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Executive Summary

Mental health disorders is a great public health concern through out the world. It became an integral part of SDG agenda to transform the world by 2030. In Malaysia, mental disorders estimated to be responsible for about 8.6% of total DALYs. National Health Morbidity Survey in 2015 reported the prevalence of mental health problem among adult and children were 29.2% and 12.1% respectively. The prevalence of suicidal attempt was apparently increasing.

We conducted a situational analysis of mental healthcare in Malaysia for 2015-2016 using unpublished psychiatric survey data, Health Informatics Centre, Ministry of Health Malaysia and some other relevant sources, aimed to assess the performance of mental healthcare.

The main findings were that the density of psychiatrist is still low however the mental health care is successfully integrated into other hospitals, primary health care and community based psychiatric care, thus decentralized from the institutional hospitalization. There were mental health policies and guidelines available although the policy is due for revision.

We compare certain indicators with those published by OECD countries. Generally, there were a need to explore further the reasons for discrepancies in comparison with some OECD countries.

We identified several areas which need to be given attention for remedial actions; there were high prevalence of mental disorders, substance abuse and suicidality. In addition, the prevalence of exercising as an indication of healthy life style was very low. The density of psychiatrist and counsellors are still low. There is a need to review and verify the reason for high ALOS.

We recommend a surveillance system of mental health problems such as a registry to be established, in addition to the inclusion in Malaysia's BOD study and NHMS using the same definition over the years to observe the trends. MOs are encouraged to take up the postgraduate course in psychiatry in order to fill the shortage of psychiatrist. The number of counsellors and paramedics also need to be planned to meet the future demand. The campaign of healthy life style and stress management should be stepped up.

The long term recommendation is to establish a mental health institution which oversee the whole spectrum of mental healthcare and services.

Malaysia's Mental Healthcare Scorecard

Key:

- : On track
- : Further scrutiny needed
- : Requires immediate attention or action remedial action
- : More data and analysis required

Dimension 1 : Achieving better mental health status.

	Indicators	2014	2015	Change	National target	Assessment
1.1	Prevalence of mental health problem for child 5-15 years old (NHMS 2015).		12.1%			●
1.2	Prevalence of mental health problem for adult (\geq 16 years old) (NHMS2015).		29.2%			●
1.3	Prevalence of mental health problem for geriatric age 60 years and above (NHMS2015).		24.0%			●
1.4	Prevalence of suicidal attempt (\geq 16 years old) (NHMS11), aged 13-17 years old (NHMS2012) .	0.5% (2011)	6.8% (2012)			●
1.5	Suicide rate.		1.18% (2009)			●
1.6	Prevalence of physically active(NHMS).	56.3% (2006)	66.5%	+10.2%		●
1.7	Prevalence of identified drug abuse per 100 000 population (\geq 13 years old) (AADK).	92.3	111.9	+19.6		●
1.8	Prevalence of binge drinker among 18 years and above (NHMS).		5.0%			●

Dimension 2 : Ensuring confidence and satisfaction in high quality and accessible health services.

	Indicators	2014	2015	Change	National target	Assessment
2.1	Patient satisfaction					●
2.2	Percentage of patients with waiting time of ≤ 90 minutes to see the doctor at psychiatric clinic.	97.5%*	97.8%**	+0.3%	≥ 90%	●
2.3	Percentage of non–urgent cases that were given appointment for first consultations within ≤ 6 weeks at psychiatric clinic.	99.3%*	99.1%**	-0.2%	≥ 80%	●
2.4	FMS mental cases referral ratio.	1:23.5	1:29.7	+6.2		●
2.5	The number of Clinical Practice Guidelines (CPG)	6	6	0		●
2.6	Percentage of patients prescribed with more than 2 benzodiazepines/ hypnotics at a particular time.	0.2%*	0.1% **	-0.1%	≤ 10%	●
2.7	Defaulter rate among psychiatric out–patient.	6.8%	5.7%	-0.9%	≤15%	●
2.8	Number of MENTARI.	16	22	+6		●

*Data in * Jan – Jun and ** Jul – Dec 2015*

Dimension 3 : Fairness in financing

	Indicators	2014	2015	Change	National target	Assessment
3.1	Public spending on mental healthcare as a percentage of total current health expenditure.		no data			●

Dimension 4 : Mental healthcare system sustainability and efficiency.

