	43	26	20	50	43	45	44
Paediatric Surgery	2	2	8	8	7	7	8	8	8	8

Disciplines	2013 / 2014 Session		2014 / 2015 Session		2015 / 2016 Session		2016 / 2017 Session		2017/ 2018 Session	
	No. of Offers	No. of Acceptance	No. of Offers	No. of Acceptance	No. of Offers	No. of Acceptance	No. of Offers	No. of Acceptance	No. of Offers	No. of Acceptance
Plastic Surgery	7	7	8	8	5	5	9	9	6	6
Psychiatry	40	38	50	43	46	44	49	48	56	54
Public Health	44	42	54	50	72	67	68	66	69	70
Radiology	41	38	53	53	54	52	67	65	68	68
Rehabilitation Medicine	9	9	8	7	9	9	10	10	9	9
Sports Medicine	6	6	5	5	9	8	3	3	4	4
Transfusion Medicine	6	6	6	6	8	8	7	7	8	8
Forensic	2	2	5	5	5	5	5	4	5	5
Total	753	725	845	801	926	875	924	897	1000	980

Source: The Training Management Division, MoH

Table 15
MoH Hospitals Accredited as Training Centres For Masters of Medical Programme

No	Hospital
1.	Tuanku Fauziah Hospital, Kangar
2.	Sultanah Bahiyah Hospital, Alor Setar
3.	Pulau Pinang Hospital
4.	Seberang Jaya Hospital
5.	Raja Permaisuri Bainun Hospital, Ipoh
6.	Taiping Hospital
7.	Bahagia Hospital, Ulu Kinta
8.	Kuala Lumpur Hospital
9.	Putrajaya Hospital
10.	Tengku Ampuan Rahimah Hospital, Klang
11.	Selayang Hospital
12.	Sungai Buloh Hospital
13.	Serdang Hospital
14.	Ampang Hospital
15.	Tuanku Jaafar Hospital, Seremban
16.	Melaka Hospital
17.	Sultanah Aminah Hospital, Johor Bahru

No	Hospital
18.	Sultanah Fatimah Specialist Hospital, Muar
19.	Sultan Ismail Hospital, Pandan, Johor Bahru
20.	Permai Hospital, Tampoi
21.	Tengku Ampuan Afzan Hospital, Kuantan
22.	Sultanah Nur Zahirah Hospital, Kuala Terengganu
23.	Raja Perempuan Zainab II Hospital, Kota Bharu
24.	Sarawak General Hospital
25.	Sentosa Hospital, Kuching
26.	Queen Elizabeth Hospital, Kota Kinabalu
27.	Women and Children Hospital, Likas
28.	Mesra Bukit Padang Hospital, Kota Kinabalu
29.*	Hospital Sultan Haji Ahmad Shah, Temerloh
30.*	Hospital Miri
31.*	Hospital Duchess of Kent, Sandakan
32.*	Pusat Darah Negara, Kuala Lumpur
33.*	Institut Kanser Nasional, Putrajaya

Source: Medical Development Division, MoH

The increase of scholarship slots for Master of Medical Programme over the years has resulted the rise of number of specialists produced annually. In 2017, there were 662 medical officers graduated from the programme, as compared to 481 in 2016, 442 in 2015 and 371 in 2014.

Issues and challenges in the implementation of the Master of Medical Programme, include monitoring and placement of trainees, the number of qualified candidates in the university screening test, performance of trainees in passing the examinations and wastage of scholarship slots (*Hadiah Latihan Persekutuan*). Amongst measures taken include strengthening of the monitoring mechanism of trainees, particularly those in the Open System; enhancing the organisation of deployment of trainees at the training hospitals (Rotational System) and shortening of the period of allowance for extension for the scholarship.

It is hoped further improvements could be made with regards to the implementation of training in Master of Medical Programme. These include gradual increase of scholarship slots annually and the number of MoH's hospitals accredited as training centres. MoH Malaysia is also looking for more slots for the 'Open System', and more disciplines of specialty training can be offered by the universities (depending on the capacity of the universities).

2.2 The Specialty Training Programme - Parallel Pathway in MoH Malaysia (Membership and Fellowship from International Collegiate)

The Specialty Training Programme - Parallel Pathway, is a training programme to produce specialists in the basic specialties to cater for the need of the country. The training programme is run either partially or fully in Malaysia, but the examination, qualification or certificate is under the purview by the

international institution. The implementation of the Specialty Training Programme - Parallel Pathway in MoH Malaysia is continuously being strengthened to produce more specialists for the country. Examples of the qualifications are as in **Table 16**.

Two (2) local training programmes under MoH Malaysia Specialty Training Programme - Parallel Pathway in Urology and Cardiothoracic Surgery had commenced in July 2016.

Table 16
Examples of The Qualifications from International Collegiate in 2017

No	Specialty	Examples Of The Parallel Pathway Programmes
1.	Internal Medicine	Member of the Royal College of Physicians (MRCP), UK/Ireland
2.	Pediatric	Member of the Royal College of Pediatrics and Child Health (MRCPCH), UK
3.	Obstetrics & Gynecology	Member of the Royal College of Obstetricians and Gynaecologist (MRCOG), UK
4.	Family Medicine	Dip. Family Medicine-Adv Training Program (FRCAGP) Australia
5.	Psychiatry	Member of Royal College of Psychiatry (MRCPsych), UK
6.	Radiology	Fellow of the Royal College of Radiologists (FRCR), UK
7.	Anesthesiology	Fellowship of College of Anaesthesia of Ireland (FCAI), Ireland
8.	Pathology	Fellow of the Royal College of Pathologist (FRCPath), UK
9.	Forensic Medicine	Diploma in Medical Jurisprudence, UK
10.	Radiotherapy & Oncology	Fellow of the Royal College of Radiologists of London (FRCR), UK
11.	Cardiothoracic Surgery	Fellowship of Royal College of Surgeon (FRCS) Cardiothoracic Surgery, Edinburgh
12.	Urology Surgery	Fellowship of Royal College of Surgeon (FRCS Urology), Glasgow
13.	*Ophthalmology	Fellow of the Royal College of Ophthalmologists (FRCOphth) UK
14.	*Otorinolaryngology	Fellowship of Royal College of Surgeon (FRCS in Laryngology) Ireland
15.	*Orthopaedic	Fellowship of Royal College of Surgeon (FRCS Orthopedic & Trauma)
16.	*Plastic Surgery	Fellowship of Royal College of Surgeon (FRCS Plastic Surgery), Glasgow
17.	*Emergency Medicine	Fellowship of Royal College Emergency Medicine (UK)

* Coming soon

Source: Medical Professional Development Section, Medical Development Division, MoH

All medical officers who passed or obtained the specialist qualification are also required to undergo a minimum period of supervision (the pre-gazettement period) for six months before can be gazetted as a specialist by the MoH.

Table 17
Number of Medical Specialist from Parallel Pathway Programme 2013 to 2017

Discipline	Awarded	2013	2014	2015	2016	2017
Internal Medicine	MRCP	47	77	85	112	137
Paediatric	MRCPCH	27	37	35	15	60
O&G	MRCOG	4	2	9	1	20
Ophthalmology	FRCOphth	-	-	1	-	-
Clinical Oncology	FRCR ONCOLOGY	3	-	2	4	-
Anesthesiology	FCAI	-	-	-	1	-
Radiology	FRCR	-	-	-	-	5
Psychiatry	MRCPsych	-	-	-	-	2
Total		81	116	132	133	224

Source: Medical Professional Development Section, Medical Development Division

3. Subspecialty Programme

In the effort to further increase the number of subspecialists for the country, the subspeciality training has been strengthened whereby in July 2010 the Treasury and the Public Service Department had approved the MoH's application for the provision of scholarship for specialist who wish to pursue subspeciality training. Partial scholarship will be awarded to those pursuing the local training, while full scholarship is awarded to those who pursue overseas training. On average the MoH provides 150 scholarship slots for subspeciality training annually.

The Subspecialty Programme has used all 150 slots allocated for three consecutive years. The most popular subspecialties were Cardiology followed by Endocrinology, Gastrohepatology, Geriatric Medicine and Colorectal Surgery.

4. Gazettement of Specialists and Subspecialists

Every doctor with recognised post-graduate qualification has to be gazetted by the Special Gazettement Committee (Jawatankuasa Khas Perubatan) which is chaired by Director-General of Health and 3 panel members; in accordance to Section 27, Chapter F of the Public Service's General Order. In 2016, 586 clinical specialists were gazetted as compared to 707 in 2017. The field of Internal Medicine has produced the most number of gazetted specialists, followed by Paediatrics and Anaesthesiology (**Table 18**).

Table 18
Number of Specialists and Subspecialists Gazetted based on Specialty (2008 to 2017)

Specialty/ Subspecialty	Number of specialist gazetted					
	2012	2013	2014	2015	2016	2017
Internal Medicine	92	105	85	81	101	162
Dermatology	1		3	3	12	2
Neurology	3	9	3	2	2	2
Nephrology	2	8	1	5		6
Respiratory Medicine	6	2	5	3	3	5
Gastroenterology	4	3	1	1		0
Cardiology	6	7	6	2	4	7
Upper GI				2		
Rheumatology	1	3	6	5	1	2
Geriatric	2					
Hepatology	3			1		
Haematology Medicine	6	1				
Palliative Medicine					1	
Endocrine Medicine	4	2	2	3	3	1
Medical Oncology		1	1			
Clinical Genetic		1	2			2
Acute Internal Medicine			2	1		
Medicine Genetic						1
General Surgery	21	36	35	25	53	44
Hand & Microsurgery						
Surgery Urology	6	4	3		1	
Neurosurgery	4	4	4	8	5	9
Breast & Endocrine Surgery		4	6	2		
Paediatric Surgery	4	3	2	2	4	8
Plastic Surgery	4	1	1	2	5	2
Cardiothoracic Surgery	1		4	1		1
Urology						1
O & G	37	23	33	26	36	37
Maternal Fetal Medicine	6		1			
Uro-Gynaecology	2		2	1		
Advance O&G						
Reproductive Medicine	1	2		1	3	
Gynae-Oncology	1	4	1	2		2
Paediatric	38	42	48	34	57	67
Paediatric Dermatology				1		2
Paediatric Endocrine				1	1	
Paediatric Cardiology	1	2	2			1
Paediatric Rheumatology				1		
Paediatric Neurology					1	
Paediatric Cardiothoracic		1				

Specialty/ Subspecialty	Number of specialist gazetted					
	2012	2013	2014	2015	2016	2017
Paediatric Radiology	2	1				
Paediatric Adolescent Medicine						
Paediatric Infectious Disease						
Development Paediatric			2		1	
Paediatric Gastroenterology				1		
Paediatric Hematology-Oncology				1		1
Neonatology			2	3	2	
Pead. Respiratory						1
Anaesthesiology	41	42	51	78	47	61
Anaesthesiology Cardiothorasic	2	1	1	1		2
Anaesthesiology Neuro	1			1		
Pain Management	4	1	4	2		2
Anaesthesiology Obstetric	1	1		1	1	1
Anaesthesiology Paediatric				3		
Intensive Care	1		1	4	3	
Orthopaedics	29	22	33	34	38	46
Foot & Ankle Surgery						1
Athroplasty						1
Radiology	38	26	37	24	29	53
Uroradiology		1	1			
Breast Imaging	1		1	1	2	1
Interventional Neuroradiology			1		2	
Musculoskeletal Radiology						3
Interventional Radiology	2	1			3	1
Radiologi Gastrohepatobiliary				1		
Radiology Forensic				1		
Neuroradiology			1		1	
Patology						
Patology (Anatomy)	8	11	14	9	11	13
Patology (Microbiology)	7	6	5	3	5	9
Patology (Haematology)	8	5	9	4	13	6
Patologi (Chemistry)	8	7	3	3	2	4
Forensic		3	3		2	3
Ophthalmology	21	34	25	27	33	34
Psychiatry	11	24	14	13	24	22
ENT	20	12	15	16	20	17
Emergency Medicine	19	26	27	40	36	37
Radiotherapy & Oncology	3	5	3	1	3	8
Rehabilitation Medicine	3	9	7	6	8	6
Nuclear Medicine	6	5	7	6	3	4
Sport Medicine	1	3	2	3	4	6
Total	493	514	528	503	586	707

Source: Medical Professional Development Section, Medical Development Division, MoH

5. Clinical Specialists in MoH Hospitals

The number of specialists and subspecialists in MoH Hospitals are increasing year by year. In 2017, there was 6.76 per cent increase in the total number of specialists as compared to 2016. Even though there is an increase of number of specialists every year, however it is still not enough to cater the need of the country as we are moving towards developed country.

Table 19
Number of Clinical Specialists in MoH Hospitals (2013 to 2017)

Discipline	No. of Specialists (Including subspecialty trainee and specialists on contract basis)				
	2013	2014	2015	2016	2017
Anaesthesiology	387	479	474	514	533
Cardiology	51	51	49	46	68
Cardiothoracic Surgery	22	24	24	21	19
Dermatology	40	41	40	40	47
Emergency Medicine	146	207	207	246	271
Forensic	27	28	28	27	31
General Medicine	552	622	644	804	790
General Surgery	262	287	284	303	321
Hand and Microsurgery	1	1	1	1	0
Nephrology	71	71	70	67	75
Neurology	28	30	30	29	37
Neurosurgery	33	47	46	54	57
Nuclear Medicine	13	22	22	22	25
Obstetrics and Gynaecology	300	303	293	306	329
Ophthalmology	226	233	232	252	278
Orthopaedic	249	278	276	297	328
Otorhinolaryngology	146	159	159	162	162
Paediatric	398	438	435	459	478
Paediatric Surgery	20	25	24	27	32
Pathology	260	306	305	333	384
Plastic Surgery	27	27	26	30	31
Psychiatry	158	176	176	203	223
Radiology	249	275	275	324	339
Radiotherapy and Oncology	29	32	31	31	34
Rehabilitation Medicine	40	49	49	57	62
Respiratory Medicine	40	39	38	37	43
Sports Medicine	13	19	19	23	27
Urology	32	30	28	27	35
Transfusion Medicine	24	34	34	35	41
Total	3,845	4,333	4,319	4777	5100

Source: Medical Professional Development Section, Medical Development Division, MoH

Note: Excluding Family Medicine Specialists, Public Health Specialists and Dental Specialist

6. Medical Officers in MoH

The number of Medical Officers (excluding the House Officers) working in MoH has been increasing. There were 24,726 Medical Officers until December 2017, as compared to 21,900 in 2016 (**Table 20**).

Table 20
Number of Medical Officers (Excluding House Officers) in MoH (2009 to 2017)

2013	2014	2015	2016	2017
14,898	18,072	19,982	21,900	24,726

Source: Human Resources Division, MOH, Medical Professional Development Section, Medical Development Division, MoH

7. Continuing Professional Development (CPD)

Continuing Professional Development (CPD) is an expanded form of Continuing Medical Education (CME), which had been implemented in a more comprehensive nature. It is a systematic planned process of lifelong learning and professional development. It enables health professionals to maintain and enhance knowledge, skills and competency for practice in providing delivery of quality health care in the country.

MoH has launched its online CPD system in 2007 and currently completed the enhancement phase since July 2017 (known as myCPD Version 2.0). myCPD is currently used by **over 210,000** registered users since its launching in 2007 until December 2017. myCPD system is used by **53** various health professional or health schemes in MoH, private sectors and universities. Various programs and workshops had carried out throughout 2017 to increase user awareness on using myCPD system and as for the CPD Committees at various stages to be more active in carrying out CPD activities.

CPD will continue to be used for various purposes in the MoH and the use of credit points to be adapted to different requirements such as for Annual Practising Certificate renewal for Practitioners and Physician enrolment in the National Specialist Register (NSR). With rapid advancements in medicine, it is imperative that healthcare professionals continue to keep themselves abreast with new developments through CPD that would provide better care for their patients.

8. Human Capital Development and In-service Training Activities in the Medical Programme

In the year 2017, RM11,576 million was allocated by MoH to the Medical Programme for local training of which 9,405 course were conducted and attended by 210,479 medical personnel (**Table 21**):

Table 21
Human Capital Development and In-Service Training Activities for 2017

Year	Total Allocations (RM)	Expenditure (RM)	No. of Training Activities	No. of Medical Personnel
2015				
Overseas Training	2,000,000.00	1,939,069.01	50	68
Local training	21,152,000.00	20,710,100.42	10,592	266,092
Total	23,152,000.00	22,649,169.43	10,642	266,160

Year	Total Allocations (RM)	Expenditure (RM)	No. of Training Activities	No. of Medical Personnel
2016				
Overseas Training	2,000,000.00	1,149,341.65	53	71
Local training	21,152,000.00	20,812,727.44	10,455	259,951
Total	23,152,000.00	21,332,069.09	10,508	260,022
2017				
Overseas Training	-	-	-	-
Local training	11,576,000.00	11,407,744.20	9,405	210,479
Total	11,576,000.00	11,407,744.20	9,405	210,479

Source: Medical Professional Development Section, Medical Development Division, MoH

9. Smart Partnership between the MOH and the Local and Foreign Agencies Medical Programme

9.1 Smart Partnership with Local Agencies

Since 1993, the Ministry of Health Malaysia (MoH) has established a formal partnership with both Private and Public Institutes of Higher Learning through the utilisation of MoH facilities for clinical training of medical students from each respective medical college. As of December 2017, there are 31 institutions (11 public and 20 private institutions) which were given permission to utilise the MoH facilities for the clinical training of their medical students. In addition, MoH facilities were also utilised for post-graduate training in various fields of medical specialties and subspecialties.

In line with the implementation of the National Blue Ocean Strategies, the MoH has also offered the MoH hospitals without resident specialist to be utilised by Institute of Higher Education (public/private) in providing specialist services to the patient, particularly in the 6 basic specialties namely Internal Medicine, General Surgery, Paediatrics, Obstetrics and Gynaecology, Orthopaedics and Anaesthesiology. To date there are a total of 9 public universities and 11 private universities that have offered to provide specialist services in MoH hospitals without resident specialist.

9.2 Smart Partnership with Foreign Agencies

MoH has a smart partnership in the field of medical education with foreign agencies. A MoU (Memorandum of Understanding) was signed with the Royal College of Physician and Newcastle University, United Kingdom on 19 January 2012 on medical education including postgraduate, particularly for the Training of Trainers.

MALAYSIAN HEALTH TECHNOLOGY ASSESSMENT SECTION (MaHTAS)

Since its establishment in 1995, MaHTAS has continued to play an important role in providing input for informed decision on health technologies and clinical practice. In 2017, Horizon Scanning of health technologies activity was formally started following a successful pilot project, carried out from year 2015 to 2016. The Technical Advisory Committee for Horizon Scanning was established to provide technical expertise in the development and implementation of the strategies and priorities of horizon scanning. Following the establishment, several awareness and engagement sessions for horizon scanning activity were conducted.

Capability in conducting local economic evaluation was strengthened in 2017 where more structured trainings were conducted. As a result, more economic evaluation studies were successfully completed as a component of technology assessment reports in 2017.

At the same time, MaHTAS continued to produce Health Technology Assessment (HTA), Technology Review (mini-HTA) and Information Brief (rapid review) reports. In 2017, prioritisations of new HTA topics for 2018-2019 were also conducted. Clinical Practice Guidelines (CPG) development and implementation were continued in 2017 and emphasised on updating old CPGs.

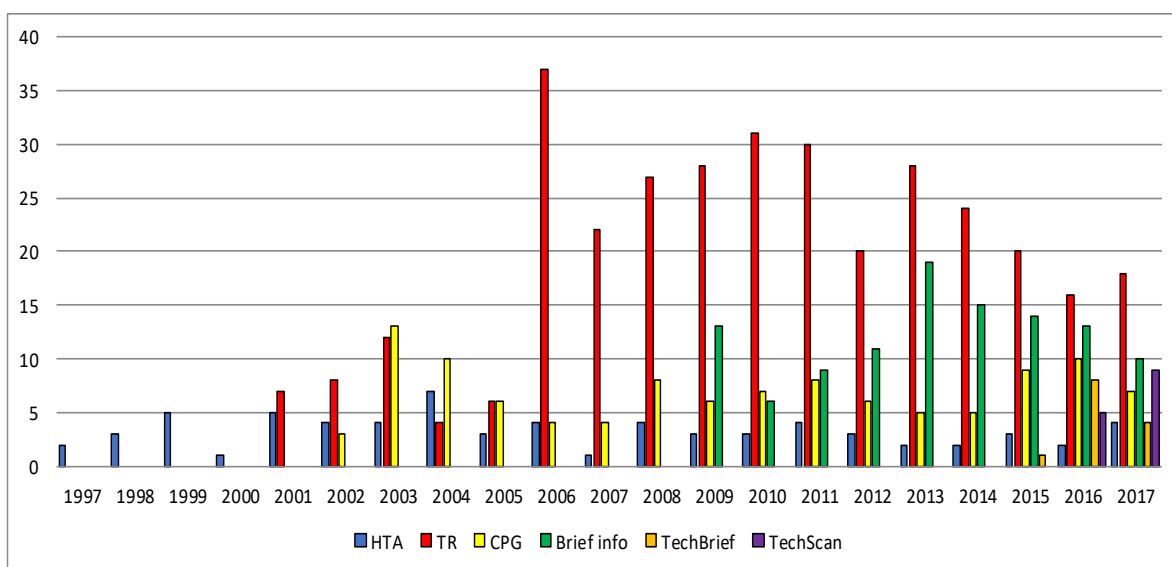
In ensuring the quality and utilisation of reports and CPGs, MaHTAS continued to monitor and evaluate its products through MaHTAS user feedbacks and relevant evaluation study. Health Technology Assessment Impact study which officially started in 2016 was also continued.

ACHIEVEMENTS

Technology Assessment Reports and Clinical Practice Guidelines

In 2017, MaHTAS produced four HTA reports, 18 Technology Review (TR) reports, 10 Information Brief (IB), four (4) TechBrief reports, nine (9) TechScan reports and seven (7) CPGs. Three (3) TR reports were completed with economic evaluation. Cumulatively from 1997 to 2017, MaHTAS has produced a total of 69 HTA reports, 338 TR reports, 111 CPGs, 110 IB reports, 14 TechScan reports and 13 TechBrief reports (**Figure 18**). The titles of the reports and CPGs produced were listed in **Table 22** and **Table 23**. All reports and CPGs can be accessed at www.moh.gov.my and myMaHTAS mobile apps.

Figure 18
Number of MaHTAS products by year (1997 to 2017)



Source: MaHTAS, MoH

Table 22
List of HTA, CPGs, and TechBrief reports produced in 2017

Health Technology Assessment Reports	Clinical Practice Guidelines
<ol style="list-style-type: none"> 1. Chinese Herbal Medicine as an adjunct for the management of fatigue and muscle weakness in cancer patients receiving chemotherapy 2. Low dose CT scan for Lung Cancer Screening 3. Quit Smoking Interventions 4. Microinvasive/Minimally Invasive Glaucoma Surgery (MIGS) 	<ol style="list-style-type: none"> 1. Management of Colorectal Carcinoma 2. Management of Asthma in Adults 3. Management of Diabetes in Pregnancy 4. Management of Glaucoma (Second Edition) 5. Primary and Secondary Prevention of Cardiovascular Disease 6. Management of Dyslipidaemia (5th Edition) 7. Management of Osteoporosis (Third Edition)
TechBrief Reports	
<ol style="list-style-type: none"> 1. Padeliporfin Vascular Targeted Photodynamic Therapy for Localised Prostate Cancer 2. Glucowise 3. Malaria Vaccine 4. Oral HIF-PHI (Hypoxia Inducible Factor-Prolyl Hydroxylase Inhibitor) for the treatment of anaemia in chronic kidney disease 	

Source: MaHTAS, MoH

Table 23
Technology Review Reports Produced in 2017 based on Recommendations

Recommended Technologies	Technologies Recommended For Research Purpose
<ol style="list-style-type: none"> 1. Sunitinib/ Pazopanib as First-Line Treatment & Axitinib/ Everolimus as Second-Line Treatment for Metastatic Renal Cell Carcinoma and Economic Evaluation 2. Trastuzumab as An Adjuvant Therapy for Early Breast Cancer and Economic Evaluation 3. Transcranial Direct Current Stimulation for Stroke Rehabilitation 4. Male Circumcision 5. Integrated Notification for Tuberculosis 6. Iodine-131-Rituximab Radioimmunotherapy for Non-Hodgkin's Lymphoma 7. Selective Internal Radiation Therapy (SIRT) Using Yttrium-90 Microspheres for HCC 8. Clinical Hypnosis/Hypnotherapy for Pain Management, Depression, Anxiety and Addiction 9. Platelet Rich Plasma (PRP) for Facial Rejuvenation 10. Intra-Arterial Chemotherapy (IAC) Treatment for Pancreatic Cancer 	Not recommended technologies
	<ol style="list-style-type: none"> 1. Platelet Rich Plasma (PRP) for Treatment of Osteoarthritis (OA) - An Update 1. Oral Folic Acid for Chronic Kidney Disease (CKD) 2. Low Molecular Weight Heparin (LMWH) as A Prophylaxis for Venous Thromboembolism (VTE) in Pregnancy and Postpartum 3. The Effect of Marketing of Unhealthy Food and Beverages to Children 4. Trastuzumab for Metastatic Breast Cancer and Economic Evaluation 5. Hyperbaric Oxygen Therapy (HBOT) - An update 6. Autohemotherapy (Autologous blood transfusion) Ozone Therapy - An update

Source: MaHTAS, MoH

Presentations/Publications

MaHTAS actively involved in disseminating and sharing information through presentations either at local or international level in 2017 as shown in **Table 24** and **Table 25**

Table 24
Abstract accepted for presentations at International/local conference

Conference Details	Title of presentations
6th HTAsiaLink Annual Conference - 17 to 20 April 2017 Venue: Hanoi, Vietnam	<ol style="list-style-type: none"> 1. Potential Impact of Artificial Pancreas for Type 1 DM 2. HPV Urine Test for cervical cancer screening 3. Potential efficacy and safety of wearable dialysis device for end-stage renal disease 4. Inter-atrial shunt device (IASD) for heart failure with preserved ejection fraction—potential efficacy and safety 5. Femtosecond Laser Assisted Cataract Surgery: how safe and effective?
2nd Kelantan International Health Conference in conjunction with 22nd National Conference on Medical and Health Sciences : 25 to 26 July 2017 Venue: Kota Bharu Kelantan	<ol style="list-style-type: none"> 1. Potential Impacts of Vascular Targeted Photodynamic Therapy for Localised Prostate Cancer 2. Minimally Invasive Surgery for Congenital Cataract
The International Forum on Quality and Safety in Healthcare: 24 to 26 August 2017 Venue: Kuala Lumpur Convention Centre	<ol style="list-style-type: none"> 1. Health Technology Assessment (HTA) Supporting Informed Decision Making: Malaysia Experience 2. Setting Up Horizon Scanning of Emerging Technologies System: Malaysia Experience 3. Adherence to Clinical Practice Guidelines (CPG) in patient care- An Illustrative example of CPG Dengue in Malaysia 4. Clinical Practice Guidelines: The Prerequisites
5th Asia Pacific Conference on Public Health 2017: 10 to 13 September 2017 Venue: Kuching Sarawak	<ol style="list-style-type: none"> 1. Malaria Vaccine- A new weapon? 2. Integrated Notification for Tuberculosis.

Source: MaHTAS, MoH

Table 25
Plenary and other presentations at International and local conference

Conference Details	Title of presentations
6th HTAsiaLink Annual Conference. 17 to 20 April 2017, Hanoi, Vietnam	Malaysia's experience in Designing Health Benefit Package
The 8th National Thalassemia Seminar in conjunction with the 1st ASEAN Thalassemia Forum. 21 May 2017, Kuala Lumpur	Health Technology Assessment
ISPOR 36th Health Technology Assessment Roundtable – Asia Pacific. 23 September 2017, Taipei, Taiwan.	HTA of Medical Devices and Diagnostics: Malaysia Experience
International Medical Device Conference 2017. 8 to 10 August 2017, Penang, Malaysia	Horizon Scanning Activity in Malaysia
Konvensyen QA Peringkat Kebangsaan. 24 to 26 Oktober 2017, Perak, Malaysia	Horizon Scanning: Early Assessment of Health Technologies
5th HTAi Asia Policy Forum. 2 to 3 November 2017, Beijing, China	Involved in roundtable discussion

Source: MaHTAS, MoH

Several articles from MaHTAS in collaboration with CPGs' development groups members, academicians, and other clinicians were also published in peer-reviewed journals in 2017:

- i. Ariff MI, Yahya A, Zaki R, Sarimin R, Mohamed Ghazali IM, Gill BS, et al. (2017) Evaluation of awareness & utilisation of clinical practise guideline for management of adult Dengue infection among Malaysia doctors. PLoS ONE 12(5): e0178137.
- ii. Abd.Rahman M, Ahmad Zaki R, Sarimin R, Ariff MI, Suli Z, Mahmud M, et al. (2017) Adherence to Clinical Practice Guidelines (CPG) management of dengue infection in adults (revised 2nd edition). PLoS ONE 12(11): e0184559.
- iii. Liew BS, Zainab K, Cecilia A et al. CPG Update: Early management of head injury in adults in primary care. Malaysian Family Physician. 2017; 12(1);22-25
- iv. Hong YHJ, Hassan N, Cheah YK et al. CPG Update: Management of T1DM in children and adolescents in primary care. Malaysian Family Physician 2017; 12(2);18-22

Training

MaHTAS continued to organise trainings and awareness activities in 2017 such as:

- i. Seminar on Horizon Scanning for Health Technologies held on 15 February 2017
- ii. Systematic Review on Evidenced-Based CPG Development & Implementation Workshop: Two sessions were conducted in 2017. The first session was from 20 to 22 March and the second session was from 21 to 23 August 2017.
- iii. Horizon Scanning Engagement Session with Universities held on 6 Nov 2017
- iv. Application of Decision-Analytic Modelling in Health Economic held on 15 to 16 March 2017
- v. Workshop on Economic Evaluation - Tree Age Application held on 27 to 28 September 2017

Other than that, internal trainings were also conducted to ensure continuous capacity development among MaHTAS officers.

MaHTAS members were also involved as presenter, speaker or facilitator in many activities, such as:

- i. Briefing on CPG work process for Malaysian Endocrine & Metabolic Syndrome (MEMS) at MEMS office on 4 Feb 2017
- ii. Echo-training CPG Management of Multiple Sclerosis in Hospital Kuala Lumpur on 22 May 2017
- iii. Critical Appraisal Course organised by Institute for Public Health from 22 to 23 May 2017
- iv. Workshop on Evidence Based Medicine (EBM) and Critical Appraisal organised by Clinical Research Centre Perak and Pharmaceutical Services Division, Perak State Health Department on 10 to 12 July 2017
- v. Engagement session with Pharmaceutical Association Malaysia (PhAMA) with Horizon Scanning Unit on 18 July 2017
- vi. Systematic Review on the development and implementation of dental CPG for dental specialists and officers by Dental Health Division, MoH from 31 July to 2 Aug 2017
- vii. *Bengkel Pengkomersialan Inovasi Kementerian Kesihatan Malaysia* organised by Innovation Unit, Management Services Division MoH on 27 September 2017

CPG Implementation Activities

i. Launching

Three (3) national CPGs were successfully launched in 2017. The launching was done in collaboration with various professional societies. CPGs which were launched in 2017 were:

- a. Management of Rhinosinusitis in Adolescents and Adults
- b. Management of Nasopharyngeal Carcinoma
- c. Management of Glaucoma (Second Edition)

Image 2
Launching ceremony for CPG Management of Nasopharyngeal Carcinoma and CPG Management of Rhinosinusitis in Adolescents and Adults



Source: MaHTAS, MoH

ii. Quick Reference (QR) and Training Module (TM)

Quick Reference was developed for CPG Management of Nasopharyngeal Carcinoma and CPG Management of Glaucoma (Second Edition). Training Module was developed for CPG Management of Rhinosinusitis in Adolescents and Adults, and Management of Nasopharyngeal Carcinoma. Trainings of Core Trainers (TOT) were also conducted for these CPGs. Following TOT conducted at national level, CPG echo trainings were conducted at state level by the trainees.

Evaluation

i. HTA Impact

In 2017, 24 HTA and TR reports from the previous year were assessed for impact/influence. The results showed that the three main indications of impact and level of impact are as follows:

- Indication of impact: Recommendations or conclusion agree/accepted (91.7 per cent), used as reference material (87.5 per cent), incorporated into policy/decision/administrative documents (37.5 per cent)
- Level of impact: Major influence on decision (16.7 per cent), informed decision (45.8 per cent), some consideration given by decision maker (37.5 per cent).

ii. CPG Utilisation

In 2017, a cross sectional study on knowledge of CPG Management of Tuberculosis (Third Edition) among doctors in MOH Healthcare facilities in Selangor was conducted. It found the utilisation of the CPG was 81.6 per cent. 28 per cent of doctors had good level of knowledge of the topic. Doctors with clinical specialisation, who participated in TB CPG training, or who were involved in managing TB patients, had demonstrated better knowledge on TB management.

Way Forward

HTA programme in Malaysia has a major impact on policies and decisions in our healthcare system. The impacts of HTA on the health system centres on optimising utilisation of resources as decision are informed by the best evidence. MaHTAS will continue to focus on building momentum as the main player in advocating informed decision making in Malaysia. Maximisation of HTA will enhance decision that can capture the benefit of new technologies, overcome uncertainties, and recognise value of innovation, within the constraints of the overall health care resources. Works will be geared up towards this by producing transparent, relevant, accessible synthesized research evidence; fostering collaboration with local and international stakeholders; strengthening HTA capacity in Malaysia and empowering Malaysian consumer in the years to come.

THE MEDICAL CARE QUALITY SECTION

The Medical Care Quality Section (*Cawangan Kualiti Penjagaan Perubatan*) is comprised of the following seven (7) units which are Patient Safety, Infection Control, Standards and Accreditation, Occupational Safety and Health, Clinical Performance Surveillance Unit (CPSU), Clinical Audit and Medical Values and Ethics. The Medical Care Quality Section aims to internalise and institutionalise healthcare quality improvement (QI) within the Medical Programme of the Ministry of Health, promote evidence-based decision-making as well as strive to improve the quality of its QI activities.

ACTIVITIES AND ACHIEVEMENTS

Table 26
Quality Initiatives and Monitoring 2015 to 2017

Quality Initiatives And Monitoring		Year 2015	Year 2016	Year 2017
Clinical Performance Surveillance Unit (CPSU)				
(Performance Indices via Director General of Health KPI 2015 to 2017)				
National Performance Indices	1.145	1.094		1.225
1. Medical Programme	1.090	1.130		1.160
2. Public Health Programme	1.150	1.100		1.210
3. Research & Technical Support Programme	1.370	1.110		1.200
4. Oral Health Programme	1.060	1.082		1.210
5. Pharmacy Programme	1.070	1.080		1.450
6. Food Safety & Quality Programme	1.130	1.060		1.120
** Index value of >1 = above target; <1 = below target; equal to 1 = on target				
Modified Balanced Scorecard Indices of Hospital Director's KPI (HPIA – Hospital Performance Indicator for Accountability 2015 to 2017)				
1. Internal Business Process	1.077	1.089		1.098
2. Customer Focus	1.114	1.111		1.141
3. Employee Satisfaction	1.093	1.147		1.153
4. Learning & Growth	1.156	0.943		0.946
5. Financial & Office Management	1.006	1.046		1.100

Quality Initiatives And Monitoring	Year 2015	Year 2016	Year 2017
Modified Balanced Scorecard Indices of Hospital Director's KPI (HPIA – Hospital Performance Indicator for Accountability 2015 to 2017)			
6. Environmental Support	1.102	1.092	1.108
** Index value of >1 = above target; <1 = below target; equal to 1 = on target			
Clinical Disciplines Directorate KPI Performances 2015 to 2017			
1. Medical Based Disciplines	1.578	1.639	1.675
2. Surgical Based Disciplines	1.116	1.125	1.124
3. Diagnostic & Clinical Support Based Disciplines	1.107	1.136	1.134
** Index value of >1 = above target; <1 = below target; equal to 1 = on target			
Occupational Safety and Health Unit			
1. Number of MOH Hospital and Institution with established Occupational Safety & Health Unit	-	34	88
2. Number of MOH Hospital and Institution conducted safety audit	-	93	115
Infection Control Unit			
1. Establishment of Antimicrobial Stewardship (AMS) Team in MOH Hospitals (number)	- (implementation started in 2016)	45 (Target : 14)	61 (Target : 29)
2. Establishment of Wound Care Team in MOH Hospitals (number)	- (implementation started in 2016)	70 (Target : 14)	99 (Target : 29)
3. Prevalence of Healthcare Associated Infection (HCAI)	1.68% (Target : ≤5%)	1.38% (Target : ≤5%)	1.77% (Target : ≤5%)
4. Percentage of Hand Hygiene Compliance	79.8% (Target : ≥75%)	79.6% (Target : ≥75%)	79.7% (Target : ≥75%)
5. Prevalence of Healthcare Associated Blood Stream Infection (HA-BSI)	0.20% (Target : ≤0.3%)	0.23% (Target : ≤0.3%)	0.24% (Target : ≤0.3%)
6. Incidence of Methicillin Resistant <i>Staphylococcus Aureus</i> (MRSA)	0.17% (Target : ≤0.3%)	0.15% (Target : ≤0.3%)	0.14% (Target : ≤0.3%)
7. Incidence of Carbapenem Resistant <i>Enterobacteriaceae</i> (CRE)	0.05% (Target : ≤0.1%)	0.05% (Target : ≤0.1%)	0.06% (Target : ≤0.1%)
8. Incidence of Extended Spectrum Beta Lactamase (ESBL) producing <i>Klebsiella pneumoniae</i>	0.22% (Target : ≤0.3%)	0.21% (Target : ≤0.3%)	0.19% (Target : ≤0.3%)
9. Incidence of Extended Spectrum Beta Lactamase (ESBL) producing <i>E.Coli</i>	0.16% (Target : ≤0.2%)	0.12% (Target : ≤0.2%)	0.11% (Target : ≤0.2%)
Patient Safety Unit			
1. Percentage of Government Healthcare Facilities Reporting Malaysian Patient Safety Goals Performance	80.2% (Target : 80%)	84.1% (Target : 80%)	83.6% (Target : 80%)
2. Total Patient Safety Incidents Reported from Ministry of Health Malaysia Hospitals & Institutions	-	2,769	5,689

Quality Initiatives And Monitoring	Year 2015	Year 2016	Year 2017
3. House Officers Undergone Mandatory Patient Safety Awareness Course for House Officers	- (implementation started in 2017)	- (implementation started in 2017)	4,936
Clinical Audit Unit			
1. Pain Free Hospital	8	12	13
2. POMR Bulletin	2	2	2
Medical Staff Values and Ethics Unit			
1. Complaints on non-medicolegal services (number)	720	769	1486
2. Feedback received by MOH hospital (application, award, inquiry)	434	777	915
Standards and Accreditation Unit			
1. Number of MOH hospitals with accreditation certification	30	15	20
2. Number of MOH hospitals / institutions with MS ISO 9001 certification	21	19	54
3. Number of MOH hospitals /institution with EKSA (MAMPU) certification	5	7	16
4. Numbers of MOH hospitals with National Innovation Awards	9	10	10

Source: The Medical Care Quality Section, Medical Development Division, MoH

HIGHLIGHTS OF 2017

POLICIES AND PROCEDURES

1. *Terma Pengukuhan Penyelaras Kualiti Negeri dan Hospital bagi Aktiviti Survelan Pencapaian Klinik (Arahan Ketua Pengarah Kesihatan 15 April 2015 (rujukan: KKM87/P3/12/6/3 Jld.14 (21)*
2. *Pelaksanaan HPIA (Hospital Performance Indicator for Accountability) versi 5.0 (KPI Pengarah Hospital) - Arahan Ketua Pengarah Kesihatan ruj: KKM.600-28/2/8 Jld. 3 (26) dated 11 January 2017*
3. Director General of Health Malaysia Directive Letter on the Implementation of Patient Safety Awareness Course for House Officer; 6 January 2017
4. Director General of Health Malaysia Circular on the Implementation of Incident Reporting & Learning System 2.0 for MoH Malaysia Hospitals & Institutions; 5 December 2017
5. Disinfectant Manual
6. Multidrug Resistant Organism (MDRO)& Methicillin Resistant Staphylococcus Aureus (MRSA) Bacteremia Manual, 2nd Edition
7. Guidelines on the Implementation of Patient Safety Awareness Course for House Officer; 6 January 2017
8. Guidelines on the Implementation of Incident Reporting & Learning System 2.0 for MoH Malaysia Hospitals & Institutions; 16 October 2017

9. Guideline for Prevention & Management of Workplace Violence Among Healthcare Workers in MoH Facilities
10. POMR Buletin 2017

SEMINAR / CONFERENCE AND TRAINING

1. *Bengkel dan Pembentangan Cadangan Pelaksanaan KPI bagi Perkhidmatan Kesihatan Awam (Pejabat Kesihatan Daerah) - March 2017*
2. *Seminar dan Pembentangan Regional Pencapaian KPI bagi Hospital-Hospital KKM (Utara, Tengah, Selatan, Timur, Sabah & Sarawak) 2017*
3. *Pembentangan Hala Tuju KPI dalam Perkhidmatan Awam bagi Program Perubatan, November 2017 (Mesyuarat TPKN(Perubatan) bersama Pengarah Perkembangan Perubatan, November 2017)*
4. *Mesyuarat Semakan Pencapaian KPI Pengarah Kesihatan Negeri 2017 (disemua Jabatan Kesihatan Negeri 2017)*
5. Launching of Guideline for Prevention & Management of Workplace Violence Among Healthcare Workers in MoH Facilities in conjunction with the World Occupational Safety and Health Day 2017
6. Infection Control Workshop for Infection Control Nursing State Co-ordinator
7. One Health AMR Surveillance Seminar & Workshop Part 1 & 2
8. World Hand Hygiene Day 2017 and National Infection Control Seminar
9. 4th National Wound Care Conference
10. WHO-Malaysia, Hand Hygiene Train the Trainers Programme 2017
11. Strengthening of AMR Surveillance for Healthcare System Workshop
12. World Antibiotic Awareness Week (WAAW) 2017 and Antimicrobial Resistance Seminar
13. Patient Safety Unit - State Health Dept. Strategic Meeting & Inspirational Session on Patient Safety ; 13 to 14 March 2017
14. Patient Safety Seminar 2017 : Incident Reporting & Learning System "Glitters from Mishaps" & 3rd Global Patient Safety Challenge : "Medication Without Harm" and Launching of Incident Reporting 2.0 for MoH Hospitals ; 16 to 17 October 2017
15. Total of 7 training sessions on Patient Safety organized and conducted by Patient Safety Unit
16. *Kursus Asas Etika Perubatan untuk Pegawai Perhubungan Pelanggan dan Penyelaras Aduan Hospital dan Institusi KKM*
17. *Kursus Asas Etika Perubatan peringkat Bahagian Perkembangan Perubatan*
18. Advanced Medical Ethics Course:Communication in Clinical Settings for MOH Hospital and Institution

OTHERS

1. *Penyampaian Report Card Pengarah Kesihatan Negeri 2017 pada Mesyuarat KPK Khas Bil. 1/2017 (delivered by Director General of Health Malaysia)*
2. *Penyampaian Report Card Timbalan Pengarah Kesihatan Negeri (Perubatan) 2017 pada Mesyuarat TPKN(P) bersama Pengarah Perkembangan Perubatan Bil. 1/2017 (Disampaikan oleh YBhg. Dato' Pengarah Perkembangan Perubatan)*
3. *Kajian Knowledge, Attitude & Practice (KAP) bagi Penyelaras Kualiti Hospital dan JKN 2017*
4. *Kajian Semakan Indikator HPIA bagi Perkhidmatan di Hospital-Hospital KKM 2017 (Mac 2017).*
5. *Kajian Pelaporan Pencapaian Perkhidmatan Kepakaran Klinikal melalui CPVF, 2017*
6. *Kajian Kesesuaian Indikator Perkhidmatan Klinikal Selaras dengan Hala Tuju KPI Perkhidmatan Awam (Disember 2017).*

7. *Audit Pencapaian KPI Pengarah Kesihatan Negeri 2017 (di semua Jabatan Kesihatan Negeri)*
8. National Infection Control and Antibiotic Committee Meeting (JKKIAK)
9. National Antimicrobial Resistance Committee (NARC) Meeting
10. The 8th International Congress of the Asia Pasific Society of Infection Control 2017, Bangkok Thailand
11. Meeting on NAP on AMR in the Western Pacific Region, Filipina
12. Workshop on Monitoring of Antimicrobial Consumption in Select Western Pacific Countries, Filipina
13. Consultative Meeting on the ASEAN Leaders Declaration on AMR, Filipina
14. 1st joint meeting of ISAAR (International Symposium on Antimicrobial Agents and Resistance) & ICIC (International Interscience Conference on Infection and Chemotherapy), Busan, Korea
15. Call to Action on AMR Conference & Antimicrobial Resistance Inter-Agency Coordination Group (IACG) Meeting, Berlin, Germany
16. Workshop on WHO Integrated Global Survey on ESBL Producing E.Coli using a One Health Approach "The Tricycle Project" Jakarta, Indonesia
17. 2nd Ministerial Meeting on Patient Safety in Bonn, Germany ; 29 to 30 March 2017
18. Patient Safety Council of Malaysia Meeting , MoH Putrajaya; 17 April 2017
19. BMJ-IHI International Conference on Quality & Safety ,KL; 24 to 26 August 2017
20. OECD-WHO Meeting on Quality & Safety, Seoul Korea ; 23 to 24 November 2017
21. *Kerjasama dengan IPK dalam menggunakan kajian kepuasan pelanggan SERVQUAL di hospital KKM*
22. *Kemaskini Piagam Pelanggan Teras KKM bagi memantau pencapaian penyediaan Laporan Perubatan dalam masa yang ditetapkan*
23. Sharing & Managing Innovative Products of MOH Hospital Meeting 2017
24. Finalization of MoH Hospital for MSQH Accreditation Meeting of 2018

MEDICAL PRACTICE

MEDICO LEGAL SECTION

Medico Legal Section is responsible for the management of potential medico legal cases involving healthcare facilities in the Ministry of Health (MoH). The process includes investigating, coordinating, resolving, compensating and providing technical advice related to medico legal issues. The Section also coordinates and mitigates medico legal litigation cases between MoH facilities and the Attorney General's Chamber. In addition, the Section undertakes to role of organising training and courses on medico legal awareness for healthcare personnel in the MoH.

MAIN ACTIVITIES

i. Management of potential medico legal complaints

The number of potential medico legal complaints and medico legal litigation cases is recorded by the Medico Legal Section from year 2013 to 2017. There is a decrease trend in number of cases for the year 2017 compared to the year 2016 (**Table 27**).

Table 27
Number of Potential Medico Legal Complaints and Medical Litigation
Cases Recorded by MoH (2013 to 2017)

Year	Potential Medico Legal Complaints	Medico Legal Litigation
2013	159	35
2014	142	55
2015	173	55
2016	225	59
2017	207	40

Source: Surveillance Unit, Medico Legal Section, MoH

ii. Independent Inquiry Committee

Independent Inquiry Committee will be established for medico legal cases which were not resolved at the facility and state level. Cases which demand compensation will also be investigated via this committee. Independent Inquiry Committee is an external panel consisting of Senior Consultant Specialist, Specialist from related discipline, representative from State Health Departments, Representative from Medical Practice Division and community representative. In 2017, a total of 136 inquiries had been conducted by the MoH.

iii. Ex Gratia Meetings

Ex Gratia Meetings were conducted at the Ministry level on a monthly basis. Medico legal cases requesting compensation will be presented and discussed in this meeting. The meetings were chaired by the Director of Medical Practice Division and the panels include representative from MoH Legal Advisor Office and members of the Attorney's General Chamber. In 2017 a total of 124 potential medico legal cases were presented of which 93 (75 per cent) cases were offered for *ex gratia* payment.

iv. Ex Gratia Compensation

In 2017, the total amount of ex gratia compensation paid for medico legal cases was RM 1,669,085.45 and the amount paid for court cases was RM 13,404,713.88. The total amounts of payment in 2017 for both cases were RM 15,073,799.33. The figure was significantly higher as compared to amount being paid in 2016 which was RM 11,219,138.44 (**Table 28**).

Table 28
Compensation Paid by Court and Ex Gratia Payment (2013 to 2017)

Year	Payment for Court Cases (RM)	Payment for Ex Gratia Cases (RM)	Total (RM)
2013	18,107,845.77 (29)	7,069,399.00 (76)	25,177,244.47
2014	410,000.00 (5)	6,762,109.00 (71)	7,172,109.00
2015	20,099,197.37 (30)	4,430,400.00 (73)	24,529,597.37
2016	5,986,092.39 (13)	5,233,046.05 (56)	11,219,138.44
2017	13,404,713.88 (26)	1,669,085.45 (51)	15,073,799.33

Source: Surveillance Unit, Medico Legal Section, MoH
() – denotes no. of cases

v. Medico Legal Trainings

In 2017, the Medico Legal Section took the initiative to introduce the second training on Expert Witness by the MoH. The objectives of the course were to train and exposed the Senior Specialist on their role as expert witness in court, principles of medical negligence, importance of communication and documentation. The 3-days course includes presentation by academicians, senior consultants' clinician, legal counsels and a mock trial session. In addition to that, the Section continues its collaboration with various MOH hospitals and State Health Departments to conduct seminars and training. A total of 65 training session were conducted in 2017 (**Image 3**).

Image 3
Training on Expert Witness



*Expert Witness Training 1/2016 being held in Avillion Admiral Cove Hotel,
Port Dickson from 31 July to 2 August 2017*



*Expert Witness Training 2/2016 was held in Avillion Legacy Hotel,
Melaka from 26 to 28 September 2017*

Source: Surveillance Unit, Medico Legal Section, MoH

WAY FORWARD

The Medico Legal Section aims to reduce the number of medico legal cases in MoH. To achieve this, regular training and awareness programme need to be conducted. Furthermore, monitoring of these cases performed through surveillance and regular audits will be undertaken to ensure that the high standards and quality of services being provided to all MoH clients are maintained.

The Section planned to improve our performance with various activities for 2017 namely:

- i. Organizing Technical Meetings for Medico Legal Units at the hospitals and State Health Departments. The aim is to get feedback from all states and providing updates on management of potential medico legal cases.
- ii. Drafting of Management of Cerebral Palsy Consensus Guideline
- iii. Revising and updating the “Guideline on Management of Medico Legal Complaints 2007”
- iv. Development of “Ex Gratia Policy Guideline”
- v. Field Audits on improvement of service quality based on External Inquiry recommendations

PRIVATE MEDICAL PRACTICE CONTROL SECTION

The Private Medical Practice Control Section (CKAPS) undertakes the role to implement and enforce the Private Healthcare Facilities and Services Act 1998 [Act 586] which has come to its eleventh year of implementation in 2017. The regulation and control of private healthcare facilities and services under this Act include registration, approval, licensing, handling of complaints, evaluation of quality, enforcement activities and matters relating to the private healthcare facilities and services (PHFS).

There are three (3) main sectors under this Section, namely:

1. Policy, Resources and Standard Sector;
2. Technical and Operational Sector;

Under this sector, there are five units –

- i. Clinic Unit;
 - ii. Haemodialysis Unit;
 - iii. Hospital Unit;
 - iv. Psychiatric, Nursing Home and Hospice Unit; and
 - v. Ambulatory Care Centre, Blood Bank, Maternity Home and Combined Unit.
3. Services Evaluation Sector;

The services evaluation sector unit is made up of four units –

- i. Complaint Unit;
- ii. Quality Unit;
- iii. Enforcement Unit; and
- iv. Prosecution Unit.

MAIN ACTIVITIES UNDER CKAPS

1. Clinic Unit

The scopes and functions of Clinic Unit under CKAPS are to process the applications related to Certificate of Registrations (COR) of private medical clinics and private dental clinics, as listed below:

- i. Registrations of private medical clinics and private dental clinics;
- ii. Transfer of Certificate of Registration;
- iii. Amendment to Certificate of Registration;
- iv. Duplicate of Certificate of Registration;
- v. Disposal of Certificate of Registration;

- vi. Revocation of Certificate of Registration;
- vii. Amendment of registration information; and
- viii. Withdrawal of application.

At the end of 2017, **7,571** private medical clinics and **2,137** private dental clinics were registered with the Ministry of Health, as in **Table 29**

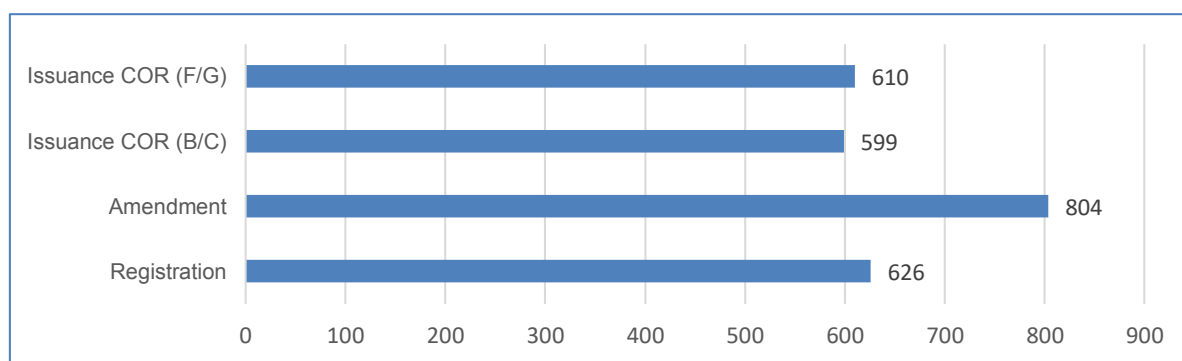
Table 29
Number of Registered Private Medical Clinics and Private Dental Clinics in Malaysia
(Until 31 December 2017)

No	State	Clinic Categories	
		Private Medical Clinic	Private Dental Clinic
1.	Johor	932	231
2.	Kedah	364	71
3.	Kelantan	222	60
4.	Melaka	295	47
5.	Negeri Sembilan	291	66
6.	Pahang	237	56
7.	Pulau Pinang	543	159
8.	Perak	642	121
9.	Perlis	37	7
10.	Selangor	2,012	687
11.	Terengganu	163	52
12.	Sabah	378	118
13.	Sarawak	343	97
14.	WP KL & Putrajaya	1,097	361
15.	WP Labuan	15	4
Total		7,571	2,137

Source: Private Medical Practice Control Section, MoH

The number of applications processed by Clinic Unit for 2017, is as shown in **Figure 19**.

Figure 19
Number of Applications Processed and Issuance Certificate of Registration by
Clinic Unit for 2011 to 2017



Source: Private Medical Practice Control Section, MoH

In addition, the unit is also responsible to perform verification visit and inspection visit as well as issuing show cause notice and revoking certificate of registration.

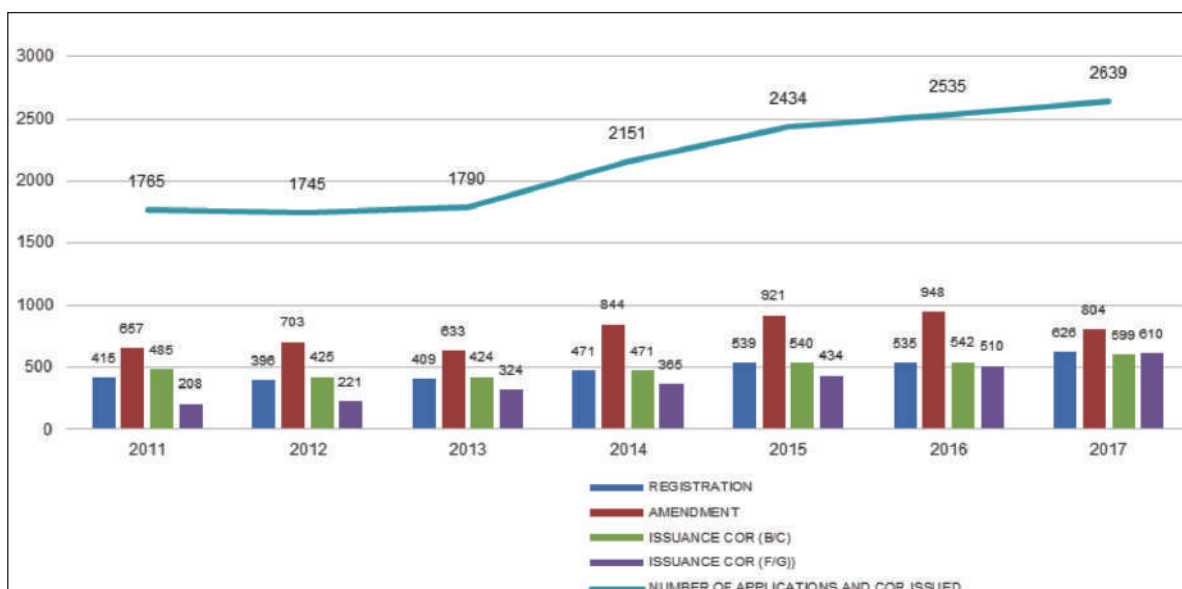
There is an increase in the number of applications for registration and other applications (except for application for amendment to COR) from 2011 to 2017, as shown in **Table 30**.

Table 30
Total Numbers of Applications Processed and Issuance Certificate of Registration by Clinic Unit from 2011 to 2017

Type Of Application	2011	2012	2013	2014	2015	2016	2017
Registration	415	396	409	471	539	535	626
Amendment	657	703	633	844	921	948	804
Issuance COR (B/C)	485	425	414	471	540	542	599
Issuance COR (F/G)	208	221	324	365	434	510	610

Source: Private Medical Practice Control Section, MoH

Figure 20
Total Number of Applications Processed and COR Issued by Clinic Unit (2011 to 2017)



Source: Private Medical Practice Control Section, MoH

2. Haemodialysis Unit

Licensing of private haemodialysis centre, consists of two stages namely Approval to establish or maintain and License to operate or provide.

The scopes and functions of Haemodialysis Unit are related to processing these applications:

- Pre approval (for the location);
- Approval to Establish;

- iii. Licence;
- iv. Renewal of a Licence;
- v. Extension or Alteration;
- vi. Transfer of Approval or Licence;
- vii. Amendment of particulars of Approval or Licence;
- viii. Duplication of an Approval or Licence;
- ix. Disposal of Approval or Licence; and
- x. Withdrawal of applications.

In addition, the unit is also responsible to perform verification visit and inspection visit as well as issuing show cause notice and revoking an Approval or Licence.

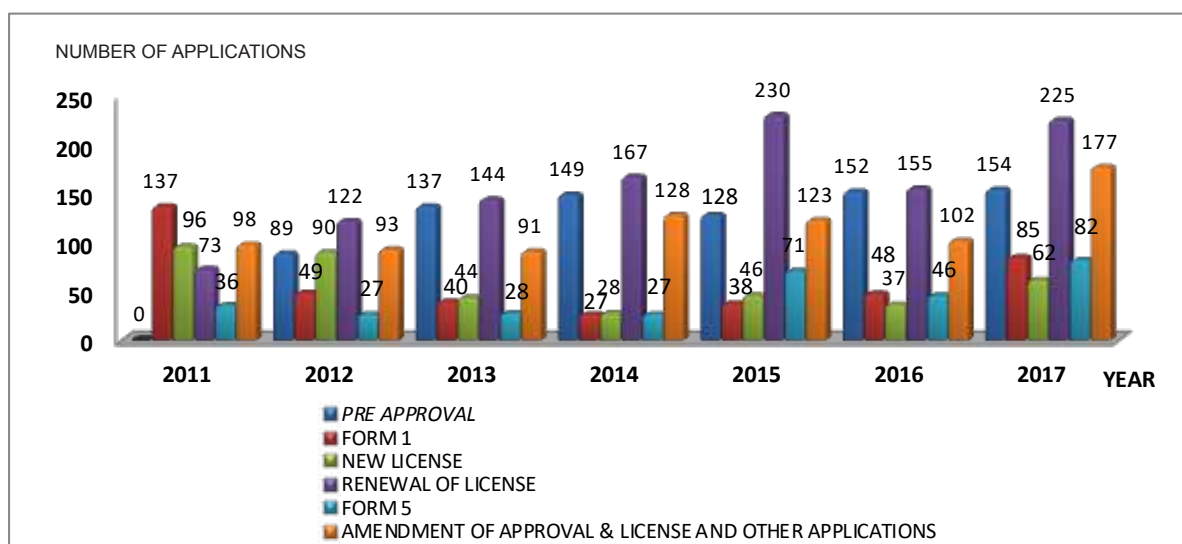
Until the end of 2017, **450** private haemodialysis centre were licensed as in **Table 31**.

Table 31
Number of Licensed Private Haemodialysis Centre in Malaysia
(Until 31 December 2017)

No	State	Number of Private Haemodialysis Centre
1.	Johor	72
2.	Kedah	40
3.	Kelantan	14
4.	Melaka	20
5.	Negeri Sembilan	27
6.	Pahang	19
7.	Pulau Pinang	41
8.	Perak	38
9.	Perlis	3
10.	Selangor	99
11.	Terengganu	15
12.	Sabah	13
13.	Sarawak	13
14.	WP Kuala Lumpur & Putrajaya	36
15.	WP Labuan	0
Total		450

Source: Private Medical Practice Control Section, MoH

Figure 21
Total Number and Type of Applications for Private Haemodialysis Centre
Processed by Haemodialysis Unit (2011 to 2017)



Source: Private Medical Practice Control Section, MoH

3. Hospital Unit

Licensing of private hospital consists of two stages namely Approval to establish or maintain and License to operate or provide.

The scopes and functions of Hospital Unit are related to processing of these applications:

- i. Pre approval (for the location);
- ii. Approval to Establish;
- iii. Licence;
- iv. Renewal of a Licence;
- v. Extension or Alteration;
- vi. Transfer of Approval or Licence;
- vii. Amendment of particulars of Approval or Licence;
- viii. Duplication of an Approval or Licence;
- ix. Disposal of Approval or Licence; and
- x. Withdrawal of applications.

In addition, the unit is also responsible to perform verification visit and inspection visit as well as issuing show cause notice and revoking an Approval or Licence or refusal renewal of Licence.

Until the end of 2017, **200** private hospitals were licensed as in **Table 32**:

Table 32
Number of Licensed Private Hospital in Malaysia (Until 31 December 2017)

No	State	Total Private Hospital
1.	Johor	25
2.	Kedah	9
3.	Kelantan	3
4.	Melaka	5
5.	Negeri Sembilan	7
6.	Pahang	6
7.	Pulau Pinang	20
8.	Perak	18
9.	Perlis	0
10.	Selangor	52
11.	Terengganu	2
12.	Sabah	7
13.	Sarawak	11
14.	WP Kuala Lumpur & Putrajaya	35
15.	WP Labuan	0
Total		200

Source: Private Medical Practice Control Section, MoH

4. Psychiatric, Nursing Home and Hospice Unit

Applications processed by this Psychiatric, Nursing Home and Hospice Unit, are related to the private healthcare facilities as listed below:

- i. Private Psychiatric Hospital;
- ii. Private Nursing Home;
- iii. Private Psychiatric Nursing Home;
- iv. Private Hospice; and
- v. Private Community Mental Health Centre.

Licensing of the private healthcare facilities as above consist of two stages namely Approval to establish or maintain and License to operate or provide.

The scopes and functions of Psychiatric, Nursing Home and Hospice Unit are related to processing of these applications for private healthcare facilities (a-e) as above:

- a. Approval to Establish
- b. Licence;
- c. Renewal of a Licence;
- d. Extension or Alteration;
- e. Transfer of Approval or Licence;
- f. Amendment of particulars of Approval or Licence;
- g. Duplication of an Approval or Licence;
- h. Disposal of Approval or Licence; and
- i. Withdrawal of applications.

In addition, the unit is also responsible to perform verification visit and inspection visit as well as issuing show cause notice and revoking an Approval or Licence.

Table 33
Numbers of Licensed Private Community Mental Health Centre, Private Nursing Home and Private Hospice (Until 31 December 2017)

No	State	Licensed Private Healthcare Facility Or Service Category		
		Private Community Mental Health Centre	Private Nursing Home	Private Hospice
1.	Johor	0	7	0
2.	Kedah	0	1	0
3.	Kelantan	0	0	0
4.	Melaka	0	0	0
5.	Negeri Sembilan	0	0	0
6.	Pahang	0	1	0
7.	Pulau Pinang	0	0	1
8.	Perak	0	1	0
9.	Perlis	0	0	0
10.	Selangor	0	2	0
11.	Terengganu	0	0	0
12.	Sabah	0	0	0
13.	Sarawak	0	5	0
14.	WP Kuala Lumpur & Putrajaya	1	5	1
15.	WP Labuan	0	0	0
Total		1	22	2

Source: Private Medical Practice Control Section, MoH

5. Ambulatory Care Centre, Blood Bank, Maternity Home & Combined Unit

Applications processed by this Ambulatory Care Centre, Blood Bank, Maternity Home & Combined Unit, are related to the private healthcare facilities as listed below:

- i. Private Ambulatory Care Centre (ACC);
- ii. Private Maternity Home swasta;
- iii. Private Blood Bank; and
- iv. Combined Facilities (two or more PHFS under Section 3, Act 586).

Licensing of the private healthcare facilities as above consist of two stages namely Approval to establish or maintain and License to operate or provide.

The scopes and functions of Ambulatory Care Centre, Blood Bank, Maternity Home & Combined Unit are related to processing of these applications for private healthcare facilities (a-d) as above:

- a. Approval to Establish
- b. Licence;

- c. Renewal of a Licence;
- d. Extension or Alteration;
- e. Transfer of Approval or Licence;
- f. Amendment of particulars of Approval or Licence;
- g. Duplication of an Approval or Licence;
- h. Disposal of Approval or Licence; and
- i. Withdrawal of applications.

In addition, the unit is also responsible to perform verification visit and inspection visit as well as issuing show cause notice and revoking an Approval or Licence.

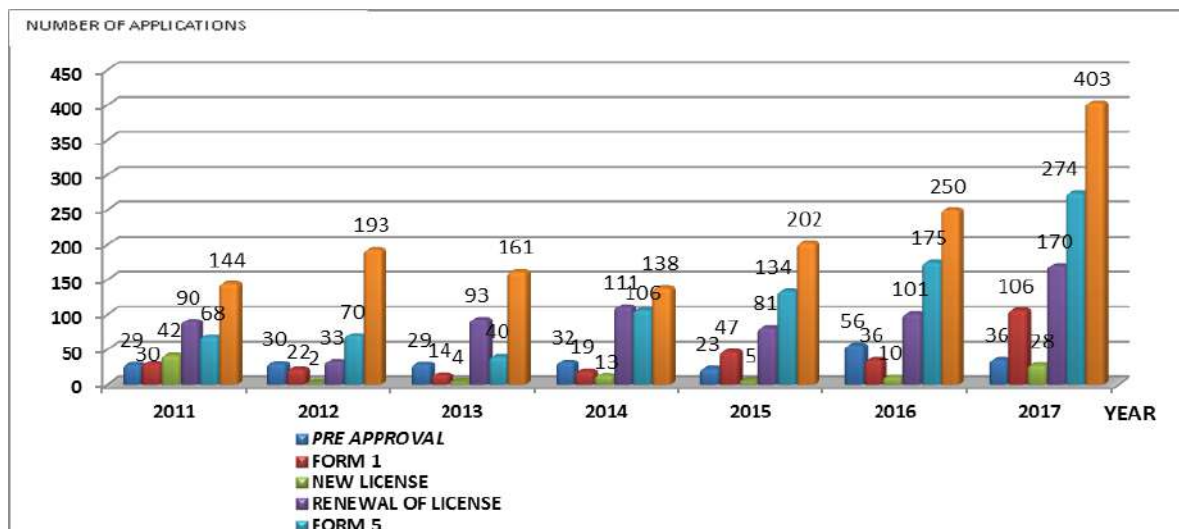
Table 34
Number of Licensed Private Ambulatory Care Centre, Private Blood Bank, Private Maternity Home and Combined Facilities (Until 31 December 2017)

No.	State	Licensed Private Healthcare Facility Or Service Category			
		Private Ambulatory care Centre	Private Blood Bank	Private Maternity Home	Combined Facilities
1.	Johor	14	0	1	0
2.	Kedah	1	0	0	0
3.	Kelantan	0	0	2	0
4.	Melaka	2	0	0	0
5.	Negeri Sembilan	0	0	0	0
6.	Pahang	1	0	1	0
7.	Pulau Pinang	9	0	0	0
8.	Perak	7	0	0	0
9.	Perlis	0	0	0	0
10.	Selangor	31	2	8	0
11.	Terengganu	0	0	2	0
12.	Sabah	7	0	0	0
13.	Sarawak	4	0	0	0
14.	WP Kuala Lumpur & Putrajaya	24	2	2	1
15.	WP Labuan	0	0	0	0
Total		100	4	16	1

Source: Private Medical Practice Control Section, MoH

There is an increase in the number of applications for licensing of private healthcare facilities and services other than private clinic and private haemodialysis centre in Malaysia from 2011 to 2017 as shown in **Figure 22**.

Figure 22
Total Number and Type of Applications for Private Healthcare Facilities and Services
(Other than Private Clinic and Private Haemodialysis Centre) 2011 to 2017



Source: Private Medical Practice Control Section, MoH

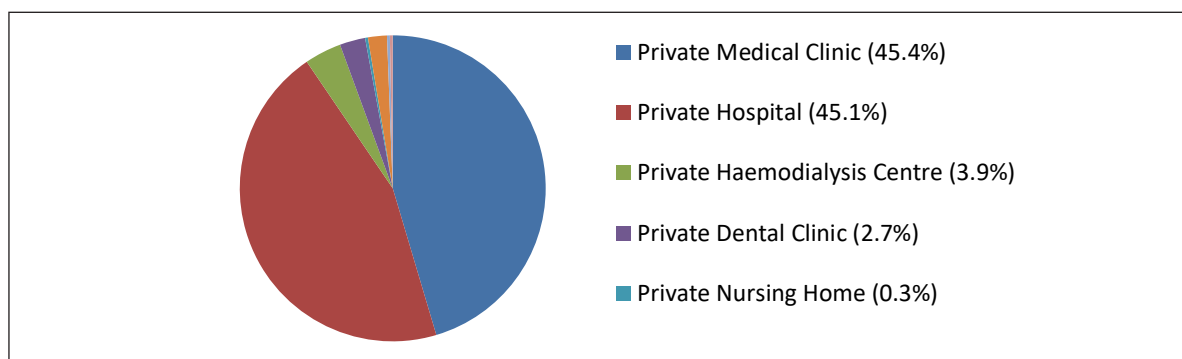
6. Complaint Unit

The scopes and functions of Complaint Unit are :

- To regulate and monitor grievance mechanism plans by PHFS;
- To investigate complaints received by CKAPS or UKAPS, when necessary; and
- To analyse and to take necessary action on reports received regarding complaints handled by UKAPS.

Throughout 2017, Private Medical Practice Control Section received a total of **337** complaints, involving PHFS regulated under Act 586, as shown in **Figure 23**.

Figure 23
Complaints Received According to Facilities Regulated under Act 586 For 2017

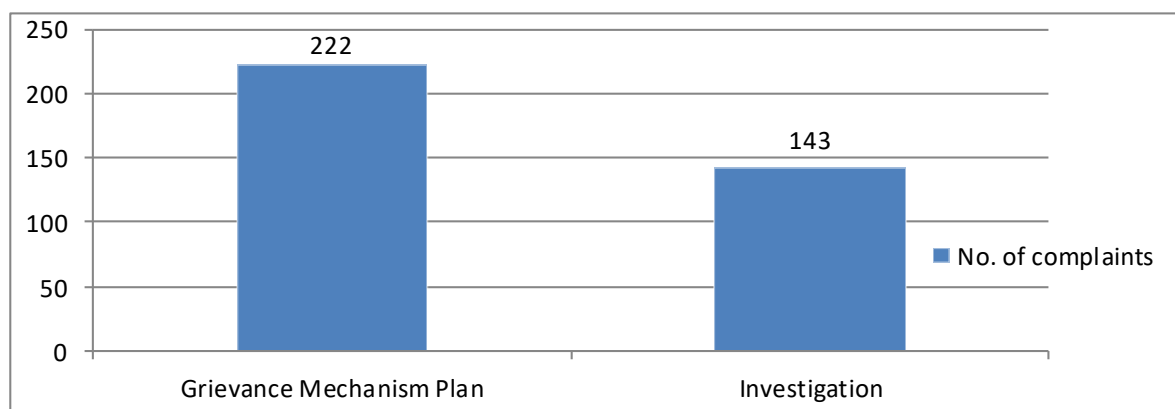


Source: Private Medical Practice Control Section, MoH

Note: There were no complaints received involving private psychiatric nursing home, private psychiatric hospital, and private community mental health centre

Complaints received from the patients or patients' representative were dealt according to the patient grievance mechanism plan, as stipulated under Act 586. There were complaints warranted investigations to be carried out such as complaints that were received from other parties and complaints that involved death of the patient or other detrimental issues, following which necessary actions will be taken in accordance to Act 586 such as show cause notice, suspension or revocation of Licence or Registration.

Figure 24
Number of Complaint Handling Mechanism for Complaints Received in 2017



Source: Private Medical Practice Control Section, MoH

7. Quality Unit

The scopes and functions of Quality Unit are:

- i. To handle case related to notification of incident reporting;
- ii. To handle case related to notification of assessable death;
- iii. To handle statistic summary unforeseeable or unanticipated incidents (*incident reporting* (IR-2A dan IR-2B))
- iv. To investigate maternal mortality and under 5 mortality involving PHFS; and
- v. To coordinate establishment Jawatankuasa Penilaian Kematian Kebangsaan (JPKK) for *assessable death*.

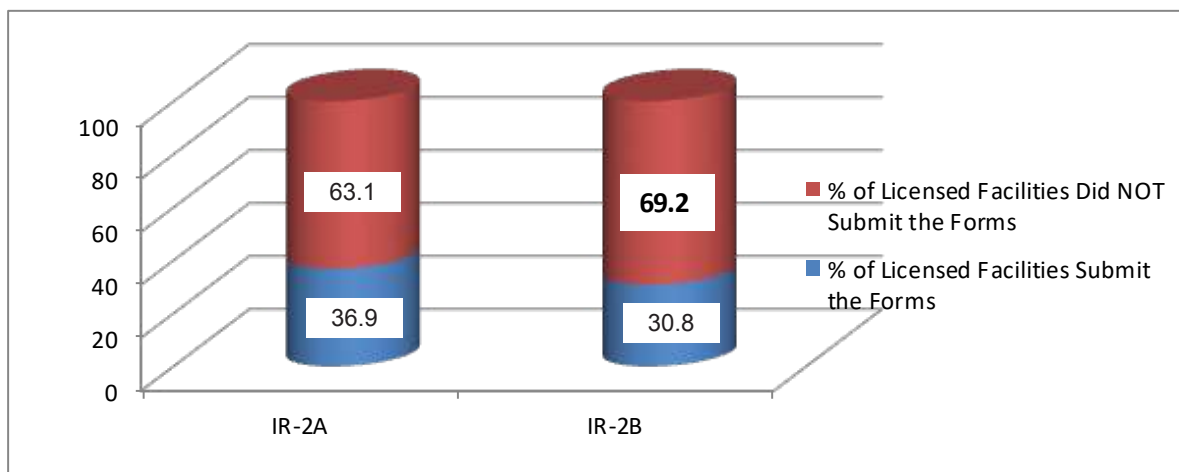
Enforced since 1 January 2011, all licensed facilities under Act 586 were required to report their unexpected incidents (Incident Reporting - IR) and occurrence of Assessable Death (AD), as directed under Director General of Health's Directives No. 1/2010. The aim of monitoring these IR and AD are mainly for the purpose of quality improvement. All reporting and notifications will not be subjected to punitive action.

The scope of IR and AD is mainly to gather data and information regarding incidents and deaths that occurred in PHFS. The reporting and notifications are on voluntary basis, using these forms:

- i. Form IR-1 : every time any incident (*as listed in form*) happen;
- ii. Form IR-2 : 6-months statistical summary of incidents that occur (*incidents that are not listed to be reported under IR-1*);
- iii. Form AD-1: every time an assessable death occurs (*within 72 hours of death*).

Throughout 2017, a total of **64** AD notifications and **67** IR-1 reports were recorded. While for IR-2, a total of **275** IR-2A and **242** IR-2B (as of 16 March 2018) reports were recorded, as in **Figure 25**.

Figure 25
Percentage of Licensed Private Healthcare Facilities and Services (other than the Private Clinics) in Malaysia Submitted IR-2A and IR-2B Forms for Year 2017



Source: Private Medical Practice Control Section, MoH

8. Enforcement Unit

The scopes and functions of Enforcement Unit are to plan and undertake enforcement activities which include undercover activities, raid activities and investigation.

Throughout 2017, a total of 31 enforcement activities were done by various states, with RM 1,943,200.00 fines collected through conviction in court. The enforcement activities involved 17 private medical clinics, 14 private dental clinics, and one each for private hospital, private ambulatory care centre and private haemodialysis centre.

9. Prosecution Unit

The scopes and functions of Prosecution Unit are:

- i. To check investigation paper and assist Deputy Public Prosecutor in preparation for court case;
- ii. To check investigation paper to be presented to Deputy Public Prosecutor for compound approval; and
- iii. To suggest compound amount/value for approval from Director General of Health

Members of this unit comprise the officer from other sectors or units.

10. Policy, Resources and Standard Sector

The scopes and functions of Policy, Resources and Standard Sector are:

- i. To provide information and input for higher authority, other division or section, intra or inter-agencies to ensure right and precise informations delivered;
- ii. To manage the income collection from the processing fee, issuance fee and compound under Act 586;

- iii. To manage administrative matters including personel, job employment, training, asset management and transportation;
- iv. To manage online application system (clinic registration) and to coordinate feedback for establishment of new MedPCs (registration and licensing);
- v. To assist Deputy Director CKAPS to formulate directive for Minister of Health and Director General;
- vi. To publish e-buletin CKAPS;
- vii. To maintain appointment for members Board of Visitor;
- viii. To coordinate engagement session between stakeholders and public such as dialogue and MPC workshops; and
- ix. To provide the information and input for formulation and amendment of laws.

OTHER TASKS AND ACTIVITIES

1. Organizing Workshops for CKAPS and UKAPS members

To enhance the understanding and skills among CKAPS and UKAPS members, five (5) workshops and one (1) meeting have been conducted in 2017, as follows:

Table 35
Workshops for CKAPS and UKAPS memebers

No	Title	Date
1.	<i>Bengkel Komunikasi Berkesan Untuk Anggota CKAPS, Bahagian Amalan Perubatan</i>	5 to 7 May 2017
2.	<i>Perbincangan Pelaksanaan Implentasi Pengkompauan Kesalahan Di Bawah Akta 586 Untuk Anggota CKAPS, UKAPS & Pergigian, KKM</i>	11 to12 July 2017
3.	<i>Mesyuarat Teknikal CKAPS, Bahagian Amalan Perubatan dan UKAPS, Jabatan Kesihatan Negeri/Wilayah Persekutuan bersama Timbalan Ketua Pengarah Kesihatan (Perubatan) dan Pengarah Kesihatan Negeri 2017</i>	13 July 2017
4.	<i>Bengkel Kesalahan-Kesalahan Bawah Akta Kemudahan Dan Perkhidmatan Jagaan Kesihatan Swasta [Akta 586] Dan Perundangan Subsidiari</i>	11 to 13 September 2017
5.	<i>Bengkel Pembaharuan Lesen KPJKS Untuk Anggota CKAPS dan UKAPS</i>	12 to 20 September 2017
6.	<i>Bengkel Memproses Permohonan Pendaftaran & Pelan Lantai Klinik Swasta Untuk Staf CKAPS dan UKAPS</i>	9 to11 October 2017

Source: Private Medical Practice Control Section, MoH

2. Education and Sharing Sessions with Private Sectors

In 2017, CKAPS has conducted a few dialogue and meetings for private sectors mainly to deliver an understanding on the licensing process, registrations and other matters relating to the private healthcare facilities and services (PHFS) as well as to remove key constrains involved in the process. Among other dialogue and meetings are:

Table 36
Education and Sharing Sessions with Private Sectors

No	Title	Date
1.	<i>Sesi Dialog & Taklimat Pengkompaunan Kesalahan Di Bawah Akta 586, Jabatan Kesihatan Negeri Terengganu</i>	15 August 2017
2.	<i>Mesyuarat CKAPS Dan UKAPS (JKN Negeri Sembilan) Bersama Pihak Hospital Swasta</i>	15 September 2017
3.	<i>Dialog Bersama KPJKS di Johor</i>	2 October 2017
4.	<i>Mesyuarat CKAPS Dan UKAPS (JKN Negeri Sembilan) Bersama Pengusaha Pusat Hemodialisis</i>	27 October 2017
5.	<i>Taklimat Akta 586 Dan Perundangan Subsidiari dan Sesi Dialog Timbalan Pengarah CKAPS Dengan Pihak KPJKS, Jabatan Kesihatan Negeri Pulau Pinang</i>	1 November 2017
6.	<i>Sesi Dialog & Taklimat Pengkompaunan Kesalahan Di Bawah Akta 586, Jabatan Kesihatan Negeri Pahang</i>	5 November 2017
7.	<i>Forum KPJKS Bersama Jabatan Kesihatan Negeri Melaka 2017</i>	19 November 2017
8.	<i>Taklimat Pengkompaunan Kesalahan Di Bawah Akta 586 Dan Perbincangan Isu-isu Semasa Bersama Pengamal KPJKS Kelantan</i>	26 November 2017
9.	<i>Taklimat Dan Dialog Pengkompaunan Kesalahan Di Bawah Akta 586 Bersama Jabatan Kesihatan WP Kuala Lumpur</i>	29 November 2017
10.	<i>DG of Health Malaysia Dialogue Session: Perbincangan Berkaitan Collaboration dan Networking Antara KKM Dengan Hospital Swasta</i>	29 November 2017

Source: Private Medical Practice Control Section, MoH

Image 4
Education and Sharing Sessions with Private Sectors



Dialog Act 586 & Briefing Subsidiary Law with private healthcare provider around Malaysia.

Source: Private Medical Practice Control Section, MoH

CHALLENGES

Rang Undang-undang Private Aged Healthcare Facilities And Services 20__

Rang Undang-undang Private Aged Healthcare Facilities And Services 20__ was drafted to increase quality of care and ensure safety among the residence in old folks facilities. Government's goal is to provide a legislation that can control and regulate the facilities that provide the services to old folks in seamless way (*independent* → *semidependent* → *dependent*) within a premise.

At this moment, private nursing home is regulated by Ministry of Health under Act 586 and Old Folks Home is regulated by Jabatan Kebajikan Masyarakat under Care Centre Act 1993.

The RUU was approved by the Parliament on 19 December 2017. The next challenge will be to draft the regulations which is suitable, practical and realistic which will be coordinated by CKAPS and CPA (Cawangan Penggubalan Akta). Currently there are about 1000 unlicensed facilities will be subjected to this Act in future.

Awareness To Private Sector Regarding Act 586

The main challenge for CKAPS is to increase awareness among the private healthcare providers regarding the importance to comply with Act 586. CKAPS proactively updates and uploads guidelines and checklists at *Bahagian Amalan Perubatan* website (medicalprac.moh.gov.my) to convey information to private healthcare provider as well as to the public.

Serial meeting with professional associations such as APHM, MPCAM, MMA was done as a platform for private sector to discuss and give suggestion to Ministry of Health. Dialogues and meetings with stakeholders such as MPC, foreign investor, MIDA, MITI are also frequently conducted to convey clear and accurate information regarding regulation of private healthcare in Malaysia.

Collaboration With Other Agencies

CKAPS also collaborates with *Jabatan Bomba Malaysia* to ensure all the licensed private healthcare facilities comply with Act 586 whereby the facilities must be certified with *Sijil Perakuan Bomba* to ensure the facilities are safe to operate once they applied for license.

The challenge for CKAPS is to process the application of the high rise building facilities and commitment from the PHFS to prepare the disaster management plan. CKAPS also collaborate with Bahagian Farmasi KKM and Polis Diraja Malaysia (PDRM) in enforcement activities.

In conclusion, CKAPS is committed towards ensuring patients safety and enhancing quality of care provided by PHFS in Malaysia. Therefore, cooperation and support from all parties especially higher authorities, stakeholders dan consumers are essential so that the standard of private healthcare facilities and services in Malaysia, is at least at par with other countries and is able to meet the expectation of the people that they serve.

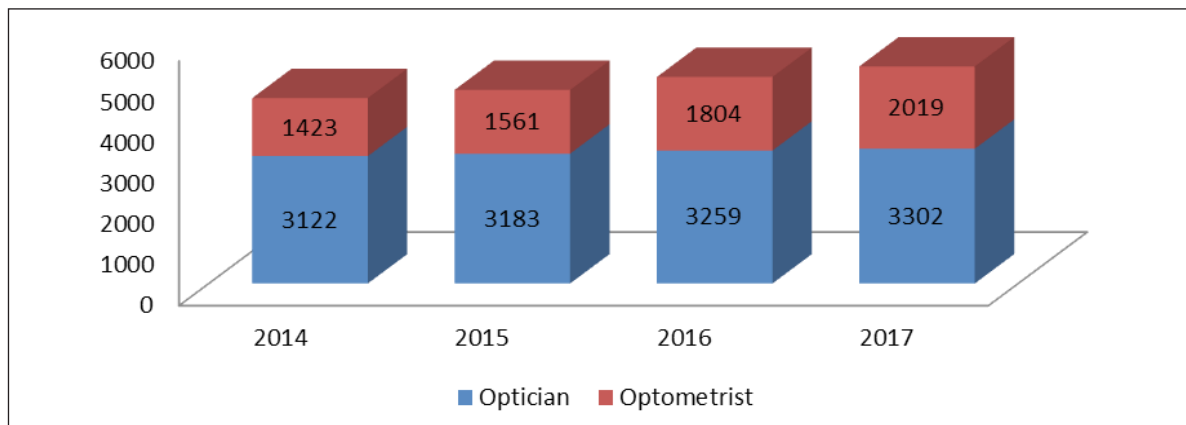
MALAYSIAN OPTICAL COUNCIL

Malaysian Optical Council (MOC) was established on 1 February 1992. As a regulatory body, MOC is responsible for the registration of optometrists and opticians. MOC is also given the responsibility to monitor optometry services and practices in Malaysia through the enforcement of laws according to the Optical Act 1991 and Optical Regulations 1994. As a professional body, MOC also evaluate and recognized Optometry and Opticianry Programme provided by Higher Education Provider in Malaysia.

a. Optometrists and Opticians' Registration

MOC Evaluation Committee ensures that only eligible persons are registered as Optometrist and Optician and are allowed to practice optometry in Malaysia. **Figure 26** shows the increasing numbers of optometrist and opticians registered with MOC annually.

Figure 26
Number of Registered Optometrist and Optician, 2014 to 2017



Source: Malaysian Optical Council, MoH

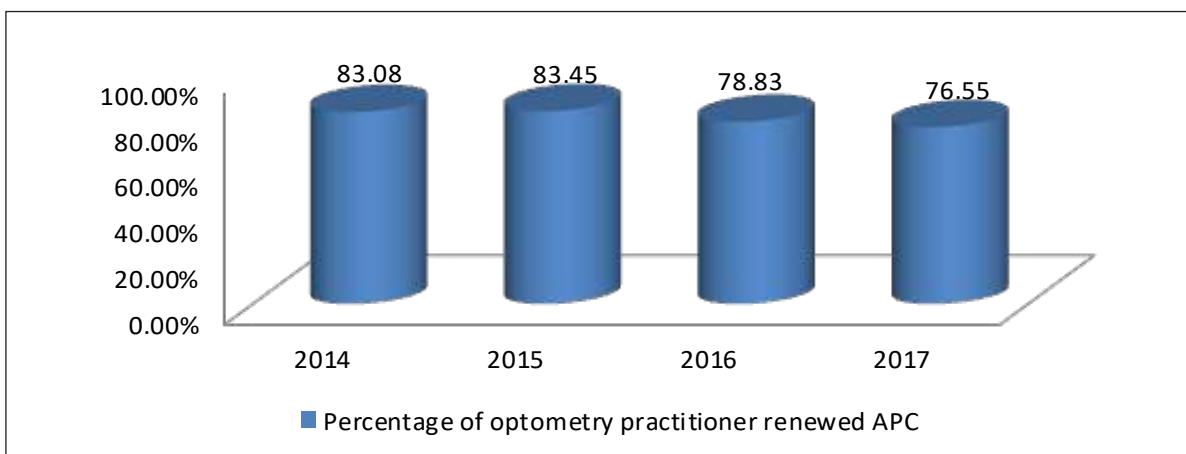
b. Contact Lens Permit

All registered optometrists are contact lens practitioner, while opticians are not allowed to practice contact lens unless they have contact lens permit. Contact lens permit is given if optician passed contact lens exam conduct by MOC. In 2017, 1 theory contact lens exam and 2 practical exams were conducted at SEGi University. From these exams, 4 opticians passed both theory and practical exams. These opticians are granted with contact lens permit, it makes a total of 571 opticians are allowed to practice contact lens.

c. Annual Practicing Certificate (APC)

According to Optical Act 1991, all registered optometry practitioner are required to apply for their APC. Application to renew the APC is made available online using OPTims system and online payment through MyBayar system. In 2017, a total of 1,494 transactions to renew APC online were recorded. **Figure 27** shows percentage of practitioners who had renewed their APC in percentage (2014 to 2017).

Figure 27
Percentage of Registered Optometry Practitioners Who had Renewed Their APC, 2014 to 2017



Source: Malaysian Optical Council, MoH

d. Qualifying Professional Assessment (PQA)

Pursuant to Optical Act 1991, to practice optometry in Malaysia a person are required to register with Malaysian Optical Council. To be eligible for registration, a person need to possess a recognized basic optometry degree as listed under the Second Schedule of the Optical Act 1991. If a person hold a basic optometry degree which is not recognized for registration, according to the section 42(2)(e) of the Optical 1991, he/she need to prove that the qualification they possessed can be used to practice as an optometrist. With that MOC introduce a Professional Qualifying Assessment (PQA) for Malaysian who has qualification not listed the Second Schedule. The PQA is ready to commence in 2018.

e. Accreditation and Recognition Of Optometry/Opticianry Programme

MOC Joint Technical Committee which comprise of representatives from MOC, MOHE, MQA, HEP and MOH conduct it's meeting every 3 months to look into accreditation of Optometry and Opticianry programme offered by local HEP. Currently, there are 7 universities running Optometry programme and 3 colleges running Opticianry programme (**Table 37**).

Table 37
List of Universities and Colleges Offering Optometry/Opticianry Programme

No	University/College	Programme	Accreditation Status
1.	International Islamic University Malaysia (IIUM)	<i>Sarjana Muda Optometri (Kepujian)</i>	Full Accreditation
2.	Universiti Teknologi MARA (UiTM)	<i>Sarjana Muda Optometri (Kepujian)</i>	Full Accreditation
3.	Management & Science University (MSU)	Bachelor of Optometry	Full Accreditation
4.	SEGi University	Bachelor of Optometry (Hons)	Full Accreditation
5.	National Institute of Ophthalmic Science (NIOS)	Bachelor of Science in Optometry	Full Accreditation
6.	Universiti Kebangsaan Malaysia (UKM)	<i>Sarjana Muda Optometri (Kepujian)</i>	Full Accreditation
7.	UCSI University	Bachelor of Optometry (Hons)	Provisional Accreditation
8.	Institut Integrasi Utama Avicenna (IIUA)	Diploma in Opticianry	Full Accreditation
9.	Vision College	Diploma in Opticianry	Provisional Accreditation
10.	Business & Management International College	Diploma in Opticianry	Provisional Accreditation

Source: Malaysian Optical Council, MoH

f. Professional Conduct and Discipline

MOC has established Inquiry Committee to look into complaints received against registered practitioners. Out of 16 complaints MOC received in 2017, three complaints are regarding unprofessional conduct of two registered optometrists and one registered optician. The committee solved the complaints through meeting session with the practitioners. Advised and warning were given to ensure the practitioner deliver safe and high quality optometry services to the public.

g. Enforcement

On 7 to 9 of August 2017, MOC conducted “*Kursus Asas Risiko*” using Malaysian Anti-Corruption Academy (MACA) training module at Hotel Avillion Admiral Cove, Port Dickson. A total of 25 MOH

Optometrists were trained to become intelligent officers to help MOC in the enforcement of Optical Act 1991. Four Intelligent Officers from MACA and MACC were invited to give talk and conduct the training.

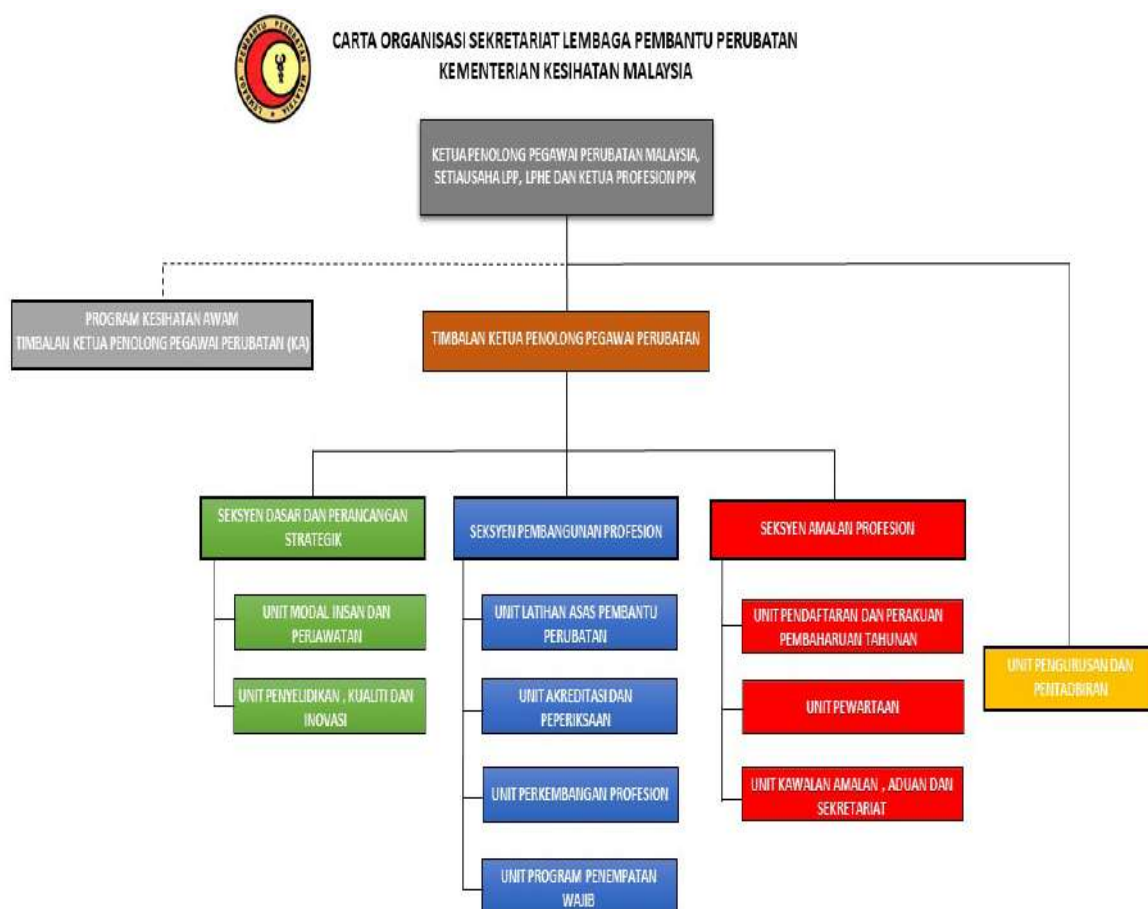
h. Optical Act 1991

A concept paper to repeal Optical Act 1991 and Regulatory Notification Form (RNF) were sent to Malaysian Productivity Corporation (MPC) on 8 March, 2017. MPC approved the concept paper and agree with the proposal to repeal the Optical Act and replace it with a new Optical Act. However, MOC is required to do Risk Impact Analysis and engagement with all the stakeholders to understand the impact of the new regulation towards the stakeholders.

MEDICAL ASSISTANT BOARD

The registration and practice of Medical Assistant's (Assistant Medical Officer) are regulated by the Medical Assistant Board under the Medical Assistant's Act 1977 in Malaysia. The board also oversees the registrations of Estate Hospital Assistant's which is regulated by Estate Hospital Assistant's Act 1965. Since 2015, the Healthcare Assistants (Pembantu Perawatan Kesihatan) has been also placed under the responsibility of the Medical Assistant Board. The Organisational Chart of Medical Assistant Board is as below (**Figure 28**).

Figure 28
Organisational Chart of Medical Assistant Board



Source: Medical Assistant Board, MoH

REGISTRATION AND ANNUAL REGISTRATION CERTIFICATE (ARC) UNIT

REGISTRATION – QUALITY OBJECTIVE

Issuance of Certificate of Registration as Medical Assistant with the Malaysian Medical Assistant Board completed within two (2) months. Standard 85%. **Table 38** shows the registration performance for year 2017

Table 38
Registration (Performance) 2017

Month	No. Of Registration	Compliance (Total)	Non-Compliance	Percentage
January	8	8		100
February	203	203		100
March	107	107		100
April	364	364		100
Mei	7	7		100
Jun	70	70		100
July	342	342		100
August	0	0		-
September	12	12		100
October	0	0		-
November	28	28		100
December	202	202		

Source: Medical Assistant Board, MoH

REGISTRATION OF ASSISTANT MEDICAL OFFICERS BY AGE COHORT (2007 to 2017)

No. of registration until December 2017 = 22,467

Public sector = 18,329, Private sector = 4,138, Death = 222, Male = 18,923,
Female = 3,544

Table 39 shows the number of shows the number of registration of assistant medical officers's by age cohort (2007 to 2017)

Table 39
Registration of Assistant Medical Officers's by Age Cohort (2007 To 2017)

Year	Sector	Sex		Age					
		M	F	≤29	30 - 39	40 - 49	50 - 59	60 - 74	≥75
2007	Public	605	0	0	594	11	0	0	0
	Private	39	0	0	38	1	0	0	0
2008	Public	633	1	0	631	2	0	0	0
	Public	59	0	0	59	0	0	0	0

Year	Sector	Sex		Age					
		M	F	≤29	30 - 39	40 - 49	50 - 59	60 - 74	≥75
2009	Public	620	23	17	623	3	0	0	0
	Private	50	10	13	45	1	0	0	0
2010	Public	830	94	248	677	4	0	0	0
	Private	79	80	94	65	0	0	0	0
2011	Public	342	94	340	95	1	0	0	0
	Private	29	71	77	23	0	0	0	0
2012	Public	676	208	711	173	0	0	0	0
	Private	206	125	273	57	1	0	0	0
2013	Public	632	173	756	48	1	0	0	0
	Private	215	276	461	30	0	0	0	0
2014	Public	655	157	770	40	2	0	0	0
	Private	210	342	518	34	0	0	0	0
2015	Public	952	400	1,053	35	0	0	0	0
	Private	128	298	419	8	1	0	0	0
2016	Public	1,377	432	1,785	22	1	0	0	0
	Private	79	203	280	2	0	0	0	0
2017	Public	1,069	202	1,264	7	0	0	0	0
	Private	101	347	447	1	0	0	0	0

Source: Medical Assistant Board, MoH

RENEWAL OF ANNUAL REGISTRATION CERTIFICATE (ARC)

Every registered Assistants Medical Officers must have a valid ARC to practice as an Assistant Medical Officer in Malaysia. **Table 40** shows the number of renewal of Annual Registration Certificate (ARC) for 2013 to 2017 in which shows an increasing in number.

Table 40
Renewal of Annual Registration Certificate (ARC) 2013 to 2016

Year	2013	2014	2015	2016	2017
No. of ARC	5,545	12,059	12,929	14,129	15,527

Source: Medical Assistant Board, MoH

ACADEMIC AND ACCREDITATION UNIT

Table 41 and **Table 42** shows 4313 trainee assistant medical officer's in ministry of health (MoH) and 1153 in private colleges

Table 41
Number of Trainee Assistant Medical Officer's in Ministry Of Health

No	MoH Colleges	No. of Students
1.	Medical Assistant College, Seremban, Negeri Sembilan.	558
2.	Medical Assistant College, Alor Star, Kedah	596
3.	College of Allied Health Sciences, Ulu Kinta, Perak	1,249
4.	College of Allied Health Sciences, Johor Bahru, Johor	544
5.	College of Allied Health Sciences, Kota Kinabalu, Sabah	671
6.	College of Allied Health Sciences, Kuching, Sarawak	695
Total		4,313

Source: Medical Assistant Board, MoH

Table 42
Number of Trainee Assistant Medical Officer's in Private Colleges

No	Private Colleges	No. of Students
1.	Islamic College of Science & Technology (KIST) Bachok, Kelantan	49
2.	College I-System Kuching, Sarawak	86
3.	Management & Science University (MSU), Shah Alam, Selangor	77
4.	International Murni College Nilai, Negeri Sembilan	215
5.	Shahputra University College, Kuantan, Pahang	34
6.	Ramsay Sime Darby Healthcare College, Shah Alam, Selangor	144
7.	Lincoln University College, Petaling Jaya, Selangor	32
8.	PUSRAWI International College of Medical Sciences (PICOMS), Kuala Lumpur	312
9.	International & Technology College Perlis (KATPM), Perlis	38
10.	Cyberjaya University College Of Medical Science (CUCMS), Cyberjaya, Selangor	37
11.	ITA College Sibu, Sarawak	38
12.	Universiti Kuala Lumpur (UniKL) Kajang, Selangor	69
13.	DSH Institute Of Technology (D.I.T) Setapak, Kuala Lumpur	56
14.	International College of Geomatika, Setiawangsa, Kuala Lumpur	15
Grand Total		1,153

Source: Medical Assistant Board , MoH

MEDICAL ASSISTANCE BOARD EXAMINATION

Table 43 shows Medical Assistant Board Examination for MoH Trainees.

Table 43
Medical Assistant Board Examination: Ministry of Health Trainees

No	MoH Colleges	No of Sem 6 trainees	No of Trainee sat for board's Exam	No of trainees pass	No of trainees fail	Remarks
1.	KPP Alor Setar, Kedah	126	126	126	NIL	NIL
2.	KSKB Sultan Azlan Shah, Ulu Kinta, Perak	203	203	203	NIL	NIL
3.	KPP Seremban, Negeri Sembilan	No student intake				
4.	KSKB Johor Bahru, Johor	89	89	89	NIL	NIL
5.	KSKB Kuching, Sarawak	108	107	107	NIL	Training postponed -1 trainee
6.	KSKB Kota Kinabalu, Sabah	143	143	141	NIL	Exam postponed – 2 trainee

Source: Medical Assistant Board , MoH

COMPULSORY PLACEMENT PROGRAMME

NUMBER OF CANDIDATES BY STATE

The 6-month Compulsory Placement Program (PPW) in Emergency Department is a special program designed and implemented to all fresh Assistant Medical Officers in the Ministry of Health, aimed at strengthening their clinical skills, enhancing ability to make decisions, and improving their communication effectiveness. **Table 44** showed the number of Compulsory Placement Programme candidates by State

Table 44
Compulsory Placement Programme by State

No	State	Group.1A/2017	Group.1B/2017	Group.1C/2017	Total
1.	Perlis	5	0	0	5
2.	Kedah	14	4	0	18
3.	Pulau Pinang	23	8	8	39
4.	Perak	45	0	3	48
5.	Selangor	100	44	31	175
6.	Hospital Kuala Lumpur	26	11	7	44
7.	W.P.Putrajaya	37	13	19	69
8.	Negeri Sembilan	28	10	15	53
9.	Melaka	7	5	10	22
10.	Johor	42	24	30	96
11.	Kelantan	4	0	0	4
12.	Terengganu	3	5	0	8
13.	Pahang	26	3	0	29
14.	Sabah	30	0	0	30
15.	Sarawak	89	28	0	117
Total		479	155	123	757

Source: Medical Assistant Board , MoH

POLICY AND STRATEGIC PLANNING

HUMAN RESOURCE AND ACADEMIC QUALIFICATION OF ASSISTANT MEDICAL OFFICERS (AMO)

Table 45 shows human resource and academic qualification of Assistant Medical Officers

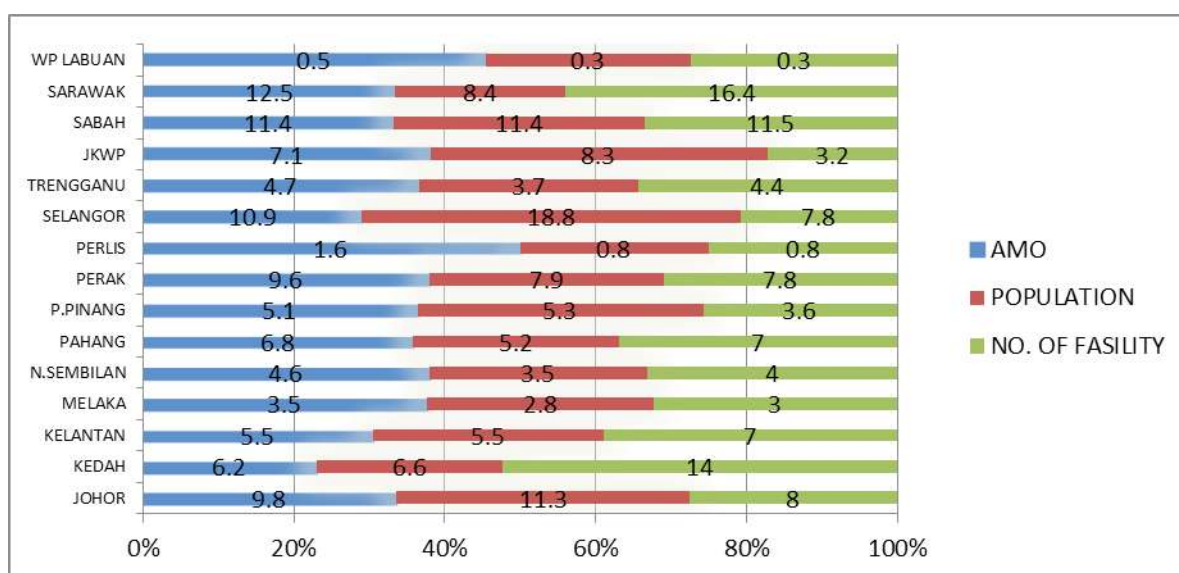
Table 45
Human Resource and Academic Qualification of Assistant Medical Officers

No	Details	Total
1.	Total numbers of AMO's	17,057
2.	Total numbers of AMO's (Public)	14,210
3.	AMO's (Private)	2,847
4.	AMO's with Post Basic	4,835
5.	AMO's with Bachelor Degree	536
6.	AMO's with Master Degree	12
7.	AMO's with PhD	2
8.	AMO's pursuing PhD	1
8.	AMO's without Post Basic	9,316
9.	AMO's Post Basic Grad per year (Average)	120

Source: Medical Assistant Board, MoH

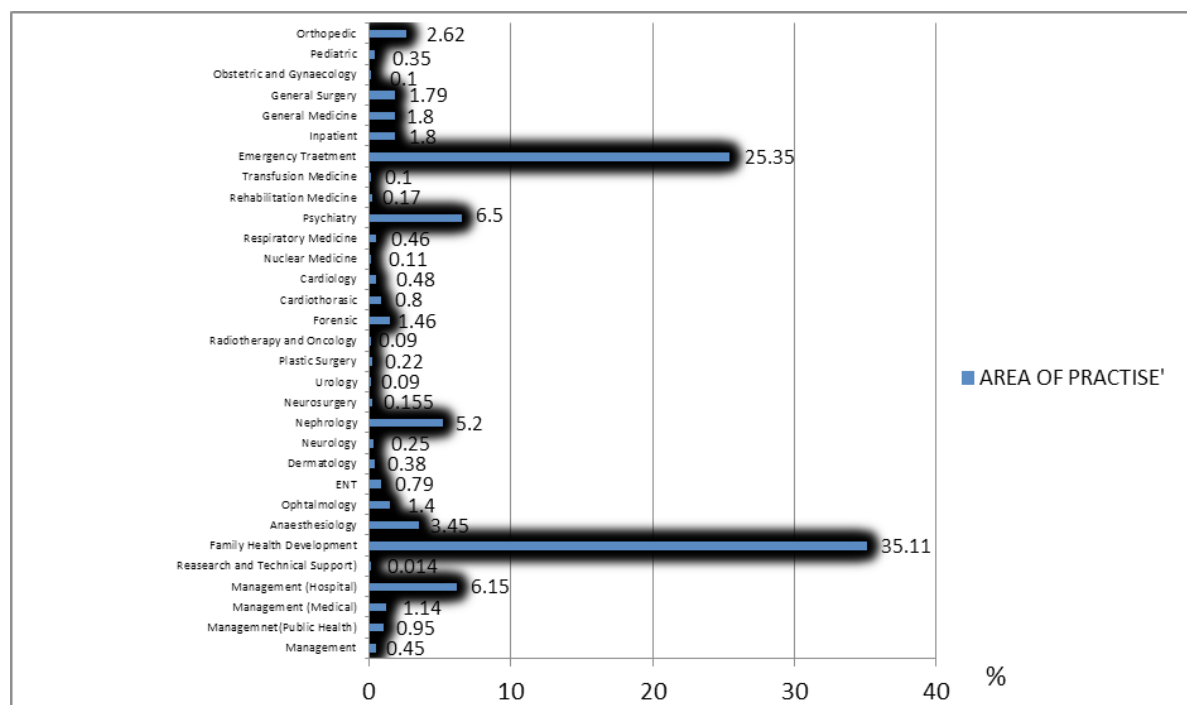
Figure 29 shows the AMO distribution by Facility and population density, meanwhile **Figure 30** shows the area of practice by AMO in which mainly at the emergency treatment and family health development.

Figure 29
AMO Distribution by Facility and Population Density



Source: Medical Assistant Board, MoH

Figure 30
Area of Practice by AMO



Source: Medical Assistant Board, MoH

HUMAN RESOURCE HEALTHCARE ASSISTANTS (PPK)

There are 21,391 out of 23,003 post of Human Resource Healthcare Assistant (PPK) filled in Peninsular Malaysia, 2,597 out of 2,661 in Sarawak and 2,294 out of 2,630 in Sabah as shown in **Table 46 to 48**

Table 46
Human Resource Healthcare Assistants (PPK) in Peninsular Malaysia

No	Grade	Filled Post	Empty Post	Total
1.	U 11/12	21,075	1,517	22,592
2.	U 14	316	95	411
Total		21,391	1,612	23,003

Source: Medical Assistant Board, MoH

Table 47
Human Resource Healthcare Assistants (PPK) in Sarawak

No	Grade	Filled Post	Empty Post	Total
1.	U 11/12	2,577	37	2614
2.	U 14	20	27	47
Total		2,597	64	2,661

Source: Medical Assistant Board, MoH

Table 48
Human Resource Healthcare Assistants (PPK) in Sabah

No	Grade	Filled post	Empty post	Total
1.	U 11/12	2,258	322	2,580
2.	U 14	36	14	50
Total		2,294	336	2,630

Source: Medical Assistant Board, MoH

ESTATE HOSPITAL ASSISTANT'S BOARD (LPHE)

HUMAN RESOURCE

The Estate Hospital Assistants Board is responsible for the registration and the matters involving Estate Hospital Assistants according to Section 2(1) Act 435 EHA (Registration) No.12/1965. A total of 878 Estate Hospital Assistant were registered under public category and 686 were registered under armed force category. **Table 49** and **50** show the number of registered Estate Hospital Assistants for 2017

Table 49
Estate Hospital Assistant Human Resource in Public Category

State	Registered Estate Hospital Assistant	Male	Female	Probation	Various Grades
Perlis	0	0	0	0	0
Kedah	165	165	0	130	35
Pulau Pinang	5	5	0	5	0
Perak	193	187	6	133	60
Selangor	112	111	1	80	32
WKL	15	15	0	15	0
Negeri Sembilan	33	33	0	32	1
Melaka	10	11	0	10	1
Johor	54	53	1	41	113
Pahang	28	22	6	22	6
Terengganu	10	5	5	7	3
Kelantan	3	3	0	3	0
Sabah	248	33	215	130	118
Sarawak	1	1	0	1	0
Total	878	644	234	609	269

Source: Medical Assistant Board , MoH

Table 50
Estate Hospital Assistant Human Resource in Armed Forces Category

State	Registered Estate Hospital Assistant	Male	Female	Probation	Various Grade
Perlis	4	4	0	4	0
Kedah	54	54	0	46	8
Pulau Pinang	14	14	0	12	2
Perak	95	95	0	84	11
Selangor	22	22	0	20	2
WKL	75	75	0	64	11
Negeri Sembilan	53	52	1	42	11
Melaka	178	178	0	148	30
Johor	79	79	0	58	21
Pahang	39	39	0	29	10
Terengganu	16	15	1	15	1
Kelantan	41	41	0	37	4
Sabah	6	6	0	5	1
Sarawak	10	10	0	10	0
Total	686	684	2	574	112

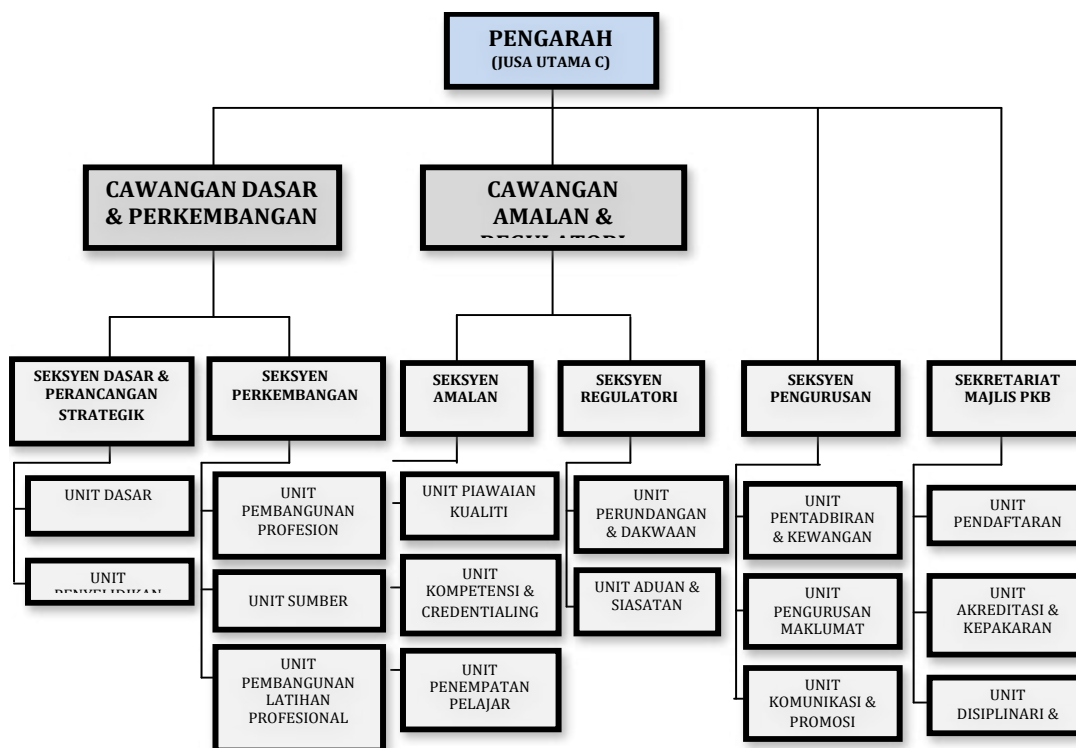
Source: Medical Assistant Board, MoH

ALLIED HEALTH SCIENCES DIVISION

Allied Health Sciences Division (AHSD) is responsible for the development of Allied Health Professionals (AHP) human capital and advancement of services in line with progression of health delivery system in Malaysia. AHSD is determinant and focused to ensure AHP services are delivered in accordance to quality standards, effective, efficient with optimization of resources and technology.

In 2017, the AHSD organisation moved into a major restructuring with existing human capital. This transformation was considered to accommodate new organisational function following the of Allied Health Professionals Act 2016 (Act 774) gazette. In this new structure, Core Team for implementation of Act 774 was upgraded to Secretariat to support activities until Malaysian Allied Health Professionals Council (MAHPC) is established. A new section for Regulatory, which consist of Legislation & Prosecution with Complaints & Investigation units was also included. (**Figure 31**).

Figure 31
Organisation Chart Allied Health Sciences Division, Ministry Of Health Malaysia



Source: Allied Health Sciences Division, MoH

ACTIVITIES AND PERFORMANCE

Key Performance Indicator (KPI) Director General of Health

Performance indicator from Profession of Dietetics, *Energy Intake at Least 70% of Recommendation within 5th Day of Enteral Nutrition Initiation among Patients in Ward* was monitored as Key Performance Indicator (KPI) Director General of Health, Ministry of Health (MoH) in the year 2017. The performance was 92.8 per cent against standard of ≥80 per cent (**Table 51**).

Table 51
Performance of Key Performance Indicator (KPI)
Director General of Health for Allied Health Professionals, 2017

Key Performance Indicator (KPI) Director Of Health For Allied Health Professionals	Target 2017	Performance 2017
Profession of Dietetic – Energy Intake at Least 70% of Recommendation within 5 th Day of Enteral Nutrition Initiation among Patients in Ward	≥80%	92.8%

Source: Allied Health Sciences Division, MoH

Key Performance Indicator (KPI) for Allied Health Professions

AHSD is also responsible to monitor Key Performance Indicator (KPI) from other professions to measure performance and to ensure continues quality improvement initiatives as in **Table 52**.

Table 52
List of Key Performance Indicator (KPI) For Allied Health Profession

No	Profession	Indicator	Standard (%)	Achievement (%)
1.	Dietitian	Percentage of inpatient seen by Dietitian \leq 24 hours [one (1) working day].	≥ 85	96.8
2.	Physiotherapist	Percentage of Patients with Backache Achieve Fully Functional Levels During The 6 Months / 24 Therapy Visit	≥ 87	98.5
3.	Occupational Therapist	Timely response (Within 24 Hours) By Occupational Therapy To In Patient Referrals.	≥ 95	99.6
4.	Speech-Language Therapist	Percentage of patients receiving therapeutic services by Allied Health Sciences Professional within the prescribed period: New patients receive speech therapy in 90 days	> 85	78.0
5.	Audiologist	Percentage of New Case Given Appointment in Audiology Clinic Following A Referral Within 45 Days.	≥ 85	78.6
6.	Medical Physicist	Daily Quality Control (QC) Test for Gamma Camera Machine.	≥ 95	97.7
7.	Medical Social Officer	The preparation of a complete Socio-Economic Report for application to the aid agency is sent within 14 working days after complete documents are received.	≥ 90	98.3
8.	Food Service Officer (Healthcare)	Percentage of Adult Inpatients Satisfied with The Quality Food Served in Hospital.	≥ 85	96.5
9.	Clinical Psychologist	Preparation of Psychological Assessment Report within 30 days after the expiration of the implementation period of psychological assessment required for a patient.	≥ 75	86.9
10.	Counselling Psychologist	<i>Bilangan Klien Yang Mendapat Perkhidmatan Psikologi Kaunseling dalam masa yang ditetapkan.</i>	≥ 85	98.0
11.	Diagnostic Radiographer	Percentage of Radiographs/ Image Rejected.	≤ 5	1.7
12.	Radiation Therapist	Percentage of accurate radical radiotherapy treatment for cancer patient.	≥ 80	87.2
13.	Optometrist	80% of the total number of patients met with Optometry Officer to get an Optometric service with a waiting time not exceeding 60 minutes.	> 80	85.2

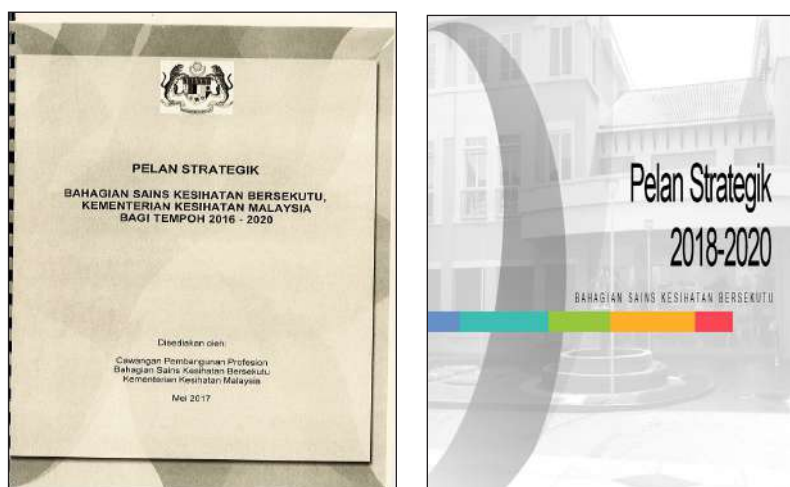
No	Profession	Indicator	Standard (%)	Achievement (%)
14.	Assistant Pharmacist	Percentage of Pharmacist Assistant achieves 40 Continuous Professional Development (CPD) Point.	≥ 90	99.2
15.	Tutor	<i>Peratus Pelatih Lulus Peperiksaan.</i>	≥ 95	99.4
16.	Medical Record Officer	Percentage of medical records that were dispatched within 72 working hours of discharge	≥ 95	94.0
17.	Microbiologist	Achievement in External Quality Assurance (EQA) Program for targeted modules in Bacteriology and Mycobacteriology	≥ 80	86.2
18.	Biochemist	More than 80% total error count (Tecal) ratio compared to total allowable error (TEa) less than 1 within 6 consecutive months for potassium (K) ie ([TEcal / TEa]) <1 within 6 consecutive months.	80 keseluruhan TEcal/TEa <1	99.8
19.	Forensic Science Officer	Management of specimens of medicolegal (histopathology) in the Department of Forensic Medicine within 30 days.	≥ 85	81.3
20.	Medical Geneticist	Successful Rate in Cytogenetics Test	≥ 96	92.6
21.	Biomedical Scientist	Accuracy of reporting the Gynaecological Module of Cytology External Quality Assurance (EQA) program.	≥ 80	86.2
22.	Embryologist	Fertilisation Rate.	≥ 74	74.0
23.	Medical Laboratory Technologist	Percentage of Timely (LTAT) For Full Blood Count Urgent/ STAT Request Within 1 Hour.	≥ 90	97.5
24.	Nutritionist	Percentage of children with increase body weight in the Lack of Nutrition Recovery Program for Children.	≥ 47.5	55.4
25.	Entomologist (Public Health)	Technical and Evaluation Visits by Scientific Officer (Entomology).	≥ 100	120.7
26.	Health Education Officer	Percentage of Quit Smoking Clinic customers who smoke quit> 6 months after receiving a quit smoking service run by Health Education Officer at Government hospital.	≥ 30	42.8
27.	Environmental Health Officer	Total Public Health Enforcement Activities Reached 100%.	100	109.0

Source: Allied Health Sciences Division, MoH

Mid-term Review of AHSD Strategic Plan

In The year 2017, the AHSD conducted mid-term review of AHSD Strategic Plan (2016 to 2020) and prepared performance report (**Image 5**). Based on the review, AHSD Strategic Plan (2018 to 2020) had incorporated two (2) core strategies; Implementation of Allied Health Professionals Act 2016 (Act 774) and Strengthening of Human Capital for next three (3) years.

Image 5
AHSD Strategic Plan (2016 – 2020) Dan Mid-Term Review (2018 to 2020)



Source: Allied Health Sciences Division, MoH

Implementation of Allied Health Professionals Act 2016 (Act 774)

Allied Health Professionals Act 2016 (Act 774) was gazetted on 18 February 2016 for registration of Allied Health practitioners and to regulate practices of 23 Allied Health Professionals. Thereafter, AHSD appointed a secretariat to develop Regulations, Code of Ethics and Conduct and Practice Standard for each profession. Various guidelines for the registration, enforcement and application from expatriates were pen down in 2017.

Workshops on Regulatory Impact Analysis and development of other related documents were done regularly by the secretariat. Study visit and discussions were planned with Malaysian Complementary and Traditional Medicine Council, Malaysian Dental Council, Malaysian Pharmacy Board and Private Medical Practice Control Section as well.

The Secretariat has also conducted 13 briefing sessions on Allied Health Professionals Act 2016 (Act 774) for AHPs at State Health Departments, Hospitals, Society meetings, universities and other stakeholders continuously.

Standard Operating Procedure (SOP)

A total of 30 Standard Operating Procedures (SOP) has been developed for seven (7) Allied Health Professions, since the year 2015 and in the process of editing as shown in Table 53. Development of SOP is an initiative to standardise and harmonise service practices among AHPs.

Table 53
Number of Standard Operating Procedure (SOP) Allied Health Professions

No	Allied Health Profession	No. of SOP
1.	Optometrist (2 nd edition)	7
2.	Medical Social Officer	3
3.	Counseling Psychologist	4
4.	Food Service Officer (Healthcare)	5
5.	Diagnostic Radiographer	6
6.	Radiation Therapist	3
7.	Dental Technologist	2
Total		30

Source: Allied Health Sciences Division, MoH

Study/Research

In the year 2017, AHSD has develop and completed three (3) studies related to AHP services as in **Table 54**

Table 54
List of Studies for Allied Health Professions 2017

No	Title
1.	<i>Kaji Selidik Perkhidmatan Forensik di Hospital Kementerian Kesihatan Malaysia.</i>
2.	<i>Kaji Selidik Clinical Instructor/ Local Preceptor bagi Program Sains Kesihatan Bersekutu (SKB) di Fasiliti Kementerian Kesihatan Malaysia.</i>
3.	<i>Kajian Kepuasan Bekerja Warga Bahagian Sains Kesihatan Bersekutu.</i>

Source: Allied Health Sciences Division, MoH

Credentialing, Allied Health Professions, MoH

A total of 556 AHPs from Optometrist, Audiologist, Speech-Language Therapist and Dietitian were awarded with one-off credentialing and remainder of 4,500 AHPs acquired credentialing via completing credentialing log book. In Total 5,056 AHPs were given credentialing for various procedures in the year 2017 (**Table 55**).

Table 55
List of Allied Health Professionals Awarded Credentialing in The Year 2017

No	Allied Health Professionals	Total
1.	Diagnostic Radiographer	1,952
2.	Radiation Therapist	177
3.	Occupational Therapist	693
4.	Physiotherapist	1,050
5.	Dental Technologist	628
6.	Optometrist	169
7.	Audiologist	86
8.	Speech-Language Therapist	47
9.	Dietitian	254
Total		5,056

Source: Allied Health Sciences Division, MoH

e-Credentialing System

e-Credentialing System was designed and developed to facilitate online application for credentialing which was done manually all these years. This initiative was a joint effort with e-Priv system Selayang Hospital, the National Champion (Improvement Category) at KIK Convention, Ministry of Health 2017.

Image 6
Front Interface of e-Credentialing System

SISTEM e-CREDENTIALING
PROFESIONAL SAINS KESIHATAN BERSEKUTU
KEMENTERIAN KESIHATAN MALAYSIA

Pengumuman:
Permohonan akan dibuka 2 penggal setiap tahun mengikut tarikh-tarikh seperti berikut :-
PENGAL 1 : 1 MAC - 30 APRIL
PENGAL 2 : 1 OGOS - 30 SEPTEMBER
Sebarang soalan atau masalah, sila berhubung dengan :
Unit Kompetensi & Credentialing
Bahagian Sains Kesihatan Bersekutu
Telefon : 03-88901011
Emel : ecredentialing@gmail.com
Pentadbir

© Sistem e-Credentialing v1 - Bahagian Sains Kesihatan Bersekutu, Kementerian Kesihatan Malaysia
Hakcipta Terpelihara 2017
[PENAFIAN : Kerajaan Malaysia tidak bertanggungjawab terhadap sebarang kehilangan atau kerosakan yang dialami kerana menggunakan maklumat dalam laman ini.]

Source: Allied Health Sciences Division, MoH

e-Penempatan Pelajar (e-PP) System

e-Penempatan Pelajar (e-PP) System is another initiative by AHSD to facilitate the student placement application by Institute of Higher Education at MoH facilities according to the Memorandum of Agreement (MoA). This system involves six (6) modules and three (3) of modules on Institute of Higher Education and Elective Information, Application of MoA and Student Attachment Application were completed. User Acceptance Test (UAT) was conducted to handle technical issues and identify improvement needed before launching for use (**Image 7**).

Hari Inovasi Profesional Sains Kesihatan Bersekutu 2017

Hari Inovasi Profesional Sains Kesihatan Bersekutu 2017 was organised on 27 April 2017 at Menara Usahawan, Putrajaya. This biennial event with the theme of '*Inovasi Teras Kecemerlangan Profesion*' became the platform to showcase innovation projects and an avenue to motivate and bring out the talents among participants to benefit the AHP services.

YBhg. Dato' Dr Hj Azman bin Abu Bakar, Director of Medical Development Division, was the guest of honour and officiated the event and launched *Buku Laporan Soal Selidik Aktiviti Penyelidikan SKB* (**Image 8**). Mr Mohd Ikhwan bin Shahdzul Bakri from Intellectual Property Corporation of Malaysia (MyIPO) presented a plenary lecture on *Paten dan Pendaftaran Harta Intelek*.

Image 7
Front Interface of e-Penempatan Pelajar (e-PP) System



Source: Allied Health Sciences Division, MoH

Image 8
Hari Inovasi Profesional Sains Kesihatan Bersekutu 2017



Program Book and Laporan Soal Selidik Aktiviti Penyelidikan Sains Kesihatan Bersekutu KKM



Launching of *Laporan Soal Selidik Aktiviti Penyelidikan Sains Kesihatan Bersekutu KKM* and Visit to Exhibition
 Source: Allied Health Sciences Division, MoH

A total of 133 AHPs has attended *Hari Inovasi Profesional Sains Kesihatan Bersekutu 2017*. The highlight was the participation of 29 projects from different categories. Three (3) Process Category, seven (7) Service Category, five (5) Technology Category and 14 from Product Category were staged and judged. The winners are as in **Table 56**

Table 56
List of Winners *Hari Inovasi Profesional Sains Kesihatan Bersekutu 2017*

No	Category	Place	Project Title	Profession
1.	Process	First	6PSM	Counseling Psychologist, Jabatan Kesihatan Negeri, Pulau Pinang
2.		Second	E-Bas @ Exchange Basis Systems For Provision Of Oral Nutrition Supplements	Dietitian, Hospital Kuala Lumpur
3.		Third	Lead Gown Test	Medical Physicist, Hospital Sultanah Aminah, Johor Bahru
4.	Service	First	ComForm (Commitment For Malaria)	Entomologist, Pejabat Kesihatan Kawasan Kudat, Sabah
5.		Second	Puzzle Board Diabetes	Dietitian, Klinik Kesihatan Seri Kembangan, Selangor
6.		Third	Angle Bed Care (ANGEL)	Occupational Therapist, Hospital Tengku Anis, Pasir Puteh, Kelantan
7.	Technology	First	Sistem Pengurusan Maklumat Bersepadu Radiologi (SPMBR)	Diagnostic Radiographer, Hospital Queen Elizabeth, Kota Kinabalu, Sabah
8.		Second	E - Pafs Diet	Food Catering Officer, Hospital Sultanah Bahiyah, Kedah
9.		Third	E - Ujirasa Form	Dietitian, Hospital Kuala Lumpur
10.	Product	First	Urine Bag Pouch	Occupational Therapist, Hospital Sultanah Aminah, Johor Bahru
11.		Second	Easy Foot Assessment 2.0	Occupational Therapist, Hospital Taiping, Perak
12.		Third	Easy Handle	Physiotherapist, Hospital Rehabilitasi Cheras, Kuala Lumpur

Source: Allied Health Sciences Division, MoH

Allied Health Sciences Division Certifications

In the year 2017, AHSD accredited with Quality Management System Certification and upgraded to MS ISO 9001:2015 which valid until 20 December 2018 (**Image 9**).

Image 9
MS ISO 9001:2015 Certification



Source: Allied Health Sciences Division, MoH

Status of Allied Health Professions Staffing

Overall, a total of 2,163 (6.6 per cent) AHPs post by various professions not filled until 31 December 2017 across the country. The three (3) positions with the highest vacancies were; 59 (33.0 per cent) Speech-Language Therapist, followed by 80 (27.6 per cent) Radiation Therapist and 258 (18.6 per cent) among the Tutor as in **Table 57**

Table 57
Number of Allied Health Professionals Post and Status until 31 December 2017

No.	Profession	Total	Filled	Vacant	Percentage of Vacancy (%)
1.	Microbiologist*	410	374	36	8.8
2.	Biochemist*	471	443	28	5.9
3.	Medical Geneticist*	21	19	2	9.5
4.	Biomedical Scientist*	85	77	8	9.4
5.	Embryologist*	12	11	1	8.3
6.	Medical Physicist*	253	219	34	13.4
7.	Entomologist*	137	118	19	13.9
8.	Forensic Scientist*	44	41	3	6.8
9.	Nutritionist*	444	418	26	5.9
10.	Speech-Language Therapist*	179	120	59	33.0

No.	Profession	Total	Filled	Vacant	Percentage of Vacancy (%)
11.	Audiologist*	200	173	27	13.5
12.	Physiotherapist (Officer)*	175	154	21	12.0
13.	Physiotherapist*	1,422	1,382	40	2.8
14.	Occupational Therapist (Officer)*	155	147	8	5.2
15.	Occupational Therapist*	1,230	1,140	90	7.3
16.	Clinical*/ Counseling Psychologist	189	174	15	7.9
17.	Diagnostic Radiographer/ Radiation Therapist (Officer)*	192	160	32	16.7
18.	Diagnostic Radiographer*	2,662	2,479	183	6.9
19.	Radiation Therapist*	290	210	80	27.6
20.	Food Technologist (Officer)	528	502	26	4.9
21.	Food Technologist	206	189	17	8.3
22.	Dietitian*	439	409	30	6.8
23.	Food Catering Officer*	33	30	3	9.1
24.	Food Service Assistant*	336	325	11	3.3
25.	Medical Social Officer*	273	252	21	7.7
26.	Optometrist	309	283	26	8.4
27.	Health Education Officer*	248	216	32	12.9
28.	Environmental Health Officer*	248	213	35	14.1
29.	Environmental Health Assistant*	4,893	4,701	185	3.8
30.	Tutor	1,390	1,132	258	18.6
31.	Medical Record Officer	53	46	7	13.2
32.	Medical Record Assistant	456	377	78	17.1
33.	Medical Laboratory Technologist*	6,722	6,342	380	5.7
34.	Dental Therapist	2,923	2,838	85	2.9
35.	Dental Technologist*	988	941	47	4.8
36.	Assistant Pharmacist	4,280	4,070	210	4.9
Total		32,888	32,725	2,163	6.6

Source: Buku Maklumat Kedudukan Perjawatan Kementerian Kesihatan Malaysia pada 31 Disember 2017, Bahagian Sumber Manusia KKM

*Professions included in the Allied Health Professional Act 2016 (Act 774)

CHALLENGES AND FUTURE PLANS

Implementation of Allied Health Professional Act 2016 (Act 774) which governs 23 allied health professions with different service scopes and qualification is a great challenge. Thus, Strategic Planning 2018-2020 has included the implementation of Allied Health Professional Act (Act 774) as its core strategy to support the effort to start registration in the year 2019.

AHSD has aspiration to always thrive to ensure Allied Health Professionals deliver safe, effective, efficient and quality health care through clear direction in line with development and expansion of Health Care System in the country

NURSING DIVISION

The Nursing Board of Malaysia was established in 1954. In June 2006, the Nursing Division was restructured and in 2014, the Nursing Division had three (3) main sections which are Nursing Practice (Hospital and Public Health), Regulatory and Policy & Quality. These sections are then subdivided into few various units.

The Nursing Practice Section monitors and regulates nursing practice according to the Nurses' Act and Regulations 1985 and guidelines stated in the Code of Professional Conduct for Nurses (1st Edition April 1998). The units under Nursing Practice includes the Nursing Practice (Hospital and Public Health), Quality Unit, Research and Evidence Based Unit, Continuous Professional Development Unit, Credentialing and Privileging Unit and International Relationship.

The Regulatory Section comprised of the Nursing Board and the Midwifery Board, monitors the compliance to the Nursing Act 1950, Midwifery Act 1966 and other nursing rules and regulations through the Nursing Unit Board Malaysia and Midwifery Board Malaysia. The Units under this section are the Curriculum Unit, Examination Unit, Private Nursing Facilities Unit, Act Unit, Annual Practice Certificate Unit (APC) and Temporary Practice Certificate (TPC). The Administration and Finance manages the financial and administration matters of the Division.

NURSING PRACTICE

Table 58 and 59 below show the number of nurses with specialisation course in 2017

Table 58
Statistik of MoH Nurses in Hospitals, 2017

No	Particular	Total
1.	Overall Total of Nurses	88,403
2.	Nurses with Post Basic Education	32,531
3.	Nurses with Degree	3,110
4.	Nurses with Master /PhD	71/1

Source: Nursing Division, MoH

Table 59
Number of Nurses with Specialisation Courses, 2017

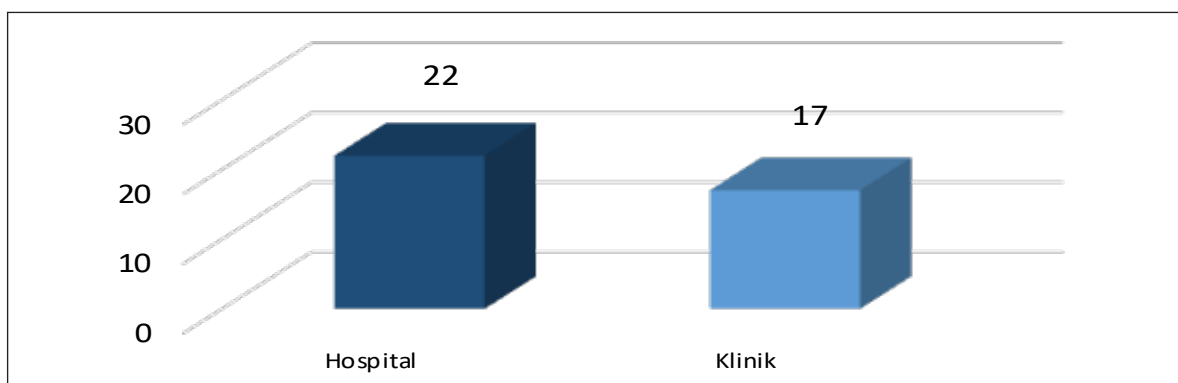
No	Specialisation Courses	Total
1.	Midwifery Advanced Diploma	14,074
2.	Public Health Nursing	2,256
3.	Gerontology Care	190
4.	Coronary Care	1,019
5.	Neonatology Care	1,221
6.	Oncology Care	429
7.	Orthopaedic Care	980
8.	Pediatric Care	1,702
9.	Psychiatry Care	446

No	Specialisation Courses	Total
10.	Renal Care	1,548
11.	Sports Care	20
12.	Forensic Care	14
13.	Diabetic Care	777
14.	Otorhinolaryngology Care	225
15.	Primary Healthcare	47
16.	Health Personal Management	359
17.	Ophthalmic Care	419
18.	Perioperative Care	1,825
19.	Intensive Care	1,837
20.	Emergency	964
21.	Perianaesthesia Care	596
22.	Neuroscience Care	256
23.	Infection Control	742
24.	Rehabilitative Care	219
25.	HIV/AIDS Counselling	144
26.	Gastrointestinal Endoscopy	192
27.	Occupational Health and Safety	9
28.	Palliative care	21
Total		32,531

Source: Nursing Division, MoH

Nursing division also did the supervisory and monitoring visits for 2017 as shown in the **Figure 32**

Figure 32
Supervisory and Monitoring Visits



Source: Nursing Division, MoH

QUALITY DEVELOPMENT

i. MANAGING CUSTOMER SATISFACTION

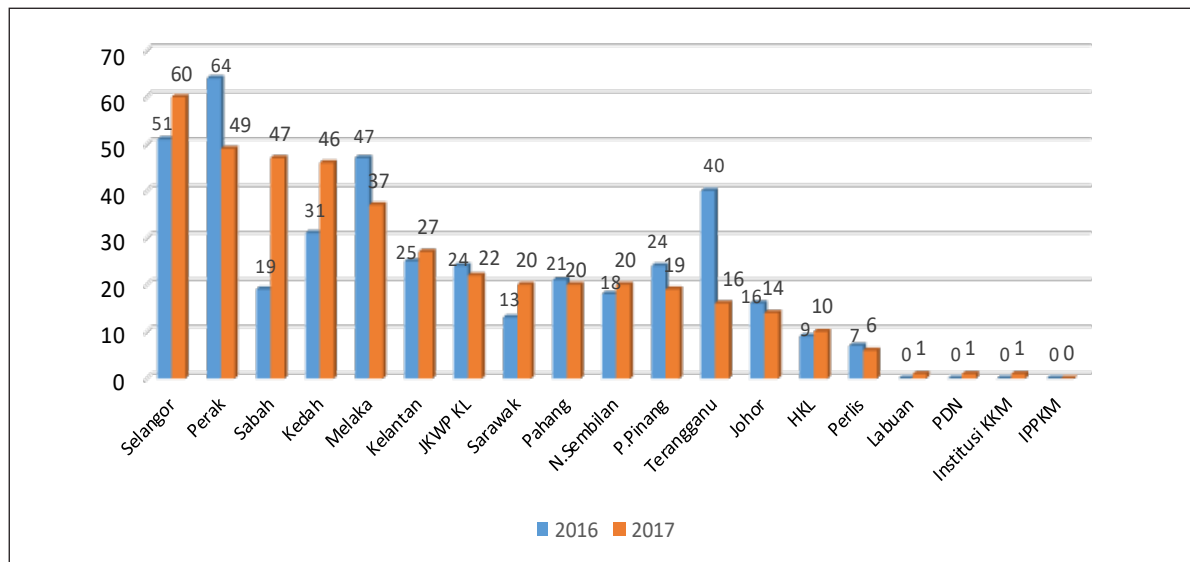
A total of 416 complaints 2017 of which 14.4 per cent (60) are from Selangor (**Table 60** and **Figure 33**). Further investigation discovered that 193 of them were baseless complaint.

Table 60
Number of Complaints Received, 2017

No	Month	No. of Complaint Received
1.	January	28
2.	February	43
3.	March	43
4.	April	33
5.	May	43
6.	June	25
7.	July	32
8.	August	38
9.	September	25
10.	October	37
11.	November	41
12.	December	28
Total		416

Source: Nursing Division, MoH

Figure 33
Number of Complaints Received by State, 2016 and 2017



Source: Nursing Division, MoH

ii. NATIONAL NURSING AUDIT (NNA)

a. National Nursing Audit (NNA) (Hospital)

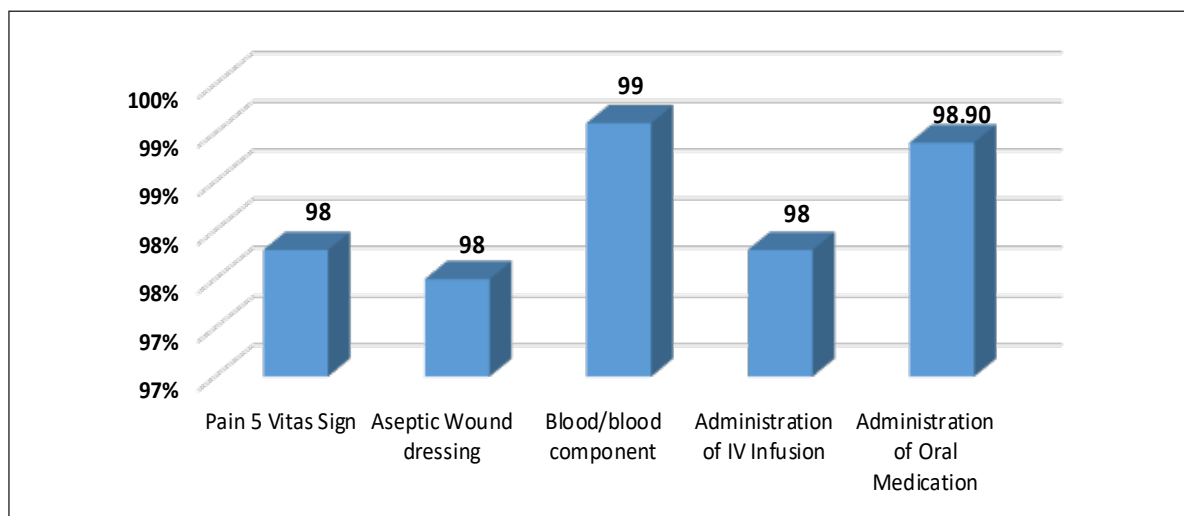
National Nursing Audit is one of the first quality activity that was introduced by the Nursing Division, Ministry of health Malaysia since 2008. The nursing audit is conducted in the hospitals and Public Health in 2 phases each year during the month of March-April (Phase 1) and in July-August (Phase 2). The audit results (**Table 61** and **Figure 34**) will be sent the Nursing Division for compilation and analysis. The reports will be presented at the Administrative Nursing Technical Meeting at National Level. Health Facilities that did not achieve the standard level are required to do root cause analysis on the shortfall and to come up with strategies for corrective actions.