	Indicators	2014	2015	Change	National target	Assessment
4.1	Total current public mental healthcare expenditure as a percentage of GDP.					●
4.2	Total current public mental healthcare expenditure per capita.					●
4.3	Hospital discharges rate per 100 000 population (public & private).	73.3	74.3	+1.0		●
4.4	Psychiatrist per 100,000 population (psychiatrist density).	0.5	0.5	-		●
4.5	Psychologist per 100,000 population (psychologist density).	0.21	0.21	-		●
4.6	Psychiatric clinical work force per 100,000 population (Psychiatric clinical workforce density).	6.24	6.39	+0.15		●
4.7	Average length of stay (Hospital with psychiatric services).	12.0	12.1	+0.1		●
4.8	Average length of stay (Specialized psychiatric hospitals).	177	139.1	-37.9		●
4.9	Bed occupancy rate (BOR)(Hospital with psychiatric services).		39.9			●
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Abbreviations

AADK	<i>Agensi Anti Dadah Kebangsaan</i>
AFRO	Africa Regional Office
AIDS	Acquired Immunodeficiency Syndrome
ALOS	Average length of stay
AMO	Assistant Medical Officer
AMRO	America Regional Office
BSC	Balanced Score Card
BOR	Bed occupancy rate
CI	Confidence Intervals
CPG	Clinical Practice Guidelines
DALYs	Disability Adjusted Life Years
EMRO	Eastern Mediterranean Regional office
EURO	Europe Regional Office
FMS	Family Medicine Specialist
GAD	Generalised anxiety disorders
GDP	Gross Domestic Product
HC	Health Centre
HIC	Health Informatic Centre
HIV	Human Immunodeficiency Virus
KPI	Key performance indicators
NHEW	National Healthcare Establishment & Workforce Statistics
NHMS	National Health Morbidity Survey
NMHR	National Mental Health Registry
NMRR	National Medical Research Register
MHPU	Malaysian Healthcare Performance Unit
MOH	Ministry of Health
MMC	Malaysian Medical Council
MREC	Medical Research and Ethics Committee
OECD	Organisation for Economic Co-operation and Development
PHC	Primary Health Care
PI	Performance Indicators
QA	Quality assurance
SDGs	Sustainable Development Goals
SEARO	South–East Asia Regional Office
SMRP	<i>Sistem maklumat rawatan perubatan</i>
WHO	World Health Organisation
WP	Wilayah Persekutuan
WPKL	Wilayah Persekutuan Kuala Lumpur
WPRO	Western Pacific Regional Office

Part I

INTRODUCTION

1.1 The burden of mental health problem

Mental health disorders is a major public health importance through out the world. It contribute to a substantial proportion of health problems in most countries. The first Global Burden of Disease Study (GBOD 1990) reported that it accounted for a significant proportion of the world's disease burden. Worldwide, neuropsychiatric disorders accounted for 10.5% of Disability Adjusted Life Years (DALYs). Unipolar depression was in the top five causes of burden [10].

GBOD 2010 assessed an expanded list of mental, neurological and substance disorders (of which mental and substance abuse accounted for about 71.4% of this disease group). They reported that mental and substance disorders was one of the leading causes of disease burden in 2010. It accounted for 10% of global DALYs, and 28.5% of global Years Lost due to Disability (YDLs). It became the leading cause of YLDs . [15].

Thus, mental health care is an important element of a health-care system. Promoting mental health and well-being are integral part of the sustainable development agenda to transform our world by 2030 adopted by the United Nation General Assembly in 2015. This is a recognition of mental health as an important elements of health care ¹

Data on prevalence of mental health illness in Malaysia are limited. The most extensive survey ever been carried out nationwide was the National Health and Morbidity Survey (NHMS) which were priorly carried out every 4 years interval. NHMS 2011 had captured data on the prevalence of generalized anxiety disorder (GAD), major depressive illness and suicidality among the adult of sixteen years old and above. Overall, the prevalence of GAD among the adult sixteen years old and above was 1.7 % (95 % CI: 1.5-2.0). The prevalence of lifetime depression and current depression were 2.4 % (95 % CI:2.1-2.8) and 1.8% (95 % CI:1.5-2.1) respectively [3]. NHMS in 2012 focused on the health issues among the adolescent age-group in school. Attempted suicide which reflect the mental health status of adolescent was reported by 6.8% (95% CI: 6.11-7.52) which was apparently high [4].