Table 61
National Nursing Audit Results from Each State -2017

No	State	Phase 1			Phase 2		
		Pain 5 th Vital Sign (%)	Aseptic Wound Dressing (%)	Blood/ Blood Component Transfusion (%)	Administration Of IV Infusion (%)	Aseptic Wound Dressing (%)	Administration Of Oral Medication (%)
1.	Perlis	91.80	98.60	100	98.20	93.74	98.90
2.	Kedah	97.50	98.60	100	96.00	98.00	98.80
3.	Pulau Pinang	95.70	94.40	96.00	93.80	95.70	99.10
4.	Perak	93.00	91.00	95.90	94.00	86.00	92.00
5.	Selangor	99.40	99.40	98.90	95.00	99.48	99.79
6.	WP KL & Putrajaya	99.40	99.50	100	97.90	98.47	99.00
7.	Negeri Sembilan	99.90	99.60	100	100	99.70	100
8.	Melaka	100	100	100	100	100	99.30
9.	Johor	99.20	98.80	99.80	99.10	98.40	98.90
10.	Pahang	97.20	97.40	99.00	98.50	98.50	98.80
11.	Terengganu	96.00	98.50	96.80	98.50	97.94	98.80
12.	Kelantan	97.40	96.20	99.60	98.00	97.80	99.50
13.	Sabah	98.00	97.00	100	98.10	98.00	99.50
14.	Sarawak	97.60	97.40	97.70	97.40	97.40	99.00
15.	WP Labuan	100	96.40	100	96.30	99.90	100
16.	Hospital KL	96.50	96.60	98.90	98.40	97.33	99.12
17.	National Cancer Institute	97.80	95.80	99.80	99.10	99.50	98.90
18.	Institute Of Respiratory Medicine	100	100	100	100	100	100
19.	ATM	99.10	97.90	98.90	99.20	97.90	99.90
Total		97.80	97.50	99.10	97.80	97.58	98.90
Standard		85	90	100	90	90	100

Source: Nursing Division, MoH

Figure 34
National Nursing Audit Results from All State -2017



Source: Nursing Division, MoH

b. National Operating Room Nursing Audit (NORNA)

The National Operating Room Nursing Audit (NORNA) results for 2017 are shown in **Table 62** and **Figure 35** below:

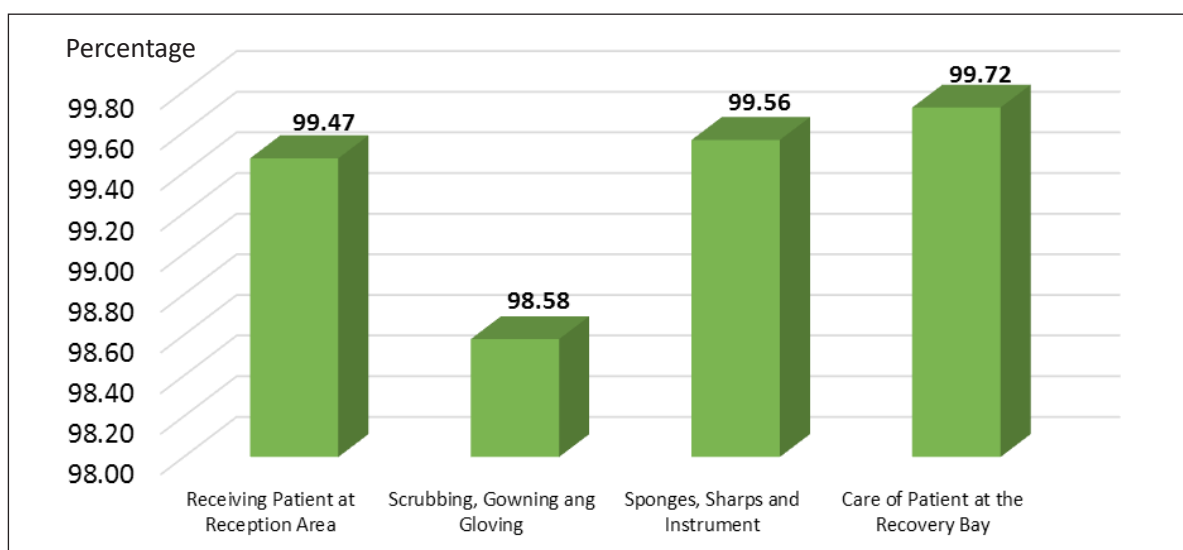
Table 62
National Operating Room Nursing Audit (NORNA) Results for 2017

No	State	Receiving Patient at Reception Area (%)	Scrubbing, Gowning and Gloving (%)	Sponges, Sharps and Instruments Count (%)	Care of Patient at the Recovery Bay (%)
1.	Perlis	98.60	100	100	100
2.	Kedah	99.80	99.95	100	100
3.	Pulau Pinang	99.20	100	100	99.00
4.	Perak	98.00	96.20	99.00	97.00
5.	Selangor	97.81	99.96	100	99.99
6.	WP KL & Putrajaya	100	97.00	100	100
7.	Negeri Sembilan	100	99.80	99.80	100
8.	Melaka	100	100	100	100
9.	Johor	100	100	100	99.90
10.	Pahang	97.77	99.50	99.80	99.50
11.	Terengganu	100	100	100	100
12.	Kelantan	100	100	100	100
13.	Sabah	100	100	100	100
14.	Sarawak	100	100	100	99.60

No	State	Receiving Patient at Reception Area (%)	Scrubbing, Gowning and Gloving (%)	Sponges, Sharps and Instruments Count (%)	Care of Patient at the Recovery Bay (%)
15.	WP Labuan	100	100	100	100
16.	Hospital Kuala Lumpur (HKL)	97.30	93.00	99.50	100
17.	National Cancer Institute (IKN)	100	89.00	94.00	100
18.	ATM	99.47	100	100	100
Total		99.47	98.58	99.56	99.72
Standard		100	100	100	100

Source: Nursing Division, MoH

Figure 35
Audit Results of NORNA 2017



Source: Nursing Division, MoH

c. National Nursing Audit (NNA) (Public Health)

The National Nursing Audit for Public Health has at present 4 elements with 12 Indicators. Out of the 12 indicators, 8 of the indicators achieved the set standards whereas 4 did not reached the set standards. The indicators that failed to achieve the standards are as such:- Anaemia in Pregnancy; Giving Immunisation via injection; Management of Cold Chain System and Management of Inadequate Dietary Intake Among Babies and Children Below 6 months till 6 years old.

d. National Indicator Approach (NIA)

There are three (3) indicators under the NIA that are monitored by the Nursing Division, Ministry of Health Malaysia. The three (3) indicators are:

- i. Incidence of Thrombophlebitis
- ii. Incidence of Pressure Ulcer
- iii. To Reduce Patient Fall.

i. Incidence of Thrombophlebitis

There is no short fall in quality for the incidence of thrombophlebitis for the year 2017 as shown in **Table 63, 64** and **Figure 36**.

Table 63
Comparison Data of Thrombophlebitis Incidence for year 2014 to 2017

No	Year	Percentage (%)
1.	2014	0.12
2.	2015	0.04
3.	2016	0.07
4.	2017	0.05

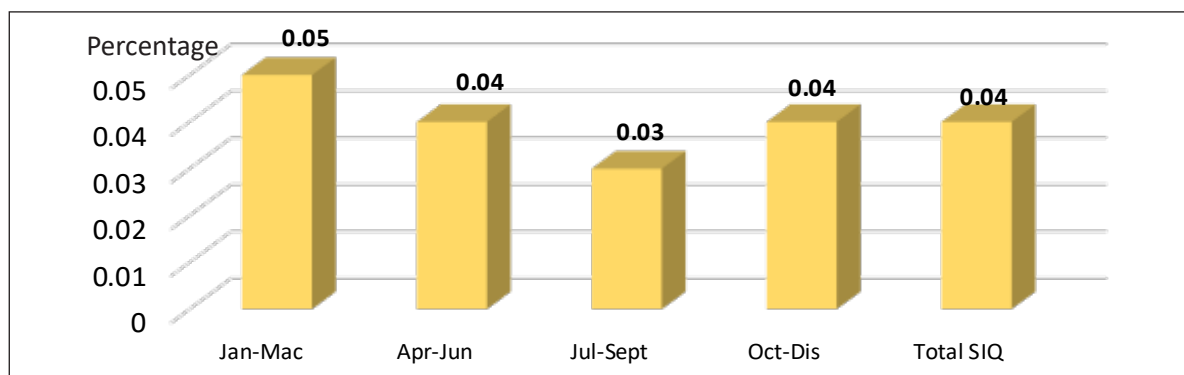
Source: Nursing Division, MoH

Table 64
Thrombophlebitis Data from each State - 2017

No	State / Hospital	Jan-Mac (%)	Apr-Jun (%)	Jul-Sept (%)	Oct-Dis (%)	Total SIQ (%)
1.	Perlis	0.02	0	0	0	0.02
2.	Kedah	0.01	0	0	0.01	0.01
3.	P. Pinang	0.02	0.05	0.002	0.01	0.02
4.	Perak	0.01	0.01	0.003	0.009	0.01
5.	Selangor	0.02	0.04	0.	0.07	0.03
6.	Negeri Sembilan	0.05	0.05	0.05	0.05	0.05
7.	Melaka	0.26	0.14	0.01	0.09	0.13
8.	Johor	0.08	0.07	0.12	0.03	0.08
9.	Pahang	0.09	0.04	0.01	0.02	0.04
10.	Trengganu	0.03	0.11	0.03	0.03	0.05
11.	Kelantan	0.04	0.02	0.007	0.09	0.03
12.	Sarawak	0.14	0.09	0.02	0.03	0.07
13.	Sabah	0.05	0.03	0.06	0.05	0.05
14.	Labuan	0	0	0.05	0	0.01
15.	Wilayah Persekutuan Health State Office (JKWP) & Putrajaya	0	0	0	0.03	0.01
16.	Hospital Kuala Lumpur (HKL)	0	0	0.08	0.02	0.03
17.	Institute of Respiratory Medicine	0	0	0.01	0	0.01
19.	National Cancer Institute	0.09	0	0.05	0	0.04
20.	ATM	0.06	0.10	0	0	0.04
Total		0.05	0.04	0.03	0.04	0.04

Source: Nursing Division, MoH

Figure 36
Thrombophlebitis Data from All State 2017



Source: Nursing Division, MoH

ii. Incidence Of Pressure Ulcer

Incidence of Pressure Ulcer had achieved the standard as shown in the **Table 65, 66** and **Figure 37**. Recorded one Shortfall in Quality (SIQ) from Institute of Respiratory Medicine for month of January – March 2017.

Table 65
Incidence of Pressure Ulcer from Year 2014 to 2017

No	Year	Percentage (%)
1.	2014	0.57
2.	2015	0.65
3.	2016	0.57
4.	2017	0.74

Source: Nursing Division, MoH

Table 66
Incidence of Pressure Ulcer by State for 2017

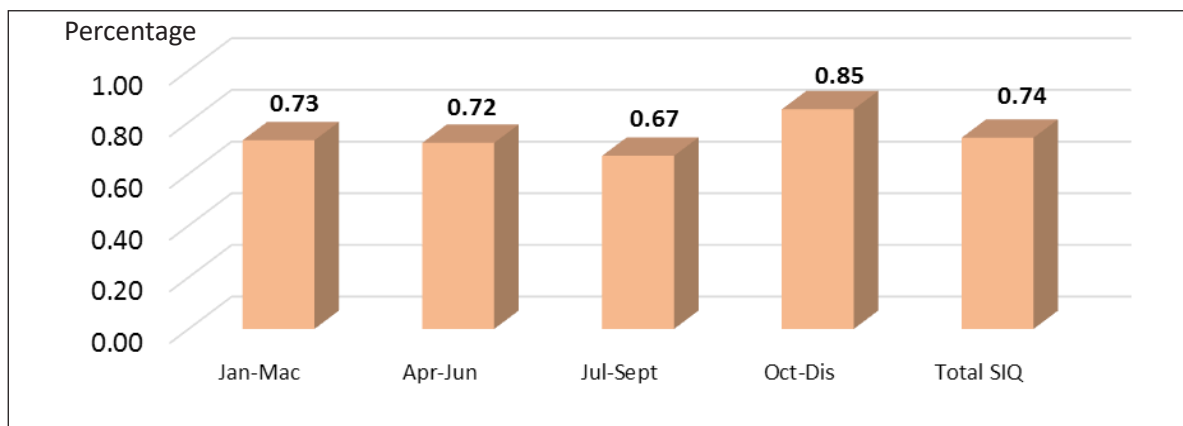
No	State / Hospital	Jan-Mac (%)	Apr-Jun (%)	Jul-Sept (%)	Oct-Dic (%)	Total SIQ (%)
1.	Perlis	0.94	0.72	0.50	0.21	0.59
2.	Kedah	0.34	0.50	0.47	0.50	0.45
3.	P. Pinang	0.43	0.44	0.3	0.30	0.37
4.	Perak	0.55	0.30	0.24	0.46	0.39
5.	Selangor	0.72	0.90	0.70	1.10	0.86
6.	Negeri Sembilan	1.48	0.79	0.77	1.04	1.02
7.	Melaka	0.26	0.14	0.18	0.19	0.19
8.	Johor	0.58	0.63	0.66	0.72	0.65
9.	Pahang	0.91	1.1	0.60	1.20	0.95
10.	Terengganu	0.31	0.6	0.70	0.20	0.45
11.	Kelantan	0.47	0.5	0.34	0.50	0.45

No	State / Hospital	Jan-Mac (%)	Apr-Jun (%)	Jul-Sept (%)	Oct-Dis (%)	Total SIQ (%)
12.	Sarawak	0.65	0.68	0.66	0.66	0.66
13.	Sabah	1.17	0.73	1.24	1.60	1.19
14.	Labuan	1.60	1.20	1.50	0	1.08
15.	Wilayah Persekutuan Health State Office (JKWP) & Putrajaya	0.40	0.20	2.20	0.40	0.80
16.	Hospital Kuala Lumpur (HKL)	0.85	0.96	0.61	1.00	0.86
17.	Institute of Respiratory Medicine	2.22	1.47	0	0.80	1.12
19.	National Cancer Institute	1.63	1.60	1.40	1.80	1.61
20.	ATM	1.93	1.73	1.00	1.27	1.48
Total		0.73	0.72	0.67	0.85	0.74

Source: Nursing Division, MoH

iii. To Reduce Patient Fall

Figure 37
Incidence of Pressure Ulcer by State for 2017



Source: Nursing Division, MoH

Standard < 2.1%

Comparison data for three (3) years, is found that the rate of patient fall is steadily increasing each year as shown in **Table 67**, **Table 68** and **Figure 38** were elaborate more about the incidence of patient fall for year 2017.

Table 67
To Reduce Patient Fall from Year 2014 to 2017

No	Year	Percentage (%)
1.	2015	24.3
2.	2016	19.2
3.	2017	31.6

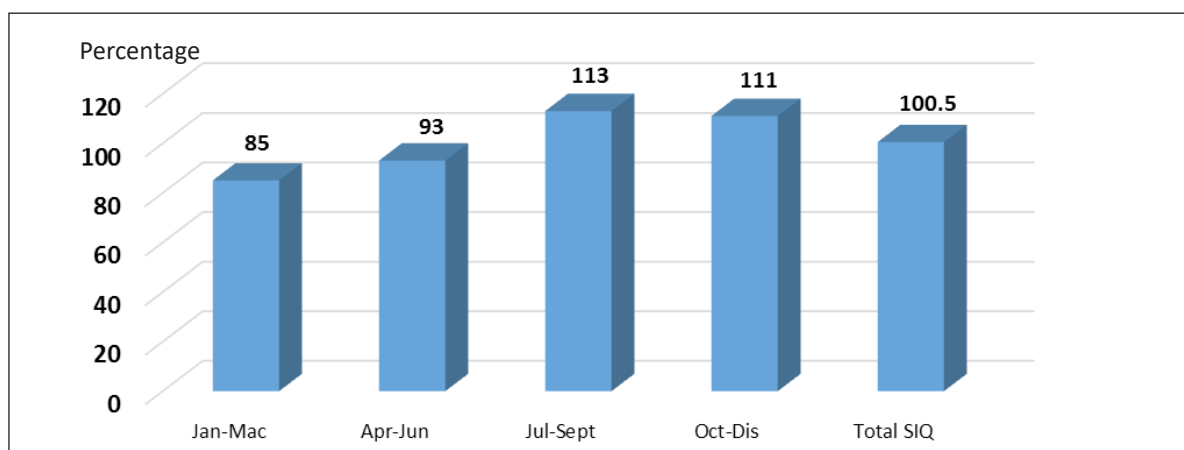
Source: Nursing Division, MoH

Table 68
To Reduce Patient Fall from Each State for 2017

No	State/Hospital	Jan-Mac (%)	Apr-Jun (%)	Jul-Sept (%)	Oct -Dis (%)	Total SIQ (%)
1.	Perlis	1	0	0	2	0.8
2.	Kedah	5	2	4	3	3.3
3.	P. Pinang	7	5	16	16	11.0
4.	Perak	13	10	10	12	11.3
5.	Selangor	12	15	21	17	16.3
6.	Negeri Sembilan	1	2	5	1	2.3
7.	Melaka	4	4	2	5	3.8
8.	Johor	8	12	13	12	11.3
9.	Pahang	7	6	5	6	6.0
10.	Terengganu	1	5	0	6	3.0
11.	Kelantan	2	2	2	1	1.8
12.	Sarawak	12	13	18	15	14.5
13.	Sabah	6	3	9	5	5.8
14.	Labuan	1	0	0	0	0.25
15.	JKWP & Putrajaya	1	3	4	2	2.5
16.	Hospital Kuala Lumpur (HKL)	1	6	4	5	4.0
17.	Institute of Respiratory Medicine (IPR)	3	3	0	3	2.3
19.	National Cancer Institute (IKN)	0	0	0	0	0
20.	ATM	0	2	0	0	0.5
Total		85	93	113	111	100.5

Source: Nursing Division, MoH

Figure 38
To Reduce Patient Fall from Each State for 2017

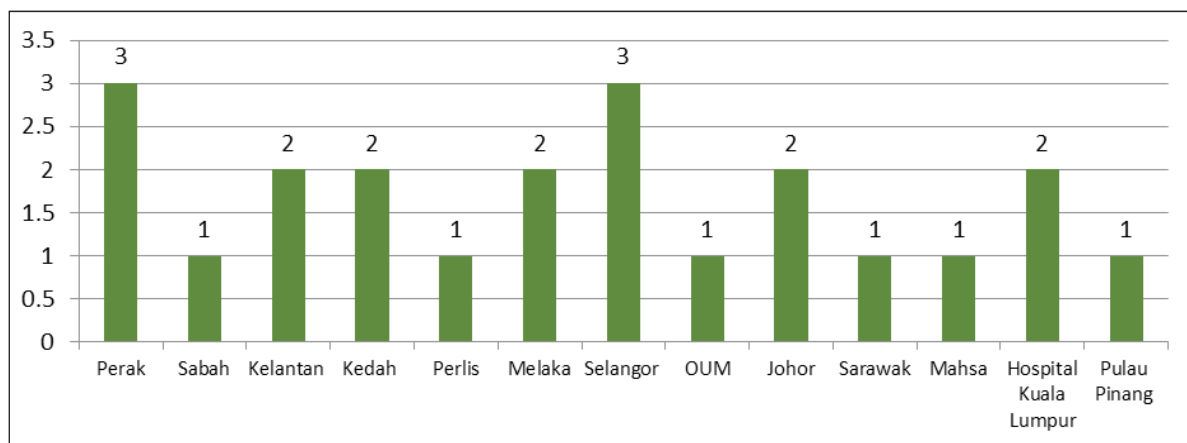


Source: Nursing Division, MoH

2ND NATIONAL NURSING RESEARCH COLLOQUIUM (NNRC) 2017 ON “EBP MAKING OUR DESTINY A REALITY”

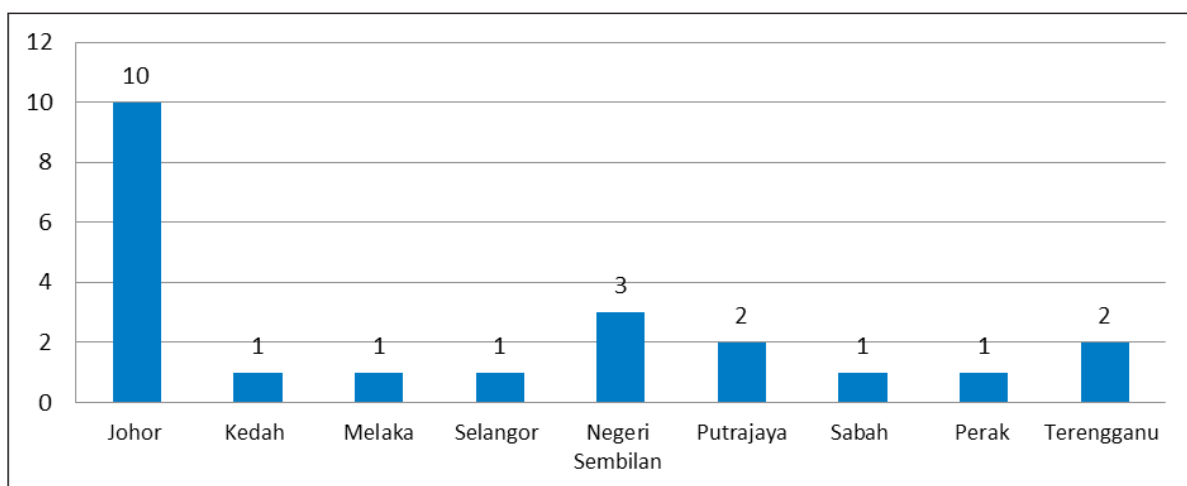
The National Nursing Research Colloquium (NNRC) was held on 16 to 18 April 2017 at Kuala Nerus, Trengganu State as a place for nurses to present their research papers. The main theme of this Colloquium is **Evidence Based Practice: Making Our Destiny a Reality**.

Figure 39
Participants of Oral Presentation at the National Nursing Research Colloquium (NRCC) 2017



Source: Nursing Division, MoH

Figure 40
Participants of Poster Presentation at the National Nursing Research Colloquium (NRCC) 2017

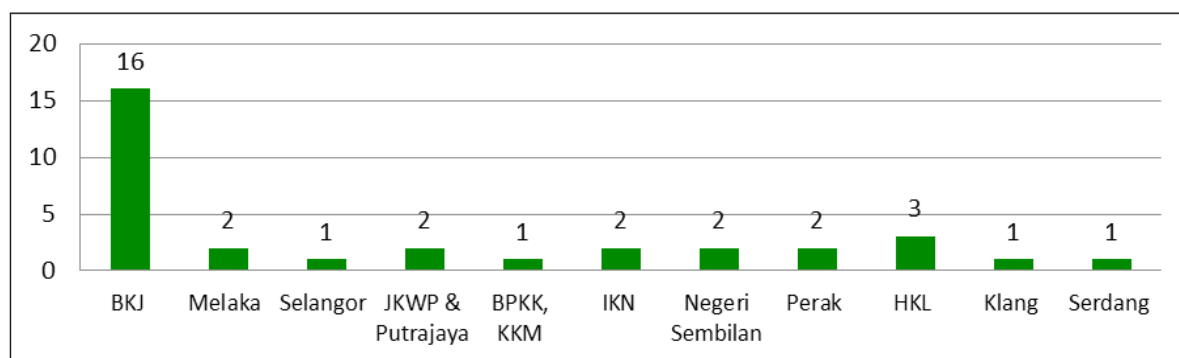


Source: Nursing Division, MoH

BENGKEL EVIDENCE BASED PRACTICE (EBP) 2017

Use of best evidence during decision-making and applying nursing care practice. The Evidence Based Practice Workshop was held at the Meeting Room Level 2, Health Education Division. The first workshop was held on 18 to 19 September 2017 and will be held again in the coming year. A total of 33 participants consisted of Matron, Head of Nurses, Nurses from MoH, Hospitals and Health Clinics. The affected hospitals are Kuala Lumpur Hospital, Klang Hospital, Ipoh Hospital, Seremban Hospital, Malacca Hospital, Putrajaya Hospital and Wilayah Persekutuan Health State Office, National Cancer Institute, Serdang Hospital, Petaling and Klang Health District Office.

Figure 41
No of Participants in Evidence Based Practice (EBP) Workshops



Source: Nursing Division, MoH

CONTINUOUS PROFESSIONAL DEVELOPMENT UNIT

Continuous Professional Development Unit was developed to plan, coordinate and prepare the schedule of courses to all nurses in Ministry of Health (MoH).

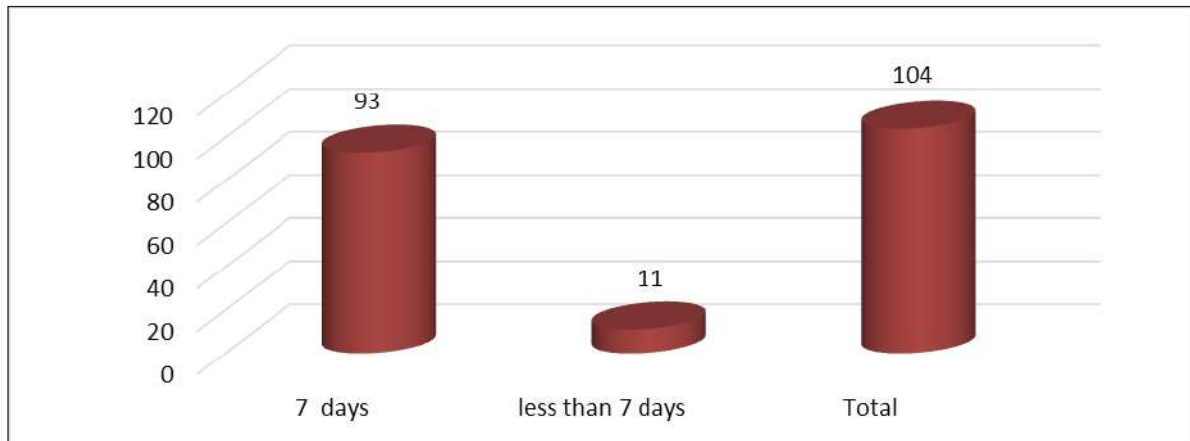
In-service course

This program aimed to increase the knowledge and latest information to ensure the nurses able to give a quality and effective nursing care. It is also to ensure the nurses attended 7 days course per year as written in *Pekeliling Perkhidmatan Awam Bil.6 Tahun 2015*. In 2017, Continuous Professional Development Unit had facilitated 21 course/workshop in which involved 1420 nurses all over Malaysia from various category and 8 courses/workshops (27 nurses) organized by other departments include non-government agencies. Nursing Division consists of 104 staffs (Professional and Support Group), in which 93 staffs (89 per cent) able to attend 7 days course in year where as another 11 of them attended less than 7 days due to long leave such as confinement leave and other reasons (**Figure 42**).

CREDENTIALING & PRIVILEGING

AHP Credentialing is also a responsibility of this Division. A series of Credentialing Committee Meetings and Sub-expertise Meetings were held to ensure smooth coordination of the Credentialing process. Among the discipline involved were Emergency & Trauma, Pre- Operative, Intensive Care, Ophthalmology and Dialysis (**Table 69**).

Figure 42
No of Nursing Division Staff Attended Courses in year 2017



Source: Nursing Division, MoH

Table 69
AHP Credentialing Activity, 2017

No	Discipline	Credentialing Recognition	
		Application	Approval
1.	Intensive Care	434	419
2.	Pre- Operative	322	315
3.	Dialysis	132	102
4.	Emergency &Trauma	41	40
5.	Ophthalmology	38	34
	Total	967	910

Source: Nursing Division, MoH

INTERNATIONAL NURSING RELATIONSHIP UNIT REPORT, 2017

Table 70
International Nursing Relationship Unit Report, 2017

No	Title	Comments
1.	Involvement of Nursing Officers to attend International Meetings / Conferences	
a.	24th Asean Joint Coordinating Committee on Nursing (AJCCN) & 86th Asean Coordinating Committee on Service (CCS).	a. 30 to 31/01/2017 - Semarang, Indonesia
b.	25th Asean Joint Coordinating Committee on Nursing (AJCCN) & 88th Asean Coordinating Committee on Service (CCS).	b. 09 to 10/10/2017 - Seam Reap, Cambodia
c.	22nd Joint Singapore- Malaysia Nursing Conference 2017	c. 05 to 06/10/2017 - The Furama Riverfront Hotel, Singapore

No	Title	Comments
2.	Malaysia Overseas Delegation Visits while studying at the Nursing Division, Ministry of Health Malaysia	
a.	2 delegates from Sultan Qaboos University, Oman in collaboration with Mahsa University	a. 16/01/2017
b.	4 delegates from Health Ministry of Republic of Maldives	b. 09/09/2017

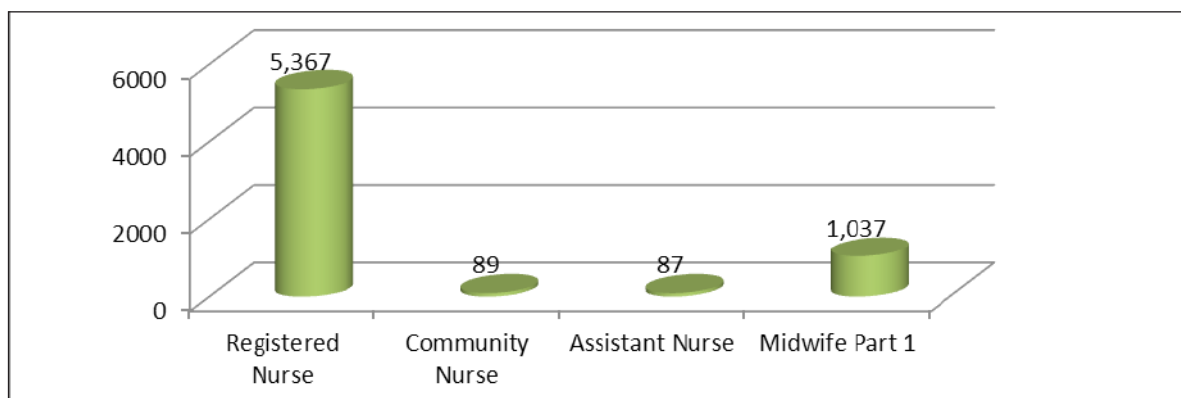
Source: Nursing Division, MoH

REGULATORY

REGISTRATION

Registration Unit is a unit in the Nursing Board Malaysia (NBM), which handles the registration process for nurses from MoH Colleges, Public Higher Learning Institute (IPTA), Private High Learning Institute IPTS and Private Colleges who has passed the Nursing Board Malaysia (NBM) and Midwifery Board Malaysia (MBM) examination. Total of 6,580 nurses have been registered in the year of 2017, in which consists of 5367 Registered Nurses, 89 Community Nurse, 87 Assistant Nurse and 1037 Midwifery Part 1 (**Figure 43**).

Figure 43
Statistics of Registration Nurses in the NBM and MBM for 2017

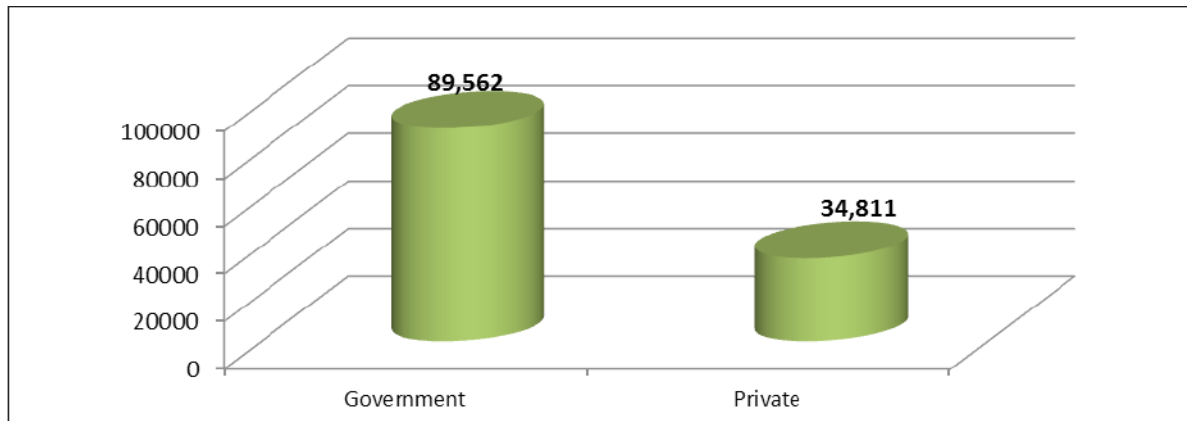


Source: Nursing Division, MoH

ANNUAL PRACTICING CERTIFICATE (APC)

Annual Practicing Certificate (APC) is issued to all nurses which would carry out Nursing Practice in all hospitals/Institution in the public and the private sectors that have registered with the Nursing Board Malaysia (NBM) and work with Malaysia employers only. In 2017 a total of 124,373 Annual Practicing Certificate (APC) has been issued, 89,562 APC for the Government Nurses and 34,811 for Private Nurses (**Figure 44**).

Figure 44
No of Nursing Annual Practicing Certificate (APC) for year 2017



Source: Nursing Division, MoH

TEMPORARY PRACTICE CERTIFICATE (TPC)

Temporary Practice Certificates (TPC) was also issued for year 2017 as shown in the **Table 71** and **72** below:

Table 71
Temporary Practicing Certificates Issued, 2017

No	State	Health Facilities Institution		College University		Elective Training		Total		
		Male	Female	Male	Female	Male	Female	Male	Female	Total
1.	India	2	26	4	2	0	0	6	28	34
2.	Philippine	0	7	0	1	0	1	0	9	9
3.	Australia	1	1	0	0	0	0	1	1	2
4.	Ireland	0	1	0	0	0	0	0	1	1
5.	Singapore	1	2	0	0	0	0	1	2	3
6.	United Kingdom	0	2	1	0	0	0	1	2	3
7.	Taiwan	0	2	0	0	0	0	0	2	2
8.	Pakistan	1	0	0	0	0	0	1	0	1
9.	Vietnam	0	1	0	0	0	5	0	6	6
10.	Myanmar	0	1	0	0	0	0	0	1	1
11.	America	1	0	0	0	0	0	1	0	1
12.	Japan	0	1	0	0	0	0	0	1	1
13.	Indonesia	0	0	1	0	0	0	1	0	1
14.	Thailand	0	0	0	0	0	3	0	3	3
15.	Maldives	0	0	0	0	0	1	0	1	1
16.	Yemen	0	0	0	0	0	1	0	1	1
17.	Papua New Guinea	0	0	0	0	1	1	1	1	2
Total		6	44	6	3	1	12	13	59	
		50		9		13		72		

Source: Nursing Division, MoH

Table 72
Number of Foreign Nurses Serving in Malaysia, 2017

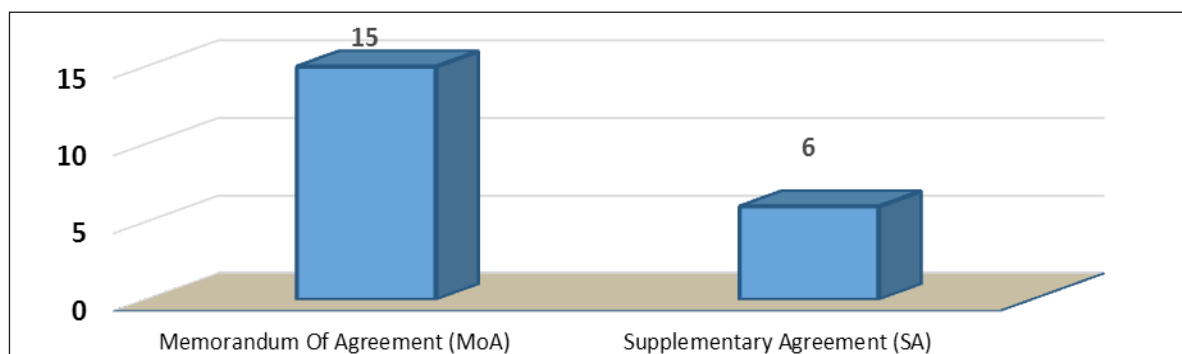
No	Country	Clinical		Education		Total
		Male	Female	Male	Female	
1.	India	2	26	4	2	34
2.	Philippines	0	7	0	1	8
3.	Australia	1	1	0	0	2
4.	Ireland	0	1	0	0	1
5.	Singapore	1	2	0	0	3
6.	United Kingdom	0	2	1	0	3
7.	Taiwan	0	2	0	0	2
8.	Pakistan	1	0	0	0	1
9.	Vietnam	0	1	0	0	1
10.	Myanmar	0	1	0	0	1
11.	America	1	0	0	0	1
12.	Japan	0	1	0	0	1
13.	Indonesia	0	0	0	0	1
Total		6	44	6	3	59

Source: Nursing Division, MoH

PRIVATE PRACTICES AND FACILITIES MONITORING

Private Practices And Facilities Monitoring Unit of Public Higher Learning Institute (IPTA)/ Private Higher Learning Institute (IPTs) is a unit which controls the use of MoH facilities to be used by Institutions of Higher Learning for public and private (IPTA / IPTs) for the clinical training of Nursing program since year 1997. This unit involves drafting the Memorandum of Agreement (MoA) as well as Supplementary Agreement (SA). In the year 2017, a total of 21 MoA was signed, 15 for Renewal MoA and six (6) Supplementary (SA) (**Figure 45**).

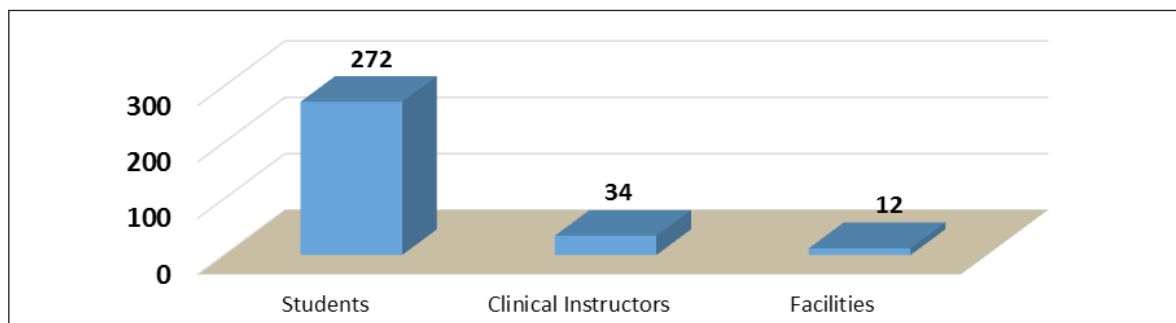
Figure 45
Statistics Provision MoA 2017



Source: Nursing Division, MoH

The unit also did periodic visits to MoH facilities to ensure Higher Learning Institute's (IPT) compliance with the guidelines. It is also checking on the candidates' qualifications before endorsement as Lecturers/ Clinical Instructors of that Higher Learning Institute and makes a token payment confirmation for MoH facility utilization (**Figure 46**). 12 Facilities have been monitored throughout the year 2017. The meeting was held with 34 Clinical Instructors and 272 students from nine (9) Public Higher Learning Institute (IPTA)/Private Higher Learning Institute (IPTs) colleges.

Figure 46
Periodic Visits to Facility MoH



Source: Nursing Division, MoH

EXAMINATION

Examination Unit is under the Regulatory Section of Nursing Division. This is universally recognized nursing professional body responsible for registry examinations/regulating licensure for all nurses in accordance to the General Registry, Nurses Act 1950 and Midwifery Act 1966. This unit had establishes condition and guideline in implementation of Registry Examination for Malaysian Nurses and foreign Nurses.

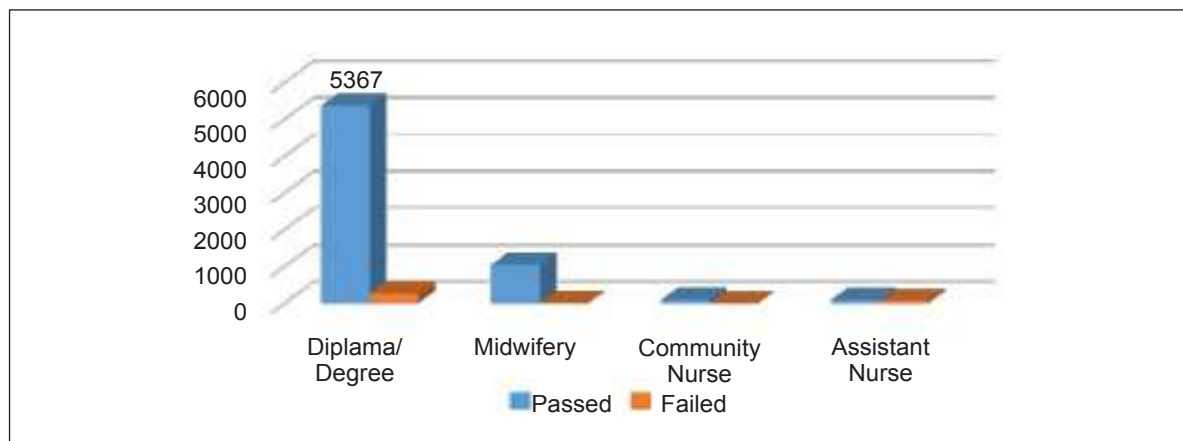
Table 73
Nursing Registry Examination Results, 2017

Program	Exam date	Institution	Sat For Exam	Passed		Failed	
				Total	%	Total	%
Nursing (Diploma/ Degree)	8 March 2017	MoH	333	326	97.89	7	2.11
		Public Higher Education Institutions	1	0	0	1	0
		Private Higher Education Institutions	188	165	87.77	23	12.23
		Total in March	522	491	94.06	31	5.94
	5 July 2017	MoH	1,013	1,004	99.11	9	0.89
		Public Higher Education Institutions	420	396	94.29	24	5.71

Program	Exam date	Institution	Sat For Exam	Passed		Failed	
				Total	%	Total	%
Nursing (Diploma/ Degree)		Private Higher Education Institutions	1,042	955	91.65	87	8.35
	Total in July		2,475	2,355	95.15	120	4.85
	6 September 2017	MoH	369	367	99.46	2	0.54
		Public Higher Education Institutions	164	147	89.63	17	10.37
		Private Higher Education Institutions	554	524	94.58	30	5.42
	Total in September		1,087	1,038	95.49	49	4.51
	December 2017	MoH	1,200	1,189	99.08	11	0.92
		Public Higher Education Institutions	80	66	82.50	14	17.50
		Private Higher Education Institutions	258	228	88.37	30	11.63
	Total in December		1,538	1,483	96.42	55	3.78
	Total Candidates		5,622	5,367	95.46	255	4.54

Source: Nursing Division, MoH

Figure 47
Nursing Board and Midwifery Board Examination 2017



Source: Nursing Division, MoH

CURRICULUM

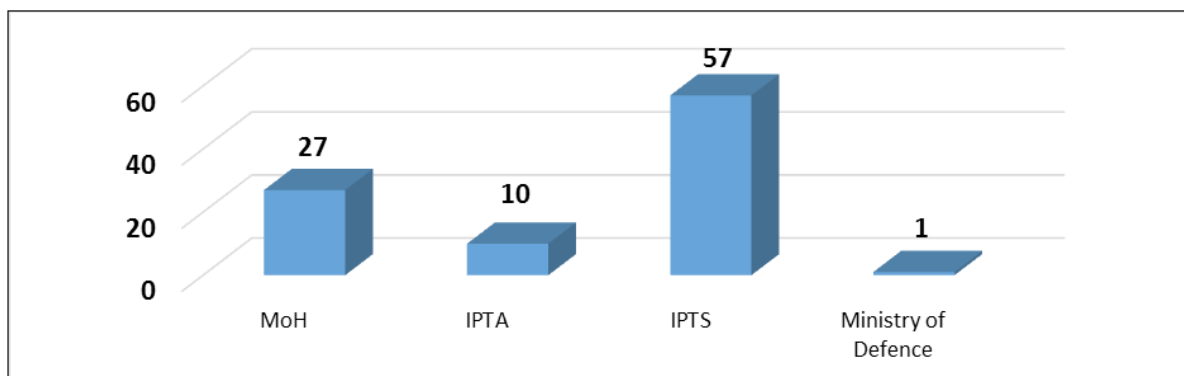
The Division is also responsible for quality control of nursing education. Its fundamental functions are to evaluate and approve all nursing curriculum in local institutions offering nursing program, and to recommend to MoA or approval of all nursing educational programs. **Table 74** shows number of local institutions offering nursing programs.

Table 74
Number of Local Institutions Offering Nursing Program, 2017

Agency	No. of Institutions	Nursing Programs							
		Certificate		Diploma	Post Basic (6 months)	Tech met	Adv. Diploma (1 Year)	Degree	
		AN	JM					Pre	Post
MoH	27	0	0	1 27(8-PSL)	0	0	11	0	0
IPTA	10	0	0	7	0	0	0	5	0
IPTS	57	4	0	50 (3 conversion)	45	8	28	21	18
Ministry of Defence	1	0	0	1	0	0	0	0	0
Total	95	4	0	59	45	8	39	26	18

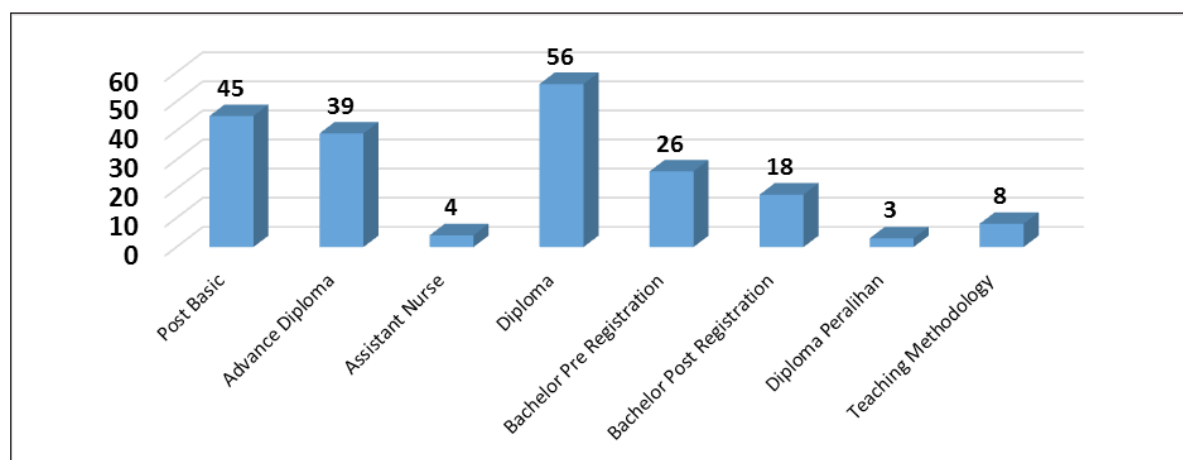
Source: Nursing Division, MoH

Figure 48
Number of Institutions Offering Nursing Programs



Source: Nursing Division, MoH

Figure 49
List of Nursing Programme in MoH, IPTA, IPTS and Ministry of Defence



Source: Nursing Division, MoH

WAY FORWARD

The rapidly changing health care system requires nurses to possess increasing knowledge, clinical competency, autonomy, empowerment and clinical judgment. Furthermore, sophisticated technologies and society's orientation to health and self-care are rapidly causing educational and training needs of nurses to grow. Thus, The Nursing Division has outlined and planed many educational and training programs, educating nurses to apply Evidence Based Practice to lead a better performance to our patients.

TRADITIONAL AND COMPLEMENTARY MEDICINE PRACTICE DIVISION (T&CM)

The National Policy of Traditional and Complementary Medicine (T&CM) was developed in 2001 and revised in 2007. This policy is important in charting the T&CM development framework in Malaysia and is used as a guide to achieving the goals set.

The Traditional and Complementary Medicine Division, Ministry of Health Malaysia (MoH), was gazetted under the research and technical support program (P&ST) in February 2004 with the post office on 1 December 2004.

In January 2006, the Cabinet had agreed with the recommendation of the Malaysian Ministry of Justice to establish an integration hospital, namely the absorption of T&CM services into the national healthcare system. Three (3) government hospitals have been identified as pioneers for the implementation of the T&CM services in the 9th Malaysia Plan as follows:

- i. Kepala Batas Hospital, Penang - 2007
- ii. Putrajaya Hospital, Putrajaya - 2008
- iii. Sultan Ismail Hospital, Johor - 2008

As of December 2016, a total of fifteen (15) government health facilities have offered T&CM services including:

- i. Sultanah Nur Zahirah Hospital, Kuala Terengganu
- ii. Duchess of Kent Hospital, Sandakan, Sabah
- iii. Sarawak General Hospital, Kuching, Sarawak
- iv. Sultanah Bahiyah Hospital, Alor Setar, Kedah
- v. Port Dickson Hospital, Negeri Sembilan
- vi. Sultanah Hajah Kalsom, Cameron Highland, Pahang.
- vii. Raja Perempuan Zainab II Hospital, Kota Bharu, Kelantan.
- viii. Cheras Rehabilitation Hospital
- ix. Low Risk Maternity Centers, MAIWP at WP Putrajaya
- x. Jasin Hospital, Melaka
- xi. Women and Children's Hospital, Sabah
- xii. National Cancer Institute, Putrajaya

Figure 50
T&CM Units in Government Health Facilities



Source: Traditional & Complementary Medicine Practice Section, MoH

Six (6) types of T&CM services have been provided that are traditional Malay massage, after-delivery massage, acupuncture, herbal medicines as side treatment for cancer patients, Shirodhara treatments and Basti therapy.

The restructuring of T&CM activities from the P&ST Program was placed under the Medical Program on 1 March 2013 (administered) and came into full force on 1 January 2014. The restructuring of T&CM into the Medical Program is to strengthen the healthcare system in government facilities, in addition to the development of policies, strategies and activities of T&CM in line with the development of the Medical Program.

The T&CM Bill has been approved in the House of Representatives and the National Assembly in 2012. On 10 March 2016, the Traditional and Complementary Medicine Act 2016 (Act 775) has been gazetted and on the 1st of August 2016 has been designated as the effective date of Act 775 for section 1,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,20,42,43,44,45,46,47,60,61 and subsections 63 (1) and (3).

In line with the enforcement of Act 775 on 1 August 2016 T&CM has undergone internal restructuring with existing posts (61 positions) with the approval of the Secretary General of the MoH.

Restructuring of the organizational structure of T&CM has been implemented with the establishment of the Secretariat of the T&CM Council (SMPTK) to carry out the functions and requirements as stipulated in ACT 775 in stages according to the enforcement phase of the following acts

Table 75
The restructuring of T&CM activities

Phase 1	Establishment of T&CM Council (2016) * Restructuring &CM organizations with existing positions without increasing posts and financial implications
Phase 2	Enforcement of T&CM Regulations * Registration of T&CM practitioners nationwide (in stages)
Phase 3	Enforcement of T&CM Regulations * Activities of inspectorate, enforcement and disciplinary proceedings

Source: Traditional & Complementary Medicine Practice Section, MoH

ACHIEVEMENT

Deputation of Ayurvedic and Siddha Physician to Malaysia and Implementation of Varnam Therapy Pilot Project

Dr. Vijay Kumar Srivastava, an Ayurvedic Physician was deputed to Malaysia on 19 May 2017. He replaced Dr. Gopesh Mangal in continuing the Ayurvedic services at Hospital Port Dickson (HPD) and Hospital Rehabilitasi Cheras (HRC.)

He attended an orientation session at HPD on 22 May 2017. On the 23 May 2017, he was introduced to all HPD staffs during the HPD Monthly Assembly and had the opportunity to meet with the HPD Director. Subsequently on 24 May 2017, he attended an orientation session at HRC. In the afternoon, he met with the Director of T&CMD, visited all sections in T&CMD and was introduced to all T&CMD staffs.

Dr. Senthilvel Govindaraju, a Siddha Physician was deputed to Malaysia and arrived on 5 July 2017. He attended an orientation session at Hospital Sungai Buloh (HSgB) on 6 July 2017. Dr. Senthilvel Govindaraju's deputation to Malaysia is to initiate the Pilot Project of Varmam Therapy in HSgB, together with the Rehabilitation Medicine Department and Orthopedic and Traumatology Department, HSgB.

Under this pilot project, Varmam Therapy services will be offered in HSgB as an additional and complementary treatment for existing modern medical treatments for the following indications:

- i. Cervical spondylosis;
- ii. Lumbar spondylosis;
- iii. Osteoarthritis (Knee); and
- iv. Adhesive capsulitis (Frozen shoulder).

In addition, a pilot study will be initiated under this pilot project which will be headed by the Head of Medical Rehabilitation Department, HSgB, together with the Siddha physician and Orthopedic and Traumatology Department, HSgB. This pilot study is expected to take one year to assess the effectiveness of Varmam Therapy for patients in HSgB based on the specified indications and criteria.

Image 10
Implementation of Varmam Therapy Pilot Project



Dr. Senthilvel Govindaraju (Siddha Physician) with Dr. Akmal Hafizah binti Zamli (Head of Rehabilitation Medicine Department, YBhg. Dato' Dr. Zamyn Zuki bin Mohd Zuki (Head of Orthopaedic & Traumatology Department) and Medical Officers of Orthopaedic & Traumatology Department, Sungai Buloh Hospital

Source: Traditional & Complementary Medicine Practice Section, MoH

Image 11
Ayurvedic Physician



Dr. Vijay Kumar Srivastava
(Ayurvedic physician) in Port Dickson Hospital
Source: Traditional & Complementary Medicine Practice Section, MoH

Meeting on the Contribution of Traditional Medicine (TM) in Strengthening Primary Health Care (PHC) organized by the World Health Organization (WHO)

Regional Office for the Western Pacific, WHO had organised the Meeting on the Contribution of Traditional Medicine (TM) in Strengthening Primary Health Care (PHC) on 14 and 15 September 2017, at Manila, Philippines. Countries from Western Pacific Region such as Cambodia, Laos, Philippines, Vietnam, Mongolia and Malaysia had attended the meeting. The experts from Australia, Japan, Republic of Korea, People's Republic of China, Hong Kong and Macao were invited to be the consultants for the discussions.

Meeting objectives are:

- i. To share national experiences in implementing national policies on the use of TM products and practices in PHC;
- ii. To identify enabling factors, barriers and priorities in implementing national policies on TM; and
- iii. To agree on next steps and practical approaches to strengthen implementation of national policies on TM in PHC to advance universal healthcare (UHC).

The Director of T&CMD, Dr. Goh Cheng Soon and Dr. Nor Asmah binti Hassan, a Family Medicine Specialist from Meranti Health Clinic, Pasir Mas, Kelantan had attended the meeting. Meranti Health Clinic is one of the public health care facilities which offer T&CM services in the primary health care setting.

During the meeting, WHO encouraged every participated country to develop their planning to maximise the contribution of T&CM in PHC by phases. Malaysia had developed a planning under the advice and guidance of the consultant during the meeting.

The 5-years planning for the development of T&CM in Malaysia are listed as below:

- i. Professionalize T&CM Practitioners
 - a. Establish Diploma academic programme/ Bachelor programme in traditional Malay medicine.
 - b. Establish Bachelor programme in traditional Indian medicine (Ayurveda).
 - c. Enhancement programme for traditional Malay postnatal practitioners.
- ii. Improve T&CM Service Delivery
 - a. Define Malaysian integrated model for T&CM into National Health Care System.
 - b. National strategy planning to incorporate T&CM services into PHC.
 - c. Awareness programme on T&CM among PHC Professionals.
 - d. Establish services for traditional Malay postnatal in other district in Kelantan.
- iii. Monitoring and Sharing Information of T&CM Practitioners and Services
 - a. Monitor the traditional Malay postnatal practitioners and services.
 - b. Evaluation of the traditional Malay postnatal services in Kelantan.
 - c. Sharing database regarding the traditional Malay postnatal services in Kelantan to other states in Malaysia
- IV. Regional collaboration and support/ collaboration with WHO for the development in the area of T&CM practice, education and clinical training, research, T&CM products and medicinal materials.

Image 12

Meeting On the Contribution of Traditional Medicine in Strengthening Primary Health Care



*Meeting On the Contribution of Traditional Medicine in Strengthening Primary Health Care
14 to 15 September 2017 Manila, Philippines*



Presentation by Malaysia's Representative, Dr. Goh Cheng Soon in the Meeting on the Contribution of Traditional Medicine in Strengthening Primary Health Care (PHC)

Source: Traditional & Complementary Medicine Practice Section, MoH

Meeting on Harmonisation of Traditional and Complementary Medicine (T&CM) Blueprint Draft with World Health Organization (WHO) Consultant

Traditional and Complementary Medicine (T&CM) Division received technical support from the World Health Organization (WHO) to develop the T&CM Blueprint (Health Care) for year 2018 to 2027. The main objective of this blueprint is to facilitate the development of T&CM industry and to strengthen the T&CM health care system in Malaysia. T&CM Blueprint was drafted after a series of meetings and workshops with the relevant stakeholders. T&CM Division had meetings with WHO Consultant, Professor Alan Bensoussan to finalise the blueprint draft from 15 to 19 May 2017. The final blueprint draft was produced and it is estimated to be launched in 2018.

Image 13

Meeting on Harmonisation of Traditional and Complementary Medicine (T&CM) Blueprint Draft with World Health Organization (WHO) Consultant



The Director of T&CM Division, Dr. Goh Cheng Soon was presenting the 'Malaysia Herbal Monograph 2015' to Professor Alan Bensoussa

Source: Traditional & Complementary Medicine Practice Section, MoH

The first T&CM Council Meeting

The T&CM Act 2016 [Act 775] was gazetted on 10 March 2016 and came into force in stages on 1 August 2016. This Act provides for the establishment of the T&CM Council to oversee the T&CM services in Malaysia and to facilitate in determining relevant matters related to it.

The first T&CM Council Meeting was successfully held on 16 January 2017 at Meeting Room Level 2, Block C, Ministry of Health Malaysia (MoH), Jalan Cenderasari, Kuala Lumpur. The inaugural meeting was chaired by the Director General of Health as the Chairman of the T&CM Council. The meeting was also attended by three (3) MoH representatives, two (2) academicians in the field of T&CM and five (5) qualified and experienced industry representatives in the field of T&CM. The meeting highlighted the importance of regulating the practices and T&CM practitioners in accordance with certain criteria that focused on the aspects of safety, effectiveness and quality of treatment and practice.

Image 14

The first T&CM Council Meeting



The first T&CM Council Meeting held on 16 January 2017 at Block C, Ministry of Health Malaysia (MoH), Jalan Cenderasari, Kuala Lumpur

Source: Traditional & Complementary Medicine Practice Section, MoH

RECIPIENTS OF SCHOLARSHIPS BY T&CM DIVISION STAFFS

For the year 2017, two of T&CM Division staffs were proudly chosen amongst numerous candidates to receive prestigious scholarships in certain fields related to health management in foreign countries. Those who had received these scholarships are:

- i. Dr. Jaspal Kaur a/p Marik Singh; and
- ii. Ms Teoh Sheh Ki.

Dr. Jaspal was chosen for a scholarship under The Young Leaders Program (YLP). The YLP is collaboration with the Japanese Government with the aim to cultivate future national leaders in Asian and other countries, to establish friendly relationship among various countries and to improve policy planning activities by forming a network among national leaders through deepening their understanding of Japan. Dr. Jaspal started her studies in Nagoya University in September 2017 and is expected to complete her Master's programme in December 2018.

Ms Teoh Sheh Ki was chosen for the Chevening Scholarship. Chevening is the United Kingdom government's international awards scheme aimed at developing global leaders. The recipients are personally selected by British embassies and High Commissioners throughout the world. Chevening offers a unique opportunity for future leaders and influencers from all over the world to develop professionally and academically; network extensively, experience UK culture, and build lasting positive relationships. Ms Teoh Sheh Ki was one of those that had successfully acquired the prestigious scholarship and is pursuing her Masters in Health Economics at the University of Sheffield, United Kingdom.

Image 15
Recipients of Scholarships by T&CM Division Staffs



Dr. Jaspal with the other recipients of The Young Leaders Program (YLP) scholarship with the Director General of Health Malaysia



Miss Teoh Sheh Ki with the other recipients of the Chevening Scholarship with the Director General of Health Malaysia

Source: Traditional & Complementary Medicine Practice Section, MoH

WAY FORWARD

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



6

RESEARCH AND TECHNICAL SUPPORT

INTRODUCTION

The Research and Technical Support (R&TS) Program, 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 Programs within the Ministry of Health (MoH). R&TS Program consists of the following Divisions: Planning, Engineering Services, The Medical Radiation Surveillance Division (MRSD) and six (6) research institutes under the National Institutes of Health (NIH).

ACTIVITIES AND ACHIEVEMENTS

PLANNING DIVISION

The Planning 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 Eleventh Malaysian Plan (11MP). Previously known as the Planning and Development Division, the two components were separated on 1 September 2012 to enhance each respective branch's functions. There is six (6) sections in the Planning Division:

- i. Health Policy and Plan Planning
- ii. National Health Financing (NHF)
- iii. Malaysia National Health Accounts (MNHA)
- iv. Health Informatics Center
- v. Health Facility Planning
- vi. eHealth Strategic Planning

HEALTH POLICY AND PLAN PLANNING SECTION

Health Policy and Plan planning involves the activities of planning, monitoring and evaluating the health sector plans.

MID-TERM REVIEW OF ELEVENTH MALAYSIA'S PLAN (MTR OF 11MP)

The formulation process of MTR of 11MP for the health sector was triggered by a circular from The Chief Secretary of The Government of Malaysia dated 22 June 2017 (Ref: UPE(S)SPW.100-23/2/2 (16)). A Technical Working Group (TWG) meeting was held from 26 to 27 October 2017 to initiate the preparation process of the MTR of 11MP. This was followed by a series of briefing to the Deputy Director-General of Health (Research & Technical Support), the Director-General of Health, and the Secretary-General of the Ministry of Health (MoH). The sessions were conducted in early November 2017. The preliminary draft of the MTR of 11MP was tabled at the Ministry of Health's Planning Steering Committee (*JPPKK*) meeting on 22 November 2017 and *Special Director- General meeting* on 5 December 2017 and ultimately to the Honorable Minister of Health.

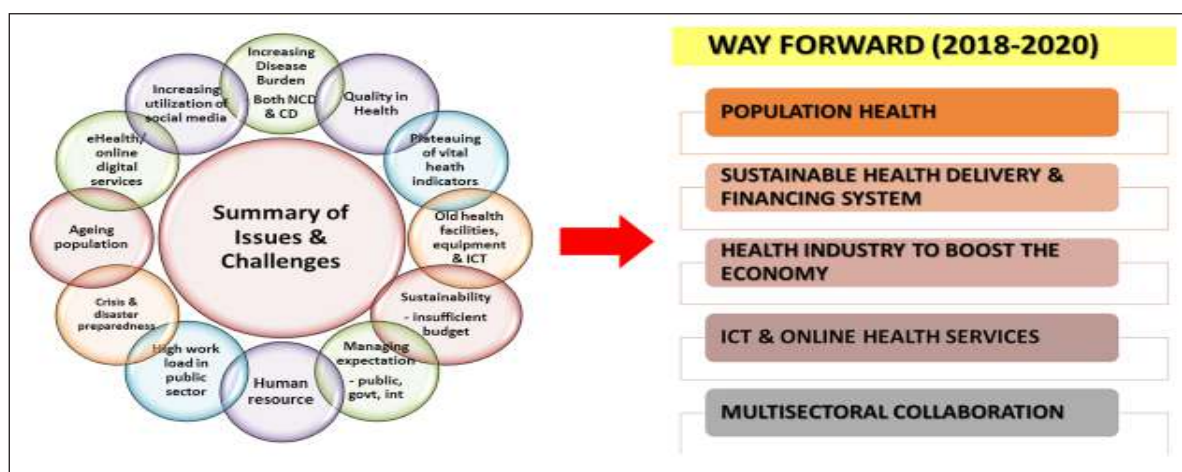
There are two main summarized findings obtained from the situational analysis exercise for the Malaysian health sectors and suggestions are made as follows:

- i. All activities/programs which have already achieved their target shall be improvised and continued.
- ii. For activities/programs which have not achieved their target and have issues and challenges in its implementation process, the activities/programs should be revised; or substituted with new activities/programs.

The process of developing health sector's way forwards took into accounts the Sustainable Development Goals (SDGs), Government Transformation Plans (GTPs), National Transformation 50 (TN50), MoH's Strategic Plans, 10 Priorities of The Minister of Health, and 8 Key Points of The Director General of Health.

Based on the 12 groups of health's issues and challenges identified in MTR of 11MP, five (5) focus areas were identified to be the agendas for the next second half of 11MP, and they are; population health, sustainable health delivery and financing system, health industry to boost the economy, ICT & online health services, and multi-sectorial collaboration (**Figure 1**). These 5 focus areas are in lines with 11MP's strategic paper, 'Achieving universal access to quality health services'.

Figure 1
Summary of Issues & Challenges and way forward (2018 to 2020) based on MTR MP11



Source: Health Policy and Plan Unit, Planning Division, MoH

MALAYSIA'S NATIONAL HEALTH POLICY (MNHP)

Currently, Malaysia has many micro health policies covering various specific health agendas, but they are often implemented in silo. The leading health policies that exist now such as Malaysia 5-years Plans, Health Service Transformation Plans, and MoH's Strategic Plans only covered certain areas in health and were developed for short term goals. For Malaysia to achieve high income country status by the year 2020, there is a need to develop one long-term and holistic health policy that will determine the healthcare strategies and way forward for now and the future. This policy needs a collective approval from all stakeholders, to drive the nation towards the same goals.

On 10 January 2017, a meeting among MoH's internal stakeholders on the preparation of preliminary draft of MNHP was held, followed by a Technical Committee meeting on 25 January 2017. The preliminary draft of MNHP was reviewed by the committee with the help of Dr. Lim Kuan Joo from World Health Organization (WHO) who was appointed as the consultant in developing process of MNHP. A workshop session with Dr. Lim Kuan Joo was held on 31 May 2017, followed by a presentation of preliminary draft of MNHP to the Deputy Director General of Health (Research & Technical Support) on 21 September 2017. It was then proposed to the Director General of Health on 4 October 2017.

SUSTAINABLE DEVELOPMENT GOAL (SDG)

The Sustainable Development Goals (2016 to 2030) which consists of 17 goals and 169 targets was launched by the United Nation (UN) in January 2016. It is the continuation from the Millennium Development Goals (MDG) which has ended in 2015. The Economic Planning Unit of The Prime Minister Office (EPU) was appointed as the secretariat of SDG at the national level, while the Malaysia's Department of Statistic (DOSM) as the focal point for data collection and information on SDG. The Planning Division of the Ministry of Health was assigned as the secretariat for goals related to health for the health sector at the ministry level. The implementation of SDG in our country is in line with all national policies and planning at the ministry level which are included in the 11MP, MoH Strategic Plan and Health Services Transformation Plan.

Phase 1 SDG Malaysia Report (2017 to 2020) titled 'Malaysia Voluntary National Review' was published by EPU as a baseline report for Malaysia. Based on the report, a Technical Committee meeting on 29 November 2017 was held and chaired by the Deputy Director-General of Health (Research & Technical Support) to discuss on the governance of monitoring and reporting of SDG's implementation in Malaysia.

HEALTH SERVICES TRANSFORMATION PLAN (PDPK)

Health Services Transformation Plan is a structured and well-planned service reformation under the Ministry of Health as an effort to enhance the quality of services in MoH, promote sustainability as well as accommodate the needs of the citizens and environmental changes. This plan was developed in accordance to the Government of Malaysia's aspiration via Government Transformation Plan aiming to transform the overall public services in Malaysia to achieve a Nation with High Income Economy status by the year 2020. Since 2017, the Public Service Department (PSD) monitors the high impact initiatives, in which the criteria are;

- i. Quick Win, Big & Fast Result
- ii. Citizen's Touch Point
- iii. Strategic Networking and Collaboration
- iv. Cost Effectiveness and Productivity
- v. Income Generation
- vi. Budget optimization
- vii. Outcome-based

As of 2017, 3 high impact initiatives were chosen, namely;

- i. Daycare Service - The aim of this initiative is to reduce hospital admissions by providing research facilities or simplified treatment model which can be done on a day case basis hence reduced ward admissions and ultimately hospital congestions.
- ii. *1 Malaysia Cataract Clinic* Service - This initiative intends to provide cataract treatment to citizen who stay far away from health facilities.
- iii. Community mobilization and empowerment in Community Mental Health Centre (Supported Employment Programme) - This initiative's objective is to help psychiatric patient to easily adapt themselves in society.

All initiatives for 2017 has reached the target and 100% completed.

The Transformation Sub-Committee (JKK Transformasi) meeting led by the Planning Division was held on 19 December 2017 to get suggestion of high impact activities for the year 2018.

THE MINISTRY OF HEALTH'S PLANNING STEERING COMMITTEE (JPPKK)

A JPPKK meeting involving all Divisions and Research Institutions in MoH was held on 22 November 2017 to discuss and endorse the Mid-Term Review of Eleventh Malaysia's Plan (MTR 11MP). Ten (10) reports on situational analysis findings and suggestions of MTR 11MP were presented by each Program in MoH, as below in **Table 1**:

Table 1
Policy Paper 2017

No	Paper Presentation	Status	Program
JPPKK BIL 1/2017 (13 November 2017)			
1/10	Situational Analysis Report MTR 11MP (TWG Health)	Approved	Planning Division
2/10	Situational Analysis Report MTR 11MP for Public Health Program	Approved	Public Health Program
3/10	Situational Analysis Report MTR 11MP for Medical Program	Approved	Medical Program
4/10	Situational Analysis Report MTR 11MP for Research & Technical Support Program	Approved	Research & Technical Support Program
5/10	Situational Analysis Report MTR 11MP for Oral Health Program	Approved	Oral Health Program
6/10	Situational Analysis Report MTR 11MP for Pharmaceutical Services Program	Approved	Pharmaceutical Services Program
7/10	Situational Analysis Report MTR 11MP for Food Safety and Quality Program	Approved	Food Safety and Quality Program
8/10	Situational Analysis Report MTR 11MP for Management (Human Resource)	Approved	Management Program (Human Resource)
9/10	Situational Analysis Report MTR 11MP for Finance Program	Approved	Finance Program
10/10	Situational Analysis Report MTR 11MP for Information Management Division	Approved	Information Management Division

Source: Health Policy and Plan Unit, Planning Division, MoH

PLANNING FOR NEED-BASED HUMAN RESOURCE FOR HEALTH (HRH)

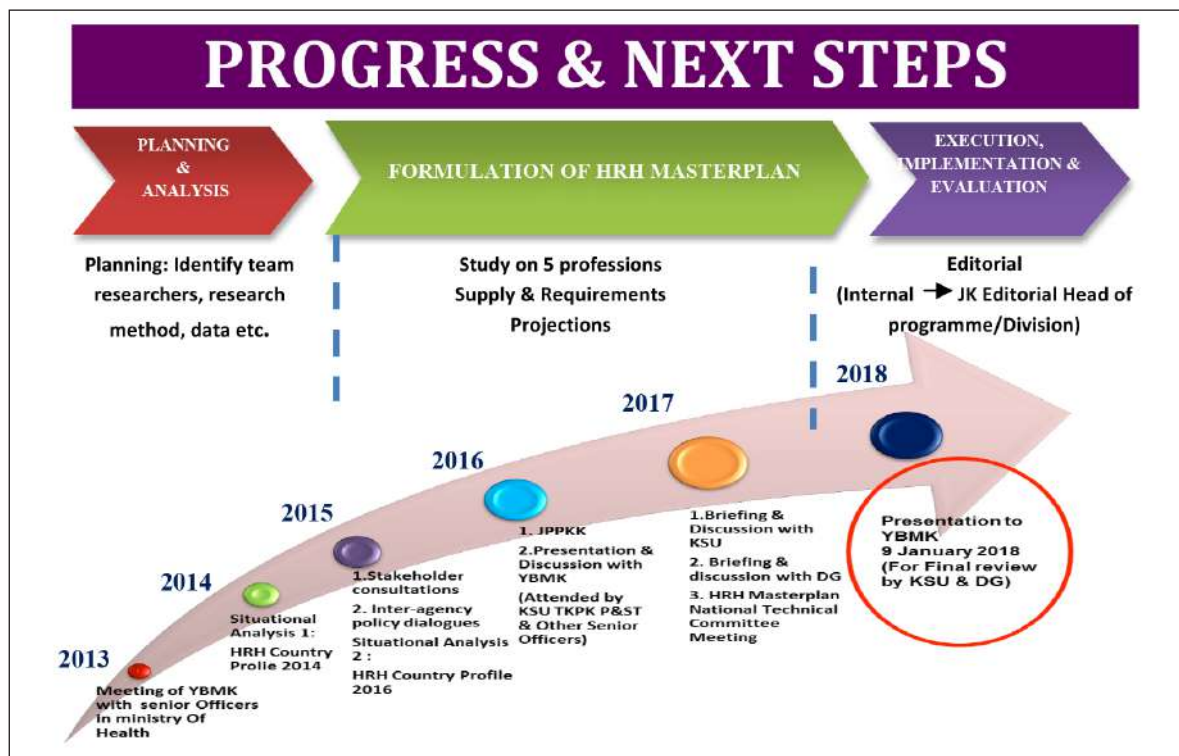
Human resource is the main element in health services. Need-based HRH must be planned and organized to ensure the well-being of the citizens' and for the sustainability of the healthcare services. In 2017, HRH planning activities included refining HRH Master Plan and distribution of the analysis report of need-based HRH according to workload in MoH. In addition, an analysis on need-based HRH in MoH's facilities based on norms was conducted.

MALAYSIA'S HUMAN RESOURCE FOR HEALTH MASTER PLAN

Malaysia's Human Resource for Health Master Plan is a document comprising a long-term planning on HRH in Malaysia for the period of 2016 to 2030. This draft document was fully completed in 2016 with the help from the WHO's consultant. This document includes situational analysis of HRH in Malaysia, projection of need-based HRH for 5 professions, strategic planning and implementation plans.

A few workshops were conducted throughout 2017 to refine this document. The figure below describes the chronology of this document's preparation process (**Figure 2**):

Figure 2
Summary of the Preparation Process of Human Resource for Health Master Plan



Source: Health Policy and Plan Unit, Planning Division, MoH

RESEARCH ON NEED-BASED HUMANRESOURCE FOR HEALTH FOR THE MINISTRY OF HEALTH, MALAYSIA

Research on need-based HRH uses 'workload' as the basis for analysis. The methodology (Workload Indicator for Staffing Needs, WISN) used for this research was developed by WHO. This method allowed us to identify gaps between the numbers of pre-existing staffs with the number of staffs we need. This will help in justifying the request to increase the number of job post later.

In 2017, Health Policy and Planning Section (PDPK) conducted an analysis on the projection of number of medical specialists and medical officers that are needed in MoH until the year 2030 using workload trend from 2010 to 2015 as the basis. The result of this analysis was given to the MoH's Human Resource Division as one of the inputs for the Cabinet's Memorandum. Besides, PDPK officials were invited to share their expertise with all stakeholders in health regarding the HRH analysis made on 10 professions which could help MoH in summarizing the numbers of staff needed.

OTHER ACTIVITIES

i. WORKSHOP FOR REFINING HRH PROJECTION SERIES 1

The objective of this workshop was to revise the job scope, overlapping roles and tasks between nurses and assistant medical officer in some disciplines in MoH's facility.

ii. WORKSHOP FOR REFINING HRH PROJECTION SERIES 2

The objective of this workshop was to update HRH norms by revising post outfit and comparing with WISN analysis result within dental and pharmaceutical service.

iii. PRESENTATION BY HEALTH POLICY AND PLAN'S MEMBERS IN 2017

The presentation by Health Policy and Plan's Members in 2017 as below:

Image 1
Workshop for Refining HRH Projection



Source: Health Policy and Plan Unit, Planning Division, MoH

Table 2
Presentation by Health Policy and Plan's members in 2017

No	Event	Date / Place	Topic of Presentation	Speaker
1.	Talk on Management of Health Program for The Bangladesh Ministry of Health and Welfare's delegates.	UPM, Selangor 24 Jan 2017	Administrative and Human Resource Management	Dr Mahani Bt Ahmad Hamidy
2.	Introductory Briefing on MoH Strategic Plan for Malacca State Health Department	MITC, Melaka 28 Mac 2017	Introductory Briefing on MoH's Strategic Plan for Malacca State Health Department	Dr Tanty Darwina
3.	Workshop: Technical Workshop on Indicators, Data & Methods for Monitoring Sustainable Development Goals and Universal Health Coverage in the Western Pacific Region	Manila, Philippines 24 to 26 May 2017	Country Presentation On SDG	Dr Uma Ponnudurai
4.	Workshop on Health Sector Productivity Research	JPA, Putrajaya 6 Sept 2017	MoH's Roles & Functions	Dr Najwa Misdan
5.	5 th Asia Pacific Conference on Public Health	Sarawak 10 to 13 Sept 2017	Supply of Doctors in Malaysia: Projections until 2030	Dr Mahani Bt Ahmad Hamidy
6.	Course on Policy and Ethics in Health for Public Health Doctor Program	Department of Community Medicine, HUSM, Kubang Kerian, Kelantan 6 Nov 2017	Agenda Setting in Policy Development Policy Implementation: Translation of Policy into Practice	Dr Mahani Bt Ahmad Hamidy

Source: Health Policy and Plan Unit, Planning Division, MoH

NATIONAL HEALTH FINANCING (NHF) SECTION

National Health Financing (NHF) is a section under Planning Division which carries the function to study, design and establish healthcare system transformation that covers the aspects of Malaysia health system financing. In 2017, many activities of NHF have been carried out under Malaysia Health Systems Research and collaboration with the Joint Learning Network and World Health Organization.

MALAYSIA HEALTH SYSTEMS RESEARCH

The collaboration with Harvard University continued under Malaysian Health Systems Research (MHSR) Part 2. MHSR Part 2 focuses on providing research, analysis and technical guidance for the implementation of health system reform initiatives based on the recommendations at the end of MHSR part 1, namely, development of non-profit Voluntary Health insurance (VHI), Enhanced Primary Health Care (EnPHC), organizational transformation (OT) of MOH and strategic purchasing function.

NHF section leads all the activities related to implementation of VHI with guidance from Harvard team, led by Professor William Hsiao. For the development of the VHI organization, NHF had conducted meetings with senior officials of MoH and other government agencies including Ministry of Finance (MOF), Bank Negara Malaysia (BNM), Economic Planning Unit (EPU), Attorney General's Chambers (AGC), and Malaysia Competition Commission (MyCC). NHF also conducts collaborative research and analysis with Harvard team on the design of the benefit package, initial target populations, premium estimation, market analysis, strategic purchasing and management of hospital revenue.

Professor William Hsiao has made periodic visits to Malaysia for about 4 times on February, April, June and November 2017 to provide advice on the implementation of VHI and to monitor the progress of the development of the operations of the VHI organization. During these visits, Professor William Hsiao has had discussions with the Minister of Health, Secretary General of Health, Director General of Health, second Minister of Finance, actuary from VHI organization and other senior officials of MoH to guide on the governance of the VHI organization, VHI model and its detailed business plan, operationalization of VHI as well as the long-term strategy, social purpose and the linkages of VHI organization.

In addition to the collaborative research and analysis and technical guidance from Harvard team, capacity building workshop and seminar have been organized to build the capacity and capability of the organization to operate the VHI successfully. In February 2017, a consultative seminar was held in Putrajaya involving high level executives with significant experience in health insurance, MOH top management, MOF representatives, VHI Project Management team, Harvard team and chaired by the honourable Minister of Health. The international health Insurance executives who were involved in the seminar represent experiences from Australia, Asia, the United States, as well as local expert in insurance industry. The consultative seminar serves to crystallize several critical issues pertaining to development of VHI organization including governance, operationalization, recruitment and business plan of the VHI.

In addition, a capacity building workshop on Strategic Purchasing and Provider Performance Measurement was held in June 14, 2017. The workshop was conducted by Professor Winnie Yip from Harvard University to discuss on the conceptual framework, provider payment methods as well as the strategic purchasing options for VHI.

As a secretariat for the MHSR Steering Committee (MHSR-SC), NHF have organized 2 MHSR-SC meetings which were held on 17 August 2017 and 21 December 2017. MHSR-SC is a committee composed of Ministers and senior officials from various agencies including the Ministry of Health and chairs by the Minister of Health which provides an oversight for the MHSR study.

Image 2
MHSR Steering Committee Meeting on 21 December 2017



Source: National Health Financing (NHF), Planning Division, MoH

COLLABORATIVE PRACTITIONERS ACTIVITIES WITH THE JOINT LEARNING NETWORK

NHF section leads the Joint Learning Network (JLN) Country-Core Group (CCG) for Malaysia and handles the local arrangement and coordination of JLN activities since 2010. The JLN CCG is chaired by the Director of Planning Division with NHF as the secretariat. In the meantime, Steering Group representative for Malaysia, who is our Senior Deputy Director of Planning Division, continues her term as JLN Convenor.

The JLN is an innovative, country-driven network of practitioners and policymakers from around the world who co-develop global knowledge products that help bridge the gap between theory and practice to extend healthcare coverage to more than 3 billion people. JLN facilitates collaborative learning around five (5) technical areas namely population coverage, primary health care (PHC), provider payment, information technology, and quality of care.

In 2017, CCG Malaysia met three (3) times and during these meetings, knowledge sharing and updates of recent activities by various officers were done. NHF officers too were involved in other international JLN activities including:

- i. JLN PHC seminar on Private Sector Engagement in Primary Health Care to Achieve Universal Health Coverage (UHC) in Yogyakarta, Indonesia (27 February to 1 March 2017). The objective of this activity is to provide knowledge on public-private partnership and the engagement challenges experienced by the host country. Participants were from various countries namely Ghana, India, Indonesia, Kenya, Mongolia and Morocco.

Image 3

JLN PHC seminar on 'Private Sector Engagement in Primary Health Care to Achieve UHC', Indonesia on 27 February to 1 March 2017



Source: National Health Financing (NHF), Planning Division, MoH

- ii. JLN Stakeholder Communication Workshop for Universal Health Coverage in Ghana (20 to 21 July 2017) to develop a Practical Guide on Strategic Communication for Universal Health Coverage. This workshop gathered inputs, best practices, and lessons learnt from various countries to develop the framework of the practical guide.
- iii. JLN Provider Payment Initiative's Primary Healthcare Financing and Payment Collaborative in Vietnam (10 to 13 October 2017). More than 40 participants from 14 countries including Malaysia gathered in Hanoi, Vietnam to share their respective experiences, challenges, and creative solutions with PHC financing and payment in a holistic way.
- iv. JLN Cross Collaborative Meeting in Seoul & Wonju, Korea (4 to 8 December 2017). The meeting was attended by several countries' members including Malaysia, Morocco, Ghana, Mongolia, India, Indonesia, Vietnam and Mali, among others. There were several collaborative group meetings held concurrently including the Health Benefits Policy, Private Sector Engagement, Measurement for Improvement and Domestic Resource Mobilisation where all countries' members discussed Korean healthcare system & Universal Health Coverage (UHC).
- v. JLN Steering Group Meeting in Korea (7 to 8 December 2017) which was chaired by our Senior Deputy Director as the Convener. During this meeting, the JLN community celebrate the country's 40th year anniversary of National Health Insurance System. Close to 100 UHC implementers from 15 countries gathered in Seoul, with representatives from Korea's National Health Insurance Service (NHIS), Health Insurance Review and Assessment Agency (HIRA), and the KDI School of Public Policy and Management to celebrate Korea's remarkable success in achieving UHC and the progress JLN countries are making through practitioner-to-practitioner learning.

The knowledge and skills gained from these collaborative activities with JLN provides a practical guide for Malaysia in moving towards Malaysian Health System reforms.

CAPACITY BUILDING WITH WORLD HEALTH ORGANIZATION

NHF section has been collaborating with World Health Organization (WHO) to organize workshops and activities related to health financing and Universal Health Coverage.

One of the activities was the 'Stakeholders' Engagement Plan for MHSR Workshop'. This workshop was organized by NHF section and conducted by Professor Fatima Suleman who has vast experience in implementing health system reforms in South Africa. It was held in Putrajaya from 6 to 8 February 2017 and participants were from various sections of Planning Divisions and other Divisions in MoH.

This workshop was intended to build the capacity on the development of effective strategic communication plan and evaluation of the effectiveness of the strategic communication activities. Strategic communication is critical to ensure a smooth transition during any health system transformation process including the implementation of VHI.

During this workshop, NHF section had gained knowledge on the basic principles of stakeholder engagement and it had assisted in developing the stakeholders' engagement plan to share the MHSR key findings with all the relevant stakeholders.

Image 4
WHO Workshop on 'Stakeholders' Engagement Plan for MHSR', Putrajaya on 6 to 8 February 2017



Source: National Health Financing (NHF), Planning Division, MoH

In addition to that, NHF officers were also involved in the 'Second SEAPRO-WPRO Health Financing Policy Workshop: Moving Towards Strategic Purchasing in Asia', which was held in Delhi, India from 19 to 22 June 2017 as a continuation from the first bi-regional health financing policy workshop that was held in July 2016. The aim of the workshop was to provide a platform for further debate in relation to strategic purchasing and sharing of countries' experiences.

Knowledge gained from this workshop is useful for NHF section in its journey to reform Malaysia healthcare delivery system specifically for the establishment of the VHI. By applying strategic purchasing in VHI, the purchasers are expected to influence providers to pursue equity, efficiency and quality in health service delivery, which is the critical factors in improving the health system performance.

Image 5

Second SEAPRO-WPRO Health Financing Policy Workshop, Delhi on 19 to 22 June 2017



Source: National Health Financing (NHF), Planning Division, MoH

Apart from that, officers from NHF and Family Health Development Division as the delegates from Malaysia, participated in the Second Meeting of the Technical Advisory Group on Universal Health Coverage for the Western Pacific which was held in Manila, Philippines from 13 to 15 November 2017. The WHO Regional Office for the Western Pacific established the Universal Health Coverage Technical Advisory Group (UHC TAG) in 2016 to provide advice to WHO and Member States on how to accelerate achievement of UHC in the Region.

This second meeting of UHC TAG discussed on service delivery and financing and governance, focusing on how countries can transform service delivery to respond adequately to the ongoing demographic and epidemiological transitions, and how they can set priorities and allocate resources efficiently and equitably for this purpose. During this meeting, Malaysia presented about the Enhanced Primary Healthcare (EnPHC), Malaysia's latest initiative to strengthen its healthcare services delivery at the primary care level for all Malaysian citizens.

MALAYSIA NATIONAL HEALTH ACCOUNTS (MNHA) SECTION

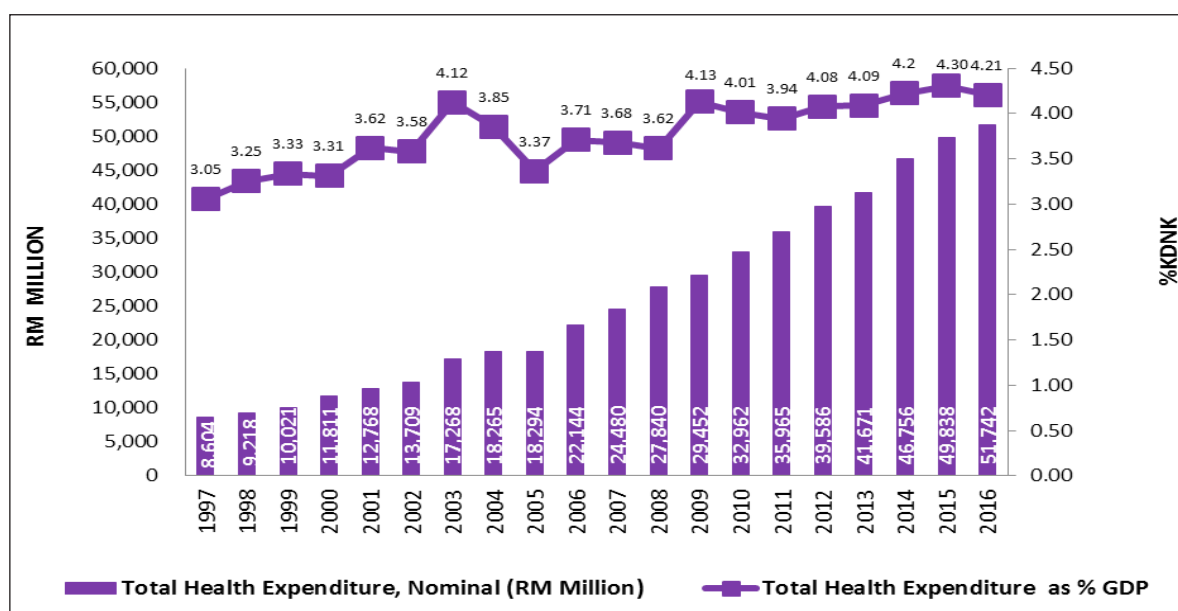
In 2001 Ministry of Health (MoH), Malaysia embarked on a journey to produce quality national health accounts information and thus, led to development and institutionalization of Malaysian National Health Accounts (MNHA) Unit. Since its establishment, Malaysian National Health Accounts Unit strives to provide policy makers with quality information for development of evidence-based health policies. The Malaysia National Health Accounts data provides a wealth of useful macro-level health expenditure information to assist not only policy makers, but also various researchers and other stakeholders.

MNHA HEALTH EXPENDITURE REPORT 1997 TO 2016

In 2017, MNHA published the sixth Malaysia NHA Health Expenditure time series report (1997 to 2016). This time series report captures and reports data for 20 years, describing key trends of both public and private sectors spending for health based on internationally standardized National Health Accounts (NHA) methodology. The chapters in this publication covers some general expenditure overviews followed by expenditure reports using the standard NHA framework, which is, expenditures by sources of funding, expenditures by providers of health services and products, and expenditures by functions of health services and products.

Malaysia's total expenditure on health (TEH) ranged from RM8,604 million in 1997 to RM51,742 million in 2016. This expenditure as a ratio to Gross Domestic Product (GDP) for the same period ranged from 3.05 per cent to 4.21 per cent (**Figure 3**). The Total General Government Health Expenditure (GGHE) increased from RM4,414 million in 1997 to RM26,662 million in 2016, or an increase from 4.90 per cent to 6.99 per cent as percentage of General Government Expenditure (GGE).

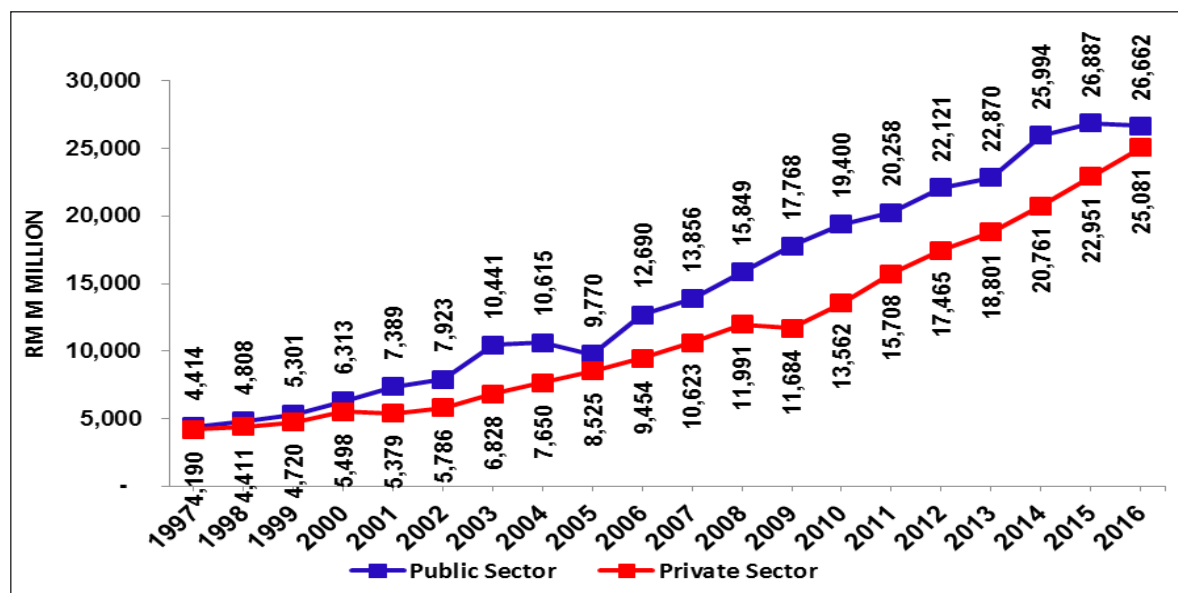
Figure 3
Total National Health Expenditure, 1997 to 2016 (RM Million & %GDP)



Source: MNHA Unit, Planning Division, MoH

Various sources of financing for health care services and products are identified and categorized as either public sector or private sector agencies. Throughout 1997 to 2016, both the public and private sector spending shows an upward trend with the public sector health spending remains higher than the private except in 2005 (**Figure 4**). During the same period, MoH was identified as the highest source of financing followed by private household Out-of-Pocket (OOP).

Figure 4
Total Health Expenditure By Sources Of Financing (Public Vs. Private), 1997 to 2016



Source: MNHA Unit, Planning Division, MoH

The providers of health care services and products include hospitals, nursing and residential care facility providers, ambulatory health care providers, retail sale and medical goods providers and public health program providers. Over the span of 20 years from 1997 to 2016, highest expenditure for health was by the hospitals as the provider of health care services followed by providers of ambulatory health care.

Functions of health services based on NHA includes core functions of health care (e.g. curative care, rehabilitative care, long term nursing care, ancillary services, out-patient medical goods, public health services, health administration and health insurance) and health related functions (e.g. education, training of health personnel, research and development). When exploring 1997 to 2016 time series TEH by functions/services/medical goods purchased, curative care remains the highest health services expenditure ranging between 57.02 to 69.65 percent. This is followed by expenditure for Health program administration and health insurance which ranged between 6 to 11 percent of TEH.

The TEH is disaggregated to show thirteen states and three Federal Territories, health expenditure. Selangor and Kuala Lumpur are the two locations with highest health expenditure. In 2016, Selangor's health expenditure was RM8,710 million and in Kuala Lumpur the health expenditure was RM7,005.

OOP health expenditures are estimated through a complex method called the integrative method whereby the gross level of direct spending from consumption, provision and financing perspective is collated followed by deduction of third party financial reimbursements by various agencies to avoid double counting. The 1997 to 2016 time series data shows that the household OOP health expenditure remains the largest single source of funding in the private sector amounting to an average of 75 per cent of this sector spending which is equivalent to about 29 to 38 per cent of total health expenditure. The OOP health expenditure from 1997 to 2016 has increased from RM3,166 million to RM19,570 million.

The annual publication of NHA technical report provides valuable information for various health transformation endeavors and assists to better understand the national trends in health expenditure. It provides a clearer picture of funding, distribution and types of healthcare services within the country.

NATIONAL AND INTERNATIONAL COLLABORATIONS

On behalf of the Planning Division, MNHA continued to be involved with many National and International projects/programmes. MNHA played an important role in analysing and extracting data to assist in several National Projects such as MoH's publication: Health Facts, data requests in preparation for Healthcare Sector Transformation activities and for ad hoc requests relating to national health expenditure from national agencies and local universities as well as in preparation for top level management speeches.

At international level, MNHA actively participated and continued to be involved in international collaborations and data submissions. NHA time series national health expenditure estimation by MNHA Section was submitted to several international agencies such as WHO Geneva for World Health Statistics, Global Health Expenditure Database (GHED) and Health at a Glance (HAG).

As mentioned in earlier MoH reports, MNHA already began to work towards using the revised version of System of Health Accounts (SHA 2011). With the guidance from consultant appointed by WHO, MNHA has progressed to develop the methodology to map and create MNHA 2 classifications/framework. This MNHA 2 classification will be in line with the original MNHA classifications and local policy needs, while still based on the new international SHA 2011 framework. MNHA's work and contribution adds value to many financial policy decisions at national, regional and international levels.

HEALTH INFORMATICS CENTRE

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.

MALAYSIAN HEALTH DATA WAREHOUSE (MyHDW)

Ministry of Health (MoH) began the implementation of the start-up phase of MyHDW in 2015. This initiative builds on previous work based on the blueprint produced in 2011 to 2013. MyHDW initial phases established the basic infrastructure and capabilities for this national analytic system and has been designed to scale and expand to include and integrate additional datasets over several phases. The core analytic functionality associated with the system pertains to secondary data usage capability, in which data collected for clinical purposes can be utilised for statistical reporting in a secure and privacy-sensitive manner after careful anonymization and de-identification process.

MyHDW, which is a state-of-the-art home-grown data warehouse system was launched by Yang Berhormat Datuk Seri Dr. S. Subramaniam, Minister of Health Malaysia on 18 April 2018 (**Image 6**). This technology is coherent with National Health Transformation Plan, whereby among the cornerstone of the transformation programme is to leverage on technology and intelligent solutions to encourage innovation. This unique data warehouse system was built based on strong collaboration and smart

partnership between numerous agencies beyond Ministry of Health i.e. other government agencies, NGOs and private sector for the betterment of health. This is in line with the Sustainable Development Goal (SDG) Sector 17 (Partnership for the Goals) as outlined by United Nation and the National Blue Ocean Strategy (NBOS).

Image 6
Malaysian Health Data Warehouse (MyHDW) Launching 18 April 2017



Source: Health Informatics Centre, Planning Division, MoH

Building on the categories of use, the potential benefits of MyHDW are multifaceted and far reaching. The collection, management and use of health information is vital to improve the quality and efficiency of Malaysia's health system. This ultimately will allow health leaders to measure performance better and ensure quality care being delivered resulting in improved health outcomes so that Life Health Record investments will achieve value for money and that healthcare spending can be linked to measureable outcomes.

MyHDW key benefits include:

- i. High quality, trusted source of information to allow the effective
- ii. management of the health system.
- iii. Good access to data in a secure and privacy sensitive manner.
- iv. Data is linkable and comprehensive allowing questions across the continuum of care.
- v. Is integral to key health system management initiatives e.g. KPI's, 1Care, HIMS etc.
- vi. Support research and surveillance requirements
- vii. Output provisioned at a variety of levels and through different tools and interfaces.
- viii. Increased analytical productivity and efficiency.

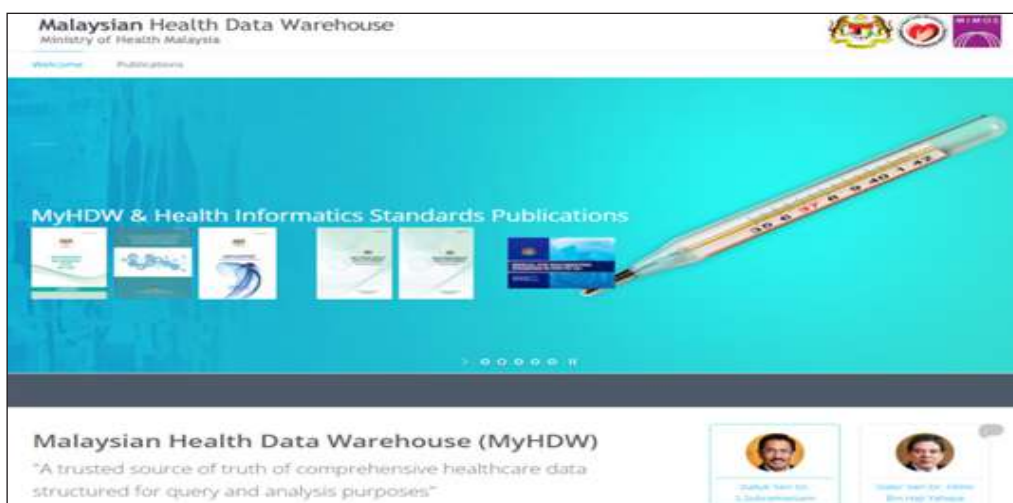
MyHDW also has a salient feature called MyHarmony which can manage unstructured data. The versatility of MyHDW is such that it integrates with Geographic Information System (GIS) to allow data that are collected for MyHDW be portrayed and mapped geographically. GIS is immensely useful in the planning of health facility developments.

Ministry of Health has created MyHDW with local technology by MIMOS, modelled after best practices from various developed countries. MyHDW has made Malaysia the 7th country in the world to own such system.

Equipped with Data and Information Governance Committee, MyHDW emphasises on data security and privacy as the utmost priority. Hence access to information contained in MyHDW is highly regulated and secured.

MyHDW is an achievement to Ministry of Health that leverages on Big Data and Analytics which can assist in making strategic business decision, improve business efficiency, drive revenue growth as well as create new and innovative business model.

Image 7
MyHDW Homepage



Source: Health Informatics Centre, Planning Division, MoH

HEALTH INFORMATICS STANDARDS UNIT

Health informatics standards are standards that are applied to the areas of health and health-related fields. Using standards in managing health information aims to support integration and interoperability between various information systems within MoH and external agencies.

The following standards allow semantic interoperability between different data systems. They ensure data preservation during data exchange in term of their meaning and definition, thus consistent and accurate statistical information can be generated from these data. The standards are:

- i. International Statistical Classification of Disease and Related Health Problems (ICD); (ICD-10, ICD-9-CM),

- ii. Systemized Nomenclature of Medicine-Clinical Terms (SNOMED CT),
- iii. Laboratory Observation Investigation Names and Codes (LOINC),
- iv. Malaysian Health Reference Data Model (MyHRDM),
- v. Malaysian Health Data Dictionary (MyHDD),
- vi. International Health Terminology Standards Development Organisation (ISO/TC 215: Health Informatics)

The unit activities revolve around training, monitoring, evaluating, and improving the quality of medical coding and documentation in Malaysia to generate quality health information. Training conducted in 2017 included certification courses for ICD-10 and ICD-9-CM; SNOMED CT e-learning courses; internal training on terminology standards and data modelling; and introduction to proper documentation of diagnosis for medical students and newly appointed house officers during the *Program Transformasi Minda* (PTM) courses throughout the year. Refresher courses were conducted along with evaluation studies, such as ICD-10 Coding Error Rate study and Evaluation of Documentation of Diagnosis both for Medical Record Officers and Medical Officers respectively.

Development, revision, and implementation of these standards are also under the purview of this unit. For example, MyHRDM book was first published in 2017 as a reference for health organisations in Malaysia when developing health information systems. SNOMED CT Cardiology Reference set were refined to include relevant Cardiology terms to be implemented in the MyHarmony project is led by this unit. Whereas LOINC mapping continued to be reviewed against the latest international version to be used by the Laboratory Information System (LIS) project led by the Medical Development Division.

This unit is also responsible for several meetings nationally and internationally. Nationally, this unit is the secretariat for National Health Informatics Council chaired by the Director General of Health Malaysia, and Health Informatics Standards Committee chaired by the Director of Planning Division. Both committees coordinate members from within and outside of MoH. Internationally, this unit is involved in two (2) IHTSDO Business Meetings, namely General Assembly and Member Forum, and ISO/TC 215: Health Informatics.

Image 8
Health Informatics Standards Unit Activities



MyHRDM published



Technology Testing



General Assembly, IHTSDO, 2017



Member Forum, IHTSDO, 2017



General Assembly, IHTSDO, 2017



Member Forum, IHTSDO, 2017



*WHO-FIC Asia Pacific Network Meeting,
Hospital UKM, 28 August 2017*

Source: Health Informatics Centre, Planning Division, MoH

HEALTH FACILITY PLANNING

The Health Facility Planning Section continues to provide input for health facility development within the Ministry of Health. In the year 2017, the Ministry of Health was allocated RM1.3 billion for the development of 353 projects (based on cash flow requirement); of which 11 are new projects and 342 are committed/ongoing projects.

One of the highlights for the year 2017 is the development of the National Centre for Food Safety (NCFS). The NCFS is a *one-off* facility developed to provide comprehensive food quality and safety services. This will also enable Malaysian food products to be tested, approved, and recognized in accordance to international standards. In addition, the centre will be the home to ASEAN Risk Assessment Centre (ARAC), which is the sole body to regulate and integrate risk assessment activities in ASEAN region.

ACTIVITIES AND ACHIEVEMENTS

MEDICAL BRIEF OF REQUIREMENTS (MBoR)

The MBoR is a document produced by the section, which specifies in detail the background and scope of a health facility project from the medical perspective. In the year 2017, a total of eleven (11) MBoR were developed.

PRE-PLANNING: VALUE MANAGEMENT

Value management is conducted for all projects costing more than RM 50 million as required by the Economic Planning Unit to ensure the scope of requirement matches the budget allocation. Value management of nine (9) new and upgrading projects were successfully concluded in 2017.

TENDER EVALUATION

As part of the technical committee, the section issues tender evaluation report for the medical planning aspect to the main technical committee. Twelve (12) project tender evaluation reports were produced in 2017.

DESIGN DEVELOPMENT

Design development is an ongoing and time-consuming process that requires active involvement from this section. This process begins from when a project is awarded to the contractor and will continue until the completion of the project. It involves detailed planning and intensive interaction with presence of representatives from the Public Works Department and users.

TECHNICAL SPECIFICATION ADHERENCE (TSA)

A total of 60 TSA packages from three (3) projects i.e. Women and Child Hospital *Raja Permaisuri Bainun, Ipoh, Perak*; Cardiology Centre, *Hospital Raja Permaisuri Bainun, Ipoh, Perak*; and Klinik *Kesihatan Sungai Rengit, Penggerang, Kota Tinggi, Johor*; were assessed and evaluated for approval.

PRE-HANDING OVER INSPECTION

Twelve (12) projects of pre-handing over inspection for medical planning compliance and workmanship quality were conducted in 2017.

TRAINING

The section also puts emphasis on the training of staff. In the year 2017, Dr. Siti Noraida was selected for Overseas Training Program which took place in the United Kingdom.

In November 2017, this section held a three-day internal workshop at the Ministry of Health headquarters in Putrajaya for the development of the Medical Planning Guideline for the Ministry of Health Hospital Project Development

DEVELOPMENT OF STANDARD PLAN

STANDARD PLAN OF 76-BEDDED HOSPITAL

In the year 2017, this section, in collaboration with the Public Works Department developed Standard 76-Bedded Hospital Plan (non-specialist). The development of a new hospital in Parit Buntar, Perak has been identified as a pilot for this standard plan.

Figure 5
An Artist Impression of A 76 Bedded Hospital Standard Plan



Source: Health Facility Planning, Planning Division, MoH

Figure 6
An Artist Impression (Front View) of A 76 Bedded Hospital



Source: Health Facility Planning, Planning Division, MoH

WAY FORWARD

In view of the growing need for the development of more health facility projects in the future, this section recognizes the need to expedite the pre-construction planning phase. It is therefore timely for us to work closely with the Public Works Department to explore strategies to improve project implementation processes.

One of the strategies employed is to continuously improve existing standard plans based on feedback from users and to develop more standard plans based on current needs. We have identified the need to produce more compact health clinic standard plans to address issues of land constraint in urban areas.

Besides that, there is also the need to have more standard hospital designs to cater for bigger and specialist hospitals.

eHEALTH STRATEGIC PLANNING UNIT

Two main activities completed by this unit in 2017 are:

1. SITUATIONAL ANALYSIS TO IDENTIFY THE NEED FOR ONLINE HEALTHCARE SERVICE REGULATORY FRAMEWORK

Online healthcare is a new method to deliver healthcare services in alignment with the advancement of digital technology. Among the services offered by the private companies through mobile applications are:

- i. Online consultation via video-call, voice-chat and texting
- ii. Medical personnel e-hailing applications to deliver patient care at client's location
- iii. Online ambulance request for non-emergency cases
- iv. Online request for blood taking at client's location
- v. Online medication prescription and dispensing to client's location
- vi. Online clinic appointment scheduling

Director General of Health (DG) had instructed eHealth Planning Section to study the legal implication and readiness of current Acts and Regulation to ensure the online healthcare services are regulated and comply with five (5) guiding principles of healthcare, which are patient safety, quality of care, confidentiality and privacy, accountability, and traceability. Some inputs were obtained from the relevant Ministry of Health (MoH) divisions, regulatory bodies and central agencies in two (2) meetings and a workshop on 25 to 26 October 2017 and few more feedbacks from 11 companies were gathered in a dialogue session between these companies and DG on the last day of the workshop. Deputy DG of Research and Technical Support and Director of Planning were also present during the dialogue session. Conclusion from these discussions is that current Acts and Regulations are insufficient to regulate online healthcare services. Therefore, a specific regulatory framework is required to regulate these online healthcare services.

Image 9
Online Healthcare Service Workshop 1/2017



Group Discussion Session



*Private Agency Dialog Session with Director
General of Health*

Source: Health Informatics Centre, Planning Division, MoH

2. PLANNING AND IMPLEMENTATION OF MoH TELECONSULTATION (TC) SERVICE WAY FORWARD

MoH TC Project commenced in 2009 and was one of seven (7) Telemedicine Flagship projects managed by eHealth Planning Section, which was known previously as Telehealth Division. It provides platform for doctors to obtain specialist consultation via 60 static workstations in 44 MoH hospitals for four (4) disciplines, which are Cardiology, Dermatology, Neurosurgery and Radiology. Three (3) issues identified in the TC service study conducted in 2016:

- i. TC hardware is obsolete and beyond economic repair
- ii. Mobility issue whereby users prefer social media such as WhatsApp, which is mobile and allows real time exchange of patient's information, hence current static TC system is no longer relevant.
- iii. TC is no longer required in Dermatology

Telehealth Steering Committee in its second meeting of 2016 had instructed eHealth Planning Section to plan and implement short-term measures and long-term plan for TC service. The following are activities done in 2017:

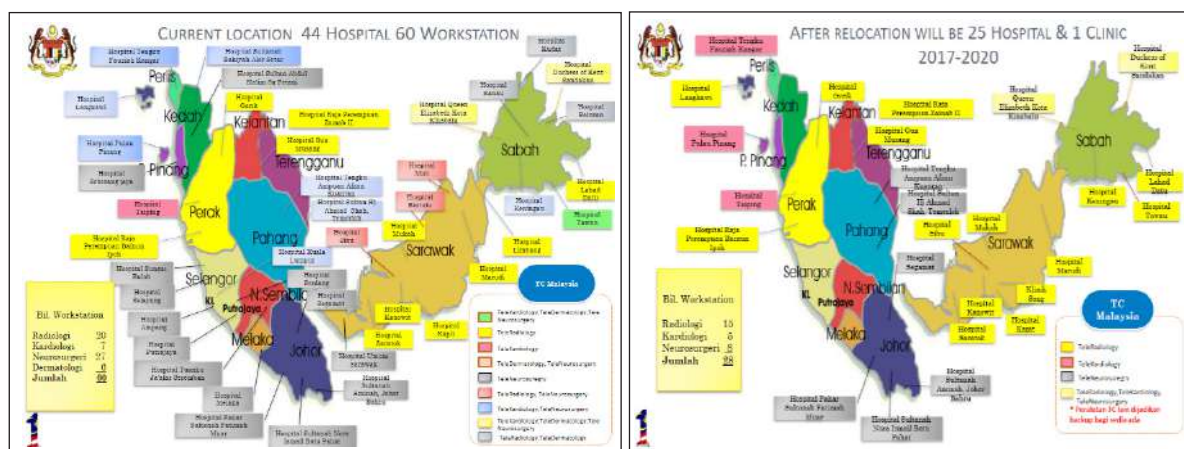
a. MOBILE TC PROOF OF CONCEPT (POC)

The objective of POC is to identify a better, safer and more efficient alternative to WhatsApp to avoid risks associated with WhatsApp such as medical error resulted from cross communication, data leakage and medico-legal issue due to inability for the specialist to make complete clinical documentation for future references. Case selected for POC was ST elevation myocardial infarction (STEMI) case between Serdang Hospital as the Hub and Putrajaya Hospital as the Spoke within Serdang STEMI network. Four (4) cases including two (2) mock cases were referred during three (3) months period of testing, which was from 17 April to 14 July 2017. Conclusion of the POC is that implementation of tested mobile TC application is possible after resolution of issues such as enhancement of channel creation and alert notification as well as licensing issue. Poor network coverage in critical areas such as in Emergency Department and Intra-cardiac Laboratory is facility readiness issue identified in the POC.

b. RE-LOCATION OF TC HARDWARE

This is a short-term measure to optimize current TC utilization and maintenance cost. Re-location activities started in 2017 with site visit to identify active and passive TC facilities. The activities will continue until 2020 and so far has resulted in reduction of number of operating facilities from 44 to 26; and from 60 workstations to 28 as shown in **Image 10**:

Image 10
TC Hardware Locations



Source: eHealth Strategic Planning Unit, Planning Division, MoH

HEALTH INFORMATION EXCHANGE PLANNING UNIT

PROJECT MyHIX 2.0

The Malaysia Health Information Exchange (MyHIX) is a system that enables electronic healthcare information sharing amongst healthcare facilities. It is an initiative to provide a platform for the collection and sharing of individual health information and has been identified as the building blocks for the Lifetime Health Record (LHR) project.

In general, all life-long health activities from all point of care can be recorded, stored and shared through the MyHIX system. The patient's medical records stored in the MyHIX repository are available for access by medical practitioners at any time subjected to existing laws and policies as well as the consent of the individuals/patients involved.

The MyHIX project was started in 2008/2009 allowing the sharing of patient healthcare information and demographic information through Discharge Summary. By the end of 2016, the system was deployed at seven (7) locations as follows:

- Hospital Putrajaya
- Hospital Tunku Jaafar Seremban, Negeri Sembilan
- Hospital Port Dickson, Negeri Sembilan

- iv. Klinik Kesihatan Putrajaya Presint 9
- v. Hospital Sultanah Nur Zahirah (HSNZ), Terengganu
- vi. Hospital Bentong, Pahang
- vii. Hospital Raja Perempuan Zainab II (HRPZ), Kelantan

Works to enhance and upgrade MyHIX system have started since 2015 based on service requirements. MyHIX Enhancement Project involves implementation of the Integration Profile (IP) e-referrals in all seven locations, upgrading the MyHIX central engine repository involving the addition of new modules based on the current needs and expanding central server capacity and development of two new Integration Profiles i.e IP Radiology and IP Laboratory Report.

In line with current developments, MyHIX services has been expanded to other MOH facilities. For 2017, a total of two (2) hospitals have been identified for the implementation of MyHIX 2.0 which is National Cancer Institute, Putrajaya and Sultan Haji Ahmad Shah Hospital, Temerloh, Pahang.

In accordance with the expansion of MyHIX services, Change Management activities have been implemented which include workshop sessions and coaching sessions with appointed Change Agent and users at MyHIX facilities.

Table 3
Annual Discharge Summary Transactions in MyHIX

No	Facility	Number of Discharge Summary Documents						
		2011	2012	2013	2014	2015	2016	2017
1.	Klinik Kesihatan Putrajaya Presint 9	367	185	1	536	384	84	8
2.	Hospital Port Dickson	1,530	9,531	8,372	9,303	7,650	5642	14,813
3.	Hospital Putrajaya	10	2	5,266	35,898	58,004	841,676	285,142
4.	Hospital Tuanku Ja'afar	7,623	31,762	56,186	59,020	59,747	64,970	34,207
5.	Hospital Sultanah Nur Zahirah	-	-	-	52,553	27,445	124,459	72,969
6.	Hospital Raja Perempuan Zainab II	-	-	-	5,374	42,084	132,747	51,569
7.	Hospital Bentong	-	-	-	19,324	33,803	12,530	8,790
8.	Institut Kanser Negara	-	-	-	-	12,308	28,799	191,869
9.	Hospital Sultan Haji Ahmad Shah	-	-	-	-	-	-	2,517
Total		9,530	41,480	69,825	182,008	241,425	1,210,907	661,884

Source: eHealth Strategic Planning Unit, Planning Division, MoH

Image 11
Project MyHIX 2.0



Change Management Workshop



Awareness Session at Health Facilities



Coaching Session with Users from Facilities



Source: eHealth Strategic Planning Unit, Planning Division, MoH

COLLABORATIVE eHEALTH PLANNING UNIT

TELEMEDICINE DEVELOPMENT GROUP

Collaborative eHealth Unit is currently engaged with the private sectors including academia through the Telemedicine Development Group (TDG). Since the past 2 years, we have collaborated with MCMC, Monash University and CREST in developing digital health innovations.

The Telemedicine Development Group (TDG) idea was officially announced by Director General of Health Malaysia, Datuk Dr Noor Hisham Abdullah during the 2nd Telemedicine Conference 2016. This is the platform where multi stakeholders of public and private entities collaborate to support the development, research and innovation of telemedicine/telehealth initiatives in Malaysia.

The Chronology of TDG is as below:

13 August 2015	DG of Health mooted: "...collaborative approach to improve outcome..." & "...a platform of stakeholders..." during Malaysia's 1st Telemedicine Conference
03 Feb 2016	Engagement with Pemandu – NKEA CCI & Healthcare
18 May 2016	Engagement with Clinical Research Malaysia (CRM)
16 August 2016	DG of Health announced: "...the formation of TDG as a platform of collaboration to drive eHealth..." Malaysia's 2nd Telemedicine Conference
14 Feb 2017	TDG Pre-Council: Discussion among founding members on Vision, Mission, Structure, Terms of Reference (ToR) & Planned Activities
19 June 2017	TDG 1st Steering Committee: DG of Health & MCMC Chairman officially launched the Telemedicine Development Group

Among the activities are:

- **Malaysian Telemedicine Conference 2017** was held at the Swan Convention Centre, Sunway Medical Centre, Bandar Sunway, Selangor from 15 to 17 August 2017 and the theme was **Healthcare For Tomorrow: The Disruption Begins**.
- **Telemedicine Innovation Challenge**; a competition focusing on innovative healthcare solutions using technology. 15 teams participated from various universities, industry and international organisations.

Image 12
Telemedicine Development Group Steering Committee



Source: eHealth Strategic Planning Unit, Planning Division, MoH

ENGINEERING SERVICES

The Engineering Services Division (ESD) comprises of:

- i. Services Branch - Project Implementation Section, Hospital Operations Section, Clinic Operations Section and Biomedical Operations Section.
- ii. Regulatory Branch - Environmental Health Control Section and NEHAP Section.
- iii. Planning Branch - Technical Unit, Environmental Health Engineering Unit, Private Healthcare Facilities and Services Unit and Facility Management 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. Project implementation of new or upgrading healthcare facilities and engineering system replacement in healthcare facilities,

PROJECT IMPLEMENTATION

In 2017, Ministry of Health through ESD continues implementing various categories of physical projects under the 10th (continuance) and 11th Malaysian Plan (10MP and 11MP). The projects implemented involve the construction of new facility (hospitals, clinic and quarters), upgrading of hospitals and clinics, renovation and refurbishment of hospitals as well as upgrading and replacing engineering systems in healthcare facilities.

As of 2017, there were **168** projects implemented by ESD, including 20 new projects received in 2017. **115** projects have been completed which were in various completion stage either in Defect Liability Period (DLP) or Final Account. Apart from 115 projects, 18 projects were completed in 2017. Beside the completed projects, **35** projects are in progress while **18** projects are in planning phase.

In addition to the above projects, there are also special or complex projects managed by ESD namely the construction of *Klinik Kesihatan Kuala Lumpur* (KKKL) which have been completed, National Institutes of Health (NIH) and Quarters for *Bahagian Pengurusan Hartanah* (BPH), JPM. **Table 4** shows various projects that have been managed and completed.

During implementation of all the projects, ESD has to manage 121 consultant firms from various field including architecture, civil and structure, mechanical, electrical and quantity surveyor. These consultants were appointed to do all the design and supervision for various projects. In terms of budget, ESD have spent about RM 2.631 billion on the implementation of these various projects.

Table 4
List of Some Projects Implemented In 2017

Type of projects implemented	Year 2017		
	No Of Projects	CPC issued in 2017	Status
(i) Kesihatan Awam (BP 200)			
a. <i>Projek sambungan</i>	39	1	35 projects completed 1 projects in progress 3 projects in planning phase
b. <i>Projek baharu</i>	3	-	1project in progress 2 projects in planning phase
(ii) Kemudahan Hospital (BP 300)			
a. <i>Projek sambungan</i>	41	-	30 projects completed 8 projects in progress 3 projects in planning phase
b. <i>Projek baharu</i>	0	-	
(iii) Kemudahan Anggota/ Kuarters (BP 900)			
a. <i>Projek sambungan</i>	5	-	2 projects completed 1 project in progress 2 project in planning phase
b. <i>Projek baharu</i>	0	-	
(iv) Projek Naiktaraf/ ubahsuai Sistem Kejuruteraan (BP 600)			
a. <i>Projek sambungan</i>	28	6	21 projects completed 4 projects in progress 3 projects in planning phase
b. <i>Projek baharu</i>	5	-	1 project in progress 4 projects in planning phase
(v) Peralatan dan Kenderaan (BP 1100)			
a. <i>Projek sambungan</i>	1	-	1 project in progress
b. <i>Projek baharu</i>	1	-	1 project in planning phase
(v) Sinking Fund			
a. <i>Projek sambungan</i>	32	9	25 projects completed 7 projects in progress
b. <i>Projek baharu</i>	10	1	1 project completed 9 projects in progress
(vi) Projek Khas			
a. <i>Pembinaan Klinik Kesihatan Kuala Lumpur (Sambungan)</i>	1	1	1 project completed

Type of projects implemented	Year 2017		
	No Of Projects	CPC issued in 2017	Status
b. <i>Pembinaan Institut Penyelidikan Kesihatan Bersepadu (IPKB) Setia Alam (Sambungan)</i>	1	-	1 project in progress
c. <i>Pembinaan Kuarters BPH di Jalan Bangsar, Kuala Lumpur (Baru)</i>	1	-	1 project in progress
<i>Jumlah Projek Sambungan</i>	148	17	
<i>Jumlah Projek Baru</i>	20	1	
Total	168	18	115 Projects completed 35 projects in progress 18 projects in planning phase

Source: Engineering Services Division, MoH

HOSPITAL SUPPORT SERVICES MONITORING

The idea of outsourcing the public healthcare of Malaysian Ministry of Health (MoH) was raised in 1996 by the Government while announcing the Seventh Malaysia Plan in which one of the plan is to increase the efficiency of services and to retain its own qualified and experienced manpower.

The Privatised Hospital Support Services (HSS) consists of five (5) services that are:

- Facility Engineering Management Services (FEMS) - the Company are required to operate and maintain all installed plants and systems, maintain all assets (non-biomedical), including carry out pest control activities and maintain the grounds and landscapes.
- Biomedical Engineering Management Services (BEMS) - services at the Contract Hospital is aimed to ensure biomedical equipment are available, safe, and ready for use at any point of time.
- Clinical Waste Management Services (CWMS) - services regulate the collection, storage, transportation, treatment and disposal of Clinical Waste produced by the Contract Hospital.
- Cleansing Services (CLS) - provide the Cleansing Services (CLS) and required to develop appropriate programs within industry standards, which not only comply with various regulations and guidelines of the Government, but also incorporate proper and effective procedures to carry out cleansing activities.
- Linen and Laundry Services (LLS) - A proper program for the delivery of adequate clean linen to the Contract Hospital and removal of soiled linen, which is to be processed at Concession's Laundry Facilities.

By 2017, the number of contract hospitals and institutions having HSS were increased to 148 from 127 hospitals and institutions in 1997 (year of implementation). The previous statistics (1997 to 2014) of the number of hospitals and institutions by concession companies are shown in **Table 5**. Meanwhile **Table 6** shows the current statistics of number hospitals and institution based on new contract. **Table 7** shows the comparison of asset numbers of HSS between 1997, 2013 till 2017

Table 5
Number of Hospitals & Institutions by Concession Companies (1997 to 2017)

Concession Company	Numbers of Hospitals and Institutions							
	1997	...2009	2010	2011	2012	2013	2014	...2017
Faber Mediserve Sdn Bhd	71	79	79	79	80	80	80	32
Radicare Malaysia Sdn Bhd	37	46	46	46	46	46	46	46
Medivest Sdn Bhd	19	22	22	22	22	22	22	22
Sedafiat Sdn Bhd	-	-	-	-	-	-	-	26
One Medicare Sdn Bhd	-	-	-	-	-	-	-	22
Total	127	147	147	147	148	148	148	148

Source: Engineering Services Division, MoH

The new contract takes effect on 1 of April 2015 with improvement to key services; FEMS, BEMS, CLS and LLS. In addition, CWMS has been expanding its scope of services becoming Healthcare Waste Management Services (HWMS) to cater all the healthcare waste in healthcare facilities. As assurance of good governance, FMS has been introduced to ensure the coordination and effectiveness of the delivering off all related services.

Furthermore, to uphold the new policy set by the Ministry towards “Green Healthcare Facilities” Concession Company are required to implement a Sustainability Programme which includes Indoor Air Quality, Energy Management and 3R (Reduce, Reuse and Recycle) at the respective Contract Hospital in accordance with the requirements.

Table 6
Number of Hospital & Institutions by Concession Companies (2017)

Concession Company	Numbers of Hospital & Institutions
Radicare Malaysia Sdn Bhd	46
Edgenta Mediserve Sdn Bhd	32
Medivest Sdn Bhd	22
Sedafiat Sdn Bhd	26
One Medicare Sdn Bhd	22
Total	148

Source: Engineering Services Division, MoH

Table 7
Number of Assets for HSS 1997 to 2017

Items	1997	...2013	2014	2015	2016	2017
Number of Hospital & Institution	127	148	148	148	148	148
Floor Area (m2)	4,297,523	4,633,788	6,111,210	6,111,210	6,111,210	6,111,210
FEMS Assets	Est. 250,000	390,482	431,226	441,620	492,493	592,378
BEMS Assets	81,254	187,946	197,005	266,697	278,032	277,380

Source: Engineering Services Division, MoH

- **QUALITY ASSURANCE PROGRAM (QAP)**

In year 2002, two (2) services were incorporated under Quality Assurance Programs (QAP) namely FEMS and BEMS. Subsequently three (3) other services namely CWMS, CLS and LLS were included since October 2006. This QAP is such that the plan and management of quality control could be taken up by all services. So that, the quality of all services could be improved continuously with the help of monitoring tools such as the Central Management Information System (CMIS) at all level be it at hospital, state, consortia or national level. The QAP report is assessed and analysed yearly and presented to the MoH Quality Assurance Committee yearly.

- **CONTRACTOR'S PERFORMANCE ASSESSMENT (CPA)**

The performance of the Concession Company in delivering the services will be assessed and reported quarterly (3 monthly) bases by the State Operation Engineer in the CPA Report. **Table 8** shows the Contractor's Performance Assessment (CPA).

Table 8
Contractor Performance Assessment (CPA) 2017

Concession Company	CPA Marks (%)	
	Jan – Apr	May - Aug
Radicare Malaysia Sdn Bhd	90.61	86.86
Edgenta Mediserve Sdn Bhd	94.14	92.04
Medivest Sdn Bhd	73.55	69.31
Sedafiat Sdn Bhd	94.82	94.85
One Medicare Sdn Bhd	92.00	93.74

Source: Engineering Services Division, MoH

- **KEY PERFORMANCE INDICATOR (KPI)**

Medical equipment and systems, and facilities at the hospital should be ensured to be functional and can be used in the delivery of effective health services. In line with the motto of the "People First, Performance Now", it is important to prevent disruption to the delivery of services to patients and consumers.

Achieving maximum uptime of equipment, systems and facilities for the year of 2017 is 98.75 per cent achieving the uptime target due to ageing factor, major repairs and other reasonable causes of breakdown. **Table 9** shows Equipment to Achieve the Specified Uptime for Each Equipment for 2013 to 2017.

Table 9
Equipment to Achieve the Specified Uptime for Each Equipment for 2013 to 2017

Items	2013	2014	2015	2016	2017
Number of equipment/systems/facilities achieve uptime	442,695	461,352	417,498	430,595	434,677
The total number of equipment/systems/facilities that are monitored in the QAP PSH	477,235	510,752	428,909	438,972	440,972
% of equipment/systems/facilities to achieve uptime	92.76%	90.33%	97.34%	98.09%	98.75%
Target % e of equipment / systems / facilities to achieve uptime	92.00%	92.00%	92.00%	92.00%	92.00%

Source: Engineering Services Division, MoH

CLINICS SUPPORT SERVICES (CSS)

Engineering Services Division (ESD) has implemented a CSS project at selected health clinics throughout the country. The project involved four (4) services that are Facility Engineering Maintenance Services (FEMS), Biomedical Engineering Maintenance Services (BEMS), Cleansing Services (CLS) and Clinical Waste Management Services (CWMS). The scope of the projects included the implementation of Planned Preventive Maintenance (PPM) and Corrective Maintenance (CM) works. **Table 10** provides summary information on the above projects. Facility engineering management is used for the development, implementation and monitoring of CSS activities as well as upgrading of health clinics facilities to ensure that health facilities work in good and safe condition.

Table 10
Summary Information on Clinic Support Services Pilot Projects (CSS) and Repair & Upgrading Works for Health Clinics

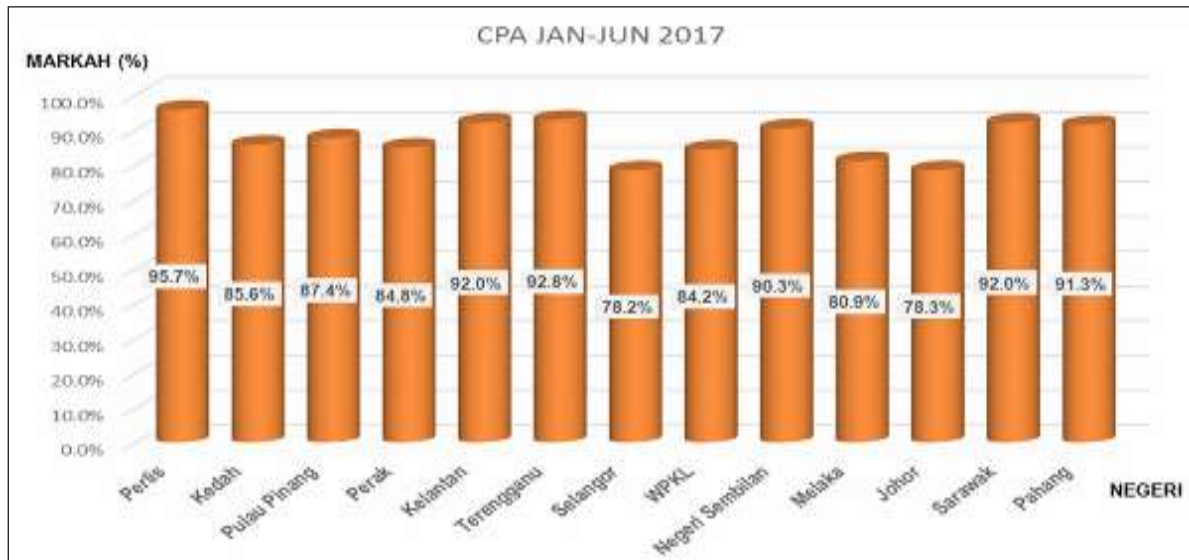
State	Scope Of Services	Contract Period	No Of Selected Clinics
Pahang	FEMS, BEMS, CWMS & CLS	1 July 2010 – 30 June 2011 (Pilot)	10
		18 June 2012 – 17 June 2013 (Extension)	10
		1 Sep 2014 – 31 August 2015 (Extension)	10
		1 Februari 2016-31 Disember 2018	10
Sarawak	FEMS, BEMS, CWMS & CLS	15 March 2012 – 14 March 2013 (Pilot)	17
		15 August 2013 -14 August 2016 (Extension)	17
		15 August 2016 – 14 August 2017 (Extension)	17
		1 Disember 2016 – 30 November 2019	21
Sabah	FEMS, BEMS, CWMS & CLS	15 November 2013- 14 Nov 2015 (Pilot)	20
		15 April 2016- 14 April 2017	20
Perlis, Kedah, Pulau Pinang, Perak, Selangor, W.P Kuala Lumpur, Terengganu, Kelantan, Johor, Melaka dan Negeri Sembilan	FEMS, CWMS & CLS	1 July 2015 – 30 June 2018	118

Source: Engineering Services Division, MoH

• CONTRACTOR'S PERFORMANCE ASSESSMENT (CPA)

The performance of the Company in delivering the services will be assessed and reported every six months by the State Operation Engineer in the CPA report. **Figure 7** shows the semi-annual Contractor's Performance Assessment (CPA) for year 2017. The Contractor performance is evaluated base on total of work order been carried out under PPM, the planning versus implementation of Corrective Maintenance and Customer Satisfaction Survey.

Figure 7
CPA Jan-Jun 2017



Source: Engineering Services Division, MoH

• OTHER ACTIVITIES

The Installation of Off-grid Photovoltaic (PV) Solar System at *Klinik Kesihatan Pensiangan*, Sabah has been completed on 9 of Mac 2017. Solar-powered photovoltaic (PV) panels convert the sun's rays into electricity and produced 25kWh of solar energy per day for the clinic and quarters usage. Now the project is under Defect Liability Period and there is maintenance of work that need to be done by the Contractor until 9 Mac 2019.

Image 13

Installation of Off-Grid Photovoltaic Solar System at Pensiangan Health Clinic, Keningau, Sabah



Source: Engineering Services Division, MoH

National Blue Ocean Strategy (NBOS) for quarters repair has also made a huge impact on the services to society. The effort of collaboration on NBOS with other external agency and as well as the NBOS programme under the MoH itself have successfully resulted in cost saving in repairing the quarters. Allocation of RM514,819.50 for quarters repairing works under NBOS Programme 2017 with other agency have resulted in cost saving of more than 45 per cent in comparison to normal procurement.

Under My Beautiful Malaysia Programme, *Kementerian Kesejahteraan Bandar, Perumahan dan Kerajaan Tempatan* have allocated RM1,568,431.14 to Ministry of Health for quarters repair and through this program MoH have repaired 71 unit of quarters in 2017. **Table 11** and **12** shows the list of projects implemented under this NBOS programme.

Table 11
List of MoH's Quarters Involved in Repairing Works Under NBOS Programme (MoH) in 2017

No	State	Location of Status	Quantity/ Unit
1.	Perak	<i>Kuarters Kelas F, Klinik Kesihatan Kota Bharu</i>	1
2.	Pulau Pinang	<i>Kuarters Kesihatan Klinik Kesihatan Ibu dan Anak Sungai Bakap</i>	6
3.	Johor	<i>Kuarters Klinik Kesihatan Renggam</i>	14
4.	Melaka	<i>Kuarters Klinik Kesihatan Sebang Padang</i>	5
5.	Kedah	<i>Kuarters PKD Kubang Pasu</i>	13
6.	Pahang	<i>Kuarters Jalan Mardi</i>	1
		<i>Kuarters Inspektorat</i>	1
7.	Perlis	<i>Kuarters Klinik Kesihatan Beseri</i>	1
8.	Kelantan	<i>Kuarters Klinik Kesihatan Ketereh</i>	4
9.	Terengganu	<i>Kuarters Klinik Kesihatan Bukit Tunggal</i>	6
Total			52

Source: Engineering Services Division, MoH

Table 12
List of MoH's Quarters Involve in Repairing Works under NBOS Programme
(My Beautiful Malaysia – Kementerian Kesejahteraan Bandar,
Perumahan dan Kerajaan Tempatan)

No	Item	Unit
1.	<i>Kuarters Klinik Kesihatan Ketengah Jaya, Dungun, Terengganu</i>	21
2.	<i>Kuarters Klinik Kesihatan Maran, Pahang</i>	24
3.	<i>Kuarters Klinik Kesihatan Tg Sedili, Kota Tinggi, Johor</i>	18
4.	<i>Kuarters Klinik Kesihatan Mantunggong, Kudat, Sabah</i>	5
5.	<i>Kuarters Klinik Kesihatan Paka, Terengganu</i>	1
6.	<i>Kuarters Klinik Kesihatan Al-Mukhtafi Billah Shah, Terengganu</i>	2
Total		71

Source: Engineering Services Division, MoH

MEDICAL EQUIPMENT ENHANCEMENT TENURE (MEET) PROGRAMME

• IMPLEMENTATION OF MEET PROGRAMME

This program is closely monitored by Section of Biomedical Operation. There are several activities organized throughout the year of 2017. Those activities are: -

- i. Monthly meeting with other division in MoH and Concession Company to resolve operation issues.

- ii. Technical Evaluation Committee to evaluate e-tender documents for GAP equipment supply to Government clinics.
- iii. Auditing program at these selected clinics in each state to observe the effectiveness of program implementation at *KK/KP Setapak*, *KK/KP Presint 9*, *KK Presint 11*, *KK Presint 14 (Wilayah Persekutuan Putrajaya)*, *KK/KP Salak (Selangor)*, *KK/KP Masjid Tanah (Melaka)*, *KK/KP Rengit*, *KD Sungai Merlong (Johor)*, *KK/KP Kuarters KLIA (Negeri Sembilan)*, *KK/KP Pokok Assam (Perak)*, *KK/KP Tanah Puteh (Sarawak)* and *KP Tuaran (Sabah)*
- iv. Project Monitoring Committee (PMC) to resolve operation issues which require decision making from top management of MoH.
- v. Workshop on MEET Competency on program implementation and establishing awareness to State Engineers and Assistant Engineers who are involved in the program
 - Module 1: Standard Operation Procedures (SOP) for MEET Program.
 - Module 2: MEET Monthly Report (MMR) and CAMMS
 - Module 3: Technical audit
- vi. Site visit to clinics involved in renovation works.

• CONCESSION PERFORMANCE ASSESSMENT (CPA)

To ensure that the maintenance of biomedical equipment is being carried out properly, Quantum Medical Solution Company (QMS) must adhere to four (4) agreed Key Performance Indicators (KPI) which are Response Time, Repair Time, Scheduled Maintenance and Uptime Guarantee

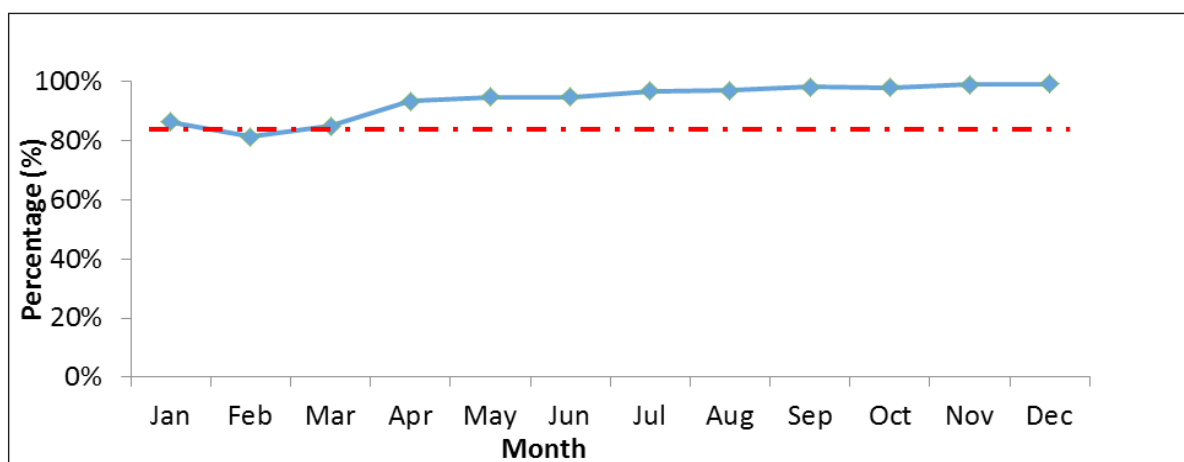
i. KPI RESPONSE TIME

Throughout the year 2017, total of 22,190 work requests were made by the clinics listed under MEET program and a total of 20,759 (94 per cent) of the work requests were compliant with response time KPI. These achievements are still below the KPI target set at 95 per cent. **Figure 8** shows the response time statistics compliance with the KPI for the year of 2017.

ii. KPI REPAIR TIME

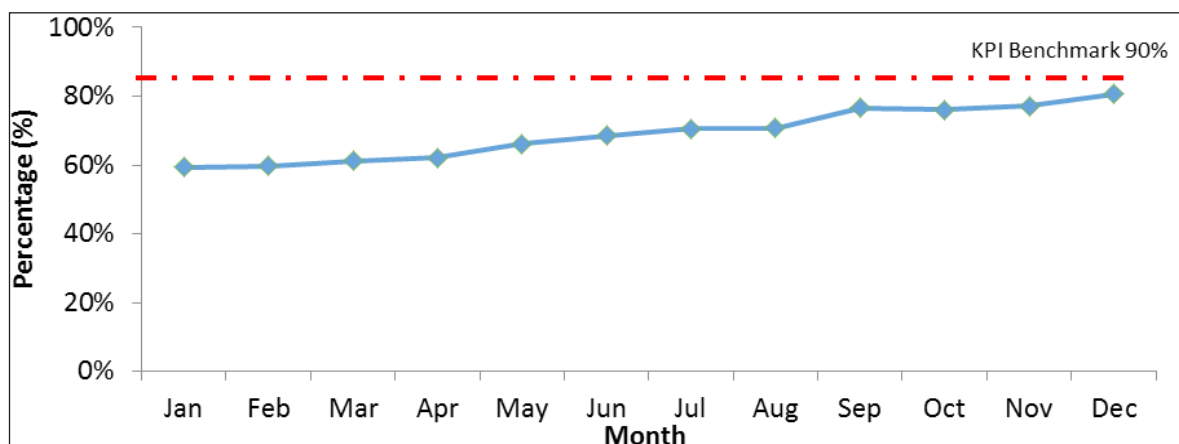
Throughout the year 2017, a total of 22,190 work requests were made by the clinics listed under MEET program and total of 15,332 (69 per cent) of the work request were compliant with repair time KPI.

Figure 8
Response Time Statistic Comply with KPI for The Year of 2017



Source: Engineering Services Division, MoH

Figure 9
Repair Time Statistic Comply with KPI for The Year of 2017



Source: Engineering Services Division, MoH

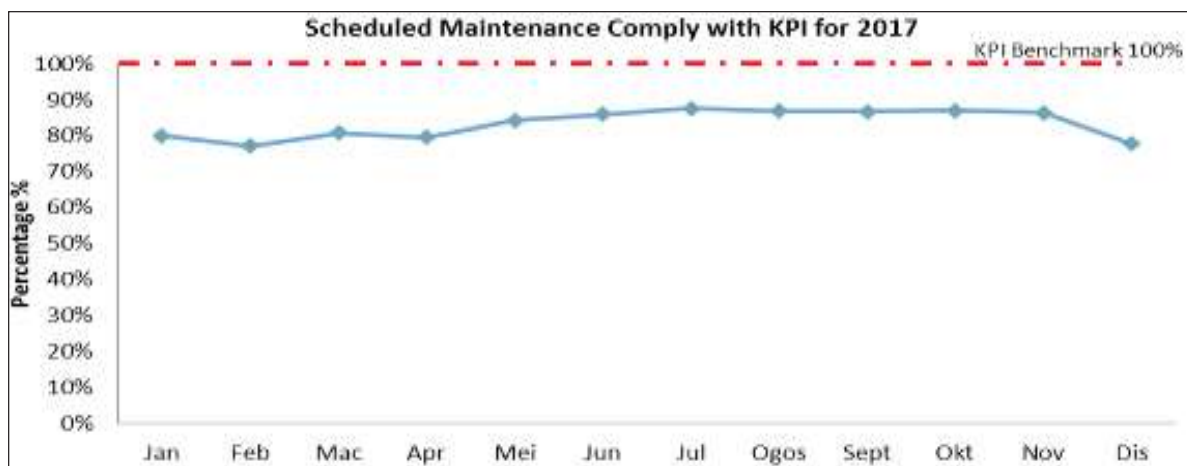
These achievements are still below the KPI target set at 90 percent. **Figure 9** shows the repair time statistics compliance with the KPI for the year of 2017.

iii. KPI SCHEDULE MAINTENANCE

Scheduled maintenance (PPM) is the maintenance activities carried out in accordance with a predetermined frequency of maintenance to ensure biomedical equipment is functioning at an optimal level and safe to use.

A total of 68,150 maintenance has been scheduled in year 2017. A total of 56,784 (83 per cent) work orders for scheduled maintenance was successfully completed in the same month which complied with the KPI target (completed within the scheduled month). **Figure 10** shows the scheduled maintenance activity compliance with KPI for year of 2017.

Figure 10
Schedule Maintenance Activity Comply with KPI for The Year of 2017



Source: Engineering Services Division, MoH

vi. KPI UPTIME GUARANTEE

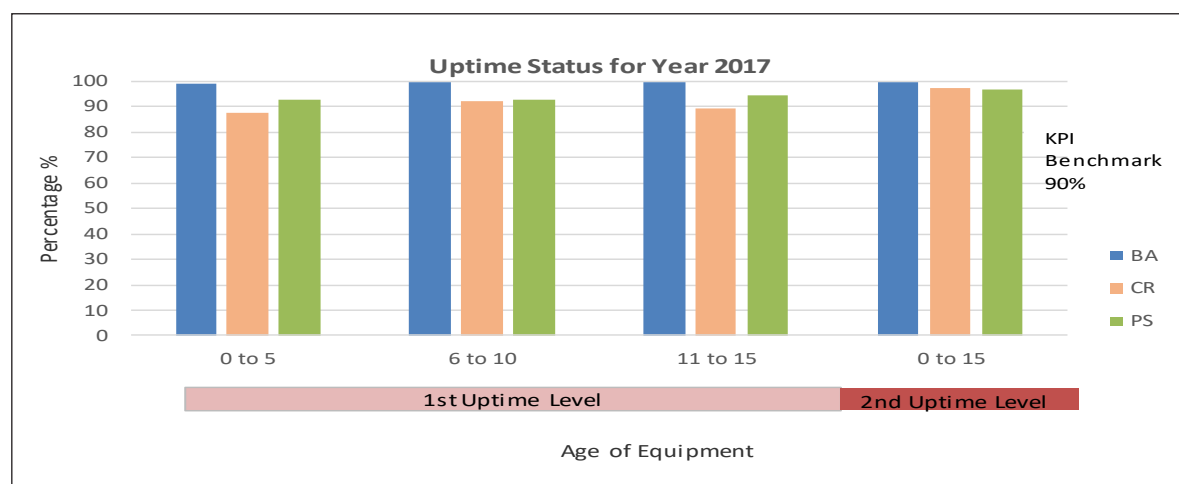
Uptime analysis and calculation is performed based on a total of 41,312 equipment after excluding equipment beyond 15 years of age as well as equipment which do not have purchase date information. A total of 9,505 equipment is under the category of Basic Equipment (BA), 1,240 under category of Critical Equipment (CR) and 30,567 equipment under the category of Patient Support (PS). **Table 13** and **Figure 11** shows the percentage of achievement (%) compliance with KPI Uptime, 1st Level and 2nd Level by equipment group and age of the equipment.

Table 13
Uptime Status for Year 2017

Equipment Group	Total Equipment	Age of Equipment (Year)	Comply with KPI Uptime 1st Level		Comply with KPI Uptime 2nd Level	
			No. of Equipment	%	No. of Equipment	%
BA	9,505	0 to 5	2,630	99.25	9,490	99.84
		6 to 10	5,062	99.57		
		10 to 15	1,771	99.89		
CR	1,240	0 to 5	303	87.57	1,204	97.10
		6 to 10	647	91.90		
		10 to 15	170	89.47		
PS	30,567	0 to 5	6,027	92.75	29,655	97.02
		6 to 10	15,130	92.59		
		10 to 15	7,285	94.27		
Total	41,312					

Source: Engineering Services Division, MoH

Figure 11
Uptime Status for Year 2017



Source: Engineering Services Division, MoH

• GAP EQUIPMENT SUPPLY STATUS

Under the agreement, QMS is also responsible to supply, deliver, install, testing and commissioning of GAP equipment. The procurement of the GAP equipment is divided into two (2) types, which are New Biomedical Equipment (NBE) and Purchased Biomedical Equipment (PBE). For NBE, the equipment will be leased out to the Government for a period of 8 years after which the equipment ownership is belonging to the Government. For PBE, the Government will own the equipment after it has been supplied. All of the equipment will be supplied in 12 batches within a 3 years period.

The supply of GAP equipment has been started on September to November 2016 for batch 1, December 2016 to February 2017 for batch 2, March to May 2017 for batch 3, June to August 2017 for batch 4 and September to November 2017 for batch 5. **Table 14** shows the total number of equipment being supplied to Government clinics in Batch 1 to 5 by state.

Table 14
GAP Equipment Supplied in Batch 1 to 5

State	Number of GAP Equipment (12 Batches)	Number of Equipment Supplied (Batch 1 to 5)	Percentage (%)
Johor	7,083	3,562	50.29
Melaka	1,817	1,064	58.56
Negeri Sembilan	3,324	1,634	49.16
Perak	6,299	2,979	47.29
Pulau Pinang & KLPM	2,979	1,462	49.08
Sabah	4,631	1,748	37.75
Sarawak	7,412	2,381	32.12
Selangor	5,625	2,736	48.64
W.P Kuala Lumpur	1,704	1,119	65.67
W.P Labuan	148	68	45.95
Total	41,022	18,753	45.71

Source: Engineering Services Division, MoH

RURAL WATER SUPPLY

It is 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 enough quantities of water that meets the basic health and hygiene requirements at minimum cost. These systems produce untreated but wholesome water and therefore the rural people are advised to boil it if used for their drinking water supply. The types of systems installed under this programme throughout the rural areas in Malaysia are the gravity-feed system, sanitary well, sanitary well with house connection, rainwater collection system and connection to public water supply systems (where available).

The development of rural water supply component in the water supply and rural environmental sanitation programme is planned according to the 5 years Malaysia Development Plan. In 2017, a total number of **937** water supply systems were installed and provided clean water to **2,740** houses. At the end of

2017, the overall status of rural water supply coverage is at **96.38** per cent which represents **1,475,516** rural houses (**Table 15**).

- **SANITARY LATRINES**

Initiated together with Rural Water Supply, the target for the programme is that each household in rural areas would be equipped with one sanitary latrine. The most effective and cheapest method for disposal of excreta in rural areas is by using pour-flush latrines. Population densities, soil conditions, cultural habits, depth of water table and the availability of water for flushing are the main 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 proper and hygienic method for disposal of excreta. In 2017, MoH has constructed a total number of **190** pour flush latrines. The small number of pour flush latrines constructed was mainly due to the limited development fund available for sanitation projects. The coverage of sanitary latrines at the end of 2017 was at **95.79** per cent that represents **1,466,358** rural houses (**Table 16**).

- **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 has also been given to proper management of sullage and solid waste in rural areas so that the disposal of such wastes can be carried out in a sanitary manner. In 2017, a total number of **2** sullage disposal systems (SPAL) and **8** solid waste disposal systems (SPSP) were constructed. Due to unavailability of development fund for sanitation projects, a small number of SPAL and SPSP were constructed by using stocks from previous year. Started only in 1997, the addition of these systems manages to contribute to the total household coverage of sullage disposal systems and solid waste disposal systems of **69.45** per cent (**1,063,221**) and **73.29** per cent (**1,121,930**) respectively (**Table 16**).