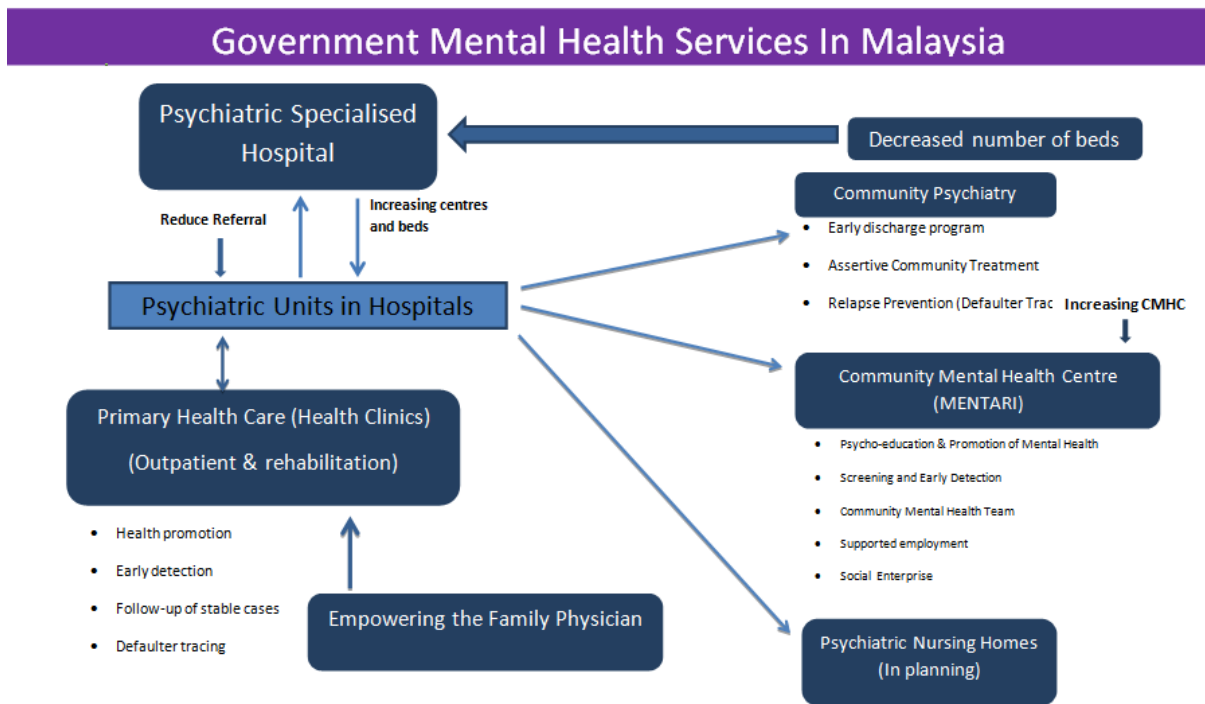
1.2 Mental health and mental healthcare system

Mental healthcare system in Malaysia comprised of elements which are fundamentally crucial for quality healthcare which are appropriate, accessible, safe, responsive, patient-centred, effective and affordable.

Mental healthcare is integrated into all primary healthcare clinics which is administratively under the public health division of MOH as oppose to the traditional system which separated mental healthcare from general health system (Figure 1.1). This integration is very important to reduce stigma and to

¹http://www.who.int/mental_health/en/

Figure 1.1: Government mental health services in Malaysia



Source: Constructed by Psychiatrist team

encourage public to seek treatment early. The primary care will focus on mental health promotion, early detection and treatment, following up of the stable mentally ill, psychosocial rehabilitation, and family intervention.

Concurrently, resident psychiatrists were post to all state hospitals and major specialist hospitals to provide comprehensive psychiatric services. This include outpatient care, inpatient care, psycho-education program, rehabilitative services, community mental healthcare centre (CHMC), psychiatric nursing home (in planning) and family intervention.

There is continuous and concerted effort to strengthen and increased the mental healthcare services in the community. It is also working towards reduction of referrals and to downsize mental institution.

1.3 A review on mental healthcare performance measurement model globally

Measuring quality of healthcare has increasingly become a focus in the provision of healthcare. The proper choice of indicators to measure and benchmarking the healthcare performance is quite a major task.

The development and use of performance indicators in the field of mental health care has increased rapidly. The key performance indicator (KPI) is a measure which describe a situation concisely, helps track progress performance and acts as a guide to inform decision making. They can inform the clients, service providers and the stake holders impressions of service and performance.

Several models had been used for monitoring the performance of mental health care. Generally, the common domains which were focused in most models were: accessibility or responsiveness, acceptability,

appropriateness, competence, outcomes or effectiveness, coordination and continuity, financial and efficiency, participation, and system management [8].

Scorecard and balanced scorecard framework which was first introduced by Kaplan and Norton for business sector [7], is an approach which is now increasingly used to monitor performance of health-care system . It is used to measure strategic objectives which covers the whole spectrum of health-care system; the input, process of care, output and outcome. It is a tool for driving focus on Ministry's priorities down into the system by cascading the indicators.

In conjunction with the increasing needs of mental health care, Ministry of Health Malaysia should strive for mental health care excellence and to deliver high standard of mental health care.

We conducted a situational analysis by examining the available data from various sources in order to assess the performance of mental healthcare in the country. The aims were to decide on the indicator matrix for assessment and benchmarking against the previous achievements, the national standards and internationally.

1.4 The framework of this report

The purpose of this report is to present the situational analysis of the mental healthcare within the Malaysian system and certain mental health care indicators to benchmarking by the national target and internationally.