- **NATIONAL DRINKING WATER QUALITY SURVEILLANCE PROGRAMME (NDWQSP)**

Guidelines for the implementation of an effective, systematic and comprehensive National Drinking Water Quality Surveillance Programme (NDWQSP) were formulated with the co-operation of agencies such as World Health Organization (WHO), Public Works Department, Department of Chemistry and Department of Environment in early 1980's. These guidelines were the foundation for the launching of the NDWQSP in 1983.

The principal objective of NDWQSP is to enhance public health standard by ensuring the safety and acceptability of the drinking water provided to the consumer by reducing the incidence of water borne diseases or other effects associated with poor public water supplies through effective surveillance. This programme ensures that public health and water work personnel will be alerted in time if the quality of drinking water is deteriorating. This will enable them to take preventive or remedial measures before any major outbreak of disease or poisoning can occur.

The NDWQSP which has been adopted by all states since 1986 provides a mechanism towards improving drinking water quality through five (5) elements of the programme, i.e., monitoring, sanitary survey, data processing and evaluation, remedial action and institutional examination. Since the implementation of the programme, the drinking water quality in the country has generally improved and the current status of drinking water can be readily assessed.

Table 15
Construction of Rural Water Supply Project by Ministry of Health in 2017

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 (Cumulative)	Coverage (%)
		Nos. Built	No of Houses Supplied	Nos. Built	No. of Houses Supplied	Nos. Built	No. of Houses Supplied	Nos. Built	No. of Houses Supplied	Nos. Built	No. of Houses Supplied	Nos. Built	No. of Houses Supplied		
Perlis	34,360	0	0	0	0	0	0	0	0	34	34	34	34	33,632	97.88
Kedah	200,563	0	0	0	0	0	0	0	0	95	95	95	95	191,958	95.71
P.Pinang	62,732	0	0	0	0	1	16	0	0	70	70	71	86	59,211	94.39
Perak	129,708	0	0	0	0	7	472	0	0	24	24	31	496	128,457	99.04
Selangor	86,584	0	0	0	0	0	0	0	0	0	0	0	0	82,287	95.04
N.Sembilan	59,053	0	0	0	0	2	38	0	0	37	37	39	75	58,819	99.60
Melaka	75,981	0	0	0	0	0	0	0	0	0	0	0	0	75,949	99.96
Johor	105,495	0	0	3	62	1	93	5	5	29	29	38	189	103,361	97.98
Pahang	83,711	6	25	1	1	5	258	5	5	38	38	55	327	81,660	97.55
Terengganu	160,546	4	4	3	13	0	0	0	0	93	93	100	110	158,786	98.90
Kelantan	203,906	0	0	2	47	7	370	0	0	228	228	237	645	183,903	90.19
Sarawak	142,132	0	0	0	0	5	186	157	157	0	0	162	343	134,376	94.54
Sabah	186,099	1	55	0	0	9	222	2		63	63	75	340	183,117	98.40
MALAYSIA	1,530,870	10	84	9	123	11	1,655	146	167	711	711	937	2,740	1,475,516	96.38

Source: Engineering Services Division, MoH

Table 16
Construction of Latrines, Sullage And Solid Waste Disposal System
by Ministry of Health in 2017

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	34,360	8	33,438	97.32	0	21,826	63.52	0	20,936	60.93
Kedah	200,563	18	187,080	93.28	2	146,972	73.28	0	165,105	82.32
P.Pinang	62,732	11	60,933	97.13	0	54,855	87.44	0	58,275	92.90
Perak	129,708	24	126,479	97.51	0	78,266	60.34	0	77,069	59.42
Selangor	86,584	13	78,171	90.28	0	73,180	84.52	0	73,647	85.06
N.Sembilan	59,053	12	54,886	92.94	0	45,258	76.64	0	45,836	77.62
Melaka	75,981	8	75,973	99.99	0	69,377	91.31	2	69,801	91.87
Johor	105,495	10	103,286	97.91	0	98,630	93.49	0	99,017	93.86
Pahang	83,711	22	80,430	96.08	0	58,807	70.25	0	60,818	72.65
Terengganu	160,546	17	160,509	99.98	0	127,025	79.12	0	137,309	85.53
Kelantan	203,906	23	201,315	98.73	0	90,848	44.55	0	110,861	54.37
Sarawak	142,132	16	121,081	85.19	0	78,191	55.01	0	88,511	62.27
Sabah	186,099	8	182,777	98.21	0	119,986	64.47	6	114,745	61.66
MALAYSIA	1,530,870	190	1,466,358	95.79	2	1,063,221	69.45	8	1,121,930	73.29

Source: Engineering Services Division, MoH

To further enhance the effectiveness of the programme, a Quality Assurance Programme (QAP) for NDWQSP was launched in December 1992 and implemented nationwide in January 1993. The QAP standards is set based on five (5) performance indicators, i.e. Free Residual Chlorine, *E. coli*, Combine Free Residual Chlorine and *E. coli*, Turbidity and Aluminium. The standards are revised each year so that it can be made more stringent to be consistent with any improvement of the national annual average.

For the year 2017, a total of 186,687 water samples were taken and divided into Group 1 of 135,899 samples, Group 2 of 30,38 samples, Group 3 amounted to 12,341 and total of 8,309 water samples for Group 4.

This involves monitoring water samples of 500 water treatment plants (source: Malaysian Water Industry Guide 2016) and 546 water courses. The water sampling performance for 2017 is shown in **Table 17**, while **Table 18** indicates the performance of QAP in 2017.

Table 17
Summary of Sampling Performance for 2017, Malaysia

State	Group 1			Group 2			Group 3			Group 4		
	A	B	C (%)	A	B	C (%)	A	B	C (%)	A	B	C (%)
Johor	19,368	19,370	100.01	4,604	4,604	100.00	1,342	1,340	99.85	849	845	99.53
Kedah	9,860	9,819	99.58	2,172	2,151	99.03	934	918	98.29	609	604	99.18
Kelantan	7,758	7,738	99.74	1,722	1,702	98.84	684	663	96.93	474	440	92.83
Melaka	4,593	4,593	100.00	958	958	100.00	450	450	100.00	267	267	100.00
Negeri Sembilan	6,752	6,681	98.95	1,446	1,356	93.78	682	605	88.71	437	405	92.68
Pahang	16,447	16,447	100.00	3,834	3,834	100.00	1,444	1,444	100.00	1,034	1,034	100.00
Pulau Pinang	3,636	3,636	100.00	716	713	99.58	452	452	100.00	262	262	100.00
Perak	12,202	12,104	99.20	2,606	2,559	98.20	1,188	1,163	97.90	778	770	98.97
Perlis	1,252	1,252	100.00	284	284	100.00	116	116	100.00	90	90	100.00
Selangor	16,539	16,449	99.46	3,822	3,742	97.91	1,832	1,818	99.24	1,344	1,316	97.92
Terengganu	6,346	6,346	100.00	1,416	1,416	100.00	496	496	100.00	300	300	100.00
Sabah	12,168	12,141	99.78	2,709	2,679	98.89	1,162	1,130	97.25	813	791	97.29
Sarawak KKM	6,801	6,592	96.93	1,488	1,423	95.63	680	649	95.44	462	416	90.04
WP Kuala Lumpur	2,635	2,632	99.89	558	548	98.21	256	252	98.44	136	134	98.53
WP Putrajaya	468	468	100.00	102	102	100.00	44	44	100.00	24	24	100.00
WP Labuan	496	416	83.87	106	80	75.47	48	46	95.83	36	30	83.33
Sarawak PA	9,973	9,215	92.40	2,250	1,987	88.31	873	755	86.48	648	581	89.66
Total	137,294	135,899	98.98	30,793	30,138	97.87	12,683	12,341	97.30	8,563	8,309	97.03

Note: A – Number of samples to be taken (Programme Agreement) B – Number of samples taken C – Percentage of samples taken (%)
Source: Engineering Services Division, MoH

Table 18
Performance of QAP for National Drinking Water Quality Surveillance
Programmes for 2017, Malaysia

State	<i>E. coli</i> & Free Res. Chlorine (QAP < 0.10)			<i>E. coli</i> (QAP < 0.35)			Turbidity (QAP < 2.00)			Free Residual Chlorine (QAP < 1.85)			Aluminium (QAP < 10.20)		
	A	B	C (%)	A	B	C (%)	A	B	C (%)	A	B	C (%)	A	B	C (%)
	(QAP < 0.10)			(QAP < 0.35)			(QAP < 2.00)			(QAP < 1.85)			(QAP < 10.20)		
Johor	17,176	0	0.00	17,177	11	0.06	17,220	3	0.02	17,220	358	2.08	4,047	297	7.34
Kedah	7,822	1	0.01	7,838	3	0.04	7,840	107	1.36	7,839	40	0.51	1,576	64	4.06
Kelantan	6,183	4	0.06	6,184	19	0.31	6,184	542	8.76	6,183	123	1.99	1,330	121	9.10
Melaka	3,991	0	0.00	3,991	0	0.00	3,991	5	0.13	3,991	11	0.28	826	76	9.20
Negeri Sembilan	5,529	2	0.04	5,539	3	0.05	5,578	79	1.42	5,568	29	0.52	1,073	132	12.30
Pahang	12,292	0	0.00	12,292	1	0.01	12,378	332	2.68	12,378	150	1.21	2,804	417	14.87
Pulau Pinang	3,047	0	0.00	3,047	0	0.00	3,052	0	0.00	3,052	1	0.03	553	12	2.17
Perak	9,498	0	0.00	9,656	0	0.00	9,639	47	0.49	9,597	3	0.03	1,779	110	6.18
Perlis	856	1	0.12	856	1	0.12	856	51	5.96	856	26	3.04	188	46	24.47
Selangor	14,521	0	0.00	14,570	0	0.00	14,755	5	0.03	14,754	34	0.23	3,072	83	2.70
Terengganu	5,402	0	0.00	5,402	0	0.00	5,629	18	0.32	5,629	11	0.20	1,249	83	6.65
Sabah	7,412	16	0.22	7,514	18	0.24	7,763	252	3.25	7,788	289	3.71	1,424	226	15.87
Sarawak KKM	4,568	30	0.66	4,589	39	0.85	4,414	231	5.23	4,827	551	11.41	869	228	26.24
WP Kuala Lumpur	2,456	0	0.00	2,457	0	0.00	2,458	4	0.16	2,458	6	0.24	469	6	1.28
WP Putrajaya	429	0	0.00	429	0	0.00	463	0	0.00	463	0	0.00	100	6	6.00
WP Labuan	237	0	0.00	258	0	0.00	232	4	1.72	238	2	0.84	41	4	9.76
Sarawak PA	5,946	0	0.00	6,066	11	0.18	5,396	71	1.32	6,458	184	2.85	978	352	35.99
Total	107,365	54	0.05	107,865	106	0.10	107,848	1,751	1.62	109,299	1,818	1.66	22,378	2,263	10.11

Note: A – Number of samples analysed B – Number of samples violated C – Percentage of samples violated (%)

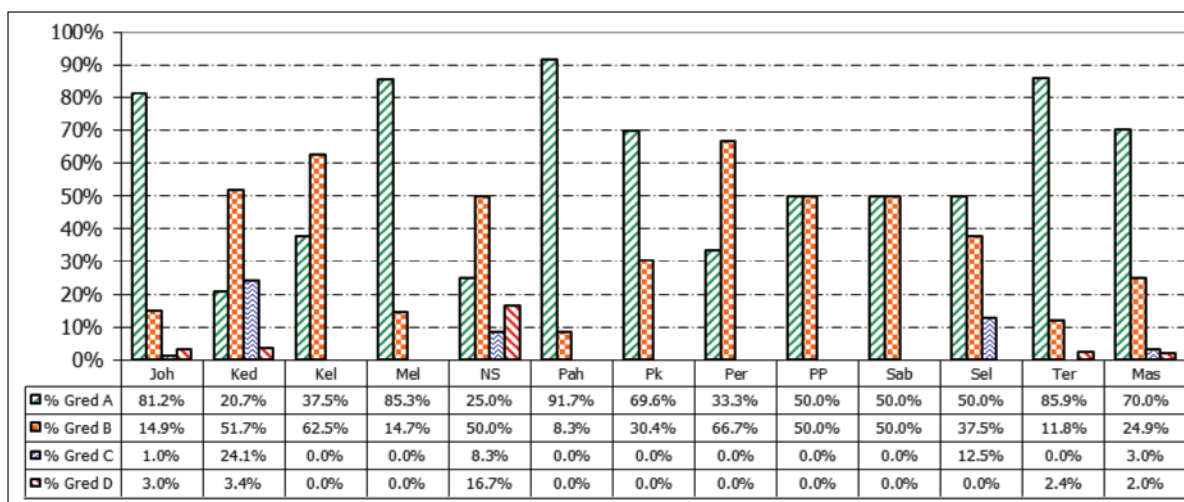
Source: Engineering Services Division, MoH

• SANITATION MONITORING OF CENTRES IN TOURISM

The tourism industry has grown rapidly and has attracted many tourists to come and visit our attractions and resorts around the country. With this development, the Ministry feels that it is necessary to ensure the level of cleanliness and sanitation in these places through routine monitoring of issues related to environmental health at these centres, so that they can be identified and take appropriate actions when needed. Such measures are necessary to ensure the health status of the people who visit these places and can also help in boosting the tourism industry of the country and contribute to the country's economy.

These monitoring activities are carried out through the Environmental Health Safety (PEKA) Program under the Engineering Services Division, MoH. These centres are evaluated and graded based on existing standards on **drinking water quality**, and guidelines on **solid waste management, drainage, sillage and sewage water disposal** and **toilet hygiene**. In 2017, there are about **199 tourism centres or resorts** that were involved with this program. The grading performance of these centres for 2017 is arranged by states and is shown in **Figure 12**.

Figure 12
Sanitary Performance of Tourism Centres by States for 2017



Source: Engineering Services Division, MoH

NATIONAL ENVIRONMENTAL HEALTH ACTION PLAN (NEHAP)

To address the major environmental health problems and needs for action, Malaysia have decided to prepare and implement NEHAP which represents strategies on how to improve environmental health within the country and defines the roles and responsibilities of various stakeholders. Highlights of NEHAP Malaysia activities in 2017 are as follows:

• STEERING COMMITTEE MEETING

Steering Committee Meeting was conducted twice a year and chaired by the Director General of Health, YBhg. Datuk Dr. Noor Hisham bin Abdullah. The committee members were representatives from 13 relevant technical agencies, Chairmen of Thematic Working Groups (TWGs), Core Team members and the Liaison Officers from Engineering Services Division. The decisions made in the meetings were as follows:

No	Meetings	Decisions
1.	NEHAP Malaysia Steering Committee Meeting No. 1/2017 Date: 17 April 2017	<ul style="list-style-type: none"> - The formation of TWG 10: Environmental Health Expert and TWG 11: Vector Bearing Disease - All agency agreed to share data needed for the development of the Malaysian Environmental Health Information System (MyEHIS) - The implementation of State Environmental Health Action Plan (SEHAP) is expended to other state in stages - The implementation status of SEHAP's pilot project, NEHAP Sabah Chapter and NEHAP Sarawak Chapter - The Endorsement of TWGs' Work Plan (TWG 1-9).
2.	NEHAP Malaysia Steering Committee Meeting No. 2/2017 Date: 23 October 2017	<ul style="list-style-type: none"> - The representatives from the headquarters of Department of Environment, Ministry of Energy, Green Technology & Water/ National Water Services Commission and National Solid Waste Management Department/Solid Waste Management and Public Cleansing Corporation are to attend the Pre-Execution of SEHAP Implementation - NEHAP must apply for Development Budget - Progress Report on TWGs Work Plan (TWG 1-9). - The implementation status of SEHAP's pilot project, NEHAP Sabah Chapter and NEHAP Sarawak Chapter

• TECHNICAL COMMITTEE MEETING

The meetings were conducted on 2 March 2017 and 3 August 2017 and chaired by the Director of Engineering Services Division. The committee members were representatives from nine (9) TWGs Chairmen, Core Team members and the Liaison Officers from Engineering Services Division for the first meeting. Chairmen of TWG 10 and TWG 11 came on board for the second meeting as they were appointed after the first Steering Committee Meeting. Both meetings focused mainly on the progress of the TWGs Action Plans.

• THEMATIC WORKING GROUPS

A total of nine (9) TWG were formed until 2016. Two new TWGs were formed in 2017 named TWG 10: Environmental Health Expert and TWG 11: Vector Bearing Disease. The main agenda of the TWGs were to discuss and follow up the status of TWGs' action plan implementation which has been approved. The TWGs for the respective area of concern were as stated in **Image 14**:

• NEHAP CONFERENCE

The National Conference on Environmental Health Action Plan (NEHAP) Malaysia 2017 was successfully held on the 25 September 2017 at Marriott Hotel, Putrajaya. The Conference with a theme "**Emerging Environmental Health Risks: Challenges for Tomorrow**" were officially opened by the Director General of Health. A total of 136 participants from various federal government agencies including Sabah and Sarawak representatives participated in the conference. Two (2) general papers, eight (8) technical papers and posters respectively related to air quality, sanitation, water quality, hazardous substance, climate change and solid waste were presented.

Image 14
Thematic Working Groups

	Air Quality – Department of Environment
	Water & Sewerage – Ministry of Energy, Green Technology and Water
	Solid Waste – National Solid Waste Management Department
	Toxic Chemicals and Hazardous Substances & Waste – Department of Environment
	Climate Change, Ozone Depletion and Ecosystem Change – Ministry of Natural Resource and Energy
	Contingency Planning, Preparedness and Response in Environmental Health Emergencies – Ministry of Health
	Health Impact Assessment – Ministry of Health
	Information Communication Technology – Ministry of Health
	Urban Drainage – Local Government Department
	Environmental Health Experts – Environmental Health Specialist
	Vector Bearing Disease – Ministry of Health

Source: Engineering Services Division, MoH

- **NEHAP SABAH CHAPTER**

On 21 March 2017, Sabah State Government and State Health Department had successfully organised a Steering Committee Meetings for Sabah Chapter. The meetings were chaired by Sabah Deputy State Secretary (Development), Datuk Paunis@Joseph Yuntaavid.

Besides, a workshop was conducted on 22 to 23 March 2017. The objective of the workshop was to discuss further on the action plan for six (6) TWGs under NEHAP Sabah Chapter. The workshop involved 17 agencies including Sabah State and Federal agencies and the Secretariat NEHAP Malaysia was invited as facilitators to assist the action plan was prepared in accordance to NEHAP Guidance Document.

- **NEHAP SARAWAK CHAPTER**

Courtesy call to Deputy Secretary of Sarawak State Government, Datu Haji Ismawi bin Haji Ismuni were held on 27 October 2017. The proposal to implement NEHAP Sarawak Chapter was then brought forward for approval. As the State Government has agreed, the first Steering Committee Meeting were held on 18 December 2017.

ENVIRONMENTAL HEALTH PROTECTION PROGRAMME

• INDOOR AIR QUALITY

In 2017, the Air Quality Unit, NEHAP Section, Engineering Services Division carried out Indoor Air Quality (IAQ) sampling and monitoring activities at the Headquarters (IPKKM) of the Ministry of Health, Putrajaya, involving 5 blocks in Complex E. IAQ sampling and monitoring activities was also conducted at 13 State Health Department (JKN) offices includes JKN Sabah and Sarawak. Besides, the Unit also conducted investigation sampling at *Jabatan Perdana Menteri, Menara Usahawan*, Putrajaya on 8 November 2017. The activities were divided into four (4) sessions; briefing to the occupants of the building, walkthrough inspection of the building, sample taking and reporting of findings. The activity was carried out in accordance to the Industrial Code of Practice 2010, published by the Department of Occupational Safety and Health, Malaysia.

Image 15
Indoor Air Quality Activity, 2017

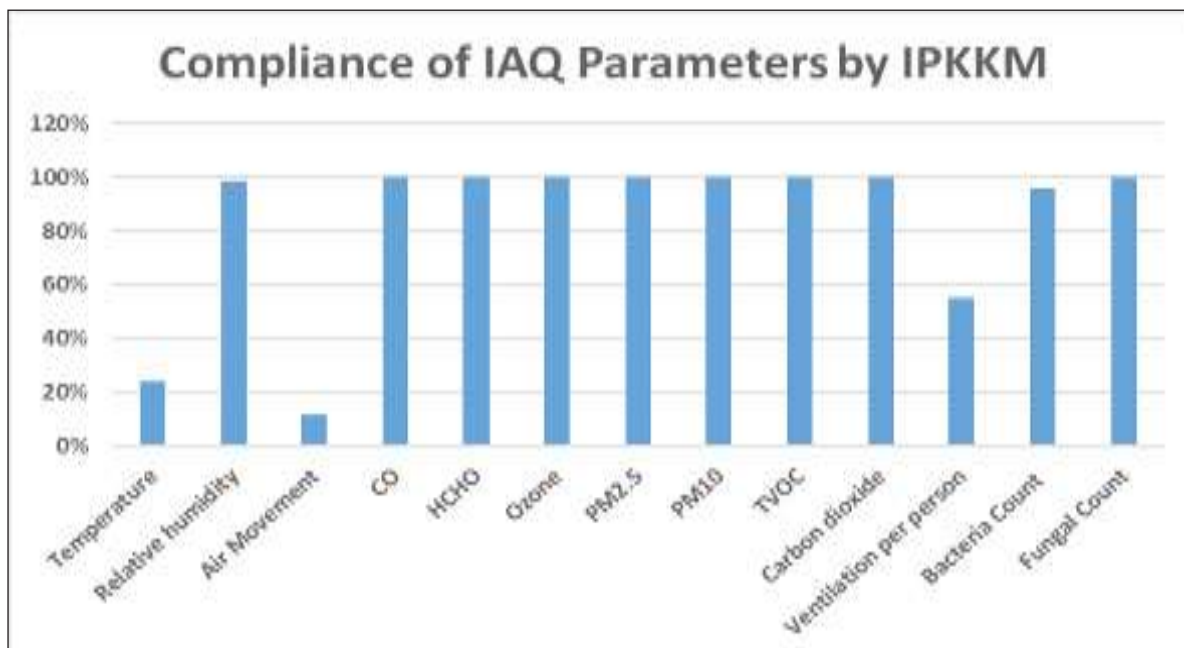


Source: Engineering Services Division, MoH

Figure 13 and Figure 14 showed the percentage of 13 IAQ parameters compliance by IPKKM and JKN.

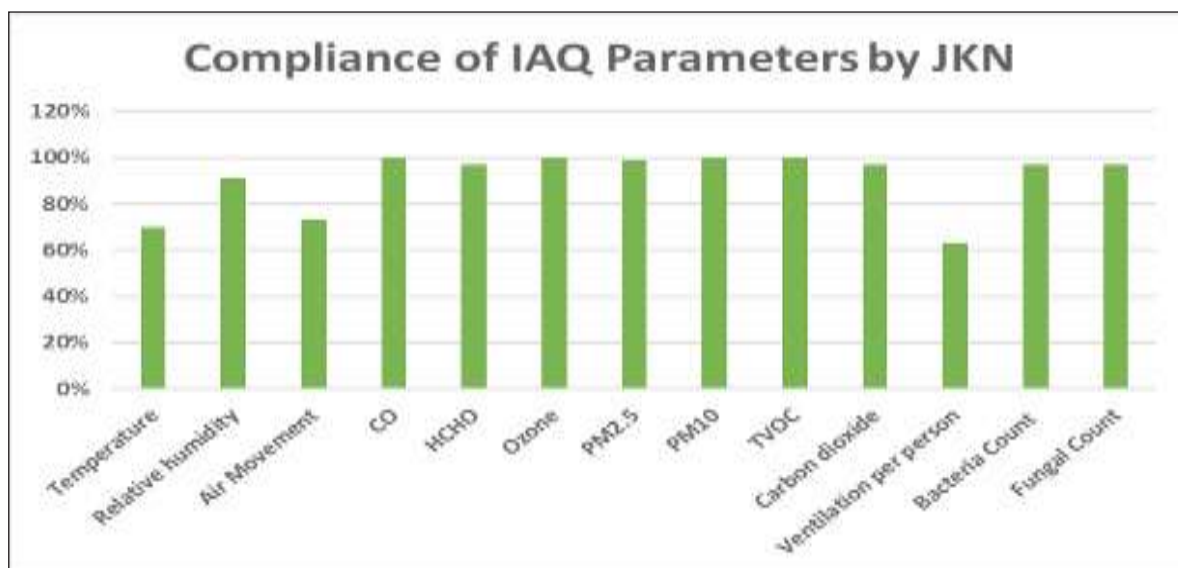
In summary, **physical parameters** (air movement) and **ventilation parameters** (ventilation per person) showed the most non-compliance. To achieve an IAQ reading within standard, monitoring and maintenance by contractors must be performed on a schedule. Owner of premise must ensure knowledge of IAQ is provided to occupants to have good IAQ practices.

Figure 13
Percentage of IAQ Compliance versus Measured Parameter by IPKKM



Source: Engineering Services Division MoH

Figure 14
Percentage of IAQ Compliance Versus Measured Parameter by JKN



Source: Engineering Services Division MoH

• HAZARDOUS SUBSTANCE AND WASTE MANAGEMENT UNIT

The main activity of the Unit is the Environmental Health Impact Assessment (EHIA) of Environmental Impact Assessment (EIA) report. The assessment was carried out in accordance to the Environmental Quality Act 1974 and Guideline of EIA - Procedure and Requirement, 2007, published by Department of Environment (DOE). In 2017, the Unit had received three (3) EIA Report from DOE and had prepared the EHIA reports and submitted to DOE for the EIA approval of prescribed activities regulated in the Act.

• ENVIRONMENTAL HEALTH RISK ASSESSMENT

In 2017, PEKA Programme has been successfully implemented the first module of PEKA activities by collecting and mapping the environmental health profile of the districts throughout Malaysia. The manual of Environmental Health Risk Inventories (EHRI) Risk Assessment has been successfully developed through Environmental Health Consultant. The environmental health risk assessment workshop has been conducted at three pilot project states (Melaka, Perak and Sabah). The development of spatial mapping using GIS application is still ongoing with the cooperation from Malaysia Remote Sensing Agency. Other activities that have been carried out in 2017 are as follows:

No.	Activity	Date and Venue	Description
1	PEKA Road Show (East Zone)	22 February 2017 Auditorium UNiSZA, Kuala Terengganu, Terengganu	<ul style="list-style-type: none"> Involved three (3) states (Pahang, Terengganu and Kelantan) Introduction and briefing session related to PEKA activities
2	PEKA Road Show (Central & South Zone)	30 March 2017 Dewan Theatre, Wisma Negeri Sembilan	<ul style="list-style-type: none"> Involved four (4) states (Selangor, WP KL & Putrajaya, Negeri Sembilan and Johor) Introduction and briefing session related to PEKA activities
3	PEKA Road Show (Sarawak Zone) i) Kuching ii) Miri	15 and 17 August 2017 Wisma PERKESO, Kuching Persatuan Bulan Sabit Merah Cabang Miri	<ul style="list-style-type: none"> Introduction and briefing session related to PEKA activities Introduction and briefing session related to PEKA activities
4	Development of PEKA EHRI Applications	January-September 2017	<ul style="list-style-type: none"> Development of PEKA EHRI Applications still ongoing Involved three modules
5	EHRI Risk Assessment Workshop	8 to 10 August 2016 Gold Coast International Resort, Banting	<ul style="list-style-type: none"> Involved three pilots project states (Melaka, Perak & Sabah) Introduction and briefing session related to EHRI Risk Assessment Conducting EHRI Risk Assessment for each state involved

Because of the PEKA Road Show, several State has organized their respective PEKA workshops for mapping and writing reports at state level - Kelantan (4 to 5/4/2017), Terengganu (12 to 13/10/2017), Negeri Sembilan (2 to 3/8/2017), Selangor (12 to 13/9/2017), Kedah (16 to 17/10/2017), Pahang (23 to 24/10/2017), Johor (30 to 31/10/2017) and Pulau Pinang (8 to 10/11/2017).

A special project Masterplan for Langat Basin under PEKA activities was carried out in 2017. The aims of this project are to collect the EHRI inventory in the Langat Basin area and subsequently to evaluate environmental health risks. This project involved three (3) states namely Selangor, Negeri Sembilan and WP KL & Putrajaya. This project is expected to be completed by the end of 2018.

PLANNING BRANCH

One (1) of the activities in the Planning Branch is Immovable Asset Management MoH under the Facility Management Unit. Facility Management Unit (UPF) is responsible to manage and coordinate the implementation of the Immovable Asset Management at the Ministry of Health.

Table 19 shows status of asset premise registration in 2017.

Table 19
Status of Asset Premise Registration (DPA), 2017

ASSET PREMIS REGISTRATION (DPA)				
STATUS (~13 Nov 17)	Draf	Check	Approved	TOTAL
	96	3	4,140	4,239

Source: Engineering Services Division MoH

Image 16 shows the status of disposable asset for 2016 to 2017. 53 condition appraisal (CA) reports were received in 2016 and 2017. 25 CA reports are in the process of disposal committee while the other 28 CA reports already received disposal verification report. From that 28 CA reports, 9 CA reports were disposed and the balance of 19 CA reports in the disposal process.

Image 16
Disposable Asset Report for Year 2016 To 2017



Source: Engineering Services Division MoH

WAY FORWARD

The prominent roles and responsibilities of engineers in the Engineering Services Division together with the medical teams, scientists and expertise in realizing the vision of the Ministry of Health, are pivotal to the healthcare service provisions. There is a need for a continuously long-term apprenticeships for the personnel to improve and upgrade their knowledge, skills and competencies in accordance to global standards and practices. An efficient and effective delivery and processing system for information and services is obligatory in order the Division to fully optimised available infrastructure, equipment and technology in its daily work processes.

As a major provider of Engineering and Technical Services to the Medical and Health Programs of the Ministry of Health, the Engineering Service 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 buildings, equipment and engineering systems, ensure reliability and efficiency of engineering installations and ensure all healthcare facilities are well maintained in appropriate standard.

MEDICAL RADIATION SURVEILLANCE DIVISION (MRSD)

The Medical Radiation Surveillance Division (MRSD) previously known as Radiation Safety Section, Engineering Services Division was established in 2016 as a new division under Research & Technical Support Program in MoH. MRSD is responsible for regulating the use of ionizing radiation in medicine under the Atomic Energy Licensing Act (Act 304). This regulatory activity consists of three (3) main activities: licensing, monitoring and enforcement.

MRSD 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, MRSD also involved in monitoring 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.

MRSD is also focused on enhancing programs on radiation safety to ensure that the practices in this country are in line with the current international standards and requirements. For that purpose, existing activities are continuously reviewed, and new activities are introduced.

LICENSING UNDER THE ATOMIC ENERGY LICENSING ACT (ACT 304)

A total of 1,149 licenses were issued to private medical institutions in 2017. This includes 139 new licenses and 1,010 renewal of license. Overall, there were 4337 licensed or registered premises using medical radiation sources as shown in **Table 20**. It consisted of 925 government hospitals/clinics and 3,412 private medical institutions respectively.

There is a total of 8,213 registered or licensed irradiating apparatus in both government and private sectors. Details of irradiating apparatus according to the type of modality are shown in **Table 21**. In addition to irradiating apparatus, radioactive materials are also used in medicine. A total of 998 radioactive sources consisted of 869 sealed sources and 129 unsealed sources were registered or licensed in government and private medical institutions as shown in **Table 22**.

Table 20
Details of Licensed/Registered Premises with Medical Radiation Sources

Type of Premises	No. of Premises		Total
	Government	Private	
Dental Clinic	489	1,593	2,083
General Practitioner Clinic	NA	1,371	1,371
Hospital	139	141	280
Health Clinic	239	NA	239
Veterinary Clinic	5	92	97
Non X-Ray Specialist Clinic	NA	83	83
Radiology Clinic	NA	62	62
Nuclear Medicine Centre	7	32	39
Army Hospital/ Clinic	38	NA	38
Radiotherapy Centre	6	28	34
Consultant Medical Physics Company (H Class)	NA	8	8
Medical Cyclotron Centre	1	2	3
Blood Irradiator Centre	1	0	1
Total	925	3,412	4,337

*NA: Not Applicable

Source: Medical Radiation Surveillance Division, MoH

Table 21
The Number of Registered/Licensed Irradiating Apparatus

Type of Irradiating Apparatus	No. of Irradiating Apparatus		Total
	Government	Private	
General, Mobile X-Ray, Veterinary	1,295	1,899	3,194
Dental (Intra Oral/OPG)	860	2,471	3,331
Fluoroscopy /C-Arm	333	382	715
Angiography	40	106	146
CT Scanner	93	174	267
Mammography	69	181	250
Lithotripter	16	13	29
Bone Densitometer	24	92	116
Linear Accelerator*	18	39	57
Linac kV Imaging	13	23	36
Intraoperative Radiotherapy (IORT)	0	5	5
Simulator	3	6	9
CT Simulator	9	14	23
Tomotherapy	1	3	4
PET-CT/ SPECT-CT	7	21	28
Cyclotron	1	2	3
Total	2,782	5,431	8,213

* including 1 unit cyberknife in a private radiotherapy centre

Source: Medical Radiation Surveillance Division, MoH

Table 22
The Number Of Registered/Licensed Radioactive Materials

Type of Radioactive Sources	Services	No. of Sources		Total
		Government	Private	
Sealed Sources	Radiotherapy	28	443	471
	Nuclear Medicine	147	243	390
	Blood Irradiator	4	4	8
Unsealed Sources	Nuclear Medicine	37	92	129
Total		216	782	998

Source: Medical Radiation Surveillance Division, MoH

MONITORING & ENFORCEMENT ACTIVITIES UNDER ACT 304

The purpose of monitoring and inspection is to ensure the compliance to all regulatory requirements: safety, security and safeguards. During monitoring and inspection, attention is given on the validity of the license, compliance with licensing conditions, qualifications of personnel, radiation protection programme, record-keeping as well as maintenance of equipment. This is to ensure the protection and safety of patients, workers and the public are not compromised.

A total of 1,635 premises were inspected including 273 in government clinics/hospitals while the other 1,362 in private establishments in year 2017. A total of 1,398 (85.5 per cent) premises were fully complied with the regulatory requirements while 237 (14.5 per cent) premises did not comply at the time of inspection. Follow-up actions were taken to ensure all premises adhered to regulatory requirements.

Prosecution actions have also been taken against 2 general practitioner clinics for not having a license to buy and store irradiating apparatus under Act 304 in 2017. They have been fined by the session court for RM15,000 and RM10,000 respectively.

MEDICAL PHYSICS SERVICES

In 2017, a total of 133 technical advices pertaining to Ionizing Radiation (IR) and Non-ionizing Radiation (NIR) activities to the MoH hospitals and clinics were carried out. The details are as listed in **Table 23**.

Table 23
Technical Advice on Ionizing Radiation (IR) and Non-ionizing Radiation (NIR)

Type of Activities	Total
Vetting on plan and radiation protection for the project at MoH clinics and hospitals and technical advice on IR and NIR	22
Meeting for the specifications and technical evaluation of imaging/ radiotherapy equipment.	20
Projects progress meeting/site visits/commissioning and acceptance testing.	88
Survey on NIR exposure level at MoH medical facility	3 Technical Reports
Total	133

Source: Medical Radiation Surveillance Division, MoH

To enhance the efficiency in IR and NIR activities, MRSD also involved in reviewing, developing and adopting codes & standards, safety guides, circulars or technical manuals. The development of said documents is carried out mostly through technical working groups which consist of members from various related professional bodies, industries and interest groups.

There are six (6) manuals and guidance documents have been issued in 2017 includes:

- i. *Garis Panduan Permohonan Pendaftaran Bagi Perkhidmatan Radiologi, Pergigian dan Veterinar Bagi Fasilitas Perubatan Kerajaan.*
- ii. *Garis Panduan Membangunkan Manual Program Perlindungan Sinaran (PPS).*
- iii. *Manual Pelaksanaan Program Penjaminan Kualiti (QAP) dalam Perkhidmatan Radiologi .*
- iv. *Pamphlet Panduan Had Dedahan Orang Awam Terhadap Sinaran RF.*
- v. *Pekeliling Keperluan Latihan Personel dalam Perkhidmatan Perubatan Nuklear di Bawah Akta 304.*
- vi. *Standard Operating Procedures (SOP) dalam Perkhidmatan Perubatan Nuklear.*

INTER-AGENCY TECHNICAL COOPERATION

MoH actively participated in inter-agency technical cooperation with national and international agencies such as Malaysian Nuclear Agency (ANM), The Royal Malaysia Police (PDRM), Chief Government Security Office (CGSO), Malaysian National Security Council (MKN), International Atomic Energy Agency (IAEA), Office of Radiological Security (ORS) US Department of Energy and World Health Organization (WHO). This cooperation is to enhance quality of patient management, safety and radiation protection and security of medical radioactive material in line with current international standard and practices. The detail of achievements are as listed in **Table 24**.

Table 24
A Brief Report on Activities and Achievements in Technical Cooperation

National and International Agencies	Activities	Achievement
IAEA	(a) Quality Audit Management Program in Nuclear Medicine Practices (QUANUM)	Kuala Lumpur Hospital (HKL) has undergone an IAEA Peer Review audit by IAEA specialists on 22 August 2016. The IAEA has issued a QUANUM Peer Review Audit report on 26 January 2017. A QUANUM post mortem audit was conducted on 5 July 2017 following the discovery of the report the audit. MoH has issued a letter of appreciation to HKL for having successfully undergone an audit by the IAEA.
	(b) Working visit by Ms. May Abdel-Wahab, Director of Human Health Division, IAEA to MRSD	The visit was held on 11 December 2017 aimed at discussing IAEA activities including the Coordinated Research Projects (CRP) in medicine and healthcare.
	(c) Fellowship (Regulatory Infrastructure for Radiation and Waste Safety)	MRSD received 3 fellows from Nepal to undergo fellowship from 18 December 2017 to 5 January 2018.

National and International Agencies	Activities	Achievement
	(d) Regional Workshop on Dose Optimization-Analysis and Interpretation of Patient Dose Data	MRSD has been the local organizer of the IAEA Regional Workshop on Dose Optimization-Analysis and Interpretation of Patient Dose Data on 6 to 10 November 2017. This workshop was held simultaneously with WHO Regional Workshop for Asian and Pacific Countries on Radiation Safety Culture in Healthcare.
	(e) Occupational Radiation Protection Appraisal Service (ORPAS)	The peer review audit of ORPAS was held on 15 to 26 May 2017. This audit involved MRSD and 3 hospitals, National Cancer Institute (IKN), Universiti Kebangsaan Malaysia Medical Center (PPUKM) and Prince Court Medical Center (PCMC). Following the findings from the audit report, feedback has been prepared for discussion with the National Project Coordinator (NPC) on 26 April, 2018.
ORS	(f) Quality Assurance Audit for Diagnostic Radiology Improvement and Learning (QUAADRIL)	The aim of implementing QUAADRIL is to provide quality radiology services in patient management and to engage in radiation safety practices in line with international standards. Proposal for implementation of QUAADRIL program have been approved by the Director General of Health.
	(a) Project Site for Safety and Security of Radioactive Source	Continuity of security consolidation programs in collaboration with ORS to improve the security level of medical facility.
	(b) Alternative Technology Program To Replace Radioactive Material	ORS agreed to conduct feasibility studies on the use of x-ray technology for Blood Irradiator used at Pusat Darah Negara (PDN) and Ampang Hospital. Further action will be taken in year 2018.
	(c) Organizing training programs with ORS: (i) Site Security Plan Workshop Part 1 (ii) Site Security Plan Workshop Part 2	Security Plan Workshop was held from 9 to 12 January 2017 at Grand Hyatt, Kota Kinabalu, Sabah. The 2nd workshop was held from 25 to 28 October 2017 at Hotel Reinassance, Johor Bahru, extending from part 1 workshop held in Kota Kinabalu.
ANM	Survey on ELF field exposure level measurement at residential area near subway route.	The study started in early December 2017 involving 3 locations. This study is still ongoing and will be expanded to other areas throughout the country.
PDRM, CGSO and MKN	Assessment of criminal threats for high-activity radioactive materials.	Following the IPPASS Mission, MoH has conducted a threat assessment in collaboration with PDRM, CGSO and MKN on Women & Children Hospital, Sabah on 2 August 2017.

Source: Medical Radiation Surveillance Division, MoH

WAY FORWARD

Medical radiation safety is becoming increasingly important since it will be one of the contributing factors through the indicator/guides to enhance quality use in radiation equipment and radioactive substances. MRSD will provide the expertise, technical capability and information essential to the protection of the patients, workers and the public.

In addition, existing activities and programs will be expanded in line with technological developments involving the use of radiation modalities to meet the complex medical needs while complying with current standards and regulations. These include efforts to expand the scope of activities related to security, safeguards and public engagement to support the Ministry of Health to address issues related to the effects of radiation on public health.

The establishment of MRSD is to strengthen and expand the existing medical radiation safety activities in complying with all the standards and current regulation requirements related to safety, security and safeguard for the needs of MoH services. MRSD will continue to regulate the usage of ionizing radiation in medical to ensure the safety and health of patient, worker and public through transformation, technology, innovation and quality approach.

NATIONAL INSTITUTES OF HEALTH (NIH)

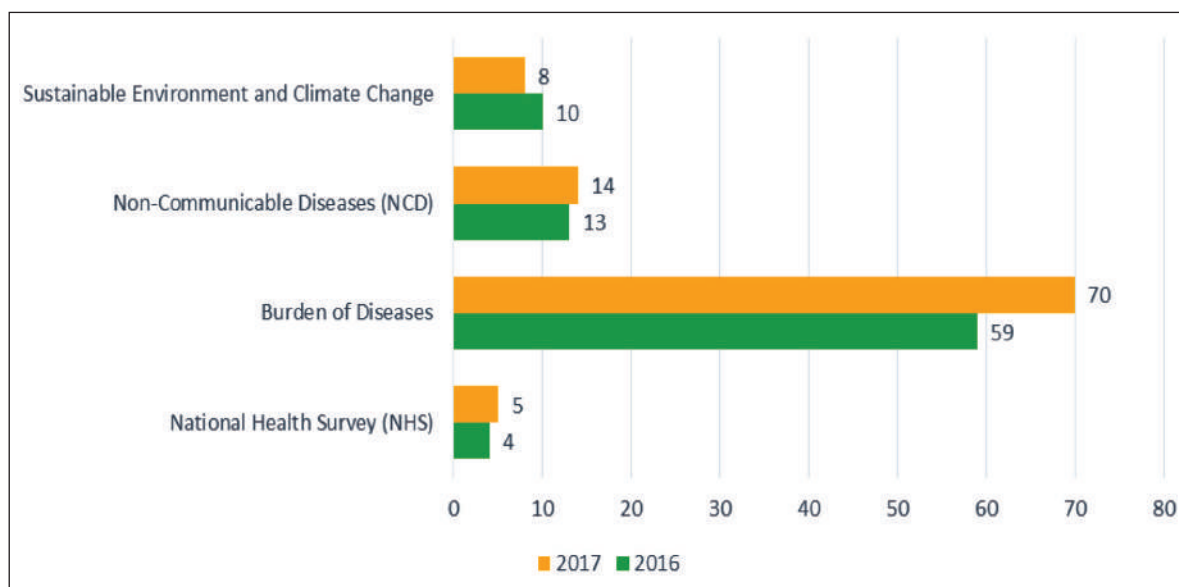
National Institutes of Health (NIH) was started in seventh Malaysian Plan (7MP). NIH consists of Institute for Medical Research (IMR), Institute for Public Health (IPH), Clinical Research Center (CRC), Institute for Health Management (IHM), Institute for Health Systems Research (IHSR), Institute for Health Behavioural Research (IHBR) and NIH Secretariat. NIH were responsible to conduct health related research for the Ministry of Health (MoH) and provide evidence to improve health delivery. NIH also monitor MoH research activities from setting up health research priority until translation of research output (change of policy, improvement of clinical practice guideline, effective health management and health promotion, enhancing service delivery through technological innovation).

In 2016 the Economic Planning Unit (EPU) has approved four (4) research cluster for 11MP, namely:

- i. National Health Survey (NHS)
- ii. Burden of Diseases (BOD)
- iii. Non Communicable Diseases (NCD)
- iv. Sustainable Environment and Climate Change.

Figure 15 showed number of research projects conducted by NIH in 2016 and 2017.

Figure 15
Number or research projects conducted in NIH by research cluster 2016 and 2017



Source: National Institutes of Health, MoH

The Government of Malaysia has approved the development of new NIH complex in Setia Alam in 2012. Concurrently, the NIH restructuring exercise was started and become one of the indicator in MoH Strategic Plan 2016 to 2020. NIH performance during mid term review for 11 MP is shown in **Table 25**.

Table 25
NIH achievements in 2016 and 2017

Indicator	2016	2017
Establishment Center of Excellence for Clinical Research	9	12
Number of Clinical Trial awareness activities conducted every year	38	39
Restructuring of the NIH	Framework of the NIH Restructuring has been established	Draft paper on NIH restructuring is being finalized at various level in the MoH PTJ NIH has been approved 25 April 2017
Percentage of Extramural (%)	32.6	27.6
Number of scientific publication in the high impact journal	179	175
Number of scientific presentation (local & international)	1178	1425
Number of Research Output (including Research Highlight, Policy Briefs, Executive Summary etc.)	150	84

Indicator	2016	2017
Number of projects potentially to change policy/new policy	30	32
Number of new industry sponsored research (ISR)	162	171
Number of new clinical trial conducted in MOH facilities	101	110
Number of Consultations (local & international)	878	910

Source: National Institutes of Health, MoH

The development of the new NIH complex was started in 2014 and expected to be completed in 2018. Latest update on NIH complex develop shown in **Image 17**. Inline with the TN50 aspiration, NIH is committed to conduct high impact research and translated research output into policy to improve health service delivery.

Image 17
NIH New Complex



Source: National Institutes of Health, MoH

INSTITUTE FOR MEDICAL RESEARCH

The Institute for Medical Research (IMR), as part of the National Institutes of Health Malaysia, is a research arm for the Ministry of Health where its core function is to carry out research on health and biomedical priority areas.

The main activities of the IMR consist of:

1. Research activities
2. Diagnostic services

3. Consultative services
4. Scientific and Technical training programmes

RESEARCH ACTIVITY

In 2017, research and medical officers of the Institute were engaged in 76 research projects. The Institute published 96 scientific papers. In addition, staff of the Institute was involved in 179 presentations at local and international conferences and other such events.

The following table lists the research projects conducted at the IMR in 2017:

Table 26
IMR Research Projects 2017

No	Project Title
1.	Population Pharmacokinetics-Pharmacodynamics (PKPD) of Colistin in Critically Ill Patients with Multi Drug Resistant Gram-Negative Bacterial Infection: A Malaysian Scenario
2.	Identification and Characterization of Potential Oncogenes and Tumour Suppressor Genes Involved in the Pathogenesis of Oligodendroglioma and Glioblastoma Multiforme Using Next Generation Sequencing
3.	Differentiation of Hibiscus sabdariffa L. (Roselle) Anthocyanin Rich Extract by a Multi Step Infrared Macro-Fingerprint Method for Anti-Obesity Derived Product
4.	Bioavailability of Hibiscus sabdariffa L. (Roselle) in Rats: In Preparation of Tisane as Anti-Obesity
5.	Analysis of Specific Extracellular MicroRNA for Mesenchymal Stem Cell Modification in Liver Cirrhosis
6.	Identification of Novel Biomarkers in B-Cell Lymphoma
7.	Proteomic Marker of Pyrethroid Resistance in <i>Aedes</i> (Stegomyia) <i>aegypti</i> (Linnaeus) as a Novel Tool in Resistance Detection and Management
8.	Characterization of the Prevailing Sarcocystis Species in Environmental Samples of a Recreational Island: A Preliminary Study
9.	Determination of Antimicrobial Activity of Forensic Fly Larvae via Resazurin-Based Turbidometric Assay
10.	Transcriptomic Analysis of <i>Burkholderia pseudomallei</i> Isolated from Human and Environment Using RNA Sequencing
11.	Gene Expression and Immunomodulatory Studies on Samples from Dengue Virus Infected Mice Treated with Carica papaya Leaf Juice (CPLJ) and Carica papaya Leaf Juice (CPLJ) Freeze Dried Preparation
12.	Sterile Insect Techniques for Dengue Vector Control
13.	Outdoor Residual Spraying for the Control Simian Malaria in Sabah
14.	Zika Virus in Vector Mosquitoes at Selected Sites in Malaysia: Preparedness for Control and Prevention
15.	<i>Orthosiphon stamineus</i> as a Potential Anti-Diabetic Drug in Gestational Diabetes Mellitus
16.	The Effect of Carica papaya Leave Juice (Fresh Juice and Freeze-Dried Preparations) on the Vascular Permeability Level of Dengue Virus Infected AG129 Mice
17.	Epigenetic Studies of Type 2 Diabetes and Diabetic Nephropathy in Malaysian Population

No	Project Title
18.	Characterization of Specific microRNAs (has-mir-4301, has-mir-3183, has-mir-324-3p and has-mir-1247-5p) in Latent Tuberculosis Infection Among Healthcare Workers
19.	Molecular Characterization Antifungal Susceptibility Pattern and Taxonomic Studies of Uncommon Fungal Pathogens
20.	Efficacy of Ethanolic Extract and Freeze Dried <i>Eucheuma denticulatum</i> on in vivo Glucose Tolerance and Diet-Induced Obesity
21.	Detection of pathogenic <i>Leptospira</i> spp. in Environment Samples (Water & Soil), Small Mammals and Ticks Obtained from Selected Recreational Areas in Hulu Langat, Selangor
22.	Evaluating Anti-Infective Compounds from the Extracts of <i>Senna alata</i> and <i>Ocimum basilicum</i> Against Cutaneous Pathogenic Fungi
23.	Determination of Biomarker for Meliodosis and Identification of Specific Antigenic Protein for <i>Burkholderia pseudomallei</i>
24.	Effect of Fresh C. papaya Leaf Juice and Freeze-Dried C. papaya Leaf Juice in Activating Early Response of Dendritic Cells and Immature T-Cells in Thymus and Spleen of Dengue Virus Infected AG129 Mice
25.	Immunological Risk Stratification Among Recipients of Renal Transplant in Malaysia
26.	Genetic Profiling of <i>P. knowlesi</i> Using Antigenic Molecular Markers and To Study Anti-Malarial Drug Resistance Markers in Human and Macaques Samples
27.	Determination of Volatile and Non Volatile Nitrosamines and Related Compounds in Malaysian Processed and Preserved Foods
28.	Application of Fungal Beta D Glucan as Fungal Biomarker and the Fungal DNA Gene Chip for Detection of Invasive Mycoses in Severely ill and Immunocompromised Hosts
29.	Isolation and Characterisation of Pathogenic <i>Leptospira</i> from Human, Animals and Environment in Various Localities in Selangor and Wilayah Persekutuan
30.	Characterisation of Monoclonal Antibodies Against Outer Membrane Proteins of Pathogenic <i>Leptospira</i> as Early Biological Markers of Leptospirosis
31.	Human Leukocyte Antigen (HLA) Associations of Non-Steroidal Anti-Inflammatory Drug Induced Urticaria/ Angiodema
32.	Proteomics and microRNA Profiling for Identification of Putative Biomarkers in Acute Myeloid Leukemia (AML) Patients
33.	Toxicology Profile of <i>Dioscorea hispida</i> in Rodent and Drug-Herb Interaction
34.	Embryotoxicity Study of <i>Labisia pumila</i> var. <i>alata</i> Extracts in Post-Implantation of ex utero Whole Embryo Culture (WEC) of Sprague Dawley Rats
35.	Enhanced Diagnostic Tool for Diagnosis of Primary Immunodeficiency Diseases in Malaysia
36.	Harnessing Whole Exome Sequencing Platform of Mutation Profiling of Cytogenetically Normal Acute Myeloid Leukaemia (CN-AML) in Malaysian Population
37.	Human Cosavirus Infections in Children Presented with Non-Polio Acute Flaccid Cases
38.	Pre-Clinical Efficacy of Engineered Human Adult Stem Cells Expressing Anti-Tumour Agent (TNF-Related Apoptosis Inducing Ligand/TRAIL) Against Lung Cancer
39.	Assessing Tuberculosis Treatment Delay, Treatment Default, Transmission Dynamics and Evaluation of the MyTB Test Kit
40.	Molecular Epidemiological Study of <i>Brucella melitensis</i> Isolated from Human and Animal in Outbreak and Sporadic Cases by Whole Genome Sequencing
41.	The Association Between Human Leukocyte Antigen and Nasopharyngeal Carcinoma

No	Project Title
42.	Molecular Analysis of Polymixin-Resistant Carbapenemase - Producing <i>Klebsiella pneumoniae</i> from Hospitals in Malaysia
43.	Identification of Novel Genes and Proteins in Host Pathogen Interaction in Pulmonary Tuberculosis and Healthy Contact Persons
44.	Determination of Loss of Heterozygosity (LOH) for Chromosomes 1p and 19q and Genetic Aberrations for Oligodendroglial Tumours
45.	Contribution of GDF-15 and FGF-21 as Potential Biomarkers for Mitochondrial Respiratory Chain Disorders Associated with Mitochondrial Neurological Disease
46.	Chikungunya Vectorial Capacity of <i>Aedes aegypti</i> and <i>Aedes albopictus</i> in Relation to Disease Transmission and Climate Change
47.	Cytokines and Chemokines Profiling in Adult Malaysian Acute Myeloid Leukemia (AML) Patients
48.	Assessing Effects of Climatic Factors on Dengue Incidence in Malaysia
49.	The Impact and Projection of Flooding and Sea Level Rise Due to Climate Change on Healthcare Facilities in Malaysia
50.	Assessing the Health Benefits of Air Pollution Reductions Associated With Climate Change Mitigation
51.	Study on Nutritional Equivalence and Anti-Nutrients of Genetically Modified Food - GM Corn and GM Soya
52.	Identification of genetic landscape of Childhood Precursor B Acute Lymphoblastic Leukaemia in Malaysia
53.	Molecular Epidemiological Studies, Virulence Factors and Genomic Diversity of <i>Corynebacterium diphtheriae</i> Isolated in Malaysia
54.	Sero-Epidemiology and Carriage Study of Diphtheria Among Malaysian Population
55.	Cross Sectional Seroprevalence Study of Zika Virus Infection in the Malaysian Population
56.	Entomological Aspects of Zika Seroprevalence at Selected Sites in Malaysia
57.	Epigenetic Regulation in Polycystic Ovary Syndrome - Methylation of PPARGC1A Promotor
58.	Improved Serodiagnostic Accuracy for Melioidosis: Evaluation of Highly Expressed Antigen Candidate
59.	Isolation and Characterization of Active Compounds from <i>Dioscorea hispida</i> Dennst Tuber for Antifungal Activity
60.	Identification and Isolation of Advanced Glycation End-Products Inhibitors from <i>Clinacanthus nutans</i> Leaves Extracts as Potential Anti-Diabetic Agent
61.	In Vitro Assessment of Mitochondrial Oxidative Capacity in Skin Fibroblast for Detection of Mitochondrial Disease
62.	Intervention of Mercury Spillage Management Among Healthcare Workers in Ministry of Health Malaysia
63.	Cell Permeability and Bioavailability Evaluation of Citropten and Its Anti-Inflammatory Properties in a Rat Model Inflammation
64.	Identification of the Protein Targets Involved in Citropten Antiviral Activity Against Dengue Virus
65.	Study of Emerging Food-Borne Trematodiasis in Tuaran and Tambunan Districts, Sabah and Its Impact on Public Healthcare

No	Project Title
66.	Identification and Determination of Onset of Antimalaria Drug Resistance Gene Mutation from Blood Samples of Human Infected With <i>Plasmodium spp.</i> and Previously Treated With Antimalaria Combination Therapy (ACTs)
67.	3-Monochloropropanediol (3-MCPD) Ester and Renal Cancer: Is There a Risk? – A Case Control and Risk Assessment Study
68.	Characterisation of Insecticide Susceptibility and Vectorial Capacity of Wolbachia (wAlbB) infected <i>Aedes aegypti</i> (L.) for Dengue and Chikungunya Virus
69.	Oral Pharmacokinetic Evaluation of Capsulated Freeze-Dried Carica papaya Juice in Rats
70.	Serum Antibodies to Dengue and Chikungunya Infections and The Risk of Developing Rheumatoid Arthritis
71.	Establishment of Immunoblot Method For Detection of Multiple Sclerosis Autoantibodies
72.	Formulation Development and Toxicity Evaluation of Tisanes Derived from Roselle (<i>Hibiscus sabdariffa</i> L.)
73.	Development of Immunoassay Using Local Seafood Allergen Extracts for the Diagnosis of IgE-Mediated Seafood Allergy
74.	Exploration of the Association of Genetic Variations and Outcomes of Renal Transplant Patients
75.	Cardiovascular and Respiratory Burden of Diseases due to Outdoor Air Pollution in Malaysia
76.	Prevalence of Antimicrobial Resistance Among Bacterial Isolates in Environmental Samples

Source: Institute of Medical Research (IMR), MoH

DIAGNOSTIC SERVICES

Being the referral laboratory for the Ministry of Health, the IMR continues to provide and improve clinical laboratory tests. IMR provides specialized and referral diagnostic tests, and tests that are not done in other laboratories. In 2017, IMR provided about 491 different tests conducted by 15 different units.

CONSULTATIVE SERVICES

IMR's staff provides advisory and consultative services to the Ministry of Health (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. In 2017, 147 staff members provided consultative services at the national level, while 55 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 (DAP&E) and the Diploma in Medical Microbiology (DMM) courses.

In 2017, the ad hoc programmes provided training opportunities for 234 scientists, medical doctors and allied personnel from other departments and local and foreign institutes. Also, in 2017, the Institute conducted 51 training workshops, 15 seminars and 14 courses.

Image 18
IMR activities for 2017



*Visit to IMR by YB Deputy Minister, MoH
on 7 March 2017*



*Visit to IMR by the Regional Director, WHO
Regional Centre for the Asia Pacific
on 28 March 2017*



*39th Convocation for the Diploma in Medical
Microbiology (DMM) on 6 July 2017*



*Students of the 48th Diploma in Applied
Parasitology & Entomology (DAP&E),
12 July – 15 December 2017*



Winner from IMR - Merdeka Award 2017



*Visit to IMR by YBhg Chief Secretary,
MoH on 21 November 2017*

Source: Institute for Medical Research (IMR), MoH

INSTITUTE FOR PUBLIC HEALTH (IPH)

Institute for Public Health (IPH), under National Institutes of Health, Ministry of Health, focuses on public health research. In line with the restructuring of health care system of Malaysia towards 1 Care, IPH will strengthen its research capacity to support the Ministry of Health in the planning of the health care delivery for the country. The main activities of the IPH consist of:

1. Research
2. Research Publications
3. Expert Consultations
4. Database Development
5. Depository Library for WHO Publications
6. Conferences, Seminars and Workshops

RESEARCH ACTIVITY

IPH has a total of 22 research projects which include a total of 12 population/community-based research/surveys, and a total of 10 collaborative research projects with other agencies.

NATIONAL HEALTH & MORBIDITY SURVEY (NHMS) 2017

NHMS 2017 main scopes are adolescent health and nutrition. It is a cross-sectional study among school students in Malaysia aged 10 years to 17 years. This survey obtained the approval from the Medical Research and Ethic Committee, Ministry of Health as well as Ministry of Education with registration number NMRR-16-698-30042.

Adolescent Health Survey (AHS) collects data on health-risk behaviour such as alcohol consumption; drug and tobacco use, poor hygiene care, physical inactivity, sexual behaviours, violence and unintentional injury. This survey is aimed at assessing the prevalence of health risk behaviours and protective factors amongst secondary school students in Malaysia using anonymous self-administered questionnaires in five (5) years cycle. The survey was conducted between 26 March and 3 May 2017 on the nationally-represented sample of 29,479 students.

This study found that prevalence of current cigarette smokers has increased from 11.5 per cent to 13.6 per cent while that of female adolescent smokers has increased to 5.3 per cent. Drugs use has also increased to double the previous reported figures. The respondents reported drugs use initiation at younger age. Sexual behaviour indexes among adolescents do not show significant yearly trends, however, the prevalence of those who were having sex and practising safe sex has decreased. Our adolescents have been reported to be involved in violence such physical fights, bully at school and physical abuse at home especially those in lower secondary school age groups. A total of 29.9 per cent adolescents has been involved in serious unintentional injury for the past 12 months.

This survey also found that the prevalence of suicidal ideation has increased from 7.9 per cent to 10.0 per cent. Of the total respondents, 9.3 per cent reported loneliness and 29.0 per cent reported addiction to the internet. About 18.3 per cent of adolescents were having depression. With these findings, we should re-prioritize our health services and shift focus to adolescent age groups as they were often assumed to be the healthiest group in our population while the study findings proved the contrary.

Nutrition Survey is covering the nutritional status, meal pattern, behavioural modification on body weight, supplement intake, meal intake, habitual food and dietary intake, the understanding and the use of nutrition labelling among Malaysian adolescents.

RESEARCH PUBLICATIONS

There are 35 research publications in peer-reviewed journal by IPH's technical officers with 23 of those being under the category Impact Factor 0.5 or higher while 12 publications under Impact Factor less than 0.5.

PRESENTATIONS

In the year 2017, IPH's technical officers have presented research findings in five (5) plenaries or symposium and have done 21 free papers presentations and 115 poster presentations at various national and international conferences and scientific meetings. There were 11 oral and poster presentations which have received awards during the conference attended by the IPH's technical officers. The awards were one best oral presentation, seven (7) best posters and three (3) second prize poster winners.

Table 27
IPH's Presentation in 2017

No	List of Award Winner for Poster/Oral Presentation	Award Received
1	Ruhaya S, Fatimah O, Cheong SM, Azli B, Syafinaz MS, Rashidah A. Relationship Between Blood Pressure, Sodium Intake and Anthropometry Among Non-Hypertensive Working Adults: My Salt 2015. 1 st National MOH Nutritionists' Symposium. Hotel Pearl International Hotel, 13 to 14 May 2017.	Second Prize Winner Poster Presentation
2	Tee GH, Noran NH, Norazizah IW, Hatta AM, Faizah P, Joanita S, Hasimah I, Norzawati Y, Sayan P, Hazrin H, Noor Aliza L. Assessing health behavior among Malaysian adults with TB-like symptoms: Findings from the National Health and Morbidity Survey (NHMS) 2015. 20 th Family Medicine Scientific Conference, Hotel Equatorial, Penang; 3 to 5 August 2017.	First Prize Winner Poster Presentation
3	Chan YY, Lim KK, Cheong SM, Azli B, Lim KH, Teh CH, Kee CC, Khoo Yi Yi, Jane LMY, Azahadi O. Physical activity and overweight/obesity among adults in Malaysia: Findings from the National Health and Morbidity Survey (NHMS) 2015. 21 st National Public Health Colloquium, Hotel Bangi-Putrajaya, Selangor, Malaysia, 23 to 24 August 2017.	Best Poster Presentation
4	Cheong SM, Ruhaya S, Hasnan A, Azli B, Fatimah O, Nor Azian MZ, Lalitha P, Nur Shahida AA, Syafinaz MS, Rashidah A. What are the associated factors for eating meal away from home among Malaysian adolescents: National School-based Nutrition Survey 2012. 21 st National Public Health Colloquium. Hotel Bangi-Putrajaya, Selangor, Malaysia, 23 to 24 August 2017.	Best Poster Presentation

No	List of Award Winner for Poster/Oral Presentation	Award Received
5	Lim KK, Chan YY, Nur Azna M, Tan BC, Hasimah I, Chua BK, Nordin S, Foo LH. Iodine deficiency disorders among pregnant women in Sarawak. 5 th Asia Pacific Conference on Public Health. Riverside Majestic Hotel, Kuching Sarawak, 10 to 14 September 2017	Best Poster Presentation
6	Noor Ani A, Umi Adzlin Silim, Muslimah Y, Aznuddin AR, Noraida MK, Maisarah O, Nurashikin Ibrahim, Azriman R, Majdah Mohamad, Fatanah Ismail. Postnatal depression and intimate partner violence: Malaysian Scenario. 5 th Asia Pacific Conference on Public Health 2017. Riverside Majestic Hotel, Kuching, Sarawak, Malaysia, 10 to 13 September 2017	Best Oral Presentation
7	Fuad A, Fatimah O, Hamizatul Akmal AH, Muslimah Y, Hasnan A. Association of Food Habits Consumption (Drinking plain water, eating fruits and chewing frequencies) towards Obesity status among Malaysian adults: Findings from Malaysian Adult Nutrition Survey (MANS 2014). 5 th Asia Pacific Conference on Public Health 2017. Riverside Majestic Hotel, Kuching, Sarawak, Malaysia, 10 to 13 September 2017	Best Poster Presentation
8	S Maria A, Noor Ani A, Majdah M, Tuty Aridzan Irdawati M, Faridah AB, Rosnah S, Faizah P, Maria Safura M, Muslimah Y, Hazrin H. Pattern of antenatal care (ANC) services utilisation and the determinants of choosing government facilities for ANC services in Malaysia. 5 th Asia Pacific Conference on Public Health 2017. Riverside Majestic Hotel, Kuching, Sarawak, 10 to 13 September 2017.	Best Poster Presentation
9	Hasimah I, Tahir A, Azahadi O, Fadhli MY, Tee GH, Wan Shakira RH, Lim KK. Hypertension and Related Risk Factors in Type 2 Diabetes Mellitus in Malaysia-Findings from National Health and Morbidity Survey 2015. 1 st International Community Health Conference (ICHC 2017). UNISZA, Kuala Terengganu, 7 to 9 October 2017.	Second Prize Winner Poster Presentation
10	Halizah MR, Nazirah A, Nur Liana AM, Fadhli MY, Azahadi O. Hypercholesterolemia Prevalence, Awareness, Treatment and Control among Adults in Malaysia: the 2015 National Health and Morbidity Survey, Malaysia. Diabetes Asia 2017 Conference. Hotel Istana, Kuala Lumpur, 12 to 15 October 2017.	Second Prize Winner Poster Presentation
11	Noor Ani A, Umi Adzlin S, Muslimah Y, Aznuddin AR, Noraida MK, Maisarah O, Fazly Azry AA, Chan YY, Rasidah J, Baizury B. A randomized controlled trial of behavioural interventions for postnatal depression: a study protocol. 12 th MOHAMM Scientific Meeting. PWTC, 30 Oct to 1 Nov 2017	Best Poster Presentation

Source: Institute For Public Health, MoH

CONSULTATIONS

In the year 2017, all officers under IPH conducted research consultation involving 64 clients. For non-research area, nine (9) consultations and technical support were provided.

CLINICAL RESEARCH CENTER (CRC)

Clinical Research Centre (CRC) is one of the six research institutes under the umbrella of the National Institutes of Health (NIH), Ministry of Health Malaysia (MoH) and has been operational since August 2000. CRC functions as the clinical research arm of MoH and CRC network presently comprises the National CRC and 33 CRC Hospitals in charge of strengthening the capacity of clinical research at all health facilities in MoH. The main function of the CRC is to manage, provide guidance and conduct high-impact clinical research activities that will improve the quality of Malaysian healthcare.

LANDMARK ACTIVITY AND ACHIEVEMENT

11TH NATIONAL CONFERENCE FOR CLINICAL RESEARCH (NCCR)

The Minister of Health, Datuk Seri Dr. S. Subramaniam officiated the 11th NCCR in conjunction with **RE**gional **A**sian **C**linical **T**rial **A**ssociation (REACTA) forum (www.reacta.asia), hosting global experts from the USA, United Kingdom, Japan, Korea, Singapore and Malaysia on topics revolving around the theme “Precision Medicine - The Future is Now” on 27 to 29 September 2017 at Putrajaya International Convention Center (PICC), Putrajaya. Precision Medicine is an emerging approach for disease treatment and prevention that considers individual variability in genes, environment, and lifestyle.

REACTA is uniquely positioned among a diverse group of members from the countries in the Asian region and performs a leadership role in implementing sound clinical study practices, furtherance of safe and effective medication in the respective country.

Image 19
11th National Conference for Clinical Research (NCCR)



Source: Clinical Research Centre, MoH

CRC CONTRIBUTES TOWARDS ACHIEVING 2018 LEADERSHIP AWARD FOR ITS EFFORT IN MAKING MEDICINE AFFORDABLE

At the recent Global Submit for Intellectual Property and Access to Medicine in Marrakesh, Morocco, MoH was awarded the 2018 leadership award for its effort in getting the world first compulsory licence for Sofosbuvir, one of the direct acting antivirals (DAA) to treat Hepatitis C.

There are a few activities that MoH did that led to this award. One of them is the Investigator initiated trial (IIT) on Hepatitis C at 4 MoH sites i.e. Selayang Hospital, Ampang Hospital, Tuanku Ampuan Afzan Hospital and Sultanah Bahiyah Hospital, that CRC and CRM are responsible for. The principal investigator (PI) is Dr Tan Soke Siam of Selayang Hospital and one of co-investigators is Dato' Dr Radzi Abu Hassan of CRC Sultanah Bahiyah Hospital. National CRC team at Clinical Trial Unit led by pharmacist Mr. Chew Chun Keat, Dr Damenthi Nair and her team; as well as researchers from Clinical Epidemiology Unit (Dr. Lee Keng Yee and Mdm. Delarina Firmawati) also contributed to the trial.

The contributions by CRC in this Hepatitis C IIT have become the “agent of change” that lead indirectly to the compulsory licensing of Sofosbuvir in Malaysia and the signing of collaboration agreement between Pharmaniga, Drugs for Neglected Diseases initiative (DNDi) and Egyptian Pharco Pharmaceuticals Inc. that promise to supply Hepatitis C treatment regimen for USD300.00 (RM1,245.00) in the public sector in Malaysia, a much cheaper price compared to the current cost of up to RM300,000.00 for a full course of treatment.

CONCLUSION

The year 2017 has been one of hard work but fulfilling. Overall, the strategies initiated by CRC from its inception in 2000 have been very successful that CRC has always achieved its key performance indicators so far.

Moving forward, CRC plans to (i) establish more local and international strategic linkages; (ii) secure more competitive extramural research grants; and (iii) actively involves in the translation and dissemination of research findings, especially into policy and everyday clinical practice, positioning Malaysia as a preferred global destination for research and taking Malaysia closer to become a leading clinical research organization in Asia.

INSTITUTE FOR HEALTH MANAGEMENT (IHM)

TALENT GROOMING PROGRAMME (TGP) 2017

Year 2017, TGP had witnessed a bigger growth and achieved a whole range of new achievements. TGP is proud with eleven Talents who have successfully completed the program with outstanding performance. The TGP Programme Completion Certificate Presentation Ceremony was officiated by the Honorable Health Minister during March 2017 MoH Assembly. As part of TGP Talent Alumni, completing TGP program does not mean that their responsibilities have stopped instead they must begin to contribute back to the MoH and Malaysia with knowledge, skills and experience they have gained throughout the program.

A total of 35 new Talents have been selected for this year bringing up the total of Talents to 120. Cohort 6 and 7 consists of various professions in the MoH with the participation of more professional officers

from the Allied Health Sciences Division. In July 2017, TGP also successfully organized the TGP Talent Dialogue Session directly with the Director-General of Health with the theme “Innovation and Creativity in Healthcare”. This dialogue session is a platform for TGP Talent to interact and exchange views with the Director-General of Health on creative and innovative initiatives or projects of high impact for effective service delivery. TGP Inspirational Leadership Podium 2017 was held four (4) times with five (5) esteemed speakers from various fields; YBhg. Tan Sri Dato’ Sri Abdul Wahid bin Omar, Dr Mohd. Lutfi Fadil Lokman, Dr. Dhesi Baha Raja, YBhg. Tan Sri Jamaluddin Ibrahim and Honorable Brig. Jen. Khairy Jamaluddin. These sharing sessions provide a platform for aspirational figures to share knowledge, wisdom and experience, inspiring the TGP Talents and MoH staff.

September 2017, TGP draws a new history with TGP officially becoming the intellectual property of the MoH by the Intellectual Property Corporation of Malaysia (MyIPO). Not only that, TGP is also one of the eight (8) initiatives that became the Finalist for the Prime Minister’s Innovation Award. This achievement is very meaningful to TGP as recognition of innovation in the effort of empowering the talent of MoH members.

Image 20
Talent Grooming Programme at PICC Putrajaya 2017



Anugerah Inovasi Perdana Menteri 2017 With The Director-General of Health And MoH Secretary-General on 7 November 2017



The Honorable Brig. Jen. Khairy Jamaluddin, Is Presenting his Talk Entitled “Future Leadership: Walking The Talk” at TGP Inspirational Leadership Podium No 4/2017 on 15 November 2017

Source: Institute for Health Management, MoH

EPIDEMIOLOGICAL INTELLIGENCE MANAGEMENT PROGRAMME (EIMP) (11 TO 29 SEPTEMBER 2017)

Malaysian Technical Cooperation Programme-Epidemiological Intelligence Management Programme (MTCP-EIMP) was started in Institute for Health Management (IHM) since 2007 which involved Institute for Health Management, Disease Control Division, Ministry of Health, Institute Medical Research, and National Public Health Laboratory. The goal of the EIMP is to strengthen the practices of applied epidemiology together with management skills and competency to enhance public health surveillance and disease outbreak management. In addition, it aspires to develop broader perspective among participants, which take into account the potential effects of social connectedness, economic inequality,

social norms and public policies on health-related behaviors and health status. The uniqueness of this course is that the health management model has been added which gives more value to the current model on field epidemiology training.

The course was conducted through various methods; lectures, group works, case studies, field visits, and simulation exercises and hands-on experience in the laboratory at the National Public Health Laboratory, Sungai Buloh. Participants were also taken to The National Crisis Response Preparedness Centre in Putrajaya, Kuala Lumpur International Airport (KLIA) Health District Office and Petaling Health District Office to get the experience in managing disease prevention and control programs at district level and port of entry (KLIA).

The EIMP will increase the awareness of the role of epidemiology to public health by discussing some of the more common applied issues involved in epidemiology and public health. It also provides knowledge and strengthens applied epidemiology thus enhances public health surveillance and outbreak management. The topics are thought-provoking, even controversial, to stimulate interest and debate. To a larger extent, participants were exposed to a range of ways thinking about health services and health system.