The report consist of six chapters. **Chapter one** is an overview of the mental health and healthcare performance, and the justification of this report. The objective of this report is outlined in **Chapter two** followed by detail description of methodology such as the sources of data and method of analysis in **Chapter three**. **Chapter four** is presenting the findings which were structured into categories namely infrastructure, human resources, service utilisation, mental health care governance, process of care which consist mainly key performance indicators (KPI), outcome and some additional information. It is describing the detail program activities of the mental healthcare across the spectrum from promotion and prevention, primary health care, community-based mental health services, hospital-based services and community rehabilitation. The findings are then summarized in **Chapter five**. The findings are mapped into possible indicator categories to measure the four performance measurement dimensions i.e. (1) Achieving better mental health status, (2) Ensuring confidence and satisfaction in high quality and accessible health services, (3) Fairness in financing and (4) Mental healthcare system sustainability and efficiency. Subsequently, the core indicators are identified and were presented as a proposed scorecard with benchmarking with standards and internal comparisons. Lastly, we conclude the strength and weakness of Malaysian mental healthcare system, and recommendation on the areas which need improvement or modification.

Part II

OBJECTIVES

2.1 General objective

The aim is to assess and report the performance and progress of mental healthcare services.

2.2 Specific objectives

1. To describe the population mental health status in term of;-
 - (a) Prevalence of mental health illness
 - (b) Prevalence of common risk factors; substance abuse and inactivity.
2. To assess the quality and efficiency of mental healthcare services.
3. To describe the accessibility, fair financing and sustainability of the mental healthcare system.
4. To assess the performance of mental healthcare based on some policy questions
5. To appraise the Malaysian mental healthcare performance against certain standards and international comparisons.

Part III

METHODOLOGY

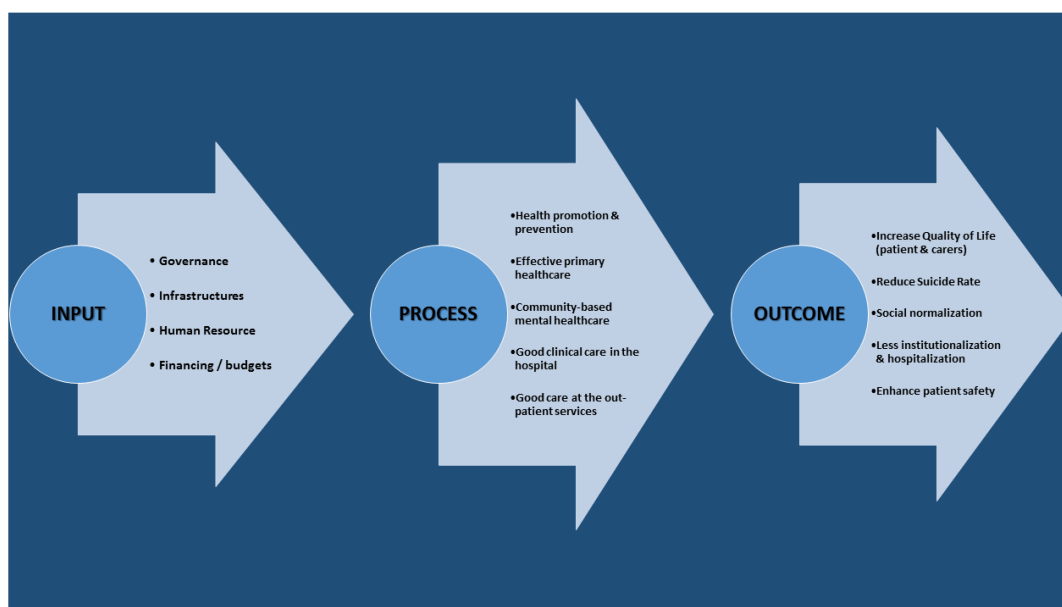
3.1 The project framework

The framework of this reporting mental health-care performance project is based on the Donabedian logical model of input-process-outcome [1]. The elements in these model are as illustrated in Figure 3.1.

We reviewed the literature for overview of performance measurement models being used globally, and specifically for mental healthcare by looking at some example from various countries. These indicators used by WHO, OECD and some countries were extracted and reviewed by a team of psychiatrist and stakeholders. In selection of indicators, weightage were given by their relevance, measurable, and availability of the data.

A focus group discussion with the stakeholders and care providers was conducted to discuss on the framework and to agree upon the selection of indicator matrices for reporting performance. The indicators reported were chosen aligned with the WHO mental health plan, OECD and other indicators which were relevant for Malaysian setting.

Figure 3.1: Conceptual framework of mental heathcare



Source: Constructed by author

3.2 Sources and characteristic of data

We utilised existing data from various sources within the Ministry of Health system, private hospitals, other related agencies and international organisations. This include granular and aggregated data which were published as well as unpublished data.