Drawing on epidemiology, history, medicine, economics and sociology, the EIMP will help participants understand how service function, the reasons services are developed in the way they are, the basis of some universal, persistent problems, and some possible solutions to such difficulties. Overall, the objectives of MTCP-EIMP for this year have been achieved. A total number of 15 participants were selected from 12 different countries but only 14 participants from 11 countries attended and completed the course. We hope to have a minimum of 20 participants attending the course next year and increase the duration of the course if financial support is sufficient.

Image 21 **Malaysian Technical Cooperation Programme-Epidemiological Intelligence Management Programme (MTCP-EIMP)**



MTCP EIMP 2017 Participants With Director Of IHM



Site Visits To KLIA Health Office

Source: Institute for Health Management, MoH

INSTITUTE FOR HEALTH SYSTEMS (IHSR)

Institute for Health Systems Research (IHSR) is a research institute of the Ministry of Health (MoH) under the National Institutes of Health (NIH). The main function of IHSR is to conduct health systems research, also known as health policy and systems research (HPSR), provide scientific evidence and promote the use of research findings in health policy and practice.

The research areas covered are selected according to national priorities, with reference to the WHO Health Systems Framework and building blocks for health systems. These areas include Governance, Health Information and Technology, Health Economics and Financing and Service Delivery.

IHSR is designated as a WHO Collaborating Centre for Health Systems Research and Quality Improvement and works in partnership with the WHO and its network of institutions worldwide for the development of Health Systems Research as well as Quality Assurance and Improvement in Malaysia and internationally. IHSR is also recognised as the national Quality Assurance (QA) Secretariat. The QA Secretariat acts as a coordinating centre for training and development of QA Programmes (QAPs) within the Health Ministry.

The major activities of IHSR include research, consultation and training with the primary aim of improving the health care system in accordance with the 11th Malaysia Plan and Healthcare Transformation.

ACHIEVEMENTS

RESEARCH

In 2017, IHSR has conducted a total of 15 research projects. A number of completed projects have informed health policy and practice. These projects are related to improvement in efficiency, quality and cost of health care services, clinical governance and patient safety.

Apart from these, there were projects in progress that covered domains of person-centred care, equity in health care, economic evaluation, regulatory performance, strategic vision and policy design as well as areas of health care services that include accessibility, accommodation, responsiveness, delivery arrangements and implementation strategies for improving oral health, health systems performance and health outcomes.

Research findings are disseminated through the publication of journal articles, technical reports and research highlights. In promoting the use of research findings into policy, stakeholder engagement is achieved via deliberative dialogues and seminars as well as oral and poster presentations.

IHSR is dedicated to enhancing the utilisation of research findings or evidence into health policy-making through knowledge translation (KT) activities.

CONSULTATION

IHSR provides consultation for various agencies of MoH for health systems improvement. In 2017, consultation and technical assistance were provided through Lean Initiatives, QA/QI initiatives and Economic Evaluation.

TRAINING

In 2017, IHSR had organised a total of 35 training programmes and workshops for its staff and others within MoH for personal and professional development.

WAY FORWARD

IHSR aspires to further strengthen its capacity as research institute to improve the health care system and ultimately advance the health of the nation through Health Policy and Systems Research.

INSTITUTE FOR HEALTH BEHAVIOURAL RESEARCH (IHBR)

The Institute for Health Behavioural Research (IHBR) was established in 2006 and is one of the six research institutes under the National Institute of Health (NIH), Ministry of Health Malaysia. The main function of this Institute is to carry out research, training as well as consultancy in the field of health behavior, health promotion, health communication and risk communication.

RESEARCH ACTIVITIES

Throughout the year 2017, the Institute has carried out four (4) research activities as follows:

1. STUDY ON THE USE OF TRADITIONAL HERBS AND TRADITIONAL MEDICINE AMONG TYPE 2 DIABETES PATIENTS IN NEGERI SEMBILAN

The main objective of this study was to explore the practice of using herbal and traditional medicine among diabetic patients in the localities of Negeri Sembilan.

2. QUALITATIVE STUDY ON VACCINE REFUSAL AMONG PARENTS/CAREGIVERS IN SELANGOR

This study aimed to explore experiences, perceptions and views of parents /caregivers who had refused vaccination for their children as well as alternative practices believed to increase their children's immunity level.

3. STUDY ON INTERNET USE AMONG THE ELDERLY TO FIND HEALTH INFORMATION

This study was conducted to identify health information seeking behavior through the internet among the senior citizens.

4. ENHANCED PRIMARY HEALTH CARE- PROCESS EVALUATION (EnPHC)

This qualitative study is collaboration between IHBR and the Institute of Health Systems Research (IHSR) and aimed to assess the level of readiness and acceptance of EnPHC intervention among health professionals in the participating clinic.

PUBLICATION ACTIVITIES (SCIENTIFIC PAPER)

There are four (4) scientific papers published throughout the year 2017 by IHBR:

Table 28
IHBR 2017 Publishing Activity (Scientific Paper)

No	Title	Journal *impact factor If
1.	An Explorative Study on Peers Perspective : School Children As Health Agent in Gombak, Selangor. Global Journal of Health Science , Vol.9, No. 5;2017, Canadian Centre of Science and Education.	International (If 1.29)
2.	The Attitude of Psychiatric and Non-psychiatric Health-care Workers Toward Suicide in Malaysian Hospitals and Its Implications for Training. Academy Psychiatry , 6 February 2017.	International (If 1.217)
3.	Doktor Muda Competencies : Self Efficacy and Hand Washing Demonstration Skill Among School Children in Malaysia. Global Journal of Health Science ; Vol. 9, No. 12; 2017, Canadian Center of Science and Education. ISSN 1916-9736 E-ISSN 1916-9744	International (If 1.29)
4.	Community Empowerment For Malaria Control And Prevention In Kampung Tong Nibong, Sarawak: An Intervention Study. International Journal of Public Health Research, UKM . October 2017. No (2):807-813	Local (Peer Reviewed)

Source: Institute for Health Behavioural Research, MoH

PRESENTATION ACTIVITIES (POSTER & ORAL)

IHBR shares their research findings with the following presentation in 2017:

POSTER PRESENTATION

A total of 12 poster presentations were presented at local conferences. Two (2) posters with the following titles have won award:

- i. Knowledge And Attitude Among Patients With Type 2 Diabetes Mellitus Towards Medication Adherence At Health Clinics In Gombak, Selangor - **Best Poster Award at the 21st National Public Health Colloquium, 23 to 24 August 2017, Hotel Bangi, Putrajaya, Selangor**
- ii. The Effectiveness of *Doktor Muda* as Peer Educator: Health Knowledge Attitude and Practices of Primary School Children in Malaysia - **2nd Place for Best Poster Award at the International Conference on Public Health, 27 to 29 July 2017, Hotel Armada, Selangor.**

2 posters were presented internationally, and the details are as below:

- i. The Challenges and Experiences of Community Engagement for Dengue, Zika and Chikungunya Prevention with Wolbachia Aedes Aegypti in Malaysia - presented at **Public Health Conference, Bangkok, Thailand, 5 to 7 July 2018**
- ii. Why Malaysian Parents Refuse Vaccination? - presented at **Budapest Central European University, Budapest Hungary Summer School, 31 July to 11 August 2017**

ORAL PRESENTATION

A total 10 oral presentations were presented at local conferences. 2 oral presentations were presented internationally, and the details are as below:

- i. The Challenges and Experiences of Community Engagement for Dengue, Zika and Chikungunya Prevention with Wolbachia Aedes Aegypti in Malaysia - presented at **Public Health Conference, Bangkok, Thailand, 5 to 7 July 2018**
- ii. Community Engagement: Pre and Post Survey on Wolbachia Project in Shah Alam - presented at **11th National Health Research Forum, Crowne Plaza Hotel Vientiane Capital, Lao PDR, 23 to 25 October 2017**

OTHER PUBLICATIONS

Other publications of IHBR in 2017 is *Laporan Kajian Keberkesanan Pendidikan Rakan Sebaya Terhadap Pengetahuan, Sikap Dan Amalan Kesihatan Murid Sekolah*

CONCLUSION

The Research & Technical Program will continue to support all programs and activities within the MoH and 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 to support the other programmes, provide evidence for policy making and improve public health services and health delivery system.



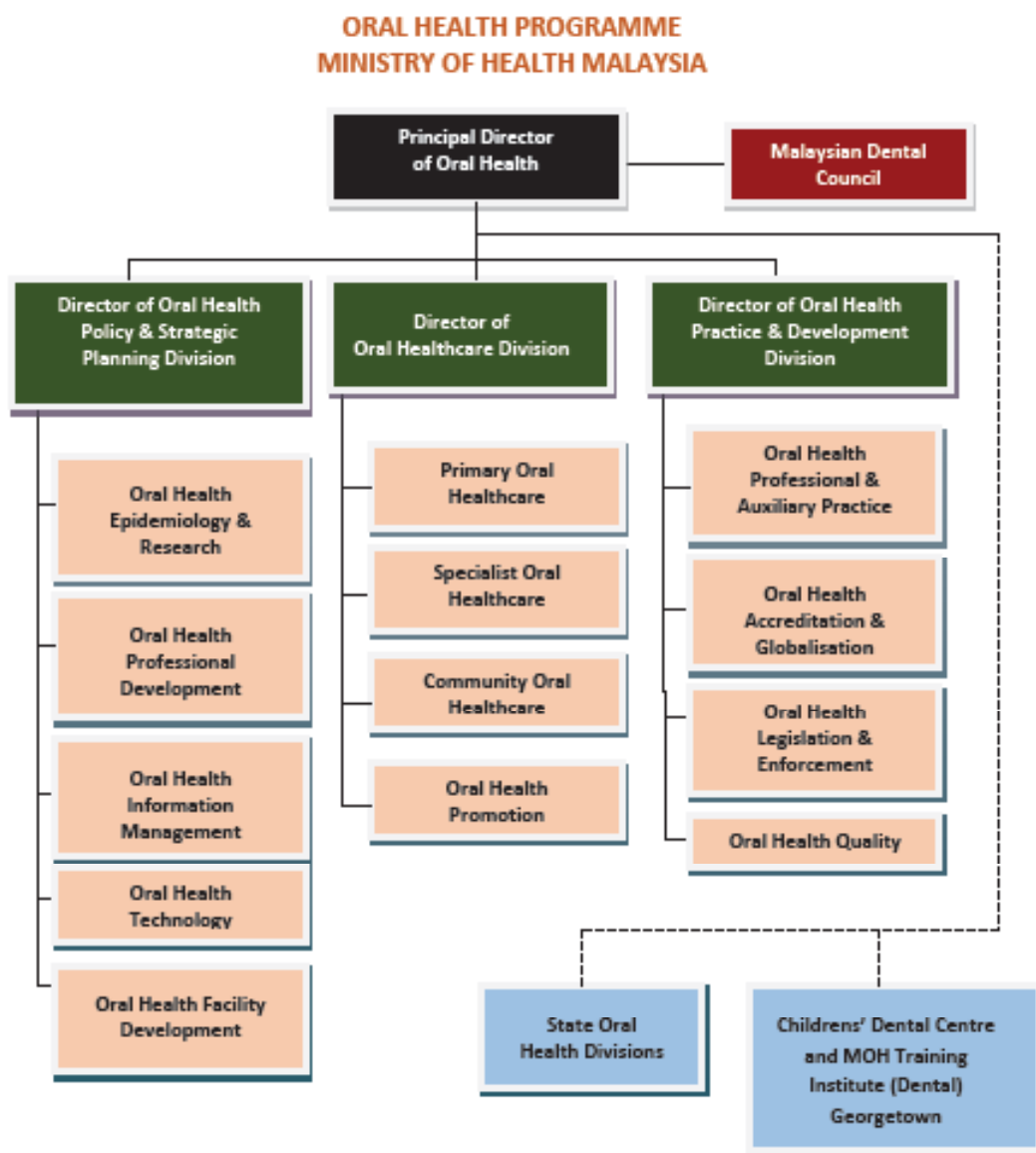
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ORAL HEALTH

INTRODUCTION

The Oral Health Programme of the Ministry of Health (MoH) plays a major role in the stewardship and governance for oral health care services in the country. This includes development of oral health policies and strategic planning, management of oral health programs and activities, legislation and regulations pertaining to the practice of dentistry so as to sustain good oral health among Malaysians. The Oral Health Programme management structure is as below (**Figure 1**):

Figure 1
Organisation Structure of Oral Health Programme, MoH, 2017



Source: Oral Health Programme MoH, 2017

In 2017, the total operating expenditure for the Oral Health Programme was RM 896,984,941.16 under the following activities and codes as in **Table 1**.

Table 1
Total Operating Expenditure of Oral Health Programme, 2017

No	Activities and Code	Expenditure (RM)
1.	Management (050100)	78,321,797.81
2.	Primary Oral Healthcare (050200)	633,596,072.33
3.	Community Oral Healthcare (050300)	49,782,403.84
4.	Specialist Oral Healthcare (050400)	135,284,667.18
Total		896,984,941.16

Source: Oral Health Programme MoH, 2017

ORAL HEALTH EPIDEMIOLOGY AND RESEARCH

Oral health research activities and management of the oral health research agenda were carried out to support oral health evidence-based policy making. The dissemination of the national research projects findings to stakeholders have also been carried out through various platforms. Throughout 2017, the following activities were undertaken in collaboration with various agencies within and outside MoH at national and programme levels:

NATIONAL LEVEL RESEARCH PROJECTS AND INITIATIVES

1. National Health & Morbidity Survey 2016 (NHMS 2016): Maternal & Child Health (Oral Health Module) - Report of Oral Health Module was completed and submitted to the Institute for Public Health, MoH and preparation of manuscript for oral health module was initiated. The survey findings were presented to Dental Officers and Dental Therapists at the Oral Health Programme, MoH, Putrajaya on 8 November 2017.
2. National Health & Morbidity Survey 2017 (NHMS 2017): Adolescents Health Survey (AHS) - Reports of hygiene module (inclusive of oral health hygiene) were completed and submitted to the Institute for Public Health, MoH. A total of 17 draft reports were prepared for oral health hygiene module, which included the Malaysia AHS: Country Report (1 report) and 16 state reports. Presentation on the survey findings to Dental Officers and Dental Therapists at the Oral Health Programme, MoH, Putrajaya was carried out on 8 November 2017.
3. National Health & Morbidity Survey 2018 (NHMS 2018): 'Elderly Health'- Preparation of scope of survey (inclusive of oral health module) led by the Institute for Public Health, MoH.
4. National Health and Morbidity Survey 2019 (NHMS 2019): 'Healthcare Demand'- Preparation of questionnaire items (inclusive of oral health module) led by the Institute for Health Systems Research, MoH.
5. Collaborative Project "Dental Care Pathways for Geriatric Populations in ASEAN Countries: Clinicians' Knowledge, Perceptions and Barriers Faced"- Data collection for Phase II study completed and report write-up was initiated by University of Malaya as Principal Investigator.
6. National Oral Health Research Initiative (NOHRI) - updating of oral health research database at country level was completed.

RESEARCH PROJECTS AT PROGRAMME LEVEL

National Oral Health Survey of Preschool Children 2015 (NOHPS 2015)

Two (2) reports were completed and preparation of Fact Sheet for publication was initiated. The survey findings were disseminated at the conference/seminar/meeting and through journal publication as follows:

1. Oral Presentation
 - *Mesyuarat Jawatankuasa Pemandu NOHPS 2015*, 12 January 2017.
 - 3rd Malaysian Dental Therapists' Scientific Conference 2017, Berjaya Times Square, Kuala Lumpur, 5 to 7 May 2017.
 - *Mesyuarat Teknikal Bahagian Kesihatan Pergigian KKM Bil. 3/2017*, 16 May 2017.
 - *Seminar Pembentangan Penemuan Kajiselidik Peringkat Kebangsaan*, Oral Health Programme, Perlis, 17 August 2017.
 - *Seminar Pembentangan Penemuan Kajiselidik Peringkat Kebangsaan*, Oral Health Programme, Pahang, 23 August 2017.
 - *Bengkel Penemuan NOHPS 2015 dan Pencapaian Pra-sekolah/toddler 2017*, Oral Health Programme, Federal Territory Kuala Lumpur, 29 to 30 August 2017.
2. Poster presentation at 5th Asia Pacific Conference on Public Health, Kuching, Sarawak, on 10 to 13 September 2017, entitled 'National Oral Health Survey of Preschool Children 2015: Findings in Relation to Preschool Teachers and Preschool Environment'.
3. Publication in the Medical Journal Malaysia, Volume 72 Supplement, 1 August 2017 entitled 'Oral Health Knowledge, Practice and Behaviour of Preschool Teachers: Findings in a National Survey'.

NHMS 2017: National Oral Health Survey of Schoolchildren (NOHSS 2017)

Three (3) training sessions of standardization and calibration for 36 State Examiners to conduct of data collection were carried out (**Image 1**). Monitoring of surveys in the states were carried out as follows; field data collection progress, expenditure of survey allocation, data entry and response rate. Two (2) reports were completed and submitted to the Institute for Public Health, MoH. Preparation of manuscript for publication was initiated. Presentation of survey findings to the States Deputy Director (Oral Health), MoH was carried out at *Mesyuarat Jawatankuasa Dasar dan Perancangan Kesihatan Pergigian (JDPKP)*, KKM on 5 December 2017. The findings were also presented to Dental Officers and Dental Therapists at the Oral Health Programme, MoH Putrajaya on 8 November 2017.

Image 1
Standardisation and Calibration of Examiners Session for NHMS 2017:
National Oral Health Survey of Schoolchildren 2017



Source: Oral Health Programme MoH, 2017

OTHER ORAL HEALTH RESEARCH ACTIVITIES

Other oral health research activities conducted in 2017 were as follows:

- Review of applications from other agencies for conduct of research in dental facilities in MoH.
- Monitoring of State Health System Research, preparation for publication of the Compendium of Abstracts 2016 and 2017 and compilation of the Compendium of Abstracts 2018 and 2019.
- Review of oral health research manuscripts for publication and abstracts for presentations of research findings in the MoH.
- Ethical review of oral health research proposals under the Medical Ethics Committee at the Faculty of Dentistry, University Malaya (the Oral Health Programme, MoH is a permanent member of this Committee).

ORAL HEALTH PROFESSIONAL DEVELOPMENT

The Oral Health Programme has made significant strides to improve personal development as well as career pathways for all oral health personnel.

ALTERNATIVE TRAINING PATHWAY IN DENTAL POST GRADUATE TRAINING

Based on the country's need, more dental officers are needed to pursue postgraduate training. Thus, an alternative pathway approach was suggested to produce more dental specialists to meet the target.

The alternative pathway training in the medical field has started a few years back. In August 2017, the Director General of Health had visited the Dental Faculty of the Royal College of Surgeons (RCS) of England and a discussion was conducted with its Dean, Professor Michael Escudier on extending the alternative pathway to the Oral Health Programme, MoH.

A follow up visit to the Faculty of Dental Surgery RCS of England was held on 3 October 2017, led by the Principal Director of Oral Health. The discussion focused on establishing dental alternative pathway training in collaboration with the Dental Faculty of RCS of England and to begin with the field of Orthodontics.

NEW DENTAL OFFICERS PROGRAM (NDOP)

Two (2) briefings on the implementation of the New Dental Officers Program (NDOP) were conducted at the venues below:

- i. Institute for Health Management, Kuala Lumpur on 26 October 2017 (West Malaysia); and
- ii. Hotel Mega Miri, Sarawak on 3 November 2017 (East Malaysia)

The briefing aimed to train the facilitators on the implementation of the NDOP. Both events were officiated by the Principal Director of Oral Health and were attended by 271 Dental Specialists and Dental Officers. The participants were briefed on Log Book, Performance Appraisal Form, *Laporan Nilai Prestasi Tahunan* (LNPT) and Criteria Determination for Contract Dental Officers Grade UG41 to be appointed as permanent Dental Officers in the MoH Malaysia. The meeting ended with a question and answer session with the Principal Director of Oral Health and the Director of Oral Healthcare Division MoH.

ORAL HEALTH FACILITY DEVELOPMENT AND MANAGEMENT

DEVELOPMENT PROJECT UNDER 11 MALAYSIAN PLAN

In year 2017, fifteen (15) dedicated dental development projects under the third Rolling Plan (RP3) were approved. The projects are as listed:-

1. Standalone Dental Clinics:
 - Klinik Pergigian Bukit Selambau, Kedah
 - Klinik Pergigian Kluang, Johor
 - Klinik Pergigian Beluran, Sabah
 - Klinik Pergigian Tanjung Karang, Kuala Selangor, Selangor
 - Blok Pergigian at Klinik Kesihatan Bukit Changgang, Kuala Langat, Selangor
 - Blok Pergigian at Klinik Kesihatan Sg. Tekam Utara, Jerantut, Pahang
 - Klinik Pergigian Daro, Mukah, Sarawak
 - Klinik Pergigian Pasir Akar, Besut, Terengganu
 - Klinik Pergigian Tronoh, Kinta, Perak
2. Klinik Pakar Pergigian Kota Setar, Kedah
3. Klinik Kesihatan (Jenis 3) & Pusat Pakar Pergigian Presint 6, Putrajaya
4. Naik taraf Klinik Pakar Pergigian Jln. Zaaba (Non-Hospital Based Dental Specialist Centre), Seremban, Negeri Sembilan.
5. Pusat Pakar Pergigian, Kota Kinabalu, Sabah
6. Kuarters Klinik Pergigian Chiku 3, Gua Musang, Kelantan
7. Naik taraf Jabatan Pergigian Pediatrik, Hospital Melaka, Melaka

DEVELOPMENT OF NORMS AND GUIDELINES FOR NEW FACILITIES

Brief of Requirements (BOR), Standard Equipment List and Specifications of Equipment for new facilities have been reviewed and updated as below:

1. Redevelopment of Klinik Pergigian Dato' Keramat, Kuala Lumpur
2. Redevelopment of Klinik Pergigian Cochrane, Kuala Lumpur
3. Brief of Requirement for Standalone Clinic (RMK11)
4. Standard Brief for Klinik Pergigian di Klinik Kesihatan Jenis 1 RMK11
5. Standard Brief for Klinik Pergigian di Klinik Kesihatan Jenis 2 RMK11
6. Standard Brief for Klinik Pergigian di Klinik Kesihatan Jenis 3 RMK11

PRIVATISATION OF CLINIC SUPPORT SERVICES FOR MANAGEMENT OF BIOMEDICAL EQUIPMENT SERVICES UNDER MEDICAL EQUIPMENT ENHANCEMENT TENURE (MEET)

Extensive monitoring of MEET delivered by Quantum Medical Solutions (QMS) Company was carried out at *Klinik Kesihatan* and *Klinik Pergigian* via Technical Audit organized by the Engineering Services Division, MoH. Clinics involved were:

1. *Klinik Kesihatan dan Klinik Pergigian Setapak, WPKL & Putrajaya*
2. *Klinik Kesihatan dan Klinik Pergigian Putrajaya P9, WPKL & Putrajaya*
3. *Klinik Kesihatan dan Klinik Pergigian Salak, Selangor*
4. *Klinik Kesihatan dan Klinik Pergigian Kuarters KLIA, Negeri Sembilan*
5. *Klinik Kesihatan dan Klinik Pergigian Pokok Assam, Perak*
6. *Klinik Kesihatan dan Klinik Pergigian Masjid Tanah, Melaka*
7. *Klinik Kesihatan dan Klinik Pergigian Tanah Puteh, Sarawak*
8. *Klinik Pergigian Tuaran, Sabah*

In addition, the Internal Audit Section, MoH had also conducted an Audit on MEET program management at *Klinik Kesihatan* and *Klinik Pergigian Penampang, Sabah*.

PRIVATISATION OF CLINIC SUPPORT SERVICES FOR FACILITY AND ENGINEERING MANAGEMENT SYSTEM (FEMS) AND BIOMEDICAL EQUIPMENT MANAGEMENT SYSTEM (BEMS), CLEANSING AND LINEN SERVICES (CLS) AND CLINICAL WASTE MANAGEMENT SYSTEM (CWMS) UNDER CLINICAL SUPPORT SERVICES (CSS)

The Oral Health Programme has submitted application for CSS service expansion to new facilities including 14 Standalone Dental Clinics under the CSS Expansion Project in 11 states and CSS in the state of Pahang. Monitoring of CSS implementation at *Klinik Kesihatan* and *Klinik Pergigian* was done through technical inspection visits lead by the Clinic Operation Section, Engineering Services Division, MoH. The clinics involved were:-

1. *Klinik Kesihatan dan Klinik Pergigian Jalan Perak, Pulau Pinang*
2. *Klinik Kesihatan dan Klinik Pergigian Pekan, Pahang*
3. *Klinik Kesihatan dan Klinik Pergigian Bandar Jengka, Pahang*
4. *Klinik Kesihatan dan Klinik Pergigian Maran, Pahang*

CSS in *Klinik Kesihatan* and *Klinik Pergigian* in Sarawak continues while the contract with Jawat Johan Sdn. Bhd. in Sabah ended on 14 April 2017, and MoH is planning for new contract.

TRAINING

The Oral Health Facility Development and Management course was conducted at Acapella Hotel, Shah Alam from 27 to 29 September 2017. Main objective of the course was to review the Medical Brief Requirements and Standard List of Equipment for Oral Health Facilities including primary care clinics and specialist clinics. Relevant stakeholders had provided input and feedback during this course.

ORAL HEALTH TECHNOLOGY

As of December 2017, three (3) (CPG) were published, and three (3) other CPGs were being reviewed. The titles were as listed in **Table 2:**

Table 2
Clinical Practice Guidelines (CPG) As Of 31 December 2017

No	Title of CPG	Publication (Year)	Edition	Status
1.	Management of Palatally Ectopic Canine	2016	Second edition	Published
2.	Management of Periodontal Abscess	2016	Second edition	Published
3.	Management of Acute Orofacial Infection of Odontogenic Origin in Children	2016	First edition	Published
4.	Management of Condylar Fracture of the Mandible	2005	First edition	Review in progress
5.	Management of Unerupted and Impacted Third Molar	2005	First edition	Review in progress
6.	Management of Avulsed Permanent Anterior Teeth in Children	2010	Second edition	Review in progress

Source: Oral Health Programme MoH, 2017

APPROVED PURCHASE PRICE LIST (APPL)

Activities in 2017 includes attending meetings coordinated by the Procurement and Privatisation Division MoH. This section provided input in finalising the companies, lists of products and price negotiations for APPL 2017 to 2019 with Pharmaniaga Logistics Sdn. Bhd. Technical assessment for 8 dental products under the APPL List was conducted and the Technical Evaluation Meeting was held on 7 April 2017. This section continues to monitor issues on APPL including penalty on late delivery and product complaints.

MANAGING ENQUIRIES RELATED TO DENTAL TECHNOLOGY

Literature search for scientific papers was done on technology related matters as below:

- Stem cell technology and tooth regeneration
- The usage of N95 mask
- Tooth whitening material
- Amalgam Waste
- Triclosan in dental toothpaste

MINAMATA CONVENTION ON MERCURY

Relevant dental inputs were provided in relation to Minamata Convention on Mercury and monitoring on the use of amalgam fillings, use of thermometers and sphygmomanometers in government dental facilities are continued.

ORAL HEALTH INFORMATION MANAGEMENT

TELEPRIMARY CARE-ORAL HEALTH CLINICAL INFORMATION SYSTEM (TPC-OHCIS)

TPC-OHCIS is a clinical information system project approved under the Public Service Delivery Transformation (PSDT) Programme by PEMANDU, the government's Performance and Delivery Management Unit in the Prime Minister's Department. A funding of RM30.9 million were provided under the Ministry of Science, Technology and Innovation (MOSTI) research fund for MIMOS Berhad to develop an integrated system that enhances electronic health records for health and dental clinics. The system went live at 13 pilot sites (6 Health Clinics and 7 Dental Clinics) in Negeri Sembilan on 1 June 2017.

At the end of 2017, a total of 51,743 dental patients had been registered into the system with 111,990 visit records created. The system was also used in the outreach services covering 4 preschools, 19 primary schools, 7 secondary schools and 16 community settings.

Image 2
TPC-OHCIS Being Used in Patients' Registration and Dental Laboratory



Source: Oral Health Programme MoH, 2017

DEVELOPMENT OF DENTAL CHARTING MODULE IN PROJEK SISTEM PENGURUSAN PESAKIT (SPP) HEALTH INFORMATION SYSTEM (HIS) AND OPERATING THEATRE MANAGEMENT SYSTEM (OTMS)

MoH has developed the strategic core ICT support towards the establishment of Lifetime Health Record (LHR) in line with the mission and vision of ICT Strategic Plan, MoH (ISPMOH) 2016 to 2020. The Oral Health Programme supports these efforts by ensuring the use of standard Dental Charting Module in different systems developed by MoH. Dental Charting module in TPC-OHCIS will be used as prototypes in Clinical Documentation (CD) for SPP and OTMS project. The CD SPP and OTMS teams collaborated with TPC-OHCIS team in the development of Dental Charting module in the system.

PROJECT PELUASAN ORAL HEALTH CLINICAL INFORMATION SYSTEM (OHCIS)

This is a continuation of Tenth Malaysia Plan, which involves the upgrading of the ICT infrastructure for 20 facilities implementing OHCIS and infrastructure readiness for 54 dental clinics without OHCIS in preparation to implement TPC-OHCIS.

ROLL-OUT OF ORAL HEALTH CLINICAL INFORMATION SYSTEM (OHCIS) TO *KLINIK KESIHATAN KUALA LUMPUR (KKKL)*

The OHCIS in KKKL Clinic began operational on 3 April 2017. Simulation tests have been conducted from 27 March 2017 to 1 April 2017.

ORAL HEALTH PROMOTION

In 2017, strategic collaboration with various government and non-government agencies via the National Blue Ocean Strategy (NBOS) were conducted as listed below.

***IKON GIGI* PROGRAMME (i-GG)**

The 'i-GG' Programme is implemented with the aim to empower volunteers from communities who will act as facilitators in raising awareness on the importance of oral health to members of their community. They are known as *Ikon Gigi*. In 2017 there was a total of 391 accredited *Ikon Gigi* throughout the country. They have implemented 1,469 local activities covering 30,000 community members in their locality.

KOLABORASI ORAL DAN AGAMA (KOA)

KOA is a collaborative effort between the Oral Health Programme and Major Religious Bodies in Malaysia. The objective is to increase awareness and practice of oral healthcare among the community as religion has great influence on every religious person. Thus, oral health messages were delivered in various religious activities.

KESIHATAN ORAL TANPA ASAP ROKOK (KOTAK)

The Oral Health Programme collaborated with the Disease Control Division, MoH and the School Education Division, Ministry of Education Malaysia in the implementation of KOTAK. This programme is incorporated into the School Dental Service where all primary and secondary students are screened for smoking status. Identified smokers will undergo Advanced Intervention to help them to quit smoking. In 2017, a total of 2,596,036 primary schoolchildren and 1,892,348 secondary schoolchildren were screened through this program.

TRANSFORMATION WITH 1 SMILE TOGETHER (TW1ST)

The Oral Health Programme for Community College or known as Transformation with 1 Smile Together (TW1ST) target students and staff of Community Colleges, and aims to enhance their knowledge and awareness on the importance of oral health. It involves the Oral Health Programme and the Community College Education Department of the Ministry of Higher Education, Malaysia. The identified community college students will become the role models for their peers. TW1ST was launched in September 2017 in Perak by YAB Dato' Seri Dr Ahmad Zahid Hamidi, Deputy Prime Minister of Malaysia and a 'Memorandum of Understanding' signing was held as symbolic of the collaboration between the two ministries.

COLLABORATION WITH ELECTRONIC MEDIA

The Oral Health Programme has established collaboration with several Electronic Media agencies for activities as listed below:

- A total of six (6) Jom Heboh events (Media Prima Bhd. Network)

- A total of nine (9) School Attack Programme (Media Prima Bhd. Network)
- TV and radio talk shows on oral health related topics: Fake Braces (RTM) and *Bahaya Pengamal Pergigian Haram* (RTM)

PROGRAM SINGGAH SANTAI @PNM #RELAKSLAH DULU

Effort to empower the libraries as a lifelong learning center for all community and community groups. The National Library of Malaysia (PNM) has held a total of six *Program Singgah Santai @PNM #Relakslah Dulu*. The Oral Health Programme participated in several health activities including exhibitions and performances by Dental Buskers as well as services through Mobile Dental Clinics.

COLLABORATION WITH KUALA LUMPUR CITY HALL (DBKL)

The Oral Health Programme and Kuala Lumpur City Hall (DBKL) collaborated activities as below:

- KL Ekstravaganza 2017
- KL Car Free Morning

KEMBARA SIHAT 1MALAYSIA (KS1M)

The KS1M programme is a collaboration between the Oral Health Programme MoH, the Welfare Department and other government agencies. The team moves from one place to another which symbolizes the bringing of health services to every Malaysian doorstep. The programme has benefited 12,000 people from 110 destinations throughout Malaysia and has made a total journey of 8,000km.

PROGRAM EKSPRESI NEGARAKU 2017

Program Ekspresi Negaraku 2017 was organized by the Prime Minister's Office aimed to foster the spirit of patriotism, pride and love for the country. The Oral Health Programme participated in this activity by providing services through Mobile Dental Clinics that creates a 'Feel Good Factor' to the people. This programme was officiated by YAB Prime Minister of Malaysia and began in Putrajaya in March 2017 and followed by Kedah, Perak, Sabah, Malacca and Kelantan.

PRIMARY ORAL HEALTHCARE

EXPANSION AND CONSOLIDATION OF PRIMARY ORAL HEALTHCARE DELIVERY

The Ministry of Health Malaysia has been the lead agency in providing oral healthcare to the population, and continues giving priority to certain target groups; toddlers (0 - 4 years), pre-school children (5 - 6 years), schoolchildren (7 - 17 years), children with special needs, antenatal mothers, adults and the elderly.

Continuous effort was undertaken to improve the coverage of the priority groups with the addition of the young adults (15-29 years) population groups. The guidelines on oral healthcare for young adults are being developed with the aim to increase the accessibility of young adults at higher learning institutions.

In ensuring the effective management of periodontal patient at the primary care setting, a standard operating procedure for management of periodontal conditions were initiated with the aim to provide guidance on periodontal screening, non-surgical management of cases and appropriate referrals for management of complex cases.

Several meeting were undertaken in 2017 to better enhance data collection method which includes improving the current Health Information Management System (HIMS) data collection format to include data on new initiatives such as the Modified MoH International Caries Detection and Assessment System, Gingival Index Score (GIS) and Oral Health Promotional Programmes such as Smoking Intervention Program among Schoolchildren. These changes were approved in November 2017. Meeting on matters related to verification of data was also conducted on 9 to 10 August 2017.

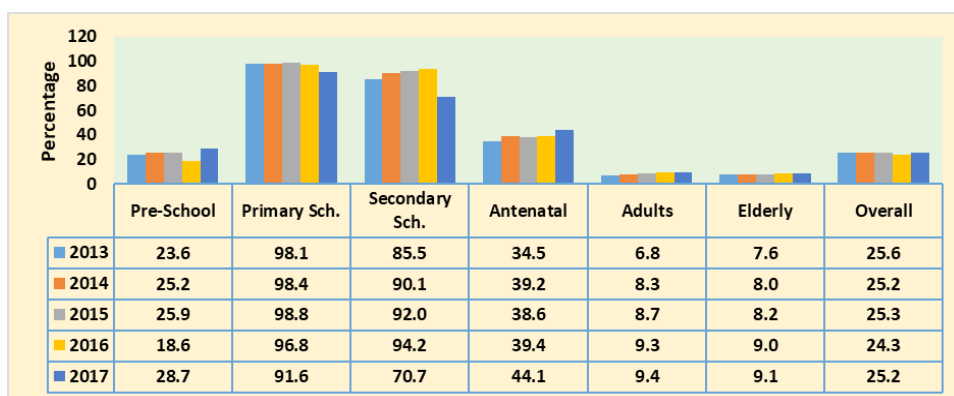
The outpatient dental services have been expanded in the following aspects:

- Number of dental clinics with daily outpatient services increases from 504 (2016) to 523 (2017).
- Number of dental clinics with permanent dental officers increases from 82.5 per cent (2016) to 83.1 percent (2017).
- Delivery time for issue of dentures to the public and elderly patients has also improved. The percentage of denture patient receiving dentures within 3 months has increased from 75.4 per cent (2016) to 83.1 per cent (2017).
- Percentage of denture patients aged ≥ 60 years old receiving dentures within 8 weeks also increased from 55.4 per cent (2016) to 63.9 per cent (2017).

MONITORING AND EVALUATION OF PRIMARY ORAL HEALTHCARE

The performances were monitored quarterly and reports presented at Technical and *Jawatankuasa Dasar & Perancangan Kesihatan Pergigian* (JDPKP) meetings once a year. The overall utilisation of primary oral healthcare in the MoH has increased from 24.3 per cent in 2016 to 25.2 per cent in 2017 (**Figure 2**).

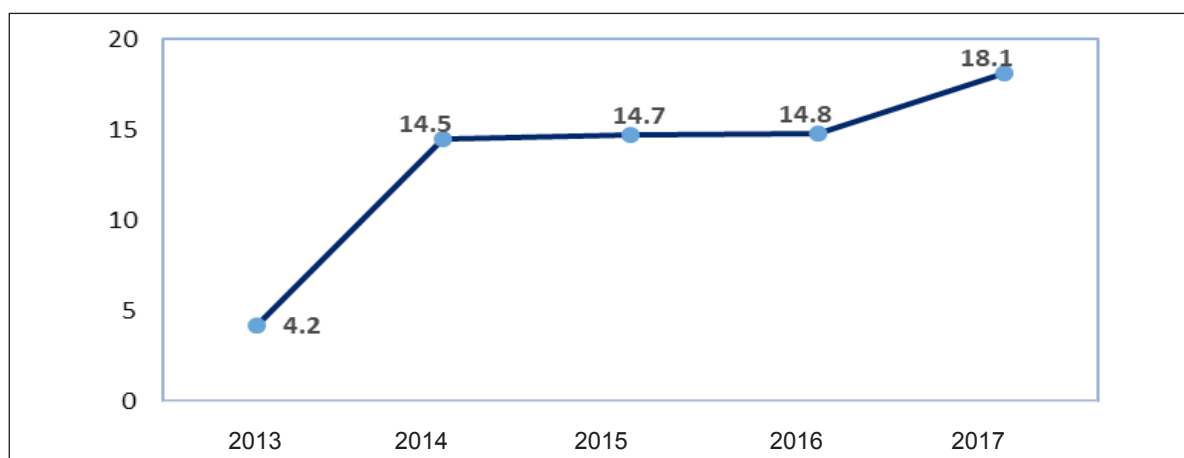
Figure 2
Coverage of Primary Oral Healthcare by Patient Category (2013 to 2017)



Source: Health Informatics Centre, MoH (preliminary data 2017)

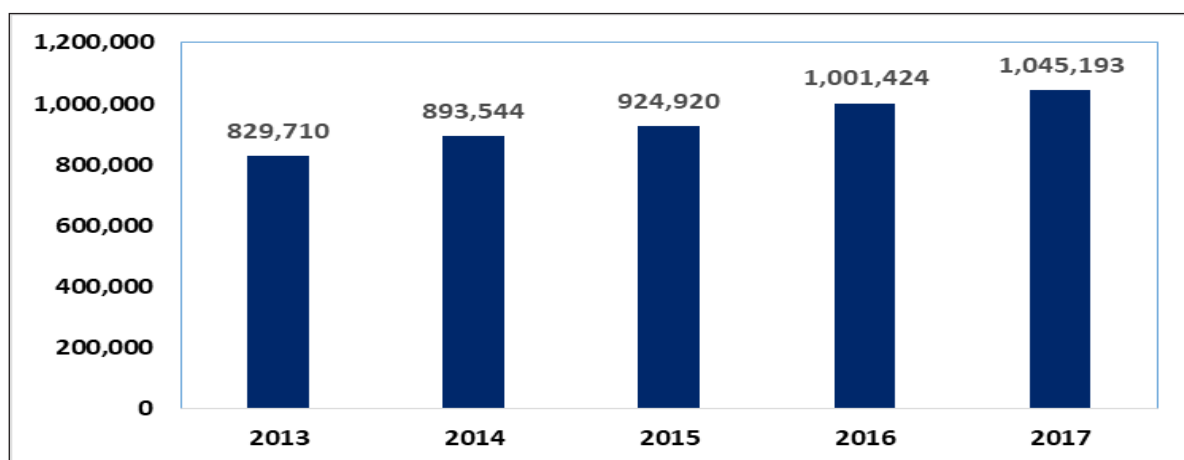
There has been a slight increase in the coverage of toddler population from 14.8 per cent (2016) to 18.1 per cent (2017) (**Figure 3**). cursory examination of the oral cavity of toddlers - 'lift-the-lip' - is done in settings such as in childcare centres or Maternal and Child Health Clinics. Clinical preventive measures, such as fluoride varnish are instituted where required. As for preschool children, the number of children receiving care increased from 1,001,424 (2016) to 1,045,193 (2017) (**Figure 4**).

Figure 3
Percentage of Toddlers Receiving Primary Oral Healthcare, 2013 to 2017



Source: Health Informatics Centre, MoH (preliminary data 2017).

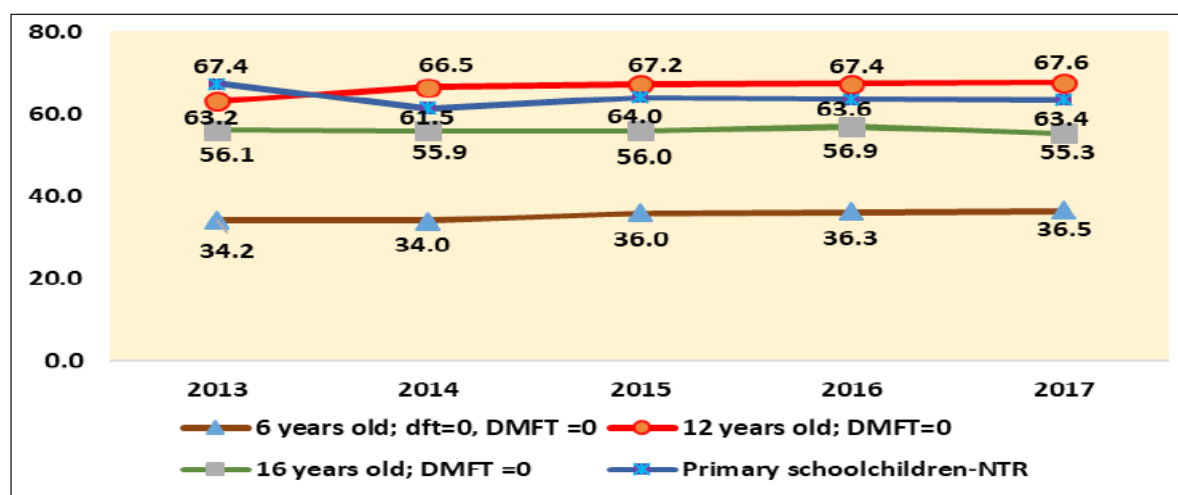
Figure 4
Number of Preschool Children Receiving Primary Oral Healthcare, 2013 to 2017



Source: Health Informatics Centre, MoH (preliminary data 2017)

Impact indicators for school dental service was also monitored. There was a slight increase in caries-free for 6 and 12 year-olds, whilst a slight decrease was noted for 16 year-olds in 2017. As for No Treatment Required (NTR) among primary schoolchildren, there was a decrease in 2017 (63.4 per cent) as compared to 2016 (63.6 per cent) (**Figure 5**).

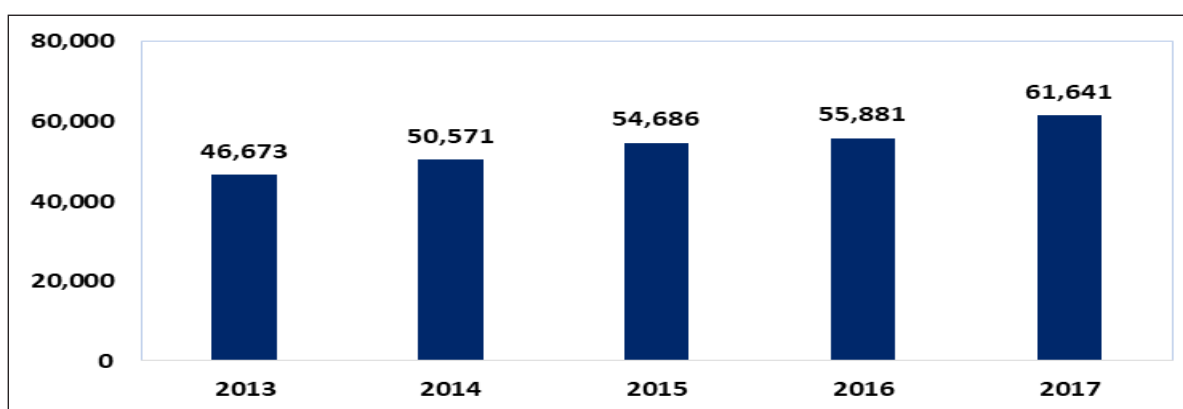
Figure 5
Impact Indicators for School Dental Service, 2013 to 2017



Source: Health Informatics Centre, MoH (preliminary data 2017)

The number of children with special needs receiving primary oral healthcare services has been increasing steadily over the years. Under the National Blue Ocean Strategy 7 (NBOS 7) initiatives, special needs children, the elderly and single mothers are given priorities in healthcare. In 2017, a total of 61,641 special needs children received oral healthcare (**Figure 6**).

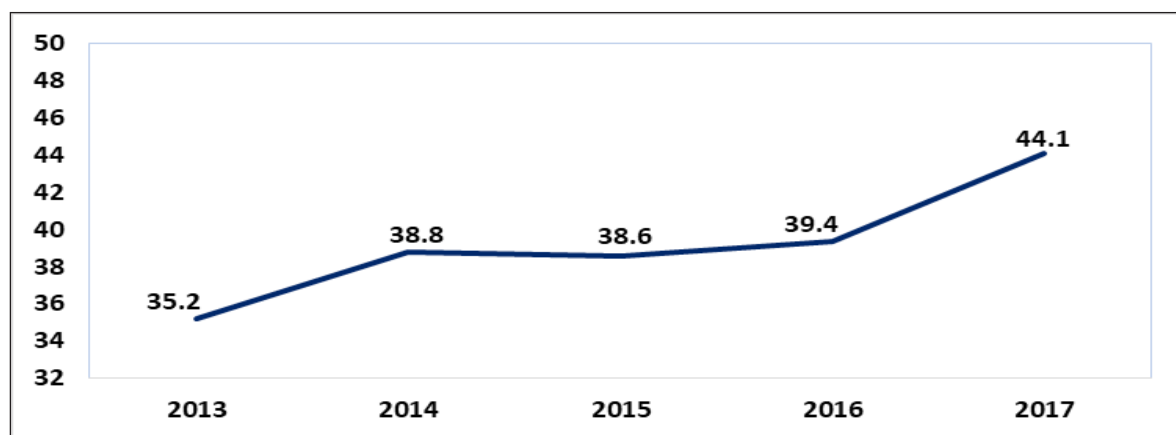
Figure 6
Children with Special Needs Receiving Primary Oral Healthcare, 2013 to 2017



Source: Health Informatics Centre, MoH (preliminary data 2017)

Efforts have been made to increase the attendance of antenatal mothers at dental clinics which includes referrals from Maternal and Child Health Clinics as part of routine antenatal checkup. In 2017, the coverage of antenatal mothers increases from 39.4 per cent in 2016 to 44.1 per cent in 2017 (**Figure 7**).

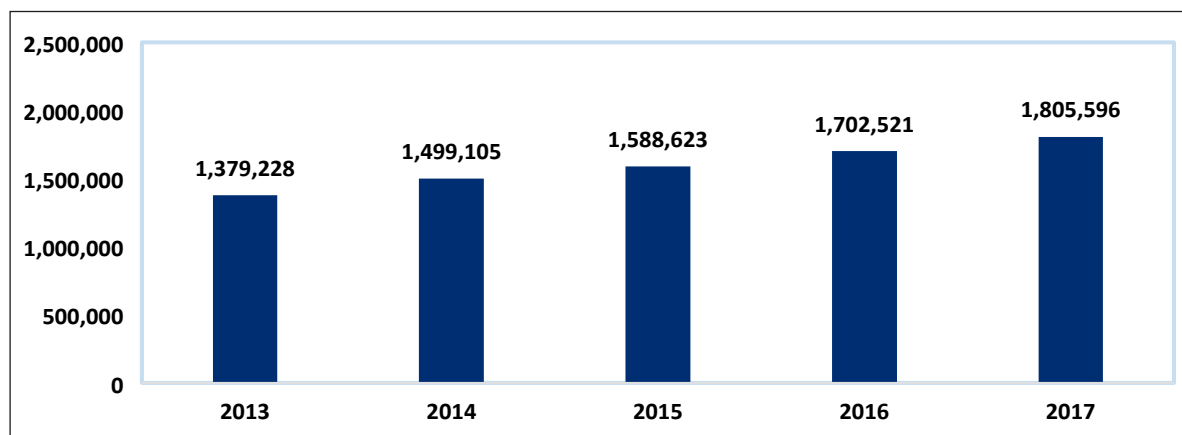
Figure 7
Coverage of Antenatal Mothers, 2013 to 2017



Source: Health Informatics Centre, MoH (preliminary data 2017)

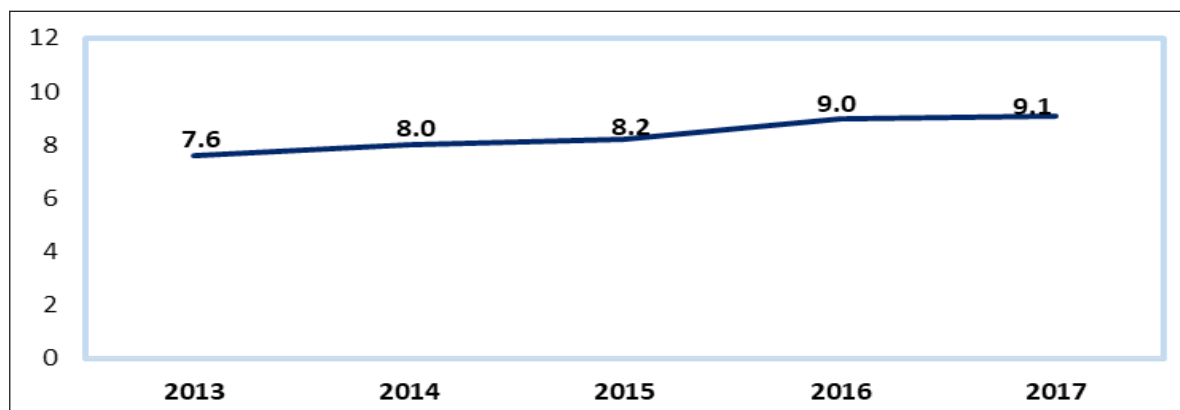
The provision of oral healthcare for adults is provided through various dental facilities and through outreach services which includes the Urban Transformation Centres (UTC), Rural Transformation Centres (RTC) and the increasing number of dental clinics providing daily outpatient services. Thus, there are an increasing number of adults and elderly receiving primary oral health care in 2017 (**Figure 8 and 9**).

Figure 8
Adults Population Receiving Primary Oral Healthcare, 2013 to 2017



Source: Health Informatics Centre, MoH (preliminary data 2017)

Figure 9
Percentage of Elderly Population Receiving Primary Oral Healthcare, 2013 to 2017



Source: Health Informatics Centre, MoH (preliminary data 2017)

SPECIALIST ORAL HEALTHCARE

The 9 dental specialties in the MoH are Oral Surgery, Orthodontics, Paediatric Dentistry, Periodontics, Oral Pathology & Oral Medicine, Restorative Dentistry, Special Needs Dentistry, Forensic Dentistry and Dental Public Health. Overall in 2017, there are 261 clinical dental specialists in MoH (**Table 3**).

Table 3
Gazetted Clinical Dental Specialists in MoH (2013 to 2017)

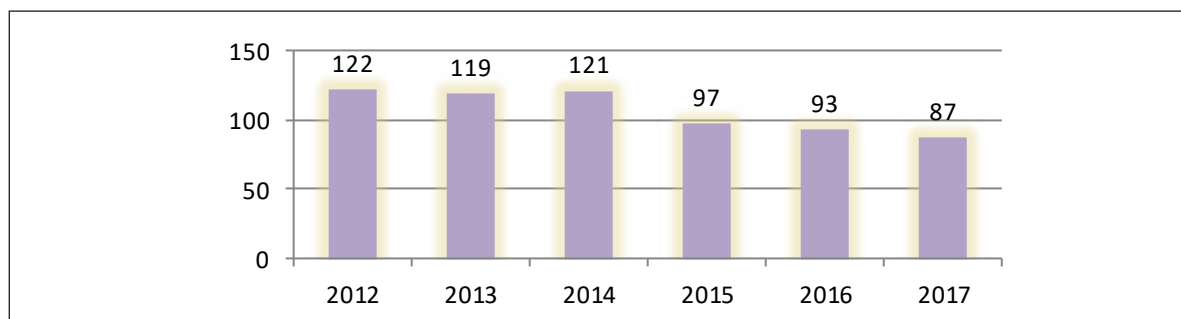
No	Discipline	2013	2014	2015	2016	2017
1.	Oral Surgery	55	56	60	64	75
2.	Orthodontics	46	48	47	52	64
3.	Paediatric Dentistry	33	35	39	38	38
4.	Periodontics	24	29	34	34	36
5.	Oral Pathology and Oral Medicine	9	10	11	11	15
6.	Restorative Dentistry	20	20	20	24	28
7.	Special Needs Dentistry	2	3	3	4	4
8.	Forensic Dentistry	1	1	1	1	1
Total Clinical Specialist		190	202	215	228	261

(Not Inclusive of specialist undergoing gazettement and contract dental specialist)

Source: Oral Health Programme MoH, 2017

In addition, there are 87 Dental Public Health Specialists in the MoH (**Figure 10**). Mapping of specialists services were done to ensure appropriate distribution of existing specialists based on need and also to identify future training requirements for all specialties. The establishment of 6 new dental specialist services was undertaken for 18 dental facilities in 2017 (**Table 4**).

Figure 10
Dental Public Health Specialists in MoH (2012 to 2017)



Source: Oral Health Programme MoH, 2017

Table 4
New Specialty Services Established in 2017

No	Specialty	Hospital / Dental Facility
1.	Oral Surgery	Hospital Segamat, Hospital Tanah Merah, IKN Putrajaya
2.	Paediatric Dentistry	Hospital Segamat, Hospital Kulim,
3.	Oral Pathology & Oral Medicine	Hospital Sultanah Nur Zahirah, Hospital Seberang Jaya,
4.	Orthodontics	KP Kulim, KP Kuala Berang, KP Kuala Lumpur
5.	Restorative Dentistry	KP Kuala Krai, KP Teluk Intan, KP Miri, KP Sibu Jaya, KP Batu Arang, KP Kuala Pilah, KP Kuala Lumpur
6.	Periodontics	KP Kuala Lumpur

Source: Oral Health Programme MoH, 2017

Service data are collected through the HIMS e-reporting system. The workload of dental specialists as reflected by the ratio of specialist to patients (**Table 5**).

Table 5
Workload of Dental Specialist by Disciplines, 2013 to 2017

No	Specialty	Specialist : No. of patients seen				
		2013	2014	2015	2016	2017
1.	Oral Surgery	1:3,645	1:3,843	1:3,823	1: 3,954	1:3,358
2.	Orthodontics	1:3,850	1:3,689	1: 4,083	1: 4,055	1:3,554
3.	Paediatric Dentistry	1:3,606	1:2,676	1:2,427	1 : 2,730	1:3,005
4.	Periodontics	1:1,578	1:1,368	1:1,312	1 : 1,491	1:1,466
5.	Oral Pathology & Oral Medicine	1:828	1:848	1:744	1: 869	1:833
6.	Restorative Dentistry	1:1,594	1:1,658	1:1,732	1 : 1,439	1:1,294

Source: Health Informatic System MoH, pre eliminary data 2017

COMMUNITY ORAL HEALTHCARE

WATER FLUORIDATION PROGRAMME

There were a total of 496 Water Treatment Plants (WTP) in Malaysia. All WTPs were fully privatized except for those in Perak, Sabah, Sarawak and Labuan. Of 311 WTP (62.7 per cent) which was installed with fluoride feeders, 253 (81.4 per cent) were active while 58 (18.6 per cent) were inactive due to lack of resources to purchase fluoride compound or facing technical problems such as fluoride feeder that require repair or replacement.

In 2017, an estimate of 76.5 per cent of population received fluoridated water. However fluoridation coverage in Pahang has decreased from 3.4 per cent (2016) to 1.4 per cent (2017). Less than 50 per cent of WTP in Sarawak, Labuan, Sabah, Kelantan and Pahang produce fluoridated water. Meanwhile, 85.7 per cent of readings taken at reticulation points conformed to the recommended range (**Figure 11**).

Figure 11
Conformance of Fluoride Level in Public Water Supplies to The Recommended Range (0.4-0.6ppm), 2006 to 2017



Source: Oral Health Programme MoH, 2017.

PRIMARY PREVENTION AND EARLY DETECTION OF ORAL POTENTIALLY MALIGNANT DISORDERS AND ORAL CANCERS

A total of 572 new and 68 repeat high-risk *kampung*/estates/communities were visited and 14,293 residents aged 20 years and above were screened for oral lesion. Under the opportunistic screening, a total of 107,582 walk-in patients were screened at the dental clinics. Among those screened, 322 patients were seen with oral lesion and 198 were referred to the Oral Surgeons for further investigation and management out of which 22.2 per cent were having malignant lesions.

PROFESSIONAL & AUXILIARY ORAL HEALTH PRACTICE

CAREER PATHWAY AND WELFARE

Grade U56 was created for the Medical and Dental Specialists. Specialists with five (5) years service after gazettment and 5 years at Grade 54 are eligible to be considered to Grade 56. A total of 66 Dental Public Health Specialists and 72 Clinical Dental Specialists in various dental specialities were promoted to Grade UG56 in 2017.

IMPROVEMENT OF ORAL HEALTHCARE SERVICES

The Oral Health Programme is continuously improving knowledge and updates on oral healthcare through international events which include:

- Conference and Exhibition of Malaysian International Dental Show 2017 for 30 Dental Technologist on 21 to 23 April 2017.
- 3rd Malaysian Dental Therapists ' Conference on 5 to 7 May 2017

HUMAN RESOURCE MANAGEMENT

Policy *Pengejatan Penjawat Awam* are being enforced with no new posts created. The first batch of Dental Officers appointed on contract basis had undergone compulsory service which started on 9 January 2017. The total number of appointment of dental officers in 2017 was 1,329 for a maximum period of contract of three (3) years.

ACCREDITATION AND GLOBALISATION

REVISION OF GUIDELINES FOR ACCREDITATION OF UNDERGRADUATE DENTAL DEGREE PROGRAMME

Revision of the Accreditation Guidelines was completed and approved by the Malaysian Dental Council (MDC) during the 119th Meeting on 21 September 2017. Implementation of the guidelines to all undergraduate dental degree programme by the local Higher Education Providers (HEPs) will be effective starting 2019.

DEVELOPMENT OF THE RATING SYSTEM

Development of the Rating System for accreditation of undergraduate dental degree Programmes has been completed and subsequently approved by MDC during the 119th Meeting on 21 September 2017 and will be enforced to all undergraduate dental degree programme conducted by local HEPs effective from 2019.

MORATORIUM ON DENTAL PROGRAMME

The proposal paper on the extension of the Dental Moratorium for a further five (5) year period starting from 1 March 2018 was endorsed by MDC at the 119th Meeting on 21 September 2017. The paper was then forwarded to the Ministry of Higher Education (MOHE) for cabinet's approval.

ACCREDITATION VISITS TO HIGHER EDUCATION PROVIDER (HEP) CONDUCTING UNDERGRADUATE DENTAL DEGREE PROGRAMMES

Full Accreditation evaluation visit was conducted for Lincoln University College (LUC) DDS programme by the panel of assessors on 23 to 24 May 2017. The DDS programme was given full accreditation status for a period three (3) years from 22 September 2017 to 21 September 2020.

Renewal of Full Accreditation for Under graduate Dental Degree Programme

- Universiti Kebangsaan Malaysia (UKM)
The accreditation period for the programme was extended for a period of five (5) years from 6 December 2016 to 5 December 2021.
- MAHSA University (MAHSA)
The accreditation period for the programme was extended for a period of five (5) years from 15 June 2017 to 14 June 2022.
- Melaka-Manipal Medical College (MMMC)
The accreditation period for the programme was extended for a period of four (4) years from 3 July 2017 to 2 July 2021.

GLOBALISATION AND LIBERALISATION OF HEALTHCARE SERVICES

ASEAN Joint Coordinating Committee on Dental Practitioners (AJCCD)

2 AJCCD Meetings were held in 2017:

- The 19th AJCCD Meeting: 30 to 31 January 2017 in Semarang Indonesia.
- The 20th AJCCD Meeting: 10 to 11 October 2017 in Siem Reap City, Cambodia.

Technical inputs were given on the following matters:

- ASEAN Minimum Common Competency Standards for Dental Undergraduate Education
- ASEAN Dental Practice Standards
- Mechanism to enhance mobility of ASEAN dentists
- Country database on practitioners from ASEAN countries

Other Bilateral/Multilateral Negotiations between Malaysia and other countries

Proposal on areas for cooperation in dentistry between countries for the following negotiations were provided as shown below:

- Malaysia - New Zealand: Training of dental specialists and auxiliaries
- Malaysia - USA: Training of dental specialists
- Malaysia - EU: Training of dental specialists, allow dental specialists to practice
- Malaysia - Singapore: No cooperation proposed
- Malaysia - Algeria/Morocco: No cooperation proposed

Health Tourism

Technical input has been provided during meetings held by Malaysian Society for Quality in Health (MSQH) regarding the development of the:

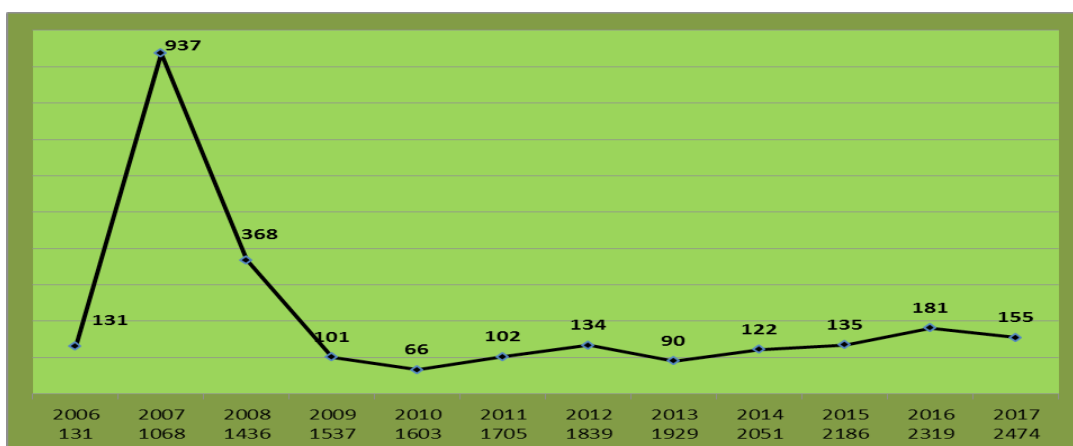
- Dental Clinics Accreditation Standards
- Operational Policies for implementation of dental clinic accreditation programme
- Training of the assessors for the accreditation of dental clinics

ORAL HEALTH LEGISLATION & ENFORCEMENT

REGISTRATION OF NEW DENTAL CLINIC

In 2017, there were a total of 210 applications for registration of private dental clinic out of which 155 complied with the Private Healthcare Facilities & Services Act 1998 requirements. Recommendations for registration of these dental clinics were made to the Evaluation of Applications for Licensing and Registration of Private Healthcare Facilities and Services Committee (**Figure 12**).

Figure 12
Registration of New Dental Clinics 2006 to 2017



Source: Oral Health Programme MoH, 2017

A pre-registration inspection followed by post-registration inspections for compliance of registered dental clinics were also undertaken. Surveillance was conducted on dental clinics which did not comply with the registration requirements (**Figure 13**)

Figure 13
Inspections for Compliance and Surveillance 2009 to 2017



Source: Oral Health Programme MoH, 2017

ENFORCEMENT PROVISIONS IN THE DENTAL BILL

In view of the imminent approval of the Dental Bill in Parliament, training for the enforcement officers in the carrying out of the enforcement provisions is on-going.

DENTAL BILL

In 2017, the finalized Dental Bill was presented to the Director General of Health and the Minister of Health before being approved by the Cabinet on 17 November 2017. The First Reading of the Bill was on 28 November 2017.

DENTAL REGULATIONS

The draft of the Dental Regulations was completed in June 2014. The draft of the Regulations will be revived next year to finalise the regulations in-line with the Dental Bill.

INVESTIGATION ON COMPLAINTS

In 2017, a total of 66 complaints were received. These complaints were referred to the respective state enforcement officers for investigation and 44 enforcement activities, including 15 raids were carried out. A total of 14 cases were successfully prosecuted in 2017.

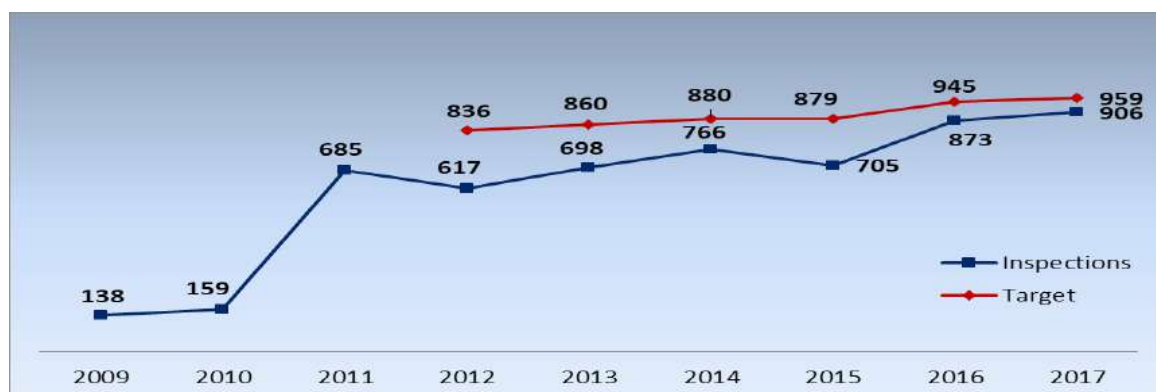
SAFETY AND HEALTH AUDIT IN GOVERNMENT DENTAL CLINICS

Safety and health audits for 1,137 government dental clinics were carried out throughout 2017.

INSPECTION OF PRIVATE DENTAL CLINICS

In 2017, a total of 906 (45.7 per cent) registered dental clinics in all states were inspected, which was 94.5 per cent of the target (**Figure 14**).

Figure 14
Inspection of Private Dental Clinics 2009 to 2017



Source: Oral Health Programme MoH, 2017

MEETING OF ENFORCEMENT OFFICERS

Enforcement Officers meeting was held in February 2017. The areas discussed were:

- Enforcement Report and Achievement of 2016
- Plan of Action and Targets for 2017
- Cross-border activities
- Issues in the implementation of the new Dental Act
- Illegal practitioners and practises

ORAL HEALTH QUALITY

QUALITY ASSURANCE PROGRAMME (QAP)

The Quality Assurance Programme (QAP) is intended to improve the quality, efficiency and effectiveness of health services delivery including oral health. The National Indicator Approach (NIA) and the District/Hospital Specific Approach (DSA/HSA) have been used under the QAP for the Ministry of Health. At the national level, achievements for these indicators are monitored twice a year. Indicators are periodically reviewed to ensure relevance and appropriateness.

NATIONAL INDICATOR APPROACH (NIA)

In 2017, four (4) NIA indicators have been monitored to measure the achievement of primary and public healthcare. This year, the achievements are lower than in 2016. The achievements are as below (Table 6):

Table 6
Oral Health Indicators under NIA, 2017

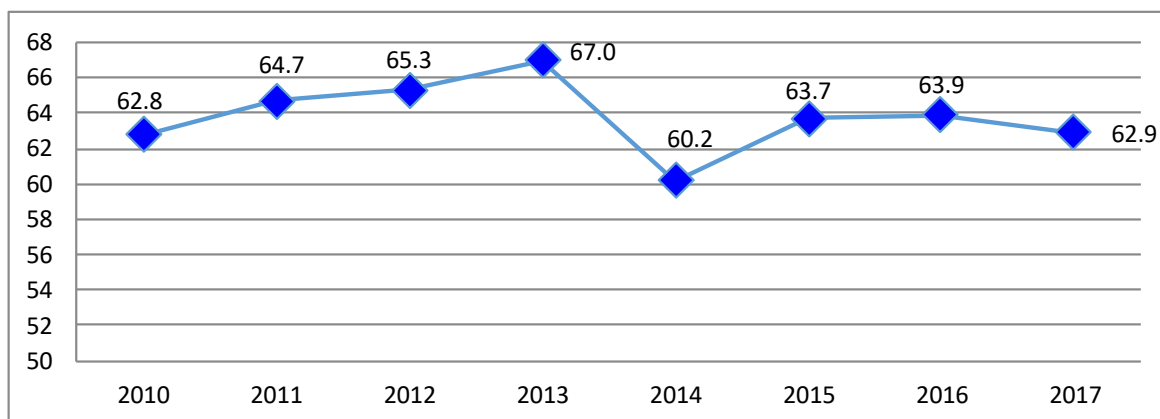
No	Indicators	Standard (%)	Achievement (%)	SIQ Yes/No
			2017	
1.	Percentage of primary schoolchildren maintaining orally-fit status	≥ 65	62.9	Yes
2.	Percentage of secondary schoolchildren maintaining orally-fit status	≥ 80	68.3	Yes
3.	Percentage of non-conformance of fluoride level at reticulation points (Level < 0.4ppm)	≤ 25	12.7	No
4.	Percentage of non-conformance of fluoride level at reticulation points (Level > 0.6ppm)	≤ 7	0.7	No

Source: Oral Health Programme MoH, 2017

In 2017, the indicator “Percentage of non-conformance of fluoride levels at reticulation points (Level <0.4ppm) has seen an increase over the previous year, and thus requires careful monitoring to ensure maximum effectiveness.

The achievement on the percentage of primary schoolchildren maintaining orally-fit status showed an increasing trend from 2010 to 2013. However, there was a drop in achievement in 2014 and this is attributed to the introduction of the Gingival Index Status (GIS) for schoolchildren. Within four years after the use of GIS in oral health examination of schoolchildren, the achievement in 2016 was 63.9 per cent. However, it dropped to 62.9 per cent in 2017 (**Figure 15**).

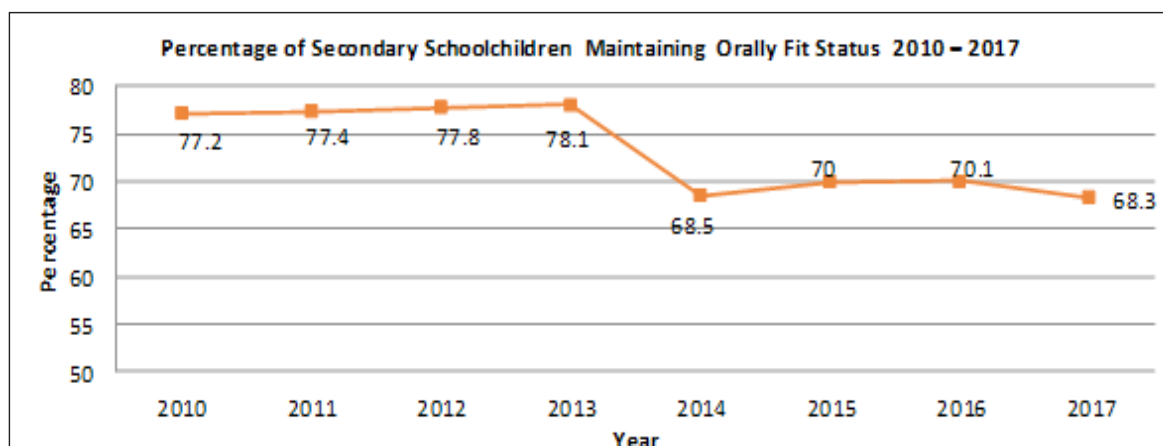
Figure 15
Achievement of Primary Schoolchildren Maintaining Orally-Fit Status
2010 to 2017



Source: Oral Health Programme MoH, 2017.

Similarly, the pattern of achievement for the percentage of secondary schoolchildren maintaining orally-fit status showed an increasing trend from 2010 to 2013. A decline in achievement which took place when the GIS was introduced in 2014. Following this, the achievement showed an upward trend for year 2015 and 2016 but declined again in 2017 (68.3 per cent) (**Figure 16**).

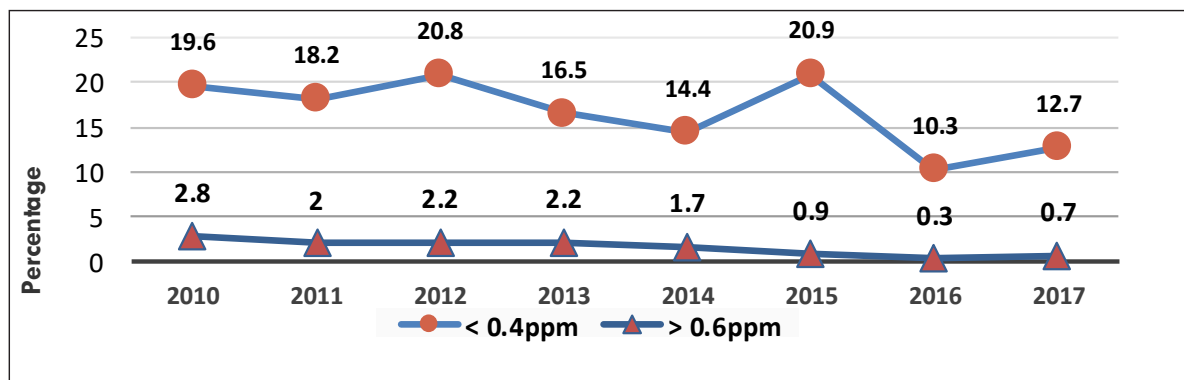
Figure 16
Achievement of Secondary Schoolchildren Maintaining Orally-Fit Status
2010 to 2017



Source: Oral Health Programme MoH, 2017.