The sources of data were;-

1. Health Informatics Center, Ministry of Health Malaysia.
2. Primary Health Care Services.
3. Psychiatric Survey database.
4. Clinical Performance Surveillance Unit, MOH
5. National Healthcare Establishment & Workforce Statistics (NHEWS).
6. *Agensi Anti-dadah Kebangsaan*.
7. National Suicide Registry Malaysia (NSRM).
8. World Health Organization (WHO).
9. Global Burden of Diseases (GBOD).

As we anticipated gross under-reporting and reporting bias, we did not utilise data from National Mental Health registry (NMHR). Most of the registered cases were schizophrenia. Further more, the registry was discontinued after 2007 due to some administrative constraints.

The sources and characteristics of the data is described in Table 3.1. Most data were gathered in the form of aggregated secondary which are either published or unpublished. As most data obtained were not accompanied by the metadata, hence, little is known about the effort and level of data ascertainment at the primary sources.

3.3 Data ascertainment and validation

In most setting, ascertainment of data completeness is always challenging especially when using the secondary data. In order to obtain the best possible estimate, at best, we utilised data from various sources. To certain extent, data ascertainment and validation were mostly done at the level of data providers. Any discrepancies encountered were verified by either contacting the providers or appraising their methodology from the reports.

3.4 Data management and data analysis

Data which were gathered from various sources using MS excel 2010 were subsequently exported accordingly to STATA ver 14 for analysis and plotting charts. ArcGIS ver 10.1 was used for the purpose of mapping.

The findings were primarily reported as descriptive statistics in the form of change, rates, prevalence, density, trends and ratios. The definition of indicators and the equations used in this report are listed in the appendices (Appendix A). Where ever applicable, adjustment method is applied by calculating the expected number as possible estimates.

The situational analysis results were initially organised by type of indicators as input-process-outcome model. Those findings are analysed further in chapter 5 in order to answer some policy questions. The policy questions are grouped into four dimensions. The dimensions are; population mental health status, responsiveness, fairness and sustainability.

Table 3.1: Sources and characteristics of data

Data source	Year covered	Description	Ascertainment
HIC, MOH	2006-2015	Aggregated data & published data: HIC data are hospital admissions and discharges data. Year 2012 was the transition from old system to SMRP.	Data were submitted by MOH hospitals. Some level of cleaning and validation process carried out at HIC. Data ascertainment was low for 2012.
Psychiatric survey database	2014- 2015	Aggregated, unpublished data: This is Psychiatrist initiated survey, where the info are collected from primary sources yearly.	High level of ascertainment is expected due to primary data collection and were verified by respective psychiatrist.
Mental Health Unit, MOH	2014-2015	Aggregated, unpublished data from monthly returns	Level of ascertainment to be determined.
Clinical Performance Surveillance Unit (CPSU), MOH	2015	Aggregated, unpublished data	Level of ascertainment to be determined.
Ministry of Education	2014-2015	Aggregated, unpublished data from monthly returns	Level of ascertainment to be determined.
<i>Agensi Anti-Dadah Kebangsaan (AADK)</i>	2010-2015	Aggregated, published yearly data	High level of ascertainment is expected.
WHO	2010-2015	Published report	High.
OECD	2010-2015	Published report	High
GBOD	1990-2000	Published report	High

3.5 Performance assessment and international comparison





This performance assessment project is designed closely aligned with the existing Quality Assurance Programs, National Strategic Plan and Sustainable Development initiatives (SDG).

The performance were assessed in three ways;-

- Based on changes from previous years
- Comparing against national target or standards
- International comparisons mainly by comparing with the OECD countries or those similar in terms of GDP.

The performance were assessed quantitatively and qualitatively. The findings were presented based on four categories of achievements;- (1)on track, (2) further scrutiny needed, (3)requires immediate attention and (4) more data acquisition and analysis needed. These categories were presented by colour. The detail description of the colour codes are as shown in Table 5.4.

Table 3.2: The description of performance assessment level

Grading	Interpretation	Description
	On track.	The performance is considered on track if there were positive changes, above the national target or standards
	Further scrutiny needed	The information gathered are less convincing or inconclusive hence further investigations and actions are needed
	Requires immediate attention or action	Immediate attention or remedial actions are needed if there were negative changes in performance or below the national target and standards
	More data and analysis required	When the data and information are insufficient to draw a conclusion

Part IV

SITUATIONAL ANALYSIS

Situational analysis of mental health and mental healthcare

Situational analysis was performed by analysing the secondary data and reviewing published data from various reports. The focus were around domains which were adopted from WHO mental health care action plan [12] and WHO Mental Health Atlas [13]. The data presented should be able to reflect the overall performance of Malaysian mental healthcare services according to input-process-outcome model.

4.1 POPULATION MENTAL HEALTH STATUS

4.1.1 Prevalence of mental health problems

The prevalence of mental health problems or disorders in Malaysia were not well established. The most ascertained data were from population based survey NHMS in 2011 [3], NHMS in 2012 [4] and 2015 [5]. NHMS 2011 reported the mental health problems among adults aged ≥ 16 years old and among children 5-15 years. In 2011 the mental health problems among children 5-15 yrs was 20.0%.

The focused were on generalised anxiety disorder(GAD), major depressive disorders and suicidality. The prevalence of GAD, current depression (Table 4.2) and attempted suicide were 1.7% (95% CI:1.52 – 2.0), 1.8% (95% CI:1.5 – 2.1), and 0.5% (95% CI:0.4 – 0.7) respectively [3].

In addition to NHMS 2011 [3], NHMS in 2015 [5] covers mental health problems both in adults and children. The findings are as in Table 4.1. The prevalence of mental health problems in adult and children were 29.2% (95% CI:27.9 – 30.5) and 12.1% (95% CI:11.0 – 13.4) respectively (Table 4.1). For the Geriatric group aged 60 and above, the prevalence was 24.0%. (95% CI 20.9– 27.5).

Mental health problem among adolescents 13-17 years based on NHMS 2012 [4], school-based survey, which involved 234 secondary schools throughout Malaysia, with 25,507 students (RR: 88.7%). Suicidal ideation: 7.9%, suicidal plan: 6.4%, suicidal attempts: 6.8%, DASS21: depression: 17.7%, anxiety: 39.5%, stress: 10.1% .

4.1.2 Prevalence of current depression

The prevalence of current depression was 1.8% (95% CI 1.5 - 2.1). Females were more affected than the males, and highest prevalence was among the Indian (Table 4.2).

Table 4.1: Prevalence (%) of adult and children mental health problems by states, National Health Morbidity Survey 2015

Characteristics	*Adult (≥ 16 years old)		Children (5-15 years old)	
	Prevalence	Confidence Interval	Prevalence	Confidence Interval
MALAYSIA	29.2	27.9 - 30.5	12.1	11.0 - 13.4
State				
Perlis	24.0	19.8 - 28.8	4.9	3.0 - 8.1
Kedah	26.7	22.3 - 31.6	8.2	5.6 - 11.9
P.Pinang	19.1	14.6 - 24.7	10.7	5.4 - 20.0
†Perak	17.0	13.1 - 21.8	5.7	3.2 - 9.8
Selangor	29.3	26.7 - 32.1	13.7	10.8 - 17.2
WP Kuala Lumpur	39.8	34.7 - 45.2	13.6	8.3 - 21.5
WP Putrajaya	20.7	16.0 - 26.5	12.0	6.6 - 20.6
N.Sembilan	24.0	19.6 - 29.0	11.7	7.5 - 18.0
Melaka	22.9	18.5 - 27.9	8.9	5.5 - 14.2
†Johor	22.2	18.4 - 26.6	14.0	10.3 - 18.9
Pahang	27.8	21.5 - 35.1	13.2	8.6 - 19.8
Terengganu	26.0	19.8 - 33.4	9.9	7.0 - 13.9
Kelantan	39.1	35.1 - 43.2	10.3	7.5 - 14.1
†Sabah & WP Labuan	42.9	39.3 - 46.7	14.8	11.8 - 18.3
†Sarawak	35.8	30.1 - 41.9	16.0	11.6 - 21.8
Location				
Urban	28.8	27.3 - 30.4	11.8	10.4 - 13.4
Rural	30.3	27.9 - 32.9	13.0	11.1 - 15.3
Sex				
Male	27.6	25.9 - 29.3	12.4	10.8 - 14.1
Female	30.8	29.2 - 32.5	11.9	10.3 - 13.6
Ethnicity				
Malays	28.2	26.6 - 29.7	10.4	9.1 - 11.8
Chinese	24.2	21.3 - 27.3	14.2	10.6 - 18.9
Indians	28.9	24.6 - 33.6	13.8	9.8 - 19.2
Other Bumiputeras	41.1	37.4 - 45.0	16.5	12.9 - 20.8
Others	33.2	27.8 - 39.2	12.9	7.4 - 21.5

†States with specialised psychiatric hospitals

Source of data: NHMS 2015 [5]

* Overall prevalence for aged ≤ 60 was 24% (95% CI 20.1- 27.5)

Table 4.2: The prevalence (%) of current depression, National Health Morbidity Survey 2011

Characteristics	Prevalence	Confidence Interval
MALAYSIA	1.8	1.5 - 2.1
Location		
Urban	1.9	1.5 - 2.3
Rural	1.6	1.2 - 1.9
Sex		
Male	1.4	1.0 - 1.7
Female	2.3	1.8 - 2.7
Ethnicity		
Malays	1.6	1.3 - 1.9
Chinese	1.3	0.6 - 2.0
Indians	4.6	2.9 - 6.3
Other Bumiputeras	1.8	1.1 - 2.5
Others	2.5	1.1 - 3.9

4.1.3 Suicide rate and self-harm

The source of data for suicide rate is not well established due to the challenges in establishing the actual cause of death. Suicide imposed a great stigma to the family and also has legal implication. Thus, data ascertainment for suicide cases is a concern. The most recent available evidence were from the suicide registry which were published in 2009. The suicide rate was 1.18 per 100,000 population [9]. This reported rate was presumed to be underestimated because the suicide registry was limited to medically certified death whilst almost half proportion of death are not medically certified. No such report is produced beyond year 2009 due to discontinuation of the suicide registry.