Achievements for percentage of non-conformance fluoride level <0.4 ppm have fluctuated from 19.6 per cent (2010) to 12.7 per cent in 2017. In 2016, the performance dropped to 10.3 per cent, which is the best achievement during the 7 years. The percentage of non-compliance of optimum fluoride levels for > 0.6 ppm for 2017 is at 0.7 per cent is also one of the best achievements so far. Although both achievements of these two indicators are good, fluoride levels still require careful monitoring to ensure maximum effectiveness (**Figure 17**).

Figure 17
Achievement of Non-Conformance of Optimal Fluoride Level, 2010 to 2017



Source: Oral Health Programme MoH, 2017.

CERTIFICATION STATUS

Nationwide, out of 666 dental clinics with primary oral healthcare, 562 dental clinics (84.4 per cent) are ISO-certified. Beginning 2017, all states have been directed to implement a certification transition to MS ISO 9001: 2015.

9TH NATIONAL INNOVATION AWARDS 2017

This event is organized in collaboration with the Management Services Division, Family Health Development Division, Policy & International Relations Division and MoH Information Management Division. The Oral Health Programme, MoH act as the Secretariat for this national event. The Closing Ceremony was officiated by YBhg Dato' Seri Dr Chen Chaw Min, Secretary General of the MoH on 5 October 2017 at Hotel Summit USJ Subang Jaya. Also present were YBhg Dato' Hasnol Zam Zam Ahmad, Deputy Secretary General (Management) and YBhg Datin Dr Rohani bt Embong, Director of Oral Health Policy and Strategic Planning Division, as the official representative of Principal Director of Oral Health Programme cum Chairman of National Innovation Awards, MOH 2017 Committee.

The objectives of the programme are to:

- recognize the results of innovation presented by the MOH personnel
- to foster creative and innovative culture in the way work is practiced
- introduce and disseminate the results of innovation for mutual benefit
- contribute to improving the quality of customer service delivery

The following is the list of winners by categories of projects (**Table 7**):

Table 7
Winners of National Innovation Awards, 2017

Position	Project	Organisation / State
Product		
1 st	Modified Dunlop Traction (MDT)	Jabatan Orthopedik, Hospital Sultanah Nur Zahirah
2 nd	Multipurpose Larvacide Sprayer (MLS) v2.0	Pejabat Kesihatan Daerah Raub
3 rd	Gold Retractor	Pejabat Kesihatan Pergigian Bahagian Miri
Process		
1 st	EZ Finger Print	Jabatan Perubatan Forensik Hospital Sultanah Bahiyah
2 nd	Smart Flask Opener (SFO)	Pejabat Kesihatan Pergigian Daerah Hulu Perak
3 rd	Magic Mould	Pejabat Kesihatan Pergigian Daerah Seberang Perai Tengah
Service		
1 st	Gu Cakna Ubat	Jabatan Kesihatan Negeri Kelantan
2 nd	Pengenalan Insuroute Dalam Perkhidmatan Diabetes Medication Therapy Adherence Clinic (DMTAC)	Jabatan Farmasi Hospital Kanowit
3 rd	Hab Interaktif Denggi	Pejabat Kesihatan Daerah Seberang Perai Tengah
Technology		
1 st	i-MRT Jalan Penyelesaian MR Cardiac / Liver Bagi Pesakit Kanak-Kanak yang Menghidapi Zat Besi Berlebihan	Jabatan Radiologi, Hospital Selayang
2 nd	Advanced Clinic Management-ACM	Pejabat Kesihatan Daerah Kubang Pasu
3 rd	Sistem Pengurusan Permohonan Penempatan (ePlacement)	Bahagian Sumber Manusia, IPKKM

Source: Oral Health Programme MoH, 2017.

Special Awards were also given to prominent and projects with potential. The list of special jury awards is as follows:

Table 8
Recipients of Jury Awards at National Innovation Awards, 2017

No	Project	Organisation/ State
1.	Eco Friend Dewax	<i>Jabatan Bedah Mulut, Hospital Sultanah Nur Zahirah</i>
2.	Easy Handle	<i>Unit Fisioterapi Hospital Rehabilitasi Cheras</i>
3.	K7	<i>Pejabat Kesihatan Daerah Petaling</i>

Source: Oral Health Programme MoH, 2017.

CHALLENGES AND FUTURE DIRECTIONS

The Oral Health Programme, MoH Malaysia is committed to tackle the high disease burden for periodontal diseases among adults in the areas of prevention, detection and care while actively promoting periodontal health. As majority of patients will be experiencing some form of gingival related diseases and are susceptible to advance periodontal disease, effective management becomes an important part in the provision of oral healthcare. Hence, more efforts are needed to strengthen the capacity and capability of oral health personnel to deliver effective oral health messages in preventing periodontal disease.

Continuous effort in promoting good oral health for life and prevention of oral diseases are to be given priority. The young adults in particular need to be empowered to make better decision towards improved oral health. Emphasis on preventive home care and regular dental visits are to be highlighted. Improving access to oral healthcare and provision of appropriate preventive care and treatment to this target group are much needed.

Translating oral health survey findings into policy is a challenge faced by oral health researchers as it relates closely to other relevant critical factors. In this endeavor, identifying areas of research in oral health through a systematic and interactive mechanisms between the Oral Health Programme and other stakeholders is pivotal to obtain a holistic support in the oral health research. The other challenge is the lack of trained researcher at the national and state level. Thus, capacity building for sustainability of oral health research in the country is very much needed.

The Oral Health Programme has successfully gone through the Surveillance Audit and converted to the new version effective 14 February 2017. The new version will ensure that Oral Health Programme and State Oral Health Divisions will have a Quality Management System that will meet the current challenges and requirements particularly with regard to risk management, organizational change, safe and conducive workplace environment and client satisfaction. So far five (5) states have obtained certification with the new version. The challenge is for all remaining states to do so before the mandatory deadline.

Efforts are being made to instill a culture of innovation among the oral health workforce. Barriers do exist in achieving innovative thinking and culture among the workforce. This includes lack of awareness and training in creativity and innovation. Staffs are frequently overburdened with their core business such as clinical work and lack of time to focus on innovation. It would be desirable to form dedicated teams that focused specifically on innovation and enhancing quality oral health care to be given much thought and planning.



8

PHARMACY

INTRODUCTION

The Pharmacy Services Programme, Ministry of Health as the principal government programme in the pharmaceutical sector that ensures the public gets access to safe, efficacious and quality pharmaceutical products, protecting their interests via enforcement of relevant legislation, and ensuring rational use of medicines by both healthcare providers and patients. Our vision is to enhance the nation's health through excellence in the practice of pharmacy.

As one of the Programme under Ministry of Health, this Programme consists of five (5) main Divisions headed by a Senior Director of Pharmaceutical Services (**Figure 1**). Each Division plays essential roles in different aspects and approaches with the same objective that is by providing the best professional pharmacy service to the public.

Figure 1
List of Divisions in the Pharmacy Services Programme



Source: Pharmacy Policy and Strategic Planning Division, MoH

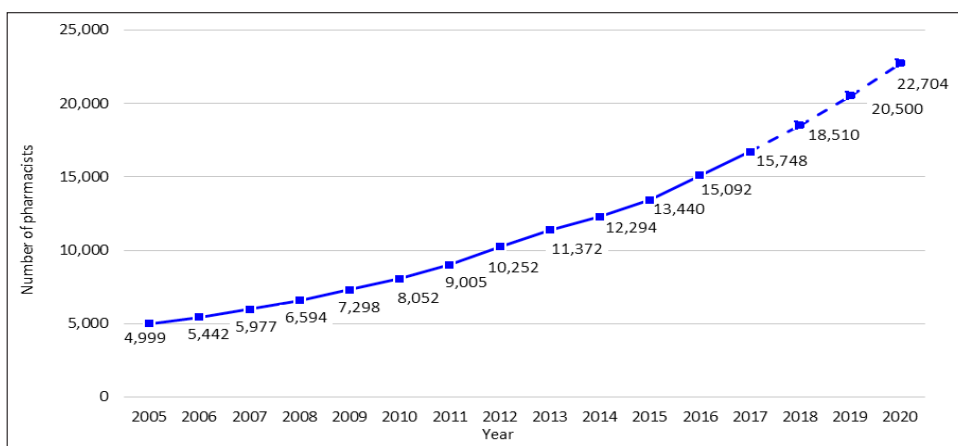
ACTIVITIES AND ACHIEVEMENTS

The number of registered pharmacists are increasing in trend every year and as of 31 December 2017, a total of 15,748 pharmacists are registered with the Pharmacy Board Malaysia (**Figure 2**).

MINISTRY OF HEALTH MALAYSIA (MOH) MEDICINES EXPENDITURE AND PROCUREMENT 2017

The total cost of medicines procured in 2017 for all MoH hospitals, institutions and health clinics was RM2,382,552,935.03 This shows an increase of 13.05 per cent in medicines expenditure compared to 2016 (**Table 1**). The value of closing stock for the medicines in December 2017 was RM302,981,934.50, which is approximately 1.55 months of stock holding.

Figure 2
Number of Registered Pharmacists (Year 2005 to 2017) and Projection into Year 2020



Source: Pharmacy Board Malaysia, MoH

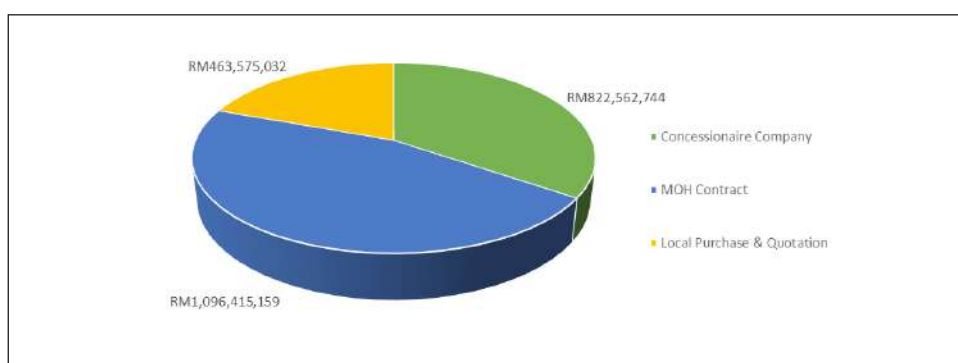
Table 1
MoH Medicines Expenditure, 2013 to 2017

Year	Total Expenditure (RM Million)	Per Centage Increment Over the Previous Year (%)
2013	2,200.43	10.94
2014	2,384.64	8.37
2015	2,323.12	-2.58
2016	2,107.61	-9.28
2017	2,382.55	13.05

Source: Pharmacy Practice and Development Division, MoH

Medicines were purchased through the Concessionaire Company, MoH central contract with direct purchase and quotations as follows (**Figure 3**):

Figure 3
Types of Medicines Procurement in 2017

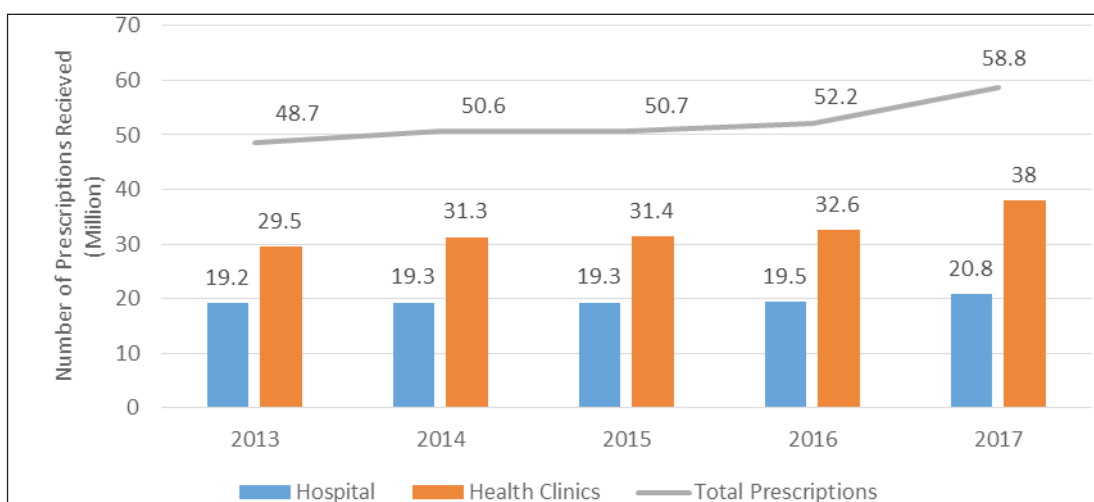


Source: Pharmacy Practice and Development Division, MoH

DISPENSING OF MEDICINES IN MOH AND HEALTH CLINICS

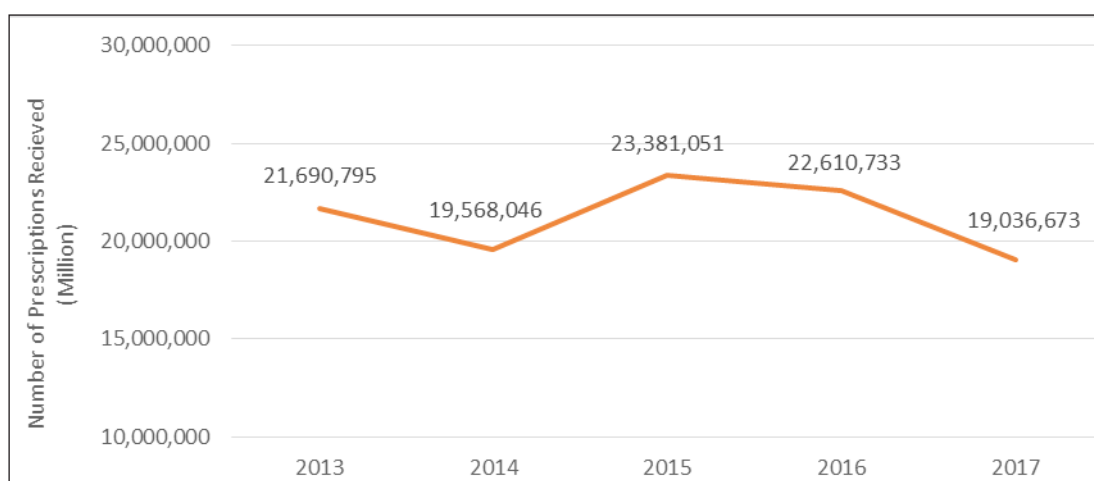
In 2017, there was an increase of 12.6 per cent for the number of outpatient prescriptions received in hospitals and health clinics compared to the previous year. The number of prescriptions received at public health facilities was 58.8 million, of which 38 million prescriptions were received in health clinics and 20.8 million prescriptions were in hospitals. There was a drop of 15.7 per cent for the number of inpatient prescriptions received at the hospital where the total was 19.04 million prescriptions (Figure 4 and 5).

Figure 4
Number of Outpatient Prescriptions Received, 2013 to 2017



Source: Pharmacy Practice and Development Division, MoH

Figure 5
Number of Inpatient Prescriptions Received, 2013 to 2017

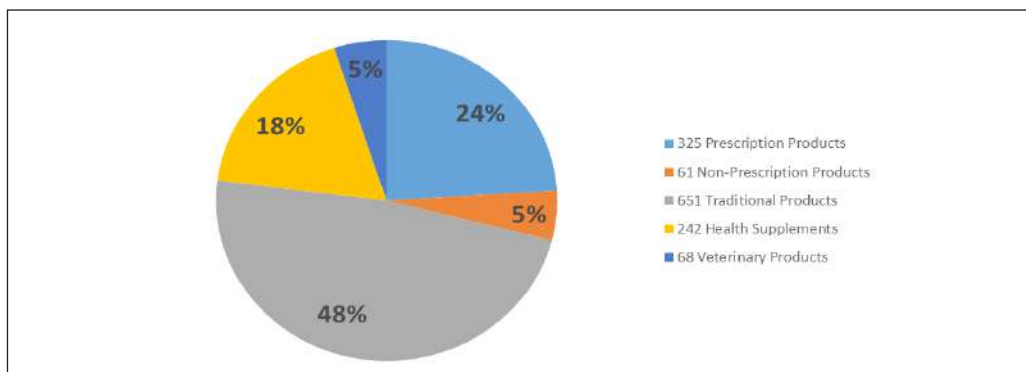


Source: Pharmacy Practice and Development Division, MoH

PRODUCT REGISTRATION

In 2017, a total of 1,347 products were registered out of 1,403 applications comprising of 57 per cent local products and 43 per cent imported products. Out of 1347 products, 48 per cent are traditional products, 24 per cent are prescription products, 18 per cent are health supplements and 5 per cent for both non prescription products and veterinary products (**Figure 6**). The cumulative number of registered products up to 31 December 2017 was 23,650 products.

Figure 6
Per centage of Products Registered in 2017



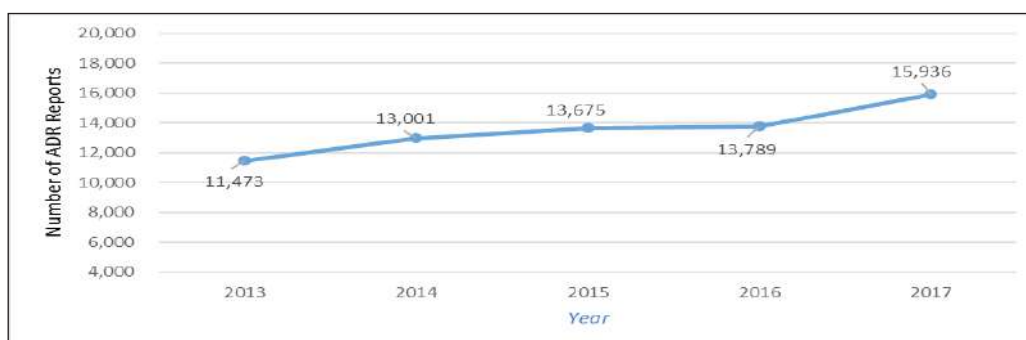
Source: National Pharmaceutical Regulatory Agency, MoH

PRODUCT POST REGISTRATION

Post-marketing surveillance activities are crucial in overcoming issues of counterfeit, adulterated and substandard pharmaceutical products in the Malaysian market. Monitoring of registered products in the market is carried out continuously to ensure that registered products in the local market fulfil the requirements for safety, efficacy and quality.

In 2017, the Malaysian Adverse Drug Reaction (ADR) Monitoring Program received a total of 15,936 reports, about 15.6 per cent higher compared to 13,789 reports for the year before (**Figure 7**).

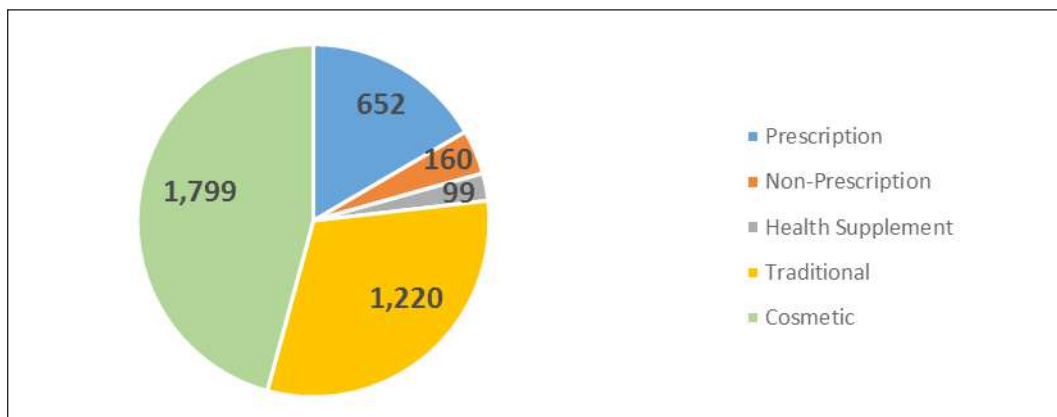
Figure 7
Number of Adverse Drug Reaction Reports



Source: National Pharmaceutical Regulatory Agency, MoH

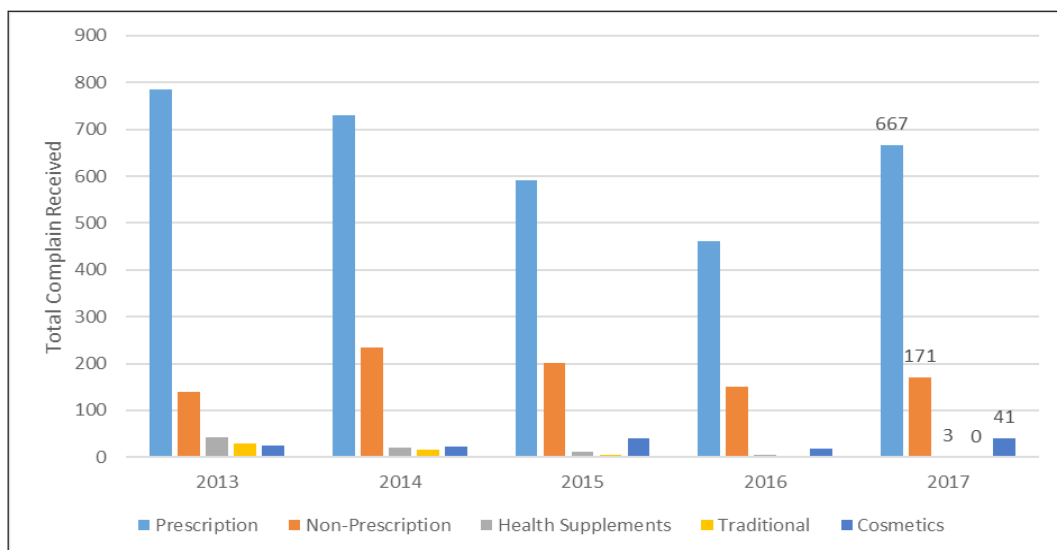
A total of 3,930 products were sampled in 2017 under the Market Surveillance for Registered Products and Notified Cosmetics Programme (**Figure 8**). 882 complaints were received in 2017 of which 76 per cent (667) of it involved prescription products (**Figure 9**). Product complaints received were evaluated, investigated, and necessary actions were taken based on the findings.

Figure 8
Number of Products Sampled For Post-Registration, 2017



Source: National Pharmaceutical Regulatory Agency, MoH

Figure 9
Total Complains Received, 2013 to 2017



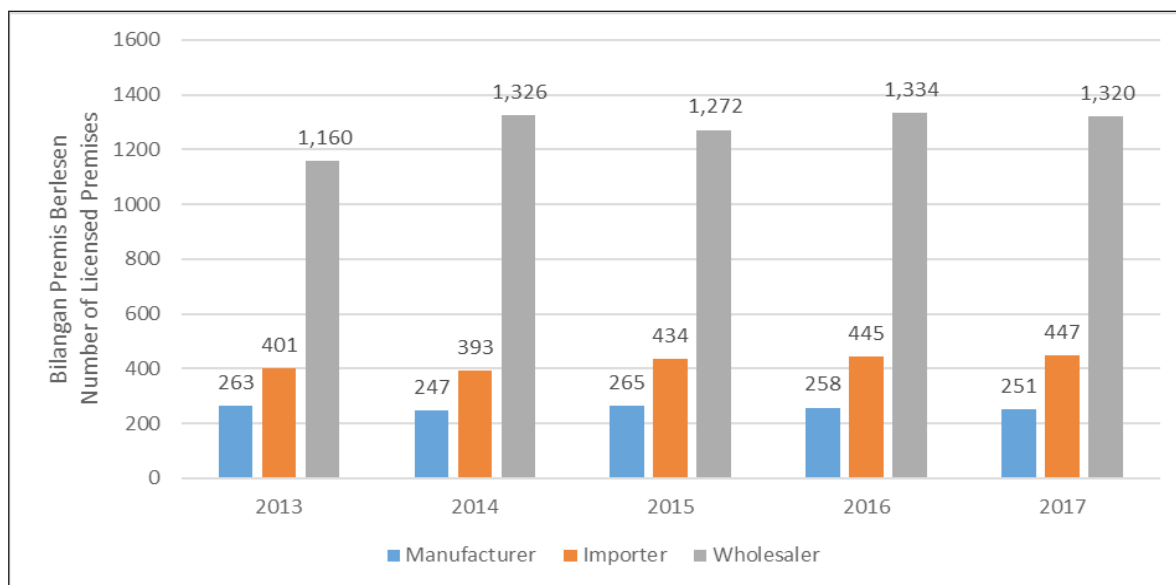
Source: National Pharmaceutical Regulatory Agency, MoH

LICENSING AND COMPLIANCE

A total of 2,018 licensed premises comprising of manufacturers (excluding manufacturers of cosmetic products), importers and wholesalers were identified for 2017. 433 Good Manufacturing Practice Examination (APB) were conducted on the premise of manufacturing pharmaceuticals, traditional/

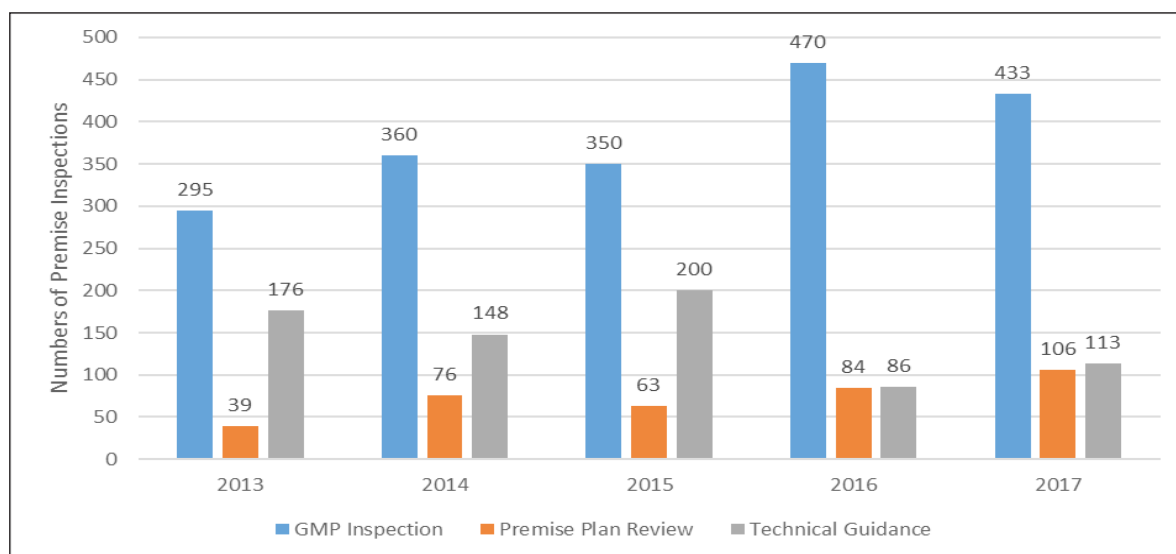
health supplements, cosmetics and other premises in Malaysia and abroad. Additionally, a total of 1,878 licenses were issued to 304 manufacturers, 464 importers and 1,110 wholesalers (**Figure 10, 11 and 12**) below:

Figure 10
Number of Licensed Premises, 2013 to 2017



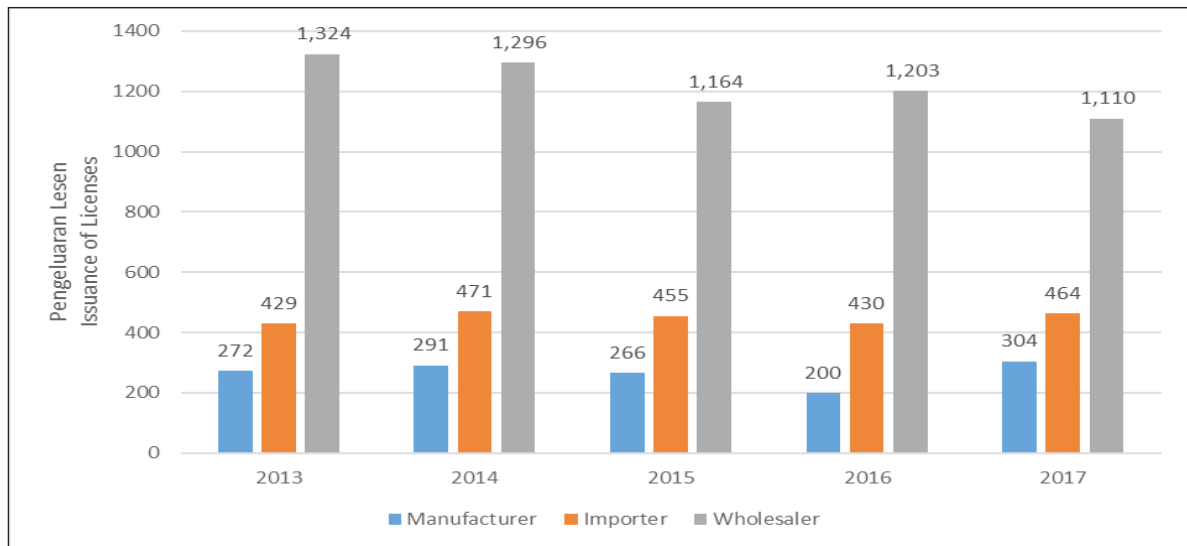
Source: National Pharmaceutical Regulatory Agency, MoH

Figure 11
Number of Premise Inspections, 2013 to 2017



Source: National Pharmaceutical Regulatory Agency, MoH

Figure 12
Total Number of Licenses Issued, 2013 to 2017

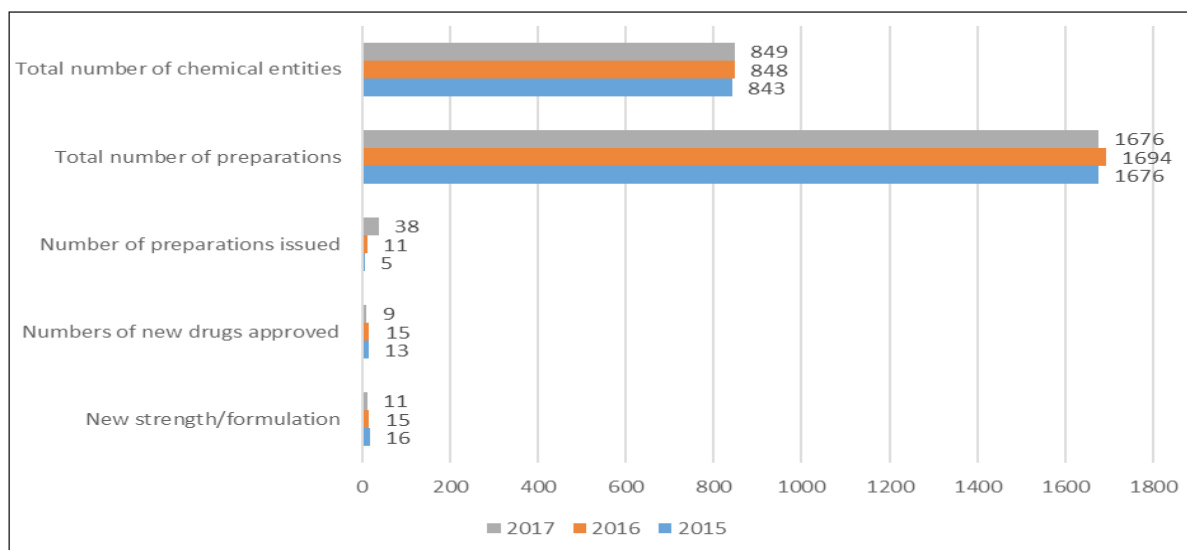


Source: National Pharmaceutical Regulatory Agency, MoH

MINISTRY OF HEALTH MEDICINE FORMULARY (MOHMF)

In 2017, the Secretariat received 50 proforma/dossiers and 39 were presented in Panel meetings. 20 drugs were approved to be listed while 38 were removed from the MOHMF. By the end of 2017, there are a total of 1,676 preparations comprising of 849 chemical entities in the MOHMF (**Figure 13**).

Figure 13
Number of Drugs Listed in the MOHMF (2013 to 2017)

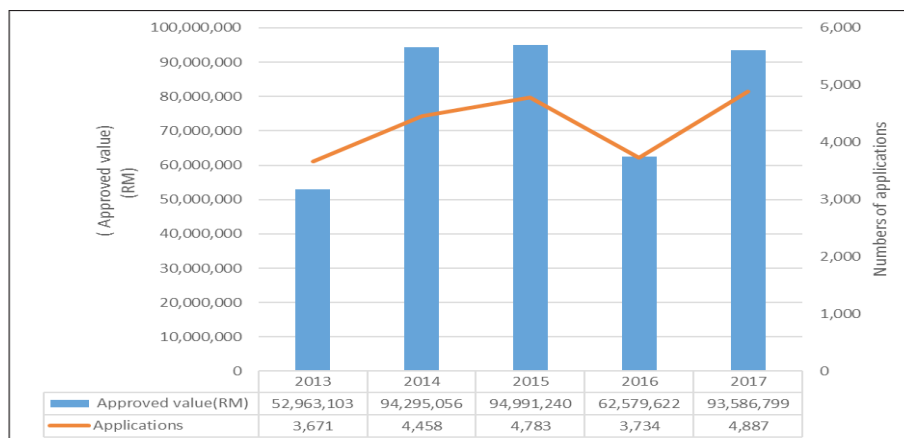


Source: Pharmacy Practice and Development Division, MoH

DIRECTOR GENERAL OF HEALTH(DG)/SENIOR DIRECTOR OF PHARMACEUTICAL SERVICES (SDPS) SPECIAL APPROVAL DRUGS

Special approval from DG/SDPS is required to obtain and use drugs outside the MOHMF. It can be used as a last resort of treatment after all options available in the MOHMF has been exhausted. In 2017, 4,887 (90.92 per cent) special approvals were issued from a total of 5,375 applications received incurring a total cost of RM93.6 million. Compared to 2016, there was an increment of 30.49 per cent (4,119 applications) in the number of applications received (**Figure 14**).

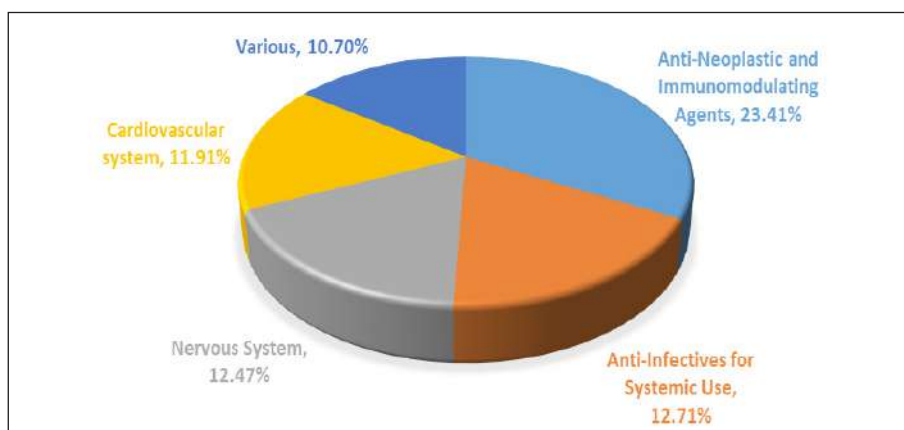
Figure 14
Approvals & Cost (RM Million) Special Drugs (2013 to 2017)



Source: Pharmacy Practice and Development Division, MoH

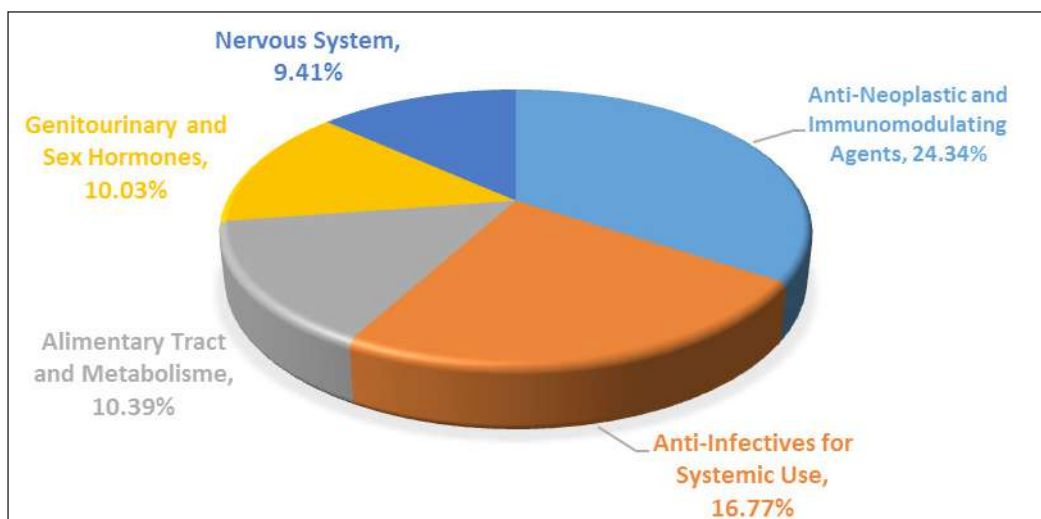
In 2017, most approvals were from the Anatomical Therapeutic Chemical (ATC classification system of Anti-Neoplastic and Immunomodulating Agents and Anti-Infective for Systemic Use for both registered (24.34 per cent; 16.77 per cent) and unregistered drugs (23.41 per cent; 12.71 per cent). Refer **Figure 15 and 16** below:

Figure 15
Top Five Categories of Special Approvals for Registered Drugs According to ATC Classification In 2017



Source: Pharmacy Practice and Development Division, MoH

Figure 16
Top Five Categories of Special Approvals for Unregistered Drugs according to ATC Classification In 2017



Source: Pharmacy Practice and Development Division, MoH

OPERATION AND INTELLIGENCE BRANCH

Didik, Pantau dan Serbu (DiPS) Programme is an initiative under the Pharmacy Programme Strategic Plan for the year 2017 to 2020 which aims to eradicate the sales of unregistered products in well-known area/hotspots. The main objective of this programme is to reduce the unauthorised transaction involving these products by at least 20 per cent every year and will be implemented until the year 2020. There are three (3) main components of DiPS, which are 'Educate', 'Monitor' and 'Raid'. 'Educate' aims to improve consumer awareness through compliance inspection and awareness initiatives. 'Monitor' involves surveillance activities in targeted areas or hotspots and 'Raid' involves raiding activities on the premises which sell unregistered products (**Image 1**).

FORENSIC PHARMACY

The development of digital forensic laboratory infrastructure and facilities with the latest laboratory equipment help in assisting the analysing of significant digital evidence. The digital forensic lab was completed in July 2017. Starting in August 2017, the lab has begun to receive digital devices to be analysed for post-operative intelligence (**Image 2**).

Image 1
DiPS Programme



Source: Pharmacy Enforcement Division, MoH

Image 2
Visit of Director General of Health to Pharmacy Forensic Lab



Source: Pharmacy Enforcement Division, MoH

INTERNATIONAL PARTICIPATION AND COLLABORATION

The Pharmacy Enforcement Division, Ministry of Health Malaysia (MoH) together with 197 other enforcement agencies from 123 countries in the world participated in Pangea X Operations which was conducted from 12 to 19 September 2017.

317 websites and 440 social media accounts were found to be selling Pharmaceutical products that violate the provisions of the law enforced have been monitored and investigated. During this operation period, 32,226 parcels, luggage and cargo were inspected. Of these, 458 postal and courier parcels, luggage and cargo worth RM1,921,731.50 were also seized. Raids were also conducted on 49 unlicensed premises which mostly sell online pharmaceutical products nationwide. During the raids, 129,022 pharmaceutical products that violated the law were seized for further action. The seizure value was estimated at RM1,693,116.00. 22 digital devices such as computers, tablets and mobile phones used as a medium to market the product were also confiscated.

Image 3
Pangea X Operations



Source: Pharmacy Enforcement Division, MoH

NATIONAL SITUATIONAL MAPPING OF ANTIMICROBIAL CONSUMPTION IN MALAYSIA STUDY

Malaysia had been selected by WHO Western Pacific Region to conduct the National Situational Mapping of Antimicrobial Consumption. Objectives of the study include to identify the existing antimicrobial consumption monitoring systems in the country, as well as the gaps and challenges in antimicrobial consumption data collection, to assess the current procurement system and to study the feasibility of introducing WHO methodology on antimicrobial consumption monitoring. The study was conducted in February 2017 by appointed investigators from the School of Pharmaceutical Sciences, Universiti Sains Malaysia, while the Pharmaceutical Care Section acted as study coordinator. Data were collected from Kuala Lumpur Hospital, Tengku Ampuan Rahimah Hospital, Sultanah Aminah Hospital dan Penang Hospital. The study findings were presented by the Deputy Director of Pharmaceutical Care Section in the Workshop on Monitoring Antimicrobial Consumption in Select Western Pacific Countries, which was held on 30 to 31 March 2017 in Manila, The Philippines.

NATIONAL PHARMACEUTICAL REGULATORY AGENCY (NPRA) AS A WHO COLLABORATING CENTRE FOR REGULATORY CONTROL OF PHARMACEUTICALS

The National Pharmaceutical Regulatory Agency (NPRA) has been given international recognition as a “WHO Collaborating Centre for Regulatory Control of Pharmaceuticals” in the year 1996. This recognition is an acknowledgement from World Health Organization (WHO) for NPRA’s contribution in the field of regulatory affairs. This recognition has attracted foreign regulatory agencies to undergo training in NPRA. Throughout 2017, NPRA received six (6) visitors from Brunei Darussalam, Nepal and Sri Lanka.

NPRA provided training to these officers from other regulatory agencies such as The National Medicines Regulatory Authority Sri Lanka, National Medicines Quality Assurance Laboratory Sri Lanka, Department of Drug Administration Nepal and Ministry of Health Brunei Darussalam. The scope of training includes Good Manufacturing Practice inspection, equipment qualification & validation, Chemical & microbiological testing on Pharmaceutical, Health Supplements & Traditional Products as well as the post-registration activities such as surveillance & pharmacovigilance of medicines.

WAY FORWARD

Pharmacy Services Programme has come out with the strategic plans with four (4) primary focuses:

- Enhancing the collaboration with stakeholders and empowering communities towards the quality use of medicines.
- Enhancing the pharmaceutical services delivery through innovation and technology.
- Strengthening the governance of Pharmacy Services Programme.
- Strengthening the skills, expertise and human capital capacity and capability.

These strategies were developed for the future direction of Pharmacy Services Programme and aligning with the needs and the current situation of the government's plans. The fundamentals of these strategies are based on, Second Strategic Thrust of the Eleventh Malaysia Plan, Health Services Transformation Plan, Ministry of Health Strategic Plan, Eight Thrust of Healthcare Transformation and Malaysian National Medicines Policy.

STRENGTHENING PRIMARY HEALTHCARE SERVICES

To uphold and improve services to the nation, the Pharmacy Services Programme aims to expand the implementation of integrated drug delivery system by establishing more centres to offer value-added services (VAS) to the public. Indirectly, patients will benefit from the continuous drug supply. Besides that, the implementation of Patient Own Medications (POMs) Programme and '*Beg Ubatku*' Programme will enable medicines optimisation without wastage and better disease management.

PHARMACY ICT TRANSFORMATION AND WORK PROCESS RE-ENGINEERING

Pharmacy Services Programme aims to enhance service delivery by doing business process re-engineering through ICT-based service innovation in order to improve the efficiency of service delivery. Transformation of selected manual processes into online based service will be carried out as to support the Government Transformation Programme (GTP) which targeted that 95 per cent of the government services transformed into online services in the year 2020.

HUMAN RESOURCE AND ORGANISATIONAL CAPACITY DEVELOPMENT

The Pharmacy Services Programme is moving towards enhancing organisational efficiency and strengthening governance and regulatory control through the establishment of statutory bodies for two (2) of its Division namely National Pharmaceutical Regulatory Agency and Malaysian Pharmacy Board. Besides that, this Programme aims to build capabilities and professionalism through Talent Development activity, the Subject Matter Expert (SME) Programme and Credentialing and Privileging (C&P) activity for pharmacists.

MULTI-SECTORAL COLLABORATION

The Pharmacy Services Programme emphasises on collaboration with other agencies and the private sector. Initiatives to engage local councils and local media through dialogue sessions via radio station are organised to contain unapproved medical advertisements. Non-governmental organisations/professional society/government agencies are also involved in the joint effort to educate and increase awareness of the quality use of medicines (QUM) to the public. The public perception towards pharmacy services is important as value recognition to pharmacists. The Pharmacy Services Programme foresees improvement in the community perception towards the service and professional image, at the same time, raising awareness towards the services being delivered.

ENHANCING HEALTHCARE FINANCING MECHANISM

The Pharmacy Services Programme is looking forward in achieving a cost-effective drug approach with affordable medicine price, and ultimately enhancing public access to safe, quality and effective medicines.



9

FOOD SAFETY AND QUALITY

INTRODUCTION

In Malaysia, food safety and quality control for all food, either its locally produced or imported and exported, is under the purview of the Food Safety and Quality Programme (FSQP), Ministry of Health (MoH). FSQP has the mandate under the Food Act 1983 to protect the public against health hazards and fraud in the preparation, sale, and use of food, and for matters incidental thereto and connected therewith. In addition, the Food Analysts Act 2011 and the Food Analysts Regulations 2013 register food analysts and regulates the practice of food analysts. This act is also under the purview of the FSQP, MoH.

ACTIVITIES AND ACHIEVEMENTS

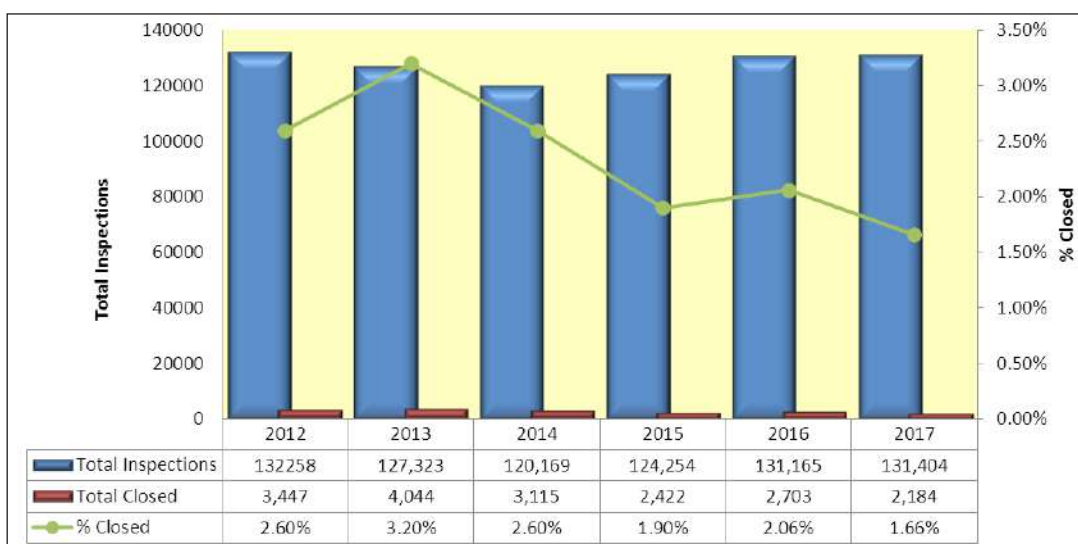
DOMESTIC COMPLIANCE ACTIVITIES 2017

The role of the domestic compliance is to plan, review and coordinate all activities such as food sampling, inspection of food premises, registrations on food premises. In addition, enforcement activities such as closure of insanitary food premises, seizure of non-complying food, investigation of complaints and management of food safety issues is conducted based on the Food Act 1983 and its regulations.

- **ACHIEVEMENT OF INSPECTION, REGISTRATIONS, SAMPLING AND CLOSURE OF FOOD PREMISES**

In 2017, a total of 131,404 food premises were inspected, and 2,184 (1.66 per cent) insanitary food premises were closed under Section 11, Food Act 1983 (**Figure 1**).

Figure 1
Inspection and Closure of Food Premises 2012 to 2017



Source: Food Safety and Quality Programme, MoH

There were 44,223 food premises registered in 2017. This number consists of 1,840 food factories, 4,616 premises which are involved in food catering, 33,599 food outlets, 135 vehicles which sell ready-to-eat food and 4033 other food premises as shown in **Table 1**.

Table 1
Registration of Food Premises from 2012 to 2017

No	Category	Year					
		2012	2013	2014	2015	2016	2017
1.	Factories	2,139	3,071	1,843	1,932	1,114	1,840
2.	Premises involved in food catering	1,403	2,297	1,524	1,057	1,113	4,616
3.	Food outlets	21,071	38,670	33,580	17,554	12,777	33,599
4.	Vehicles selling ready-to-eat food	177	667	609	243	230	135
5.	Other food premises	-	-	-	2479	477	4033
Total		24,790	44,705	37,556	23,265	15,711	44,223

Source: Food Safety and Quality Programme, MoH

In 2017, a total of 31,289 food samples were taken for analysis and 1073 (3.43 per cent) of them contravened certain requirements under the Food Act 1983 and Food Regulations 1985 (**Figure 2**). A total of 156 sellers/food manufacturers who contravened provisions under the Food Act 1983 and Food Regulations 1985 were prosecuted and fines amounting to RM132,949 were collected.

Figure 2
Food Sampling 2012 to 2017



Source: Food Safety and Quality Programme, MoH

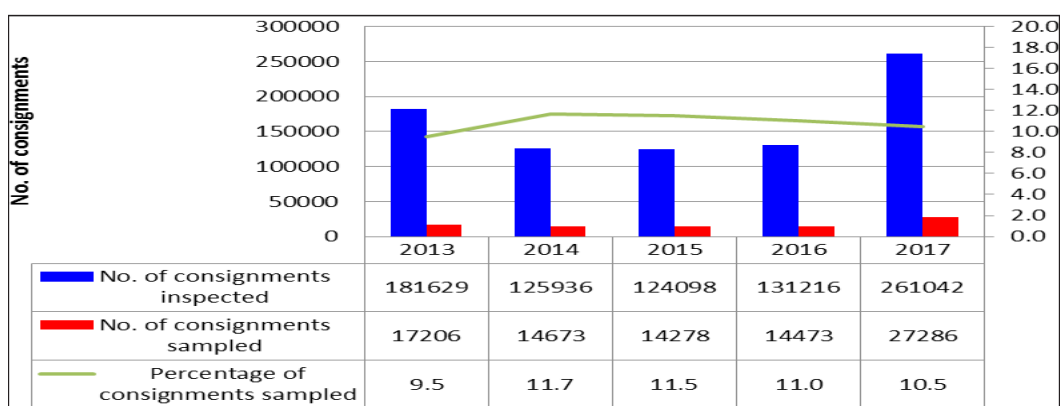
FOOD IMPORT CONTROL ACTIVITIES 2017

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 enforcement activities such as detention, relabelling, reprocessing, reconditioning, recall, reexport, rejection, prosecution and destruction of consignments that contravene such provisions in food's legislations.

• ACHIEVEMENT OF IMPORT ENFORCEMENT ACTIVITIES

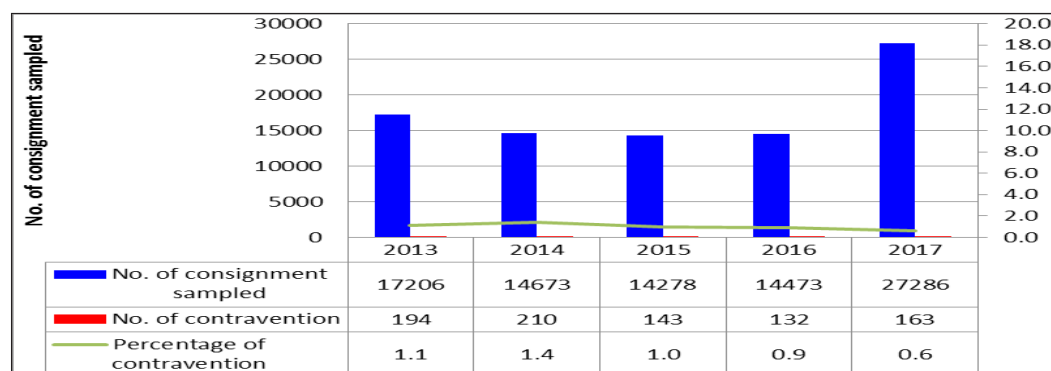
In 2017, a total of 261,042 consignments were inspected and 27,286 samples (10.5 per cent) were taken for analysis (**Figure 3**). From the total samples taken for analysis, 163 samples (0.6 per cent) contravened the Food Acts 1983 and Food Regulations 1985 as the lowest contravention rate over the 5 years since 2013 (**Figure 4**). There were 79 food alerts on contravening food consignments imported from 13 countries in the year 2017. The food alerts were then notified to all Health State Department and entry points for further action.

Figure 3
Inspection and Sampling of Imported Foods 2013 to 2017



Source: Food Safety and Quality Programme, MoH

Figure 4
Contravention of Imported Food 2013 to 2017



Source: Food Safety and Quality Programme, MoH

EXPORT ACTIVITIES 2017

• FOREIGN VERIFICATION AUDIT VISIT

FSQP had received six (6) verification audit visits from importing countries namely Japan, Canada, United States, China, Taiwan and Australia. This foreign verification audit visit aims to evaluate the food safety system implemented by Malaysia along the export production chain. The list of audit visits is as follows (**Table 2**):

Table 2
Importers' Audit Tour List 2017

No	Country	Commodity	Foreign Verification Audit Visit	Duration
1.	Japan	Food	Audit visit from Ministry Of Health, Labor & Welfare (MHLW), Jepun	13 to 15 February
2.	United States	Shrimp	Audit visit from US Food and Drug Administration (USFDA)	18 Mac 2017 to 2 April
3.	Canada	Food- allergen	Audit visit from Foreign Verification Office (FVO) of Canadian Food Inspection Agency (CFIA), Canada	21 April to 5 May
4.	China	Raw cleaned edible bird's nest	Audit visit from General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China (AQSIQ)	9 to 16 May
5.	Taiwan	Edible oil (palm oil)	Audit visit from Northern Center of Regional Administration, Food and Drug Administration, Ministry of Health and Welfare, Taiwan (TFDA)	6 to 17 August
6.	Australia	Salmon, Marine and Freshwater Fish, Shrimp	Audit visit from Department of Agriculture and Water Resources (DAWR), Australia	4 to 7 September

Source: Food Safety and Quality Programme, MoH

Image 1 Importers' Audit Tour List 2017

a) Japan MHLW Verification Visit



b) United States USFDA Verification Visit



c) Canada CFIA Verification Visit



d) Taiwan TFDA Verification Visit

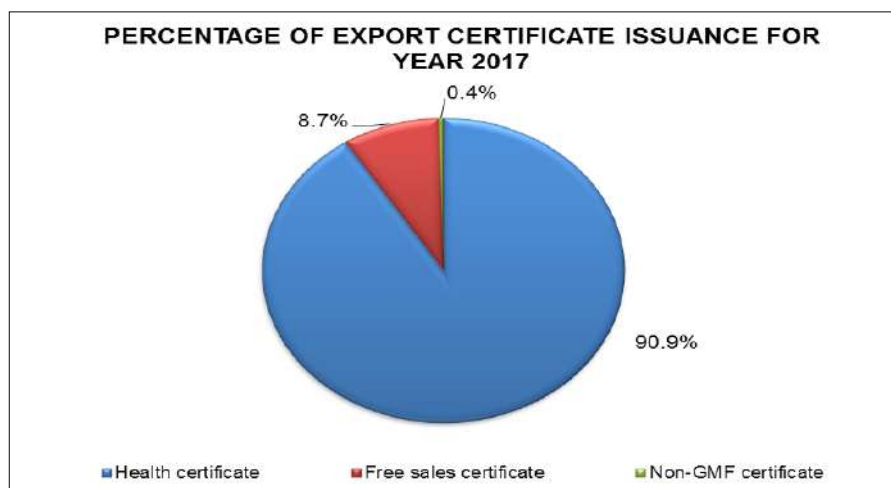


Source: Food Safety and Quality Programme, MoH

• ISSUANCE OF EXPORT CERTIFICATE

In order to comply with the importing countries requirement, total of 66,296 export certificates were issued throughout 2017 respectively 60,268 (90.9 per cent) health certificates, 5771 (8.7 per cent) free sales certificates and 257 (0.4 per cent) of Non-Genetically Modified Food (**Figure 5**). Issuance of export certificates can guarantee that the products exported from Malaysia are safe and this will increase export demand for food products from various countries.

Figure 5
Export Certificate Issuance for 2017



Source: Food Safety and Quality Programme, MoH

INDUSTRIAL DOMESTIC ACTIVITIES 2017

MyFood Tag (**Image 2**) Registration is a mechanism of strengthening the food safety and traceability along the food supply chain that focuses on the food safety requirement at certain check points/stages along the food supply chain. For 2017, this activity was carried out through a pilot project involving

the storage of meat and meat's products as well as transportation of ice for the licenced ice premises. A total of 18 of storage premises for meat and meat's products and a total of 286 for ice trucks have been verified according to food safety requirements and registered under MyFood Tag registrations.

Image 2
MyFood Tag



Source: Food Safety and Quality Programme, MoH

SURVEILLANCE ACTIVITIES 2017

FSQP had hosted a Food Safety Surveillance Seminar on 18 to 19 July 2017 at Putrajaya (**Image 3**). The objective of this seminar is to share the findings of specific research and collaboration research with FSQP officers. A total of 15 research papers have been presented in this seminar. Out of 15 papers, four (4) papers had been presented by Malaysian Palm Oil Board (MPOB), Universiti Putra Malaysia (UPM) and Malaysian Nuclear Agency (ANM) and remaining 11 papers had been presented by FSQP officers. The research papers that have been presented on the seminar were "Authenticity and Traceability of Edible Bird Nest (EBN)", "Determination of 3-MCPD Esters and Glycidyl Ester in Palm Oil", "Cooking Oil Quality in Fast Food Restaurant", "Antimicrobial Resistance (AMR) in Foods and 4-Methylimidazole (4-MEI) Contamination in Dark Coloured Drinks".

Image 3
Food Safety Surveillance Seminar



Source: Food Safety and Quality Programme, MoH

CODEX AND INTERNATIONAL SECTION ACTIVITIES 2017

In general, the Codex and International Section is responsible in coordinating Codex activities at the national level and is also responsible for international and regional affairs related to food safety.

- **CHAIR AND HOST COUNTRY FOR 25TH SESSION OF THE CODEX COMMITTEE ON FATS AND OILS (CCFO)**

The 25th Session of CCFO was successfully held from 27 February to 3 March 2017 in Kuala Lumpur, Malaysia (**Image 4**). The Session was chaired by Mrs. Noraini binti Dato' Mohd. Othman, Senior Director for Food Safety and Quality, Ministry of Health. The Session was attended by participants from 41 member countries, one (1) member organisation and seven (7) international organisations.

Image 4
25th Session of the Codex Committee on Fats and Oils (CCFO)



Source: Food Safety and Quality Programme, MoH

PRE-MARKET APPROVAL ACTIVITIES 2017

- **HAZARD ANALYSIS CRITICAL CONTROL POINT (HACCP) CERTIFICATION SCHEME**

As of December 2017, 562 certificates have been issued to food companies, which have been certified under the HACCP Certification Scheme, MOH. The recognition of this certification has greatly assisted the industry in meeting the requirements of the European Union (EU) and the United States of America for the export of fish products and fish products.

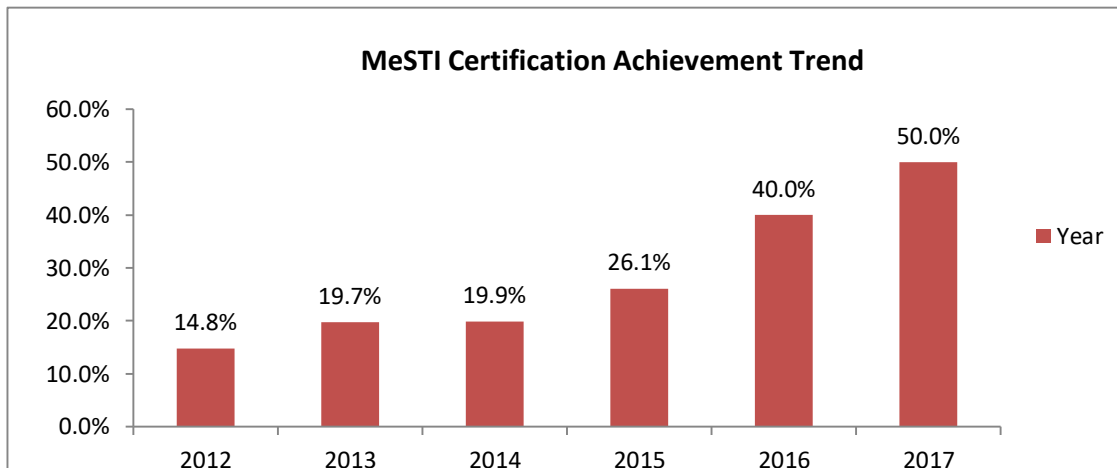
- **GOOD MANUFACTURING PRACTICE (GMP) CERTIFICATION SCHEME**

Until 31 December 2017, 582 certificates have been issued to food companies that have been certified by GMP. This recognition enhances consumer confidence in products manufactured and helps the industry to expand their market.

- **MAKANAN SELAMAT TANGGUNGJAWAB INDUSTRI (MeSTI) CERTIFICATION SCHEME**

MeSTI is a certification scheme which focuses on small and medium enterprises (SMEs) to fulfill the requirements provided under the Food Hygiene Regulations 2009. Until 31 December 2017, 3,895 (50 per cent) food manufacturing premises have obtained certification MeSTI (**Figure 6**).

Figure 6
Number of MeSTI Certified Companies, 2012 to 2017

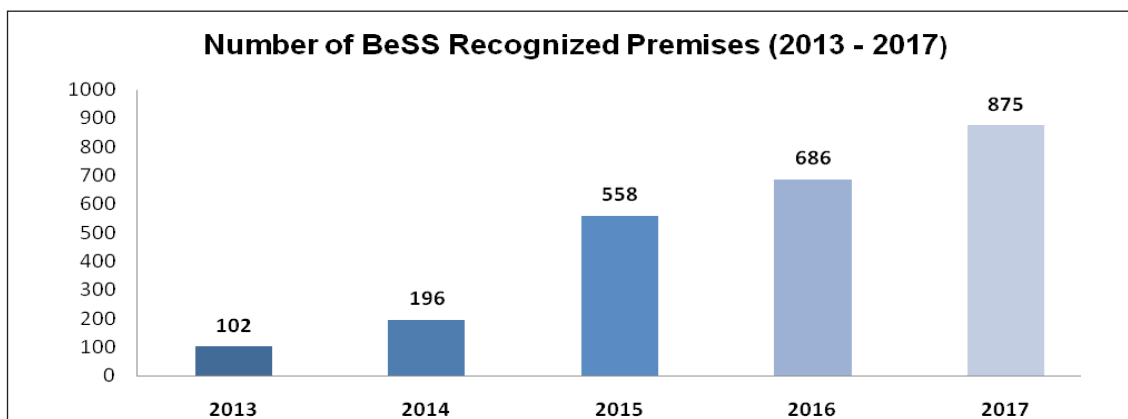


Source: Food Safety and Quality Programme, MoH

- **RECOGNITION BERSIH, SELAMAT DAN SIHAT (BeSS)**

BeSS is a recognition granted to food outlets to promote food outlet operators provide a safe and healthy food for customers. This recognition involves two (2) components, which are food safety and quality, and nutritional components. To get this recognition, food outlet operators must comply with the conditions set for both of these components. A total of 2,417 food outlets were successfully recognized BeSS since it was implemented in year 2013 until 2017 (**Figure 7**).

Figure 7
Number of BeSS Recognized Premises, 2013 to 2017



Source: Food Safety and Quality Programme, MoH

- **FOOD SAFETY ACTIVITIES IN SCHOOL**

Self-Examination Program (KENDIRI) in schools is one of the strategies to reduce the risk of food poisoning incident in school canteen and hostel kitchen as agreed in the Joint Committee Meeting of Food Safety, Quality, and Nutrition between Ministry of Education (MOE) and Ministry of Health Malaysia (MoH) since 2008. The implementation of this program will help to increase the level of provided hygiene

and food safety and act as the first line defense in the prevention of food poisoning incidents. **Table 3** shows the trend of food poisoning occurring in the whole and in the canteen and kitchen boarding school MOE from 2013 to 2017.

Table 3
Trends in Food Poisoning Trends in Schools (2013 to 2017)

Item	Year				
	2013	2014	2015	2016	2017
Total incidents in all premises	495	501	412	524	404
Total incidents in School	130	151	118	167	181
Key Performance Index (KPI) for food poisoning: <u>Total school with food poisoning incidents</u> x 100 % Total school in current year	-	-	<1.4	<1.6	<1.6
Key Performance Index (KPI) Achievement	-	1.49	1.16	1.64	1.14

Source: Food Safety and Quality Programme, MoH

COMMUNICATIONS AND CONSUMER AFFAIRS ACTIVITIES 2017

FSQP has a role in planning and implementing promotional activities of food safety and also coordinating and monitoring the enquiries and complaints related to food safety via mass media.

• THE NATIONAL CLEAN, SAFE AND HEALTHY FOOD COURTS CEREMONY AWARDS

The main promotional activity for 2017 was The National Clean, Safe and Healthy Food Courts Ceremony Awards which collaborated with the Ministry of Urban Wellbeing, Housing and Local Government (KPKT) held on 10 October 2017 at *Dewan Siantan, Perbadanan Putrajaya*, Putrajaya (**Image 5**). The ceremony was officiated by the Deputy Minister of Health and was also attended by the Deputy Secretary General of the Ministry of Urban Wellbeing, Housing and Local Government.

Image 5
The National Clean, Safe and Healthy Food Courts Ceremony Awards 2017



Source: Food Safety and Quality Programme, MoH

• FOOD SAFETY CAMPAIGNS IN SOCIAL MEDIA

Food safety campaigns has been implemented in the social media portal which selected based on the high number of followers respectively. Among the food safety campaigns that carried out in 2017 were as below:



Below is the list of achievements in Facebook and Twitter portal selected for food safety campaigns in social media for year 2017 (**Table 4 to 8**) and the promotion of these campaigns (**Image 6 to 10**).

Table 4
Achievements in Facebook and Twitter Portal for Promotion in
Conjunction with Ramadan Month

Media	Monthly Page View	FB Reach
Sinar Harian	3,376,892	407,773
Mynewshub	2,623,658	89,411
Beautiful Nara	971,231	98,119
Rotikaya	3,961,788	25,674
The Vocket	394,269	173,477
Ohmedia	3,213,822	208,379
Vitdaily	435,162	93,160
Ketuk-Ketuk Ramadan	712,339	51,413

Source: Food Safety and Quality Programme, MoH

Image 6
Promotion in Conjunction with Ramadhan Month



Source: Food Safety and Quality Programme, MoH

Table 5
Achievements in Facebook and Twitter Portal for Promotion in Conjunction with Hari Raya

Media	Monthly Page View	FB Reach
Mynewshub	2,623,658	15,512
Beautiful Nara	971,231	16,368
Rotikaya	3,961,788	74,357
The Vocket	394,269	22,236
Vitdaily	435,162	6,996

Source: Food Safety and Quality Programme, MoH

Image 7
Promotion in Conjunction with Hari Raya



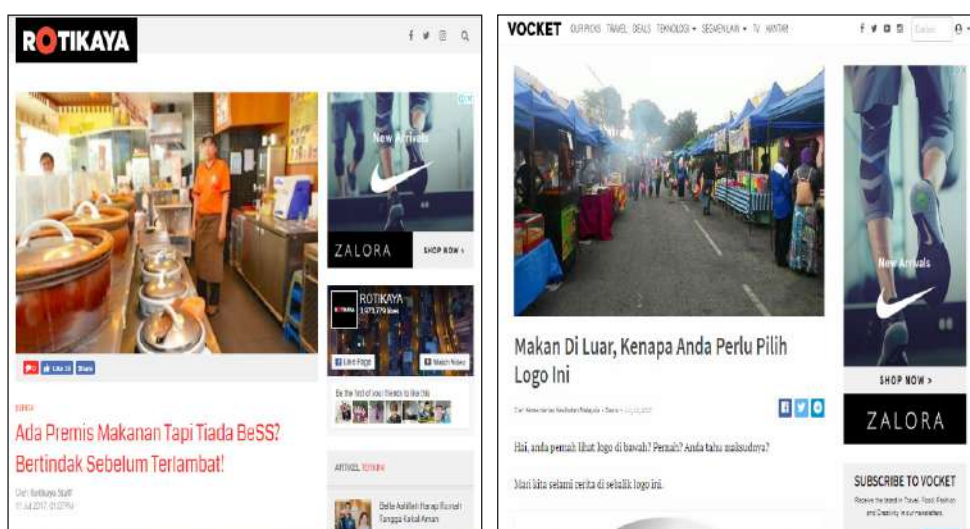
Source: Food Safety and Quality Programme, MoH

Table 6
Achievements in Facebook and Twitter Portal for Promotion of BeSS Recognition

Media	Monthly Page View	FB Reach
Sinar Harian	3,376,892	14,443
Mynewshub	2,623,658	35,377
Beautiful Nara	971,231	47,370
Rotikaya	3,961,788	117,260
The Vocket	394,269	233,864
Ohmedia	3,213,822	70,008
Vitdaily	435,162	57,633
Ketuk-Ketuk Ramadan	712,339	8,254

Source: Food Safety and Quality Programme, MoH

Image 8
Promotion of BeSS Recognition



Source: Food Safety and Quality Programme, MoH

Table 7
Achievements in Facebook and Twitter portal for Promotion of MeSTI Certification

Media	Monthly Page View	FB Reach
Sinar Harian	3,376,892	271,636
Mynewshub	2,623,658	117,367
Ohbulan	2,092,320	121,323
Beautiful Nara	971,231	78,293

Media	Monthly Page View	FB Reach
Rotikaya	3,961,788	260,526
The Vocket	394,269	195,799
Ohmedia	3,213,822	122,378
Vitdaily	435,162	79,281
Ketuk-Ketuk Ramadan	712,339	33,299

Source: Food Safety and Quality Programme, MoH

Image 9 Promotion of MeSTI Certification



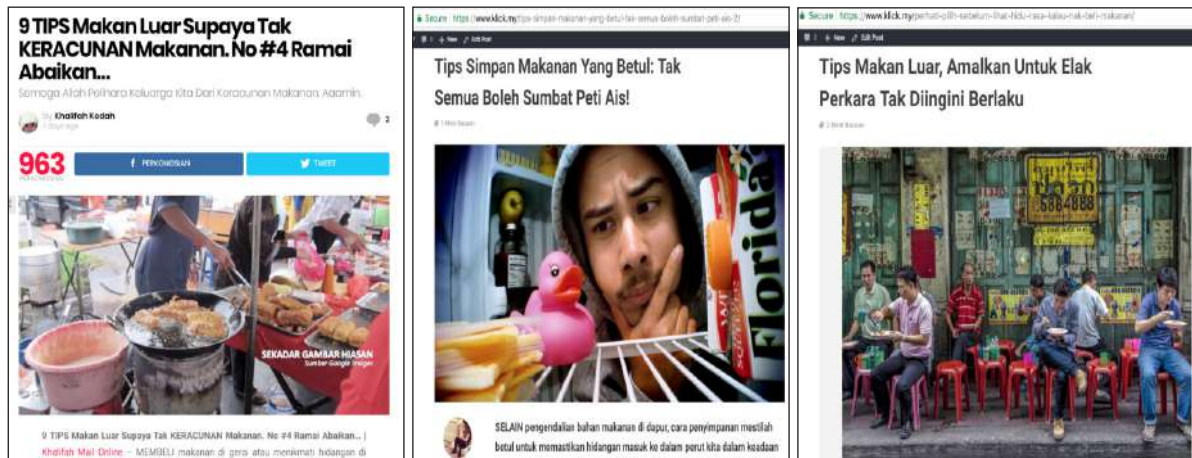
Source: Food Safety and Quality Programme, MoH

Table 8
Achievements in Facebook and Twitter portal for Promotion of Safe Food Tips

Facebook	Page Likes	Topik	Reach
Khalifah Media Networks	1.6m	Jangan Basuh Telur Selepas Beli	122,760
Klick.My	235k	Jangan Basuh Telur Selepas Beli	15,813
Khalifah Media Networks	1.6m	8 Tips Simpan Makanan Dalam Peti Ais	68,407
Klick.My	235k	8 Tips Simpan Makanan Dalam Peti Ais	13,924
Khalifah Media Networks	1.6m	9 Tips Elak Keracunan Makanan	57,075
Klick.My	235k	9 Tips Elak Keracunan Makanan	10,561
Total		Posted Article on 25-28 Oct 2017	288,540

Source: Food Safety and Quality Programme, MoH

Image 10
Promotion of Safe Food Tips



Source: Food Safety and Quality Programme, MoH

- **FOOD SAFETY CAMPAIGNS IN MASS MEDIA**

FSQP had engagement with Sheila Rusly's Production and RTM1 in Rancangan Ketuk-Ketuk Ramadan 2016/2017 for 30 episodes (**Image 11**). Each episode features food safety tips specifically to address prevention on food poisoning occurrence was recognized as top 5 shows in RTM1 with 2 million views. While the total number of RTM Online TV viewing is 30,000 people per episode.

Image 11
Rancangan Ketuk-Ketuk Ramadan 2016/2017



Source: Food Safety and Quality Programme, MoH

- **AD PURCHASE ON AL HIJRAH TV STATION**

The interview programme on Assalamualaikum slot was conducted for three (3) times with Al Hijrah TV Station (**Image 12**) and followed by 200 spots at AlHijrah TV Shows to promote campaign on *Bersih, Selamat dan Sihat* (BeSS) Recognition. In addition, 90 spots of campaign *Perhati dan Pilih* during the month of Ramadan were delivered through IKIM Radio Advertisement.