Suicidality among the population were estimated during the National Morbidity survey in 2011 using WHO questionnaire: PROMIS for suicidal behaviour. Three indicators of suicidality were elicited during the survey, namely suicidal ideation, suicidal plan and suicide attempt. The prevalence of suicidal ideation, plan and attempt were 1.7%, 0.9% and 0.5% respectively (Table 4.4). The risk factors were young age group, female, lower education and ethnic Indian [3].

Hospital admission for intentional self-harm is another proxy indicators of the risk of suicide. The rate of hospital admission for intentional self-harm for MOH hospital and private hospital for 2014 and 2015 were 0.3 and 0.2 per 100,000 population respectively as shown in Table 4.5.

Table 4.3: The incidence rate of suicide per 100,000 population, 2009

State	Count	Population	Rate
Perlis	3	237,000	1.27
Kedah	30	1,942,600	1.54
P.Pinang	38	1,580,000	2.41
†Perak	47	2,427,600	1.94
Selangor	25	5,033,500	0.50
WP Kuala Lumpur	18	1,703,100	1.06
N. Sembilan	5	1,000,300	0.50
Melaka	17	761,600	2.23
†Johor	88	3,269,100	2.69
Pahang	20	1,516,700	1.32
Terengganu	4	1,035,800	0.39
Kelantan	3	1,639,000	0.18
†Sabah	24	3,278,200	0.73
†Sarawak	6	2,470,800	0.24
Malaysia	328	27,895,300	1.18

†States with specialised psychiatric hospitals

Source of data: National Suicide Registry 2009

Table 4.4: Prevalence of suicidal risk, National Health Morbidity Survey 2011 and 2012

Suicidal Category	2011		2012	
	Prevalence (≥ 16 y.o)	95% CI	Prevalence(13-17 y.o)	95% CI
Suicidal Ideation	1.7%	1.4-1.9	7.9%	7.27-8.60
Suicidal Plan	0.9%	0.7-1.1	6.4%	5.96-6.88
Suicidal Attempt	0.5%	0.4-0.7	*6.8%	6.11-7.52

*: one or more times attempts

source of data: NHMS 2011, and NHMS 2012-global school based health survey [4]

Table 4.5: Number of admissions into public and private hospitals due to intentional self-harm (ICD10 code: X60-X84), 2015

Year	MOH Admission(n)	Private admission(n)	Total(n)	Rate*
2014	34	49	83	0.3
2015	40	49	49	0.2
Malaysia	74	98	132	

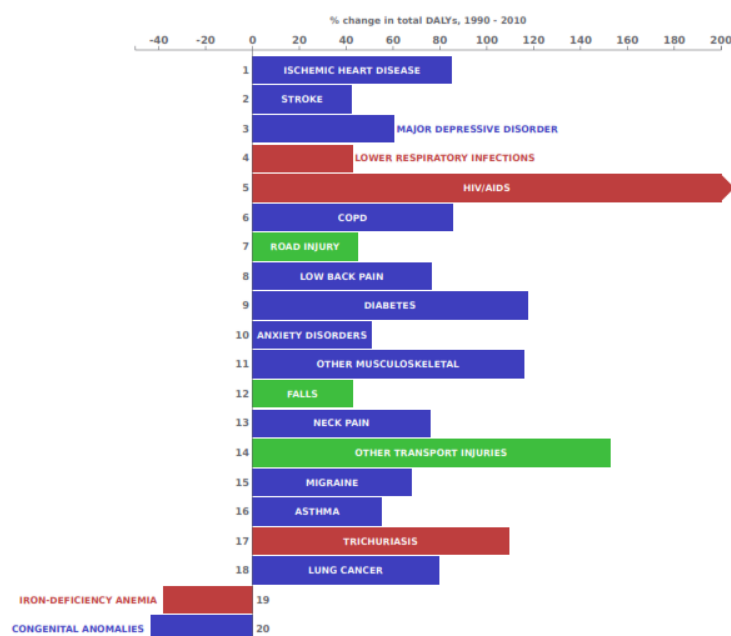
ICD10 Code X60-X84: intentional self-harm includes purposely self-inflicted poisoning or injury & suicide (attempted)

** : per 100,000 total in-patients*

4.1.4 Shifting burden of disease (BOD)

During the recent years, mental disorders were increasing in DALYS. Depressive illness and anxiety disorders became among the top 10 of diseases which contribute to increasing DALYs (Figure 4.1).