Image 12
Interview Programme



Source: Food Safety and Quality Programme, MoH

- **FOOD SAFETY INFOGRAPHIC**

Infographic is known as interactive promotional materials produced to attract the interest of consumers on food safety information in swift approach by digital world development which growing rapidly through social media. A total of 30 sets of infographic materials including food safety tips and prevention of food poisoning produced in 2017 and have been posted on Facebook FSQP (**Image 13**). This info had been reached about 1,020,323 of Facebook users.

Image 13
Food Safety Infographic



Source: Food Safety and Quality Programme, MoH

- **PROFESSIONAL DEVELOPMENT PROGRAMS WITH PETROSCIENCE**

FSQP in collaboration with Petrosience held Germ Buster Professional Development Programme from 7 to 9 March and 21 to 23 March 2017 (**Image 14**). The purpose of this programme is to embrace the knowledge and skill of expertise on how Petrosience carried out promotional activities at schools.

Image 14
Germ Buster Professional Development Programme



Source: Food Safety and Quality Programme, MoH

- **FOOD SAFETY EXHIBITION ACTIVITIES**

Exhibition : Nutrition Month Malaysia
2017
Date : 23 April, 2017
Place : IOI City Mall, Putrajaya

Exhibition : *Ekspresi Negeraku*
Dates : 16 September, 2017
Place : Putrajaya Judicial Court
Grounds

Image 15
Food Safety Exhibition 2017



Source: Food Safety and Quality Programme, MoH

LABORATORY ACTIVITIES 2017

- **IMPLEMENTATION OF FEES FOR FOOD ANALYSIS SERVICES BASED ON THE FOOD (FOOD ANALYSIS FEE) REGULATIONS 2016**

Beginning 1 March 2017, the fee for imported food analysis services imposed by Level 5, Hold, Test and Release (TUL) has been implemented by MoH. The fee for analysis is fully borne by the importing party. This is due to the proclamation of the Food (Food Analysis Fee) Regulations 2016 on 15 December 2016. The food analysis fee is for food analysis services at the Food Safety and Quality Laboratory (MKKM). From March until December 2017, a total of 690 TUL samples of various parameters were analysed at MKKM throughout Malaysia.

POLICY AND DEVELOPMENT ACTIVITIES 2017

- **THE 14th MEETING OF THE NATIONAL FOOD SAFETY AND NUTRITION COUNCIL**

The 14th National Food Safety and Nutrition Council (MKMPK) meeting was held on 13 November 2017 at the Ministry of Health and was chaired by YB Minister of Health (**Image 16**). This forum brings together all relevant stakeholders to strengthen food safety at all levels of food supply chain as to ensure that the people of this country achieve optimum nutritional status.

Image 16
14th National Food Safety and Nutrition Council (MKMPK) Meeting



Source: Food Safety and Quality Programme, MoH

- **INTERNATIONAL FOOD SAFETY TRAINING CENTRE (IFSTC) MALAYSIA.**

As in 2017, 13 training sessions had been conducted by IFSTC Malaysia (**Table 9**). A total of 306 participants had been trained comprising of participants ranging from food industries, government agencies, academicians, private sector and officers from the FSQD representing both HQ and State Level.

Table 9
List of Training Conducted In 2017

No	Title	Date
1.	Product Labelling and Hands On (I)	14-15 March 2017
2.	Food Safety Training for Auditor Under ACB-HACCP Scheme	27-29 March 2017
3.	Method Validations for Food Chemical Analysis	10-12 April 2017
4.	Good Manufacturing Practice (GMP)-Awareness	18-20 April 2017
5.	Product Labelling and Hands On (II)	3-4 May 2017
6.	Hazard Analysis Critical Control Point (HACCP) Awareness	16-18 May 2017
7.	Method Validation for Food Microbiology Analysis	4-6 July 2017
8.	Estimation of Uncertainty for Food Microbiology Analysis	11-13 July 2017
9.	Malaysian Food Act and Regulations & Updates	25-26 July 2017
10.	Food Safety Certification and Licensing	8-9 August 2017
11.	Food Safety Training for Auditor Under ACB-GMP Scheme	22-24 August 2017
12.	Product Labelling and Hands On (III)	12-13 September 2017
13.	Food Safety Inspection Training	25-28 September 2017

Source: Food Safety and Quality Programme, MoH

Image 17
Product Labelling and Hands on (I) 14 to 15 Mac 2017



Source: Food Safety and Quality Programme, MoH

Image 18
Food Safety Training for Auditor under ACB-HACCP Scheme 27 to 29 Mac 2017



Source: Food Safety and Quality Programme, MoH

WAY FORWARD

The FSQP is committed to ensure food safety and uphold the nation's integrity in food safety and quality through shared responsibility and accountability on the basis of effective tripartite management in line with government policy.



10 DEVELOPMENT

INTRODUCTION

The Ministry of Health (MoH)'s Development Division is the custodian of the Ministry's Development Expenditure (DE). The Division is headed by a Senior Under-Secretary who is directly responsible to the MoH's Secretary General, with the vision of developing health facilities towards improving people's health status.

ACTIVITIES AND ACHIEVEMENTS

DEVELOPMENT EXPENDITURE PERFORMANCE FOR 2017

At the end of 2017, MoH's **Development Expenditure (DE) performance is 96.88 per cent** from the total DE allocation that was approved for the Ministry, totalling to RM1.338billion. The breakdown of Expenditure versus Allocations by *Butiran Peruntukan* (BP) is as in **Table 1** below:

Table 1
MoH's Expenditure Performance, 2017

Project	Allocation (RM)	Expenditure (RM)	Per Cent (%)
BP 100 – TRAINING	61,801,000	60,469,941	97.85
101 Development of New College	19,561,000	18,618,919	95.18
104 Outsourcing	240,000	240,000	100.00
105 In-Service Training	42,000,000	41,611,022	99.07
BP 200 – PUBLIC HEALTH	218,376,337	214,868,960	98.39
201 Public Health Services - Rural Areas	88,926,837	86,886,985	97.71
202 BAKAS	0	0	0
203 Public Health Services - Urban Areas	129,449,500	127,981,975	98.87
204 Mobile Clinic	0	0	0
BP 300 – UPGRADING OF HOSPITAL FACILITIES	369,450,593	351,842,790	95.23
BP 400 – NEW HOSPITALS	317,347,078	314,849,666	99.21
BP 500 – RESEARCH & DEVELOPMENT (R&D)	26,501,000	25,906,938	97.76
BP 600 – UPGRADING & MAINTENANCE	69,619,828	66,514,696	95.54
BP 700 – LAND ACQUISITION & MAINTENANCE	17,000,000	16,245,534	95.56
BP 800 – INFO. & COMMUNICATION TECHNOLOGY (ICT)	54,569,422	54,556,737	99.98
BP 900 – QUARTERS MAINTENANCE	32,000	31,876	99.61
BP 900 – STAFF FACILITIES	7,557,564	6,556,822	86.76
901 Quarters for Rural Areas	1,808,364	1,383,667	76.51
902 Quarters for Urban Areas	4,914,200	4,709,261	95.83
904 Office of the State Health	835,000	463,894	55.56
BP 1000 – PROMOTION	1,000,000	1,000,000	100.00
BP 1100 – EQUIPMENT & VEHICLES	194,933,978	183,579,288	94.18
BP 9400 – NKEA	0	0	0
Total	1,338,188,800	1,296,423,249	96.88

Source: Development Division, MoH

PROJECTS IMPLEMENTATION

The Development Division is responsible for the identification of programmes and projects that are to be implemented under each particular Rolling Plan for the Eleventh Malaysia Plan. For the 2nd Rolling Plan in the year 2017, the Ministry has been approved **372 projects** by the Economic Planning Unit (EPU) of the Prime Minister's Department, which comprised of 359 existing projects and 13 new projects. There are 31 physical projects and 341 non-physical projects.

The Division is responsible for vetting through the Preliminary Detailed Abstract (PDA) and As Tendered Detailed Abstract (ATDA) submissions from the Implementing Agencies, and giving the necessary approval, where relevant. The PDA is basically an estimation of the project cost based on the size and functional unit of buildings, using cost indicators of similar projects. This is to ensure that the project cost is within the budget allocations approved by EPU. Meanwhile, ADTA reflects the true cost of a project. When a project has been completed, the total project cost need to be reflected on the As Tendered Detailed Abstract (ATDA) document. If the ATDA costing exceeds the PDA cost, again EPU's approval is needed before the project account can be closed. In 2017, a total of **116 PDA and ATDA submissions** were approved out of 131 received, which is equivalent to **89 per cent** approvals.

To ensure that the implementation expenditure of a programme/project is value for money, the government has decided that all projects worth RM50 million and above must undergo a Value Management process. The implementation of Value Management (VM) serves to identify, provide options and produce components and costs that do not contribute to the value of a service, system and project without compromising the objectives and functions specified. The VM process involves all stakeholders to evaluate and find alternatives with optimum costs without compromising the objectives, functions and quality of the project. In this regard, for the year 2017, a total of **seven (7)** projects were identified to undergo the VM process as in **Table 2** below:

Table 2
The Implementation of Value Management (VM) in 2017

No	Projects	Cost (RM)
1.	<i>Naik taraf Hospital Kajang</i>	335,729,000
2.	<i>Naik taraf Jabatan Kecemasan, Hospital Kuala Lumpur</i>	46,242,000
3.	<i>Kompleks Dewan Bedah, ICU Dan Lapan Wad Tambahan</i>	198,000,000
4.	<i>Hospital Pasir Gudang, Johor</i>	500,000,000
5.	<i>Bangunan Tambahan Hospital Baling</i>	109,707,000
6.	<i>Hospital Pendang</i>	222,270,000
7.	<i>Hospital Iskandar</i>	146,644,000

Source: Development Division, MoH

With respect to Contract Management, for the physical projects that are implemented by the Engineering Services Division MoH, the Division is responsible for the issuance of the Letter of Acceptance or *Surat Setuju Terima* (SST), as well as the management of the contractual documents. In 2017, the Division had managed and issued eight **(8) SST projects** and **all the Contract documents for these projects were coordinated and signed**, as listed in **Table 3**.

Table 3
SSTs that were Issued in the Year 2017

No	Project Name
1.	<i>Menyiapkan baki kerja menaiktaraf infrastruktur dan fasiliti Hospital Kemaman</i>
2.	<i>Cadangan kerja-kerja menaiktaraf bekalan elektrik dan kerja-kerja lain yang berkaitan di Hospital Tengku Ampuan Afzan (HTAA), Kuantan, Pahang</i>
3.	<i>Cadangan pembinaan 16 unit Kuarters Kelas 'G' di Hospital Semporna, Sabah</i>
4.	<i>Naiktaraf sistem penghawa dingin Hospital Sultanah Nur Zahirah, K. Terengganu</i>
5.	<i>Naiktaraf sistem perpaipan, Hospital Tuanku Jaafar, Seremban</i>
6.	<i>Naiktaraf sistem bekalan air dan sistem elektrik, Hospital Raub</i>
7.	<i>Cadangan naiktaraf Total Parenteral Nutrition, Hospital Sultanah Aminah, Johor</i>
8.	<i>Cadangan kerja-kerja menaiktaraf sistem bekalan elektrik di Hospital Segamat, Johor</i>

Source: Development Division, MoH

The Development Division is also responsible to coordinate, manage and monitor physical projects that are implemented under the "Public-Private Partnership" (PPP) initiative, led by UKAS. In the year 2017, one (1) new project as in **Table 4** while two (2) other on-going projects as in **Table 5** below :

Table 4
New Project Implemented Under the Public Private Partnership (PPP) Initiative in 2017

Project	Method of Implementation
Upgrading of the Sarawak General Hospital (28 April 2017) Project Component: <ul style="list-style-type: none"> • New Daycare Complex, Blood Bank & Pathology Laboratory • 2 Car Park Blocks • Medihotel 	Public-Private Partnership - Built-Lease-Maintain-Transfer via the Swiss Challenge method

Source: Development Division, MoH

Table 5
On-Going Project under Public-Private Partnership Projects in 2017

No	Project	Method of Implementation
1.	Women and Child Hospital, Kuala Lumpur (14 March 2013)	Built-Lease-Maintain-Transfer (BLMT)
2.	Kompleks Institut Penyelidikan Kesihatan Bersepadu (IPKB) (29 November 2012) <ul style="list-style-type: none"> • National Institutes of Health Complex • Klinik Kesihatan Jenis 2 Bangsar • 24 units of Class C Quarters for Bahagian Pengurusan Hartanah, Prime Ministers' Department 	Land Swap

Source: Development Division, MoH

PROJECT MONITORING

Under the directive, *Arahan* No.1, 2010 issued by the Implementation and Coordination Unit of Prime Minister's Department (ICU JPM), it is mandatory that all physical projects implementation are monitored through a committee named *Jawatankuasa Tindakan Pembangunan Kementerian* (JTPK) formed at the Ministry level and chaired by the Secretary-General. The Division is Secretariat to the Committee and its members include representatives from the Ministry of Finance, the Economic Planning Unit, the Implementation Coordination Unit, the Implementing Agencies, as well as the various divisions under the Ministry of Health. It is also mandatory that the JTPK which is chaired by the Ministry's Secretary-General convene every month to discuss on projects progress, projects issues, and all other matters related to projects implementation.

An important mechanism for project monitoring that is considered effective is through project site visits. For MoH, this involves visits by the High-Level Management of the Ministry, particularly the Minister of Health, as well as by the Secretary-General (KSU) of the Ministry. It is mandated that the Minister of Health must visit at least one project per month, while the KSU must visit at least 3 projects per month, and these visits form part of the KPI's of the Minister and KSU respectively, that are diligently monitored by ICU JPM. The Division is responsible to coordinate and manage the visits by the Minister and KSU. In 2017, the minister had visited a total of 12 projects as depicted in **Table 6**, while the KSU visited a total of 26 projects nationwide, as depicted in **Table 7**.

Table 6
List of Projects Visited by YBMK In 2017

No	Project Name	Date of Visit
1.	<i>Hospital Manjung</i>	13-02-2017
2.	<i>Klinik Kesihatan Buntong, Perak</i>	13-02-2017
3.	<i>Hospital Bachok, Kelantan</i>	12-03-2017
4.	<i>Hospital Sultanah Hajjah Kalsom, Cameron Highlands</i>	15-04-2017
5.	<i>Hospital Bera</i>	18-07-2017
6.	<i>Hospital Jeli</i>	12-08-2017
7.	<i>Hospital Pulau Pinang</i>	18-08-2017
8.	<i>Hospital Port Dickson</i>	21-08-2017
9.	<i>Hospital Cyberjaya</i>	25-09-2017
10.	<i>Blok Baru Hospital Putrajaya (Endokrin)</i>	05-10-2017
11.	<i>Hospital Rembau</i>	11-12-2017
12.	<i>Hospital Slim River, Perak</i>	18-12-2017

Source: Development Division, MoH

Table 7
List of Projects Visited by Secretary-General In 2017

No	Project Name	Date of Visit
1.	<i>Institut Penyelidikan Perubatan, Wilayah Persekutuan Kuala Lumpur</i>	21-11-2017
2.	<i>Hospital Slim River</i>	14-11-2017
3.	<i>Pejabat Kesihatan Daerah Muallim, Perak</i>	14-11-2017
4.	<i>Hospital Bahagia Ulu Kinta, Perak</i>	23-10-2017
5.	<i>Hospital Raja Permaisuri Bainun Ipoh</i>	23-10-2017

No	Project Name	Date of Visit
6.	<i>Hospital Rembau</i>	12-10-2017
7.	<i>Hospital Balik Pulau</i>	10-10-2017
8.	<i>Hospital Seberang Jaya</i>	09-10-2017
9.	<i>Hospital Bukit Mertajam</i>	09-10-2017
10.	<i>Hospital Sungai Bakap</i>	09-10-2017
11.	<i>Klinik Kesihatan Bandar Baru Ayer Itam</i>	09-10-2017
12.	<i>Hospital Petra Jaya</i>	14-08-2017
13.	<i>Hospital Sri Aman</i>	14-08-2017
14.	<i>Membina Stor Farmasi Di Hospital Orang Asli, Gombak</i>	18-07-2017
15.	<i>Hospital Raub, Pahang</i>	24-05-2017
16.	<i>Klinik Kesihatan Kuala Betis Dan Cadangan Tapak PKD Stor Berpusat, Gua Musang Kelantan</i>	23-05-2017
17.	<i>Hospital Gua Musang</i>	23-05-2017
18.	<i>Klinik Kesihatan Dengan Kuarters Di Chiku 3, Gua Musang (8CE, 3DCE)</i>	23-05-2017
19.	<i>Cawangan Logistik Farmasi Negeri Sabah</i>	20-04-2017
20.	<i>KK Menggatal, Kota Kinabalu</i>	20-04-2017
21.	<i>Hospital Kapit, Sarawak</i>	18-01-2017
22.	<i>Pejabat Kesihatan Kapit</i>	18-01-2017
23.	<i>Klinik Kesihatan Kapit</i>	18-01-2017
24.	<i>Hospital Alor Gajah</i>	10-01-2017
25.	<i>Hospital Jempol (108 Katil) (Baru)</i>	10-01-2017
26.	<i>Klinik Pergigian Pakar Kuala Pilah, Negeri Sembilan</i>	10-01-2017

Source: Development Division, MoH

PROJECT COMPLETION AND HAND OVER

When a project is successfully completed, and upon issuance of the Certificate of Practical Completion (CPC) by the Implementing Agency, a Meeting On Documents Checking Before Project Hand Over is convened, involving the contractor, the consultants, the Implementing Agency, the client as well as representatives from the Engineering Services Division and the Development Division. The purpose of the meeting is to go through the checklist on the documentations that must be made available upon project hand over, and other related matters. When the checklist is successfully complied and signed off by all parties concerned, a recommendation will be made to the Secretary-General for project hand over. Subsequently, mobilisation of resources and operations of the facility will follow. In 2017, **12 physical projects were successfully completed and handed over** to MoH for utilisation and operations of the facilities. The list of projects is enclosed in **Table 8**.

Table 8
List of Projects Completed And Handed Over to MoH, 2017

No.	Project Names
1.	<i>Klinik Kesihatan (Jenis 3) Kota Damansara, Petaling Jaya</i>
2.	<i>Penggantian Bumbung Di Keseluruhan Hospital Labuan</i>
3.	<i>Klinik Kesihatan Kuala Lumpur (Sayap Baru Hospital Kuala Lumpur)</i>

No.	Project Names
4.	<i>Klinik Kesihatan (Jenis 3) Dengan Kuarters Ayer Molek, Melaka</i>
5.	<i>Penggantian 4 Buah Lift Hospital Melaka</i>
6.	<i>Klinik Kesihatan (Jenis 3) Dengan Kuarters, Kuala Sungai Baru, Alor Gajah, Melaka</i>
7.	<i>Kolej Jururawat Masyarakat Parit Raja, Batu Pahat, Johor</i>
8.	<i>Klinik Kesihatan (Jenis 3) Yong Peng, Batu Pahat, Johor</i>
9.	<i>Klinik Kesihatan (Jenis 3) Pekan Nenas, Pontian, Johor</i>
10.	<i>Klinik Kesihatan (Jenis 6) Dengan Kuarters (2F/2G) Beladin, Pusa</i>
11.	<i>Klinik Desa Dengan Kuarters, Rancangan Silabukan, Lahad Datu</i>
12.	<i>Kerja-Kerja Penggantian Bumbung Hospital Setiu, Terengganu (Fasa 2)</i>

Source: Development Division, MoH

PROJECT OUTCOME EVALUATION

ICU JPM, through its Circular Letter No.1/2012: Guidelines on the Implementation of Project Outcome Evaluation has mandated that all development projects/facilities that are completed and have begun operation between 1 to 5 years, are eligible to undergo project outcome evaluation. The objectives of the outcome evaluation process are, to evaluate the effectiveness of programs/projects to the target group; to develop corrective actions in overcoming issues relating to unachievable desired outcomes; to secure the interest of the target groups and to ensure that they are not being marginalised by the development programs; and to assist management in making balanced decisions.

Project Outcome Evaluation forms part of the KPI of the ministry's Secretary-General that is monitored by the central agencies. The Development Division is responsible to coordinate the outcome evaluation reports of projects implemented in the ministry, which are submitted from all states. In 2017, the Division received a total 10 submissions from all over the country, for participation in the outcome evaluation process as enclosed in **Table 9**.

Table 9
List of Projects for Outcome Evaluation Workshop

No	States/PTJ	Projects Proposed For Outcome Evaluation
1.	<i>JKN Selangor</i>	<i>Hospital Shah Alam</i>
2.	<i>Hospital Kuala Lumpur</i>	<i>Membina Kompleks Pakar Dan Pusat Rawatan Harian Hospital Kuala Lumpur</i>
3.	<i>NCI</i>	<i>National Cancer Institute (NCI)</i>
4.	<i>Bahagian Kawalan Penyakit</i>	<i>Komuniti Sihat Perkasa Negara (KOSPEN)</i>
5.	<i>Bahagian Pengurusan Latihan</i>	<i>Kolej Sains Bersekutu Ulu Kinta</i>
6.	<i>JKN Melaka</i>	<i>Klinik Desa Dengan Kuarters Kesang Tua, Jasin</i>
7.	<i>JKN Perak</i>	<i>Central Services Block, Hospital Taiping</i>
8.	<i>JKN Pahang</i>	<i>Bangunan Tambahan 4 Tingkat- Jabatan A&E Dan Wad Hospital Bentong</i>
9.	<i>JKN Sabah</i>	<i>Klinik Kesihatan Jenis 2, Pejabat Kesihatan Dan Kuarters Tawau</i>
10.	<i>JKWP Putrajaya & KL</i>	<i>Klinik Pergigian Bergerak Wilayah Persekutuan</i>

Source: Development Division, MoH

Out of the 10 projects, **five (5) best project outcome evaluation reports** were selected to be presented at the national level committee, *Jawatankuasa Penilaian Outcome Kebangsaan* (JKPO), chaired by ICU JPM. Members of the committee include representatives from EPU JPM, the Ministry of Finance, and the National Audit Department, among others. In the final assessment, all the five (5) project outcome evaluation reports from MoH received marks of 90.0 per cent and above, and categorised as “Significantly Exceed Target”, as depicted in **Table 10**. In terms of the overall performance among the 10 ministries, MoH **awarded first placing**, with a total marks of 93.1 per cent.

Table 10
List of 5 Projects Presented in JKPO at ICU JPM

No	Project Name	Marks (%)
1.	<i>Hospital Shah Alam</i>	95.0
2.	<i>Membina Kompleks Pakar Dan Pusat Rawatan Harian Hospital Kuala Lumpur</i>	95.8
3.	<i>National Cancer Institute (NCI)</i>	95.8
4.	<i>Komuniti Sihat Perkasa Negara (KOSPEN)</i>	93.3
5.	<i>Kolej Sains Bersekutu Ulu Kinta</i>	85.8
Overall Performance at 1st Placing		93.1

Source: Development Division, MoH

PLANNING AND LAND USE MANAGEMENT COMMITTEE

The Development Division manages land and building acquisitions according to the Land Acquisition Act 1960, the Treasury Circular Letter No.1/2003 and the revised Treasury Circular Letter No.11/2007, for the purpose of development of health facilities. The acquisition process is conducted through a Planning and Land Use Management Committee or *Jawatankuasa Pengurusan dan Pemantauan Tanah* (JPPT) chaired by the ministry’s Secretary-General. The committee members include both the Deputy Secretary-Generals, the three (3) Deputy Director-Generals, representatives from the Federal Land Commission Department and the relevant divisions in the Ministry. The Land Unit of the Development Division is the Secretariat to the Committee.

All land acquisitions throughout the whole country, for the purpose of the ministry’s health facilities development must go through the JPPT for approval. In 2017, a total of 6 JPPT meetings were convened, with a total of 91 papers were presented and discussed for considerations.



11

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 coordinates matters related to the Cabinet, acts as the focal point for the Ministry of Health (MoH) with respect to the international relations including the World Health Organization (WHO), and responsible for promoting the local healthcare industry as well as the Delivery Management Office (DMO) for the Healthcare National Key Economic Area (NKEA).

Activities are carried out by three (3) Sections of the Division, as listed below:

- i. Policy and International Relations Section;
- ii. Health Services Industry and Secretariat Section; and
- iii. Delivery Management Office, Healthcare NKEA.

ACTIVITIES AND ACHIEVEMENTS

CABINET RELATED MATTERS

In 2017, this Division prepared and coordinated 15 Cabinet Notes and 34 Memorandums for tabling at the Cabinet Meeting. This Division also provided inputs and facilitated the preparation of 78 comments on Memorandums received from other ministries as well as 41 feedbacks to decisions made by the Cabinet throughout the year 2017.

HIGH LEVEL MEETINGS WITHIN MoH

The Division also serves as the secretariat for three (3) high level meetings in the Ministry. In 2017, 29 Post-Cabinet Meetings, three (3) Mini Post-Cabinet Meetings, four (4) Management Meetings and nine (9) Special Management Meetings were held.

ORGANIZATIONAL TRANSFORMATION UNDER THE MALAYSIA HEALTH SYSTEM RESEARCH

The MoH in collaboration with the Harvard School of Public Health (Harvard Team) has entered phase two of Malaysia Health System Research (MHSR) and the Division serves as the Coordinator of the component of Organizational Transformation (OT). The main goal of OT was for collaborative learning for MoH to formulate reconstruction and organizational change in the national health system, for example in the field of finance, strategic purchasing, regulation and delivery of health care services. Also, to provide guidance in organizational change to support changes in service delivery and funding of health.

In 2017, three (3) main activity in OT to ensure the successful implementation of this study are:

- i. Engagement with Divisions/Units/Departments /Agencies under the MoH and also involving the Divisions/Units/Departments/Agencies of other Ministries to obtain input and feedback on the governance, roles and functions of each Divisions/Units/ Departments/Agencies in the current organizational structure of MoH;
- ii. Webinar Sessions to share experiences from countries that have gone through the process of health care system transformation. Webinar with Poland and Chile were held on 7 November 2017 and 20 December 2017. The next webinar session will be held with Thailand and Australia in 2018; and
- iii. Two (2) day Workshop is expected to be held in April 2018 and will involve the related Divisions/ Units/Departments/Agencies under the MoH.

AS COORDINATOR FOR 10 KEY POINTS YB MINISTER OF HEALTH

In line with the second core of the Eleventh Malaysian Plan to enhance the well-being of the people, the Ministry of Health Malaysia Strategic Plan 2016 - 2020 was created with one of its objectives

being to strengthen the delivery of health services at all levels of the disease. The main focus of this objective is to establish primary health care. In that regard, a 'fast-track' policy has been established to accelerate the achievement of the objectives which outlined 10 key points of Honourable Minister of Health. This implementation policy is based on the direction and objectives of the MoH Strategic Plan, among others, by increasing the level of health and reducing health risk factors as well as improving healthy lifestyle practices.

10 key points of Honourable Minister of Health (fast-track policy) is as follows:

1. Primary Care as Focus of NCD Agenda;
2. Transformation of ICT;
3. Promote and Support Non-Profit Organisation;
4. Develop Cluster Hospitals;
5. Establishment of Low Risk Birthing Centre (LRBC);
6. Transformation of Pre-Hospital Care (Emergency Services);
7. Reformation of Housemen's Training;
8. Career Pathway for Medical Officers;
9. Private Practice for Senior Consultants; and
10. Voluntary Health Insurance (VHI) Scheme.

The Division is responsible for coordinating the 10 Key Points of the Minister of Health by holding meetings with Departments at the Ministry, State Health Department, hospitals, private sectors and NGOs and reporting progress status of 10 items regularly to the Office of Advisor Honorable Minister of Health.

2050 NATIONAL TRANSFORMATION INITIATIVES (TN50) FOR MOH

The Division is responsible in collecting input and aspirations particularly on issues relevant to health services from all levels of society (bottom up approach). A total of eight (8) TN50 Dialogues Session by the Honorable Minister of Health, Honorable Deputy Minister of Health, the Secretary General MoH and the Director General of Health were held. Aspirations that have been earned will be accumulated towards the preparation of the blueprint/TN50 document by MoH and Special Unit TN50 from the Economic Planning Unit (EPU).

COORDINATOR AND SECRETARIAT FOR MoH CORPORATE CULTURE

MoH Corporate Culture comprises three (3) main elements which are Caring, Teamwork and Professionalism. The Division serves as the Coordinator for the Corporate Culture Working Committee, application of the Corporate Culture includes the following:

- i. Monitoring of course/training of Corporate Culture in MoH headquarters and at the State Health Department level;
- ii. Promotion and application of the Corporate Culture through posters, announcements, MoH portal and social media; and
- iii. To review the effectiveness of the program and level of Corporate Culture practice by MoH.

In 2017, total number of courses/training conducted are 1,249 which involved 47,361 participants. Besides, a total of 12 Corporate Culture posters, public address announcements through the MoH portal, and through social media.

OTHER COORDINATION AND SECRETARIAT

The Division is also responsible for coordinating input/data and feedback on the health issues raised by external agencies/private sector as well as matters related to international trade and liberalisation in the field of health. Among others:

- i. Feedback on the minutes of meetings of the Secretary General with Heads of Service, chaired by the National Chief Secretary, YBhg Tan Sri Dr Ali Hamsa;
- ii. Feedback on the minutes of meetings of the Economic Council (EC);
- iii. Feedback on proposed matter received at the UMNO General Assembly;
- iv. International trade related matters in the field of health for the Trans-Pacific Partnership Agreement (TPPA)/Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP), Negotiations on the Regional Comprehensive Economic Partnership Agreement (RCEP) and Trade Policy Review;
- v. Data on competitiveness for The World Competitiveness Yearbook (WCY) and The Global Competitiveness Report (GCR).

INTERNATIONAL RELATIONS

• WORLD HEALTH ORGANIZATION (WHO)

Throughout 2017, the Division coordinated placements of 11 WHO fellows in various institutions in Malaysia. In addition, the Division also coordinated and processed applications from 126 participants and six (6) advisors comprising Malaysian professionals to attend 68 meetings/workshops/study visits overseas under WHO sponsorship.

The Division also coordinated the participation of MoH delegation in WHO meetings:

- i. 70th World Health Assembly, 22 to 31 May 2017, Geneva, Switzerland; and
- ii. 68th Session of the WHO Regional Committee for the Western Pacific, 9 to 12 October 2017, Brisbane, Australia.

• OTHER INTERNATIONAL BODIES

In the year 2017, the Division coordinated MoH top management's participation in various meetings, amongst others, as follows:

- i. World Economic Forum Annual Meeting 2017, 17 to 19 January 2017, Davos-Klosters, Switzerland;
- ii. 86th ASEAN Coordinating Committee on Services (CCS), 30 January to 2 February 2016, Semarang, Indonesia;
- iii. The 12th Congress of Asia and Oceania Thyroid Association, 15 to 18 March 2017, Busan, Korean Republic;
- iv. 12th ASEAN Senior Officials Meeting on Health Development (SOMHD), 7th ASEAN China SOMHD and ASEAN Plus Three SOMHD, 18 to 20 April 2017, Brunei Darussalam;
- v. 29th Commonwealth Health Ministers Meeting, 21 May 2017, Geneva, Switzerland;
- vi. 2nd Global Summit on Circulatory Health, 12 to 13 July 2017, Singapore;
- vii. ASEAN-Japan Health Ministers Meeting and Policy Discussion Meeting on UHC and Population Ageing, 14 to 15 July 2017, Tokyo, Japan;
- viii. 47th World Congress Of Surgery 2017, 11 to 17 August 2017, Basel, Switzerland;
- ix. World Food Summit, 22 to 25 August 2017, Copenhagen, Denmark;
- x. 7th APEC High Level Meeting on Health and the Economy, 23 to 24 August 2017, Ho Chi Minh City, Viet Nam;
- xi. 13th ASEAN Health Ministers Meeting (AHMM), 7th ASEAN+3 Health Ministers Meeting (APTHMM) and 6th ASEAN-China Health Ministers Meeting (APCHMM) 6 to 7 September 2017, Brunei Darussalam;
- xii. 88th ASEAN Coordinating Committee on Services (CCS), 9 to 12 October 2017, Siem Reap, Cambodia;
- xiii. Honourable Minister of Health Malaysia's Working Visit to Melbourne, Australia, 12 to 14 October 2017;
- xiv. Eat Asia-Pacific Food Forum, 30 to 31 October 2017, Jakarta, Indonesia; and
- xv. Congress of Asia-Pacific Society of Thyroid Surgery, 1 to 3 November 2017, Okinawa, Japan.

LAUNCHING OF MALAYSIA-WORLD HEALTH ORGANIZATION COUNTRY COOPERATION STRATEGY (CCS) 2016 TO 2020

In collaboration with Planning Division, MoH, the Policy and International Relations Division jointly coordinated the launching of Malaysia-World Health Organization Country Cooperation Strategy (CCS) 2016 to 2020 by Honourable Datuk Seri Dr. S.Subramaniam, Minister of Health Malaysia and Dr Shin Young-soo, WHO Regional Director for the Western Pacific on 28 March 2017 in Kuala Lumpur. The CCS allowed WHO to align its collaboration with Malaysia's health needs, capacities and capabilities.

- **MEMORANDUM OF UNDERSTANDING (MoU)**

Two (2) Memorandum of Understanding (MoU) were signed in 2017:

- i. Memorandum of Cooperation between the Government of Malaysia and The Ministry of Health, Labour and Welfare of Japan in the Field of Healthcare, 15 July 2017; and
- ii. Memorandum of Understanding between the Government of Malaysia and the Government of Republic of Maldives on cooperation in the Field of Health, 20 December 2017.

- **BILATERAL TECHNICAL WORKING GROUP MEETING ON HEALTH**

- i. **The 6th Bilateral Technical Working Group Meeting between Brunei-Malaysia; 28 February to 2 March 2017**

The 6th Bilateral Technical Working Group Meeting between Brunei-Malaysia was held via video conference from 28 February to 2 March 2017. The video conference session was led by the Ministry of Health, Brunei Darussalam as the host of the meeting.

- ii. **The Bilateral Meeting between Ministry of Health Malaysia and The Philippines Department of Health; Putrajaya; 10 July 2017**

The Bilateral Meeting between Ministry of Health Malaysia and The Philippines Department of Health was held in Putrajaya on 10 July 2017. The bilateral meeting was chaired by Undersecretary of the Policy and International Relations Division.

- **WORKING VISIT/MEETING ON COOPERATION SEMINAR/FORUM**

- i. **The Pravasi Bharatiya Divas Convention; Bangalore, India; 7 to 10 January 2017**

The convention was held in Bangalore, India from 7 to 10 January 2017 and the delegation was led by Honourable Minister of Health Malaysia.

- ii. **Official Visit of YAB Prime Minister of Malaysia to India; 30 March to 4 April 2017**

Honourable Minister of Health Malaysia attended alongside YAB Prime Minister of Malaysia from 30 March to 4 April 2017.

- iii. **16th Exchange Program for Malaysia-Brunei Darussalam Public Sector Leaders; Brunei Darussalam; 12 to 14 May 2017**

The program was held in Brunei Darussalam from 12 to 14 May 2017 and was led by the Chief Secretary of the Government of Malaysia with the participation of the Secretary General of Health.

- iv. **Working Visit and Attachment by Officials from the Management Office, Ministry of Health Brunei Darussalam to Traditional and Complementary Medicine Division; Kuala Lumpur; 11 to 14 July 2017**

This working visit was for the preparation of the Management Office, Ministry of Health Brunei Darussalam to embark on the drafting of the traditional and complementary medicine practitioner registration order for Brunei Darussalam.

- v. **10th Asia Pacific Future Trends Forum; Taipei, Taiwan; 29 to 30 November 2017**

The forum was held in Taipei, Taiwan from 29 to 30 November 2017 and the delegation was led by Secretary General of Health Malaysia.

- vi. **Official Visit of YAB Prime Minister of Malaysia to Sri Lanka and Maldives; 17 to 20 December 2017**

Honourable Minister of Health Malaysia was invited to attend alongside YAB Prime Minister of Malaysia from 17 to 20 December 2017.

- **COURTESY CALL**

- i. Courtesy Call upon Honourable Deputy Minister of Health Malaysia by Dr. Sharfi Abdel Gadir, Dean of Faculty of Medicine, Omburman Islamic University, 6 January 2017;
- ii. Courtesy Call upon Honourable Minister of Health Malaysia by H.E. MoHamad Reda Benkhaldoun, Ambassador of The Kingdom of Morocco, 3 February 2017;
- iii. Courtesy Call upon Undersecretary Policy and International Relations Division by Mr. Gholamhossein Ebrahimi, Counselor/Deputy Head Mission, Embassy of the Islamic Republic of Iran, 24 February 2017;
- iv. Courtesy Call upon Secretary General of Health Malaysia by H.E. Dag Juhlin-Dannfelt Ambassador of Sweden to Malaysia, 28 February 2017;
- v. Courtesy Call upon Director General of Health Malaysia by H.E. Nicolai Ruge, Ambassador of Denmark to Malaysia, 14 March 2017;
- vi. Courtesy Call upon Honourable Deputy Minister of Health Malaysia by H.E. Kamala Shirin Lakhdhir, Ambassador of United States of America to Malaysia, 16 March 2017;
- vii. Courtesy Call upon by Secretary General of Health Malaysia by H.E. Ibete Fernandez Hernandez, Ambassador of Cuba to Malaysia, 20 March 2017;
- viii. Courtesy Call upon Honourable Deputy Minister of Health Malaysia by H.E. Dag Juhlin-Dannfelt, Ambassador of Sweden to Malaysia, 10 April 2017;
- ix. Courtesy Call upon Undersecretary Policy and International Relations Division by Mr. Daniel Lins, Minister Counsellor, Embassy of Brazil in Malaysia, 9 May 2017;
- x. Courtesy Call upon Secretary General of Health Malaysia by H.E. Peter Vincent, High Commissioner of Papua New Guinea to Malaysia, 26 May 2017;
- xi. Courtesy Call upon Undersecretary Policy and International Relations Division by Ms. Sona Ramesh, Economic Officer (Health), Embassy of United States of America in Malaysia, 8 June 2017;
- xii. Courtesy Call upon Honourable Minister of Health Malaysia by HE High Commissioner of Sri Lanka in Malaysia, 3 August 2017;
- xiii. Courtesy Call upon Honourable Minister of Health Malaysia by Profesor Dr. Colin B. Grant, Senior Vice President (International), Southampton University, 8 August 2017;
- xiv. Courtesy Call upon Undersecretary Policy and International Relations Division by Mr. Gholamhossein Ebrahimi, Counselor/ Deputy Head Mission, Embassy of the Islamic Republic of Iran, 17 August 2017;
- xv. Courtesy Call upon Honourable Deputy Minister of Health Malaysia by HE Michael Winzap, Ambassador of Switzerland in Malaysia, 18 August 2017;
- xvi. Courtesy Call upon Director General of Health Malaysia by Deputy Minister of Health Ghana, 21 September 2017;
- xvii. Courtesy Call upon Honourable Deputy Minister of Health Malaysia by President of Association of Medical Doctors of Asia (AMDA), 29 September 2017;
- xviii. Courtesy Call upon Honourable Minister of Health Malaysia by Senior Director Government Affairs, Gilead Sciences, 2 October 2017;
- xix. Courtesy Call upon Honourable Deputy Minister of Health Malaysia by National Council for Training Sudan (NCT), 27 October 2017;
- xx. Courtesy Call upon Director General of Health Malaysia by Royal College of Emergency Medicine, 30 October 2017;
- xxi. Courtesy Call upon Secretary General of Health Malaysia by H.E. Frédéric Laplanch, Ambassador of France to Malaysia, 1 November 2017; and
- xxii. Courtesy Call upon Director General of Health Malaysia by H.E. Minister of State for Health Maldives, 9 November 2017.

• **OFFICIAL VISIT/STUDY VISIT TO MINISTRY OF HEALTH MALAYSIA**

Coordination of official and study visit by foreign officials and delegates to the Ministry of Health Malaysia and the facilities under MoH. In 2017, total of 139 visitors from 5 countries were received by MoH. **Table 1** below indicates the total number of foreign officers and delegates received by MoH for year 2017.

Table 1
Total Number of Visitors from 10 Countries Received by MoH for Year 2017

No	Countries	Total Visitors/Person
1.	China	43
2.	Indonesia	53
3.	Kenya	24
4.	Philippines	17
5.	United Kingdom	2
Total		139

Source: Policy and International Relations Division, MoH

• **COORDINATION OF ELECTIVE POSTINGS FOR OVERSEAS MEDICAL STUDENTS TO HEALTH FACILITIES UNDER MoH**

In 2017, 109 applications from overseas medical students for medical elective postings to health facilities under MoH for year 2017/2018 were coordinated. **Table 2** shows the details of the applications.

Table 2
Total Applications for Elective Postings of Overseas Medical Students to Health Facilities under MoH for Year 2017/2018

No	Institutions	Total of Application
1.	United Kingdom	
	- University of Liverpool	3
	- University of Manchester	21
	- University of Nottingham	2
	- University of Southampton	7
	- University College London	15
	- University of Oxford	8
	- University of Leicester	4
	- University of Bristol	3
	- University of Birmingham	15
	- University of Sheffield	2
	- Keele university School of Medical	12
	- Brighton and Sussex Medical School	6
	- Barts and The London School of Medicine and Dentistry	7
	- St George's University of London	2
2.	Belgium	1
	- University Catholique De Lourain	
3.	Australia	1
	- University of Sydney	
Total		109

Source: Policy and International Relations Division, MoH

PHARMACEUTICAL

• OFF-TAKE AGREEMENT (OTA)

The Off-Take Agreement (OTA) is one of the Government's initiatives to help local manufacturers in developing a vibrant pharmaceutical and medical devices industry in Malaysia. The programme is to provide additional incentive for local manufacturing of new pharmaceutical and medical devices products for exports and to encourage new investments. The Policy and International Relations Division acts as a focal point in coordinating OTA application from pharmaceutical companies with Entry Point Project (EPP) status.

For 2017, OTA contract agreement with Kotra Pharma (M) Sdn. Bhd. for products Pantoprazole 40mg Injection and Omeprazole 40mg Injection was sealed.

• EXPORT GROWTH OF PHARMACEUTICAL PRODUCTS

This Division has been entrusted to monitor the export growth of pharmaceutical products. Target is set based on global pharmaceutical industry growth forecasts of between 8 percent to 10 percent annually.

2017 (KPI Under Secretary, DHA)

Target 2017 : RM796,294,209.00 (8 percent growth compared to 2016)

Achieved 2017 : RM938,499,217.00 (117.86 percent)

• PROJECT TOUCH POINT CRITICAL HEALTH INTERVENTION FOR PEOPLE, MINISTRY OF HEALTH MALAYSIA UNDER CABINET AWAY DAY 2017

The Policy and International Relations Division coordinated four (4) Touch Point projects as follows:

- i. Dentures For The Elderly Project;
- ii. Cataract Surgery Project;
- iii. Audiometry Screening Project; and
- iv. Diabetes Retinopathy Screening Project.

ORGANISING INTERNATIONAL SOURCING PROGRAM (INSP) 2017

MoH and Malaysia External Trade Development Corporation (MATRADE) jointly organised International Sourcing Program (INSP) 2017 from 24 to 27 July 2017 at the Kuala Lumpur Convention Centre. This program was organised in conjunction with the Association of Private Hospitals of Malaysia (APHM) International Healthcare Conference and Exhibition 2017 (AIHCE).

The main objective of organising INSP is to boost the potential of local medical device and pharmaceutical companies and products in international market. INSP also serves as a platform to convene international and local companies in establishing strategic collaboration, hence assisting local companies to build network with international companies. As such, it is prominent to note that INSP plays a vital role in supporting the efforts to encourage the promotion and growth of exports of medical device and pharmaceutical industry in Malaysia as a whole. The main INSP's program is One-to-One Business Meeting between local and international companies.

In 2017, there is an increase in participation from countries and companies, as compared to previous years. INSP 2017 recorded participation from a total of 26 international companies from 12 countries including India, Myanmar, Philippines, Vietnam, Chile, United Arab Emirates, Mauritius, Poland, Kazakhstan, Cambodia, Pakistan and South Korea. About 80 local companies were in attendance in one to one business meetings session. Throughout the event, it recorded a total of 493 business meetings. Trade deals worth an estimated USD103.39 million for gloves, medical disposables, pharmaceuticals, antiseptics and disinfectants were concluded and the biggest contributors were from three companies India, Philippines and Vietnam.

Overall, the INSP participants conveyed a good response towards INSP 2017. They were in view that this program is a good platform to promote their products and services. Moreover, they stated their confidence to deal with the attending local companies due to the credibility as well as variety of products and services offered by them.

Image 1
International Sourcing Program 2017 Gallery



*25th APHM International Health Conference And Exhibition Opening Ceremony
Officiated by The Honourable Minister Of Health on 25th July 2017*



INSP 2017 Participants



MoH's Exhibition Booth



APHM International Healthcare Conference And Exhibition 2017 Booths



One-to-One Business Meeting



Local Companies Waiting For Their Business Meeting Session



Secretariat for INSP 2017; From MoH And MATRADE

Source: Policy and International Relations Division, MoH

COORDINATION OF MEETINGS FOR MoH SPECIAL MANAGEMENT AND MoH MANAGEMENT

These meetings pave the way for the flow of information from top to bottom. It is a platform to discuss on the latest crucial matters pertaining to the ministry and a session to update the work progress of each division within the ministry. These meetings are specially arranged every fortnight with the top management team of the ministry to sit together and discuss on constructive ideas for the betterment of the organization. **Table 3** is the number of meetings held for the year 2017.

Table 3
Number of The Meetings Held for the Year 2017

Meetings	2017
Special Management	14
MoH Management	3

Source: Policy and International Relations Division, MoH

COORDINATE AND PREPARE MINISTRY OF HEALTH CALENDAR

The Division takes the pleasure in compiling the events for the entire year which are related to participation and officiating events by the top members of the ministry namely the Minister, Secretary General and Director General. The planner functions as a guide book in systematically arranging events and meetings throughout the year to ease preparatory process of an event.

HEALTHCARE NKEA

• HEALTHCARE NKEA STEERING COMMITTEE MEETING

The Division through the Delivery Management Office (DMO) and PEMANDU/CSDU continued to closely monitor the progress of implementation of Entry Point Projects (EPPs) through a total of two Healthcare NKEA Steering Committee Meetings conducted in 2017. Apart from solving issues related to the implementation of projects, the committee also discussed and endorsed new projects.

• THE LIST OF PROJECTS FOR 2017:

- Passover process from PEMANDU to CSDU/DMO as PEMANDU ends on March 2019;
- NPRA and MDA - to improve application processes and approval times for licences;
- CCM - To proceed with EPP application process;
- MHTC - to defer Malaysian Year of Health and Wellness (MYHW) from 2018 to 2020;
- Focus Group Medical Devices (FGMD) - Medical Device Export's to be placed under MATRADE as MDA (MoH) is a regulatory and licencing authority;
- MDA – MyBioScience Lab will achieve OECD status by 2017;
- PAHFAS - Tabled to Parliament in November 2017 and will proceed with the Drafting of Regulations thereafter;
- UMHM (University Malaya Health Metropolis) - CSDU will be set up and will lead a Focus Group comprising of UMH (University Malaya Holdings), EPU, UKAS, MOHE and MoH; and
- CRM/Haematogenic Labs - to facilitate the setting up as well as import/export of tissue samples for research purposes.

CONCLUSION

Throughout 2017, 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.



12

INTERNAL AUDIT

INTRODUCTION

The sustainability of excellent financial management and an effective delivery service system depends significantly on the personnel that are involved in the financial management system. The existence and establishment of Internal Audit through internal auditing activities enabled management to improve on their financial management performances and the implementation of their planned programmes/activities by using optimum resources.

ACTIVITIES AND ACHIEVEMENTS

In line with the entrusted position of internal audit as stipulated in Treasury Circular 1 *Pekeliling Perbendaharaan Malaysia* (1PP) PS 3.1 and PS 3.2 to primarily provide assurance on internal controls; compliance to statutory laws, regulations and directives; and consulting services to mitigate risks, the Internal Audit Division (IAD) has carried out financial management audits at selected Responsibility Centres (RCs) and rated them accordingly to determine whether assets, liabilities, revenue and expenditure have been managed accordingly. 63 per cent of the selected RCs audited were rated 5 star (excellent) whilst 28 per cent and 9 per cent were rated 4 star (good) and 3 star (satisfactory) respectively.

Besides financial management audits, IAD has carried out another performance audits on selected programmes/activities to evaluate whether the programmes/activities were implemented according to rules and regulations and achieved their purposes. A total of 12 performance audits were carried out and seven (7) of them were related to procurement as this formed the most potential risk area that can be exposed to mismanagement. Material issues raised from IAD's audits were tabled at the quarterly Audit Committee meetings chaired by the Secretary General of Ministry of Health (MOH). Issues raised have been addressed and resolved by the relevant parties concerned. Corrective and preventive measures have been put in place to strengthen internal controls and where appropriate, issues that were related to mismanagement were subsequently followed up by the Integrity Unit; and punitive actions taken against those concerned.

SUMMARY

With the support of various levels of management in MoH and the RCs visited, IAD has succeeded in carrying out its roles and responsibilities as entrusted in 1PP. All efforts undertaken by every individual in MoH to rectify and improve shortcomings in processes and procedures; and upheld governance has helped to strengthen the public service delivery system in the healthcare sector.



13

HEALTH LEGISLATION

INTRODUCTION

The Legal Advisor's Office ("Office") of the Ministry of Health ("Ministry") is responsible for, among others, the following:

- i. providing legal advice to the divisions, departments, agencies and institutions under the Ministry including legal advices relating to Cabinet Papers, Standard Operating Procedures, Guidelines, Directives and Circulars;
- ii. drafting of Bills, amendment Bills as well as subsidiary legislation relating to the Ministry of Health in accordance with the policies of the Ministry;
- iii. vetting and approving legal documents including agreements, memoranda of understanding as well as international legal instruments on behalf of the Ministry;
- iv. attending meetings discussing legal as well as administrative issues relating to the Ministry;
- v. prosecution of offences committed under the Private Healthcare Facilities and Services Act 1998 [Act 586]; and
- vi. handling of civil cases where the Ministry represents the Government as the plaintiff and coordinating the handling of civil cases by the Attorney General's Chambers where the Government is the defendant.

ACTIVITIES AND ACHIEVEMENTS

The total and scope of work handled by the Office is subject to requests made by the Ministry as well as the departments and agencies under its purview. In 2017, the Office had attended 927 meetings; vetted 1,248 legal documents, prepared 912 legal advice and drafted 31 Bills, amendment Bills as well as subsidiary legislation. The Office had also prosecuted offences committed under the Act 586 including cases involving bogus dentists, unregistered private health facilities as well as unlicensed private hospitals.

The Office played an important role in ensuring the success of the implementation of various new Ministry policies in the form of enactment of legislation such as the enactment of the Private Aged Healthcare Facilities and Services Act 2018 [Act 802] which was passed by the Parliament in 2017 through the Private Aged Healthcare Facilities and Services Bill 2017. The Act, which has yet to come into force, intends to provide for the regulation of private aged healthcare facilities and services for the aged including its related matters. The Office is also involved in the drafting of the Dental Bill 2017 which had been tabled at the House of Representatives for its first reading in 2017. In addition, the Office had also been involved in the amendment of the Dangerous Drugs Act 1952 [Act 234] to provide for an alternative sentence for the offence of drug trafficking should the accused be convicted of the offence and fulfilled the requirement of such sentence.

WAY FORWARD

The Office is in the midst of drafting the amendment Bill to the Sale of Drugs Act 1952 [Act 368] & Poisons Act 1952 [Act 366]; and a new Bill to consolidate the Nurses Act 1950 [Act 14] and the Midwives Act 1966 [Act 436]; whereas a new Bill to establish a statutory body relating to food safety had been submitted to the Attorney General's Chambers for approval. At the same time, the Office is handling 185 civil litigation files and prosecuting 30 cases for offences committed under Act 586.



14

CORPORATE COMMUNICATIONS UNIT

INTRODUCTION

Corporate Communications Unit of MoH is set up with the objective of enhancing the image of the ministry, promoting the policies and programs of the ministry through an organized and effective public relations strategy. In addition, Corporate Communications Unit acts as the frontline in managing customer service and public complaints. This unit is divided into five (5) sections:

1. Complaint Management Section
2. Corporate Affairs Section
3. Media Section
4. Strategic Communications Section
5. Administration Section

FUNCTIONS OF CORPORATE COMMUNICATIONS UNIT

- To act as a catalyst for MoH's corporate image by being an observer, listener and communicator of customer & corporate information to MoH's Top Management.
- As the communications and media relations manager and the ministry's frontline regulator, Corporate Communications Unit is directly responsible to the Secretary General of the Ministry of Health Malaysia with the following key functions :

1. COMPLAINT MANAGEMENT SECTION

- Acts as MoH's focal point in the delivery of services and relations with MoH clients.
- Planning and implementing MoH service delivery strategies and handling of MoH clients. Managing and controlling the daily operations of the Customer Service (PKP) Counter.
- Managing and coordinating complaints, inquiries and suggestions received by MoH through 1MOCC, mail, email, telephone, fax and social media.
- Monitoring and managing feedback on current MoH related issues.

2. CORPORATE AFFAIRS SECTION

- Acts as MoH's focal point in the delivery and dissemination of information at the ministry, national and global levels;
- Planning and implementing corporate image empowering strategies;
- To plan and implement the MoH public relations program; and
- Coordinate the preparation of briefing, logistics and tour arrangements for MoH guests from home and abroad.
- Planning, managing and documenting information materials for each policy, role, program and activity, as well as MoH official functions through publication of printed materials such as newsletters, annual reports, brochures, articles; photo/video footage for circulation and reference purposes by the public and media;
- Coordinating and documenting speech texts of Minister of Health, Deputy Minister of Health & Secretary General of Health and Director General of Health.
- Planning and implementing the MoH Customer Satisfaction Survey on a yearly basis.

3. MEDIA SECTION

- Planning and implementing media plans on publicity, promotion and campaigns for each policy, role, program and activity as well as official MoH programs through TV and radio stations; promotional

items such as suspenders (bunting), banners and billboards; articles for press insertion; speech text; and MoH services information delivery program;

- Managing public and media relations by planning media strategies in disseminating information through media coverage/press conferences, press releases, media releases and special TV/radio/press interviews, as well as programs with media; and
- Delivering information regarding the facts and situations that are relevant to the MoH.

4. STRATEGIC COMMUNICATIONS SECTION

- Coordinating post master input on the official portal of MoH.
- Managing the MoH's social media accounts by ensuring that the contents are constantly updated with MoH programs/activities and current issues related to health services.

ACTIVITIES AND ACHIEVEMENTS

1. COMPLAINT MANAGEMENT SECTION

The Ministry of Health Malaysia (MoH) has received a total number of 7605 complaints in 2017 with the categories listed as in **Table 1**:

Table 1
Number of Complaints received by Categories in Year 2017

No	Complaints Category	Duration of Complaint Completion	Total Amount
1.	Simple	5 Working Days	324
2.	Moderate	15 Working Days	5,570
3.	Complex	>16 – 365 Days	1,711
Total			7,605

Source : Complaint Management Section, UKK

Overall, MoH has achieved 96 per cent settlement of total complaints received. As for the simple and moderate categories, a total of 5073 (85.4 per cent) have been resolved as per stated in MoH charter (**Table 2**):

Table 2
Number of accepted and settled Complaints In 2017

No	Complaints Category	Accepted	Settled	Completed 15 Days
1.	Simple	324	324	324
2.	Moderate	5,570	5,532	4,436
3.	Complex	1,711	1,452	-
Total		7,605	7,308 (96%)	4,760

Source : Complaint Management Section, UKK

MoH also analyzed the complaints in accordance with the 14 categories of complaints from the Public Complaints Management System (SiSPAA) as shown in **Table 3** below:

Table 3
Percentage of Complaints by Issue Category In 2017

No	Issue Category	Percentage (100%)
1.	Unsatisfactory Quality Of Services Including Over The Counter & Telephone	24.4
2.	Food Safety And Quality	19.1
3.	Failure Of Communication	7.4
4.	Misconduct Of Civil Servants	3.9
5.	Delay Or No Action	6.1
6.	Failure To Adhere To Set Procedures	7.6
7.	Failure Of Enforcement	3.9
8.	Unfair Action	1.2
9.	Lack Of Public Amenities	4.3
10.	Abuse Of Power	0.7
11.	Inadequacies Of Policy Implementation And Law	0.2
12.	Safety	0.8
13.	Miscellaneous Complaints	8.7
14.	Others	11.7

Source : Complaint Management Section, UKK

Aside from complaints, the Complaint Management Section also manages other feedback received via email (pro.kkm@moh.gov.my) and Public Complaints Management System (SiSPAA) as shown in **Table 4** below:

Table 4
Number of Feedback Received (aside from Complaints) Year 2017

No	Feedback	Total
1.	Question	1,800
2.	Appreciation	2,500
3.	Proposal	650
4.	Application	441

Source : Complaint Management Section, UKK

MoH always ensures systematic management and monitoring of complaints. The MoH Complaint Management Committee (JKPA) chaired by the Deputy Secretary General (Management) was one of the monitoring methods. In 2017, this committee had held three (3) meetings on **23 May, 26 September and 28 December 2017**. The members of the Committee comprise of:

- i. Division Secretary / Division Director at MoH Headquarters
- ii. Directors of State Health Departments
- iii. Institutional Directors
- iv. Director of Hospital Kuala Lumpur

2. CORPORATE SECTION

The Ministry Of Health Malaysia (MoH) has attended *Ekspresi Negaraku* Program for a total of nine (9) times (**Table 5**):

Table 5
***Ekspresi Negaraku* Program**

No	Activity	Date
1.	<i>Ekspresi Negaraku</i> Program in Putrajaya was launched by the Prime Minister, YAB Dato' Sri Najib Abdul Razak.	18 March 2017
2.	<i>Ekspresi Negaraku</i> Program in Kuala Kangsar, Perak was launched by Deputy Prime Minister, YAB Dato' Seri Dr. Ahmad Zahid bin Hamidi.	15 April 2017
3.	<i>Ekspresi Negaraku</i> Program in Sungai Petani, Kedah was launched by Secretary General, YAB Tan Sri Dr. Ali Hamsa.	18 April 2017
4.	<i>Ekspresi Negaraku</i> Program in Sandakan, Sabah was launched by the Prime Minister, YAB Dato' Sri Najib Abdul Razak.	7 May 2017
5.	<i>Ekspresi Negaraku</i> Program in Pasir Puteh, Kelantan was launched by Deputy Prime Minister, YAB Dato' Seri Dr Ahmad Zahid Hamidi.	14 May 2017
6.	<i>Ekspresi Negaraku</i> Program in Padang Dataran Pahlawan, Melaka.	15 July 2017
7.	<i>Ekspresi Negaraku</i> Program in Dataran Seri Kemang, Port Dickson was launched by Menteri Besar Negeri Sembilan, YAB Dato' Seri Utama Haji Mohamad Bin Haji Hasan.	24 September 2017
8.	<i>Ekspresi Negaraku</i> Program in Dataran Dewan Merdeka Dungun, Terengganu was launched by Menteri Besar of Negeri Sembilan, YAB Dato' Seri Haji Ahmad Razif Bin Abd. Rahman	14 October 2017
9.	<i>Ekspresi Negaraku</i> Program in Dataran Perayaan, Jalan Stadium, Petra Jaya, Kuching was launched by Minister of Sarawak, Yab Datuk Patinggi Dr. Abang Haji Abdul Rahman Zohari Bin Tun Abang Haji Openg.	5 November 2017

Source : Corporate Affairs Section, UKK

Image 1
***Ekspresi Negaraku* Program 2017**



Source : Corporate Affairs Section, UKK

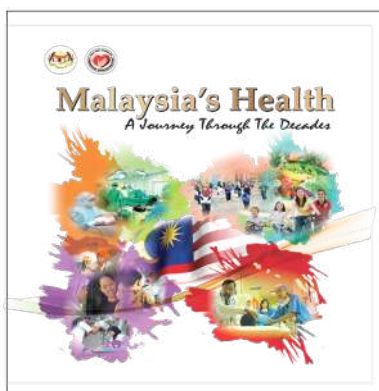
The *Negaraku* Initiative aims to raise the positive spirit of the public and raise the people's awareness of all government initiatives that have helped the public. Primary objective is to reduce negativity and unite all positive initiatives under one major theme. *Ekspresi Negaraku* Program is one of the interactive activities with the goal of cultivate the spirit of patriotism, pride, love and inspiration to the people. It provides a platform to highlight the success stories of an individual, communities and organizations that have created a name for Malaysia.

Ministry of Health (MoH) has successfully published its first Corporate Book "Malaysia's Health: A Journey through the Decades". The MoH Corporate Book is purely an internal creation by MoH's staff, from creation of the framework, content, inputs, writing, photos and design of the corporate book.

The purpose of publication of the MoH Corporate Book:

- i. An official documentation of health services in Malaysia,
- ii. A source of reference for civil servants and for the public,
- iii. A souvenir to a delegate from other country or official visit abroad,
- iv. To promote the Ministry of Health Malaysia to the world, and
- v. As a souvenir to MoH's retirees

Image 2
Malaysia's Health: A Journey through the Decades



Source : Corporate Affairs Section, UKK

3. MEDIA SECTION

The following is a list of achievements and activities of the Mass Media Section throughout 2017.

Table 6
Achievement of Mass Media Section, 2017

No	Activity	Target	Achievement
1.	Visits to Media Agency	2 media visits	ASTRO Bernama
2.	YBMK's <i>Majlis Berbuka Puasa</i> with Media	1 Majlis Berbuka Puasa	Hotel Seri Pacific
3.	Public Relations Seminar	2 PRO Seminars	Johor & Langkawi
4.	Participated in the official visit of Minister/Deputy Minister/Secretary General of Health/Director General of Health.	12 visits	24 visits

No	Activity	Target	Achievement
5.	Information Dissemination: 1) Talkshow TV 2) Radio Talk	60 slots 30 slots	100 slots 50 slots
6.	Preparing a media plan for the official MoH program	6 media plans	8 media plans
7.	Technical Advisor and coordinate the media management for the MoH program 1.Note to Authors 2.Media Release Circulation	60 NE 80 PS	150 NE 120 PS
8.	News monitoring analysis report	12 newspapers : daily	12 newspapers : 260 days

Source : Mass Media Section, UKK

Media visit to New Straits Times Press (NSTP) in Kuala Lumpur on 14 January 2017 and participated was YB Datuk Seri Dr. S.Subramaniam, Minister of Health Malaysia and YBhg. Dato 'Seri Dr. Chen Chaw Min, Secretary General of Health Malaysia.

Image 3
Media Visit to NSTP



Source : Mass Media Section, UKK

DYMM Paduka Seri Sultan Perak, Sultan Nazrin Muizzuddin Shah officiated the Klinik Kesihatan Lenggong built at a total cost of RM 32.4 million on 27 April 2017. This health clinic is able to serve health service for local residents efficiently.

Image 4
Opening Ceremony for Klinik Kesihatan Lenggong, Perak



Source : Mass Media Section, UKK

Prime Minister Datuk Seri Najib Razak officiated the Hospital Jeli's additional building, involving a cost of RM57 million on 12 August 2017

Image 5
Opening Ceremony for New Building Hospital Jeli, Kelantan



Source : Mass Media Section, UKK

The Closing Ceremony for Komuniti Sihat Pembina Negara (KOSPEN) convention was officiated by YB Datuk Seri Dr. S.Subramaniam, Minister of Health, Malaysia on 10 September 2017 at Malaysia Agro Exposition Park Serdang (MAEPS), Selangor.

Image 6
Closing Ceremony KOSPEN Convention, Selangor



Source : Mass Media Section, UKK

4. STRATEGIC COMMUNICATIONS SECTION

Strategic Communications Section has prepared and streamlined the contents/update of the materials in MoH Portal by categories (**Table 7**):

Table 7
Achievements of Official Portal of MoH

No	Type of Material	Target	Achievement
1.	Media statements	24	30
2.	Newspaper cuttings	1,200	1,200
3.	E-bulletins	12	12
4.	Speech texts	12	12
5.	E-banners	24	30

Source : Strategic Communications Section, UKK

Strategic Communications Section has prepared and aligned the contents/update of the material on official MoH social media sites (Facebook, Twitter, Instagram & Youtube) by categories (**Table 8**):

Table 8
Achievement of the Official Social Media Sites of MoH

No	Type of Material	Target	Achievement
1.	Press Statements	24	30
2.	Paper Cuttings	720	750
3.	E-banners	24	30
4.	Videos	48	50
5.	Photos	1,920	2,000
6.	Infographics	24	36
7.	Online News	36	50
8.	Health Info	180	200
9.	<i>Hebahan</i>	60	60

Source : Strategic Communications Section, UKK

Strategic Communications Section has monitored the target audience in the MoH social media sites by categories such as **Table 9**:

Table 9
Achievement of the target audience in Official Social Media Sites of MoH

No	Social Media Sites	Target	Achievement
1.	Facebook	800,000 Likes	850,000 Likes
2.	Twitter	5,000 Followers	22,000 Followers
3.	Instagram	5,000 Followers	80,000 Followers

Source : Strategic Communications Section, UKK

YBhg. Datuk Dr. Noor Hisham Abdullah, Director General of Health attended the Seminar for Social Media Health Engagement. Also present were Puan Sherene Azli, CEO of Malaysia Healthcare Travel Council (MHTC) and Puan Yamuna Perimalu, Head of Corporate Communication Unit. This seminar was held as a platform to share views regarding the usage of social media in handling health crisis and also research cases on how MoH managed the previous cases such as vape, flood in Kelantan and fire accident in Sultanah Aminah Hospital. Social media plays a vital role delivering current health information to the public and this will gain their trust on how MoH handles a particular health issue.

Image 7
Social Media Health Engagement Seminar, 2017



Source : Strategic Communications Section, UKK

CONCLUSION

Corporate Communications Unit has successfully established a strategic partnership with all stakeholders. In this regard, we will continue to strive and to achieve excellence in fulfilling our obligations and to comply with the trust provided.



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MALAYSIA HEALTHCARE
TRAVEL COUNCIL

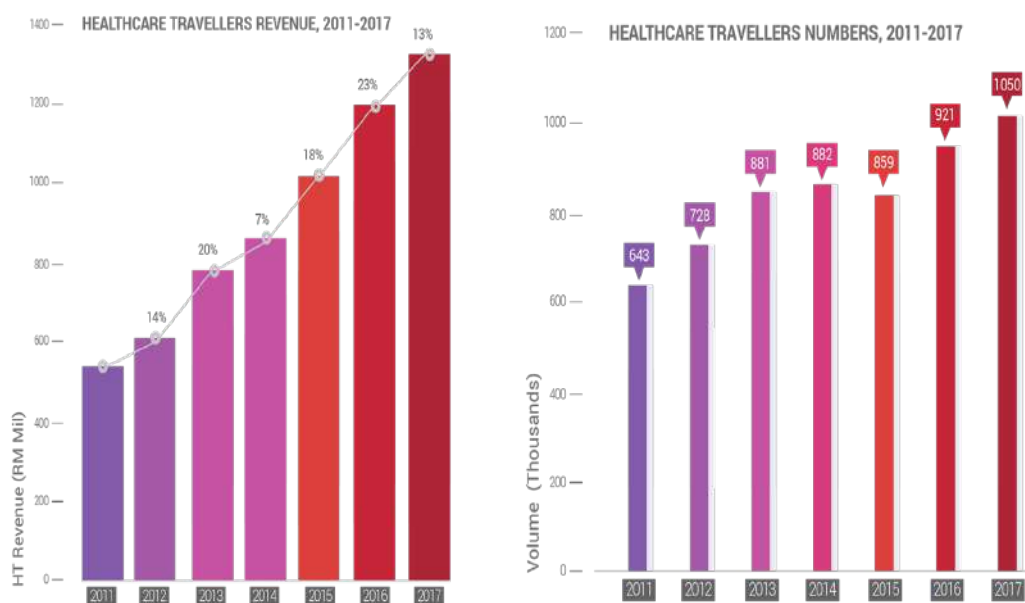
MALAYSIA HEALTHCARE TRAVEL COUNCIL (MHTC)

INTRODUCTION

The government of Malaysia has identified healthcare travel as one of the contributing sectors to boost the country's economic growth. Malaysia Healthcare has successfully raised its position as a global healthcare travel destination over the last few years thanks to the delivery of world-class quality healthcare services offered with relative affordability. Malaysia's healthcare system is closely monitored by the Ministry of Health Malaysia (MoH) to regulate all aspects of healthcare including patient safety.

The promotional efforts by Malaysia Healthcare Travel Council (MHTC), an agency under the purview of MoH, has proven fruitful through the favourable growth of the healthcare travel industry and various international recognitions received. The Malaysia healthcare travel industry is growing at an average rate between 16-17 per cent every year in the last six years. Malaysia is among the most popular healthcare travel destinations in Asia, attracting 1,050,000 healthcare travellers in 2017 compared to 643,000 in 2011. The revenues are RM1.3 billion and RM527.3 million respectively.

Figure 1
Healthcare Traveller Industry Performance, 2011 to 2017



Source: Malaysia Healthcare Travel Council (MHTC)

MALAYSIA HEALTHCARE AWARDS AND ACHIEVEMENTS

The healthcare travel industry has contributed greatly to the country's economy, especially when considering the multiplier effect. Based on the government's set target, by 2020, it is expected that a total of RM2.8 billion of revenue will be generated through the healthcare travel industry. By taking into consideration the impact of the multiplier effect, the conservative calculation of the healthcare travel industry's overall contribution to the economy is estimated to reach RM10 billion by 2020.

“Malaysia Healthcare” is also globally known as the three-time winner of the “Medical Travel Destination of the Year” (2015 to 2017) by International Medical Travel Journal (IMTJ) United Kingdom. Malaysia has also been acknowledged as the ‘Best Country in the World for Healthcare’ by US-based International Living’s Annual Global Retirement Index from 2015 to 2017. These recognitions acknowledge the efforts invested into promoting Malaysia as a leading global destination that provides world-class quality, accessible healthcare services at affordable prices.

Image 1

Malaysia Healthcare scores a hatrick by winning the “Health and Medical Tourism: Destination of the Year Award” at the International Medical Travel Journal Awards 2017 in Croatia.



(L – R): HE Ambassador of Malaysia to Croatia En. Mohd Hassan bin Bal, CEO of Malaysia Healthcare Travel Council Pn. Sherene Azli and Chief Editor of IMTJ Mr. Keith Pollard

Source: Malaysia Healthcare Travel Council (MHTC)

MHTC was also recognised as IMTJ’s Medical Travel Cluster of the Year in 2017. This speaks volumes of MHTC in carrying out the mandate as the promoting and facilitating agency of the healthcare travel industry. Renowned private hospitals in Malaysia have also won a number of prestigious international healthcare travel industry awards.

MHTC has identified four (4) major focus countries for healthcare travel, namely China, Indonesia, Myanmar, and Vietnam as part of its aggressive yet effective marketing strategies. At the same time, MHTC continues to penetrate other markets such as India, Bangladesh, Brunei, Middle East, Singapore, and Australia. Strategic and focussed marketing campaigns have been implemented to attract high value customers by offering them specialised niche healthcare services to increase the average income generated from each healthcare traveller.

Image 2
Malaysia Healthcare Awards and Accolades 2017



Source: Malaysia Healthcare Travel Council (MHTC)

In addition to this, MHTC has established representative offices abroad in Jakarta (Indonesia), Ho Chi Minh City (Vietnam), and Yangon (Myanmar). MHTC also collaborates with healthcare representatives in China, India and Bangladesh to gain faster access to our core markets. This initiative is implemented to facilitate access to healthcare providers to obtain information on treatment deals in Malaysia, to help travel management and other matters involving patient care. MHTC also conducts global marketing campaigns and strategic promotions through collaborations with hospitals, Tourism Malaysia, Malaysian embassies and selected industry partners. This move is aimed at increasing awareness of MHTC's services.

To increase global awareness of Malaysia Healthcare brand, MHTC continued its social media campaign "Malaysia Loves You" (MLY) which conveys the essence of Malaysia Healthcare. Themed "Experience Malaysia Healthcare, Embrace Malaysian Hospitality", MLY was continued in 2017 with the "Share My Love" campaign to continue bringing the MLY message that Malaysia loves you. This campaign invites people from Malaysia and abroad, to come and experience the healthcare and hospitality in Malaysia. Aside from this, MHTC organised insigHT 2017, a medical travel market intelligence conference which encouraged knowledge-sharing among industry stakeholders on various concerns and opportunities within the healthcare travel industry. Also, MHTC gave a breath of new life to Malaysia Healthcare's commercial website, www.medicaltourismmalaysia.com.

Image 3

Themed "Malaysia Healthcare: Going Beyond", insigHT 2017 was officiated by the Honourable Minister of Health Malaysia, Datuk Seri Dr. S. Subramaniam and joined by top representatives from both the public and private sectors.



(L – R: Ms. Rhenu Buller, Partner and SVP Healthcare, Frost & Sullivan; Dato' Dr. Jacob Thomas, President, Association of Private Hospitals of Malaysia (APHM); YB Datuk Seri Dr. S. Subramaniam, Minister of Health Malaysia; Ms. Sherene Azli, CEO Malaysia Healthcare Travel Council (MHTC); Mr. Keith Pollard, Chief Editor of International Medical Travel Journal (IMTJ); Mr. Stanley Lam, CEO of Mahkota Medical Centre; Dr. Anwar Anis, Project Consultant TEHealthcare Asia; and Mr. Varun Panjwani, Chief Executive Officer, Global Health and Travel)

Source: Malaysia Healthcare Travel Council (MHTC)

WAY FORWARD

For future development, MHTC will continue to promote Malaysia's healthcare travel services for these features: world-class quality, accessibility, and affordability. In the near future, MHTC aims to elevate Malaysia's profile as a renowned healthcare service hub in Asia, particularly in the fields of fertility and cardiology. In addition, MHTC will continue to implement initiatives to: -

- Deliver a seamless end-to-end healthcare travel experience for healthcare traveller's peace of mind
- Promote more cohesive industry development
- Establish value-added collaborations within and outside the country
- Ensure the sustainability of the industry