Figure 4.1: Shifts in leading causes of DALYs in Malaysia, 1990 – 2010



Source: *The Global Burden of Disease: Generating Evidence, Guiding Policy – East Asia and Pacific Regional Edition*[2]

4.1.5 Prevalence of risk factors

The known common risk factors for mental health problems are substance abuse particularly drug abuse and alcoholism. Studies had shown that physical inactivity is also commonly associated with mental problems.

4.1.5.1 Drug abuse

Substance abuse refers to the harmful or hazardous use of psychoactive substances, including alcohol and illicit drugs. ¹

The prevalence of drug abuse was estimated based on the number of cases recorded by *Agensi Antidadah Kebangsaan* which can be assessed through their webpage ². The prevalence of drug abuse were increasing during the last 3 years from 90.0 in 2013 to 111.9 per 100,000 population of ≥ 13 years old in 2015 (Table 4.6).

Table 4.6: The prevalence of drug abuse per 100,000 population 13 years old and above, 2010-2015

Year	Count	Population	†Prevalence
2010	23,639	21,835,800	108.3
2011	19,516	22,333,400	87.4
2012	15,101	22,790,700	66.3
2013	20,887	23,202,300	90.0
2014	21,777	23,596,800	92.3
2015	26,668	23,836,400	111.9

Source of data: Agensi Anti Dadah Kebangsaan ²

Source of population data: DOSM

†Prevalence calculated by author

Note: Age ≤ 13 was excluded due to apparent under ascertainment

4.1.5.2 Prevalence of alcoholism

The prevalence of alcoholism was estimated based on the national health and morbidity survey [5]. The prevalence of binge drinking for 18 years and above was 5.0%, (95% CI: 4.3, 5.8) and its proportion among the current drinkers was 59.4%, (95% CI: 54.8, 63.8). (Table 4.7).

4.1.5.3 Prevalence of physical activity

Physical activity is recognised as one of the preventive factor for mental health problem. The prevalence of physically active is relatively still low i.e. 66.5% (Table 4.8)

¹(www.who.int/topics/substance_abuse/en/)

²https://www.adk.gov.my/data/ms_MY/dataset/statistik-penyalahgunaan-dadah

Table 4.7: Prevalence (%) of current drinker and binge drinker among current drinker (≥ 18 years old), National Health Morbidity Survey 2015

Characteristics	Prevalence of current drinker	95%CI	†Prevalence of binge drinker (%)	95%CI
MALAYSIA (Prevalence binge drinker)	8.4	7.4 - 9.5	59.4 ††5.0	54.8 - 63.8 4.3 - 5.4
Location				
Urban	9.0	7.8 - 10.3	57.1	52.0 - 62.1
Rural	6.4	5.0 - 8.2	69.6	59.4 - 78.1
Sex				
Male	12.1	10.8 - 13.7	64.0	58.9 - 68.7
Female	4.3	3.6 - 5.3	45.7	38.2 - 53.4
Age Group				
18 - 19*			63.0	44.0 - 78.7
20 - 24	10.4	8.4 - 12.8	65.4	54.7 - 74.8
25 - 29	10.9	8.7 - 13.6	65.4	54.4 - 75.0
30 - 34	9.3	7.5 - 11.4	64.9	54.2 - 74.4
35 - 39	9.6	7.6 - 12.0	59.9	50.2 - 68.8
40 - 44	8.0	6.1 - 10.5	60.3	48.1 - 71.3
45 - 49	6.8	5.3 - 8.9	53.8	40.9 - 66.3
50 - 54	9.0	7.0 - 11.4	43.3	32.2 - 55.2
55 - 59	5.2	3.9 - 7.1	50.0	36.0 - 64.1
60 - 64	5.2	3.6-7.3	37.5	21.8 - 56.4
65 - 69*	3.4	2.0 - 5.9	34.4	15.9 - 59.4
70 - 74*	2.9	1.4 - 6.0	46.5	15.9 - 80.0
75+*	2.5	1.3 - 4.6	39.1	19.9 - 62.4
Ethnicity				
Malays	0.4	0.2 - 0.7	87.0	66.9 - 95.7
Chinese	19.2	16.6 - 22.1	49.7	43.5 - 55.9
Indians	11.2	9.0 - 14.0	62.5	50.9 - 72.9
Other Bumiputras	21.6	17.6 - 26.3	74.6	67.4 - 80.7
Others	6.0	4.3 - 8.3	60.5	45.7 - 73.6

†Prevalence among the current drinker

††Overall prevalence of binge drinker among (≥ 18 years old)

* Data need to be interpret with caution

Source of data: NHMS 2015 [5]

Table 4.8: Prevalence (%) of physically active, National Health Morbidity Survey 2015

Characteristics	Prevalence	Confidence Interval
MALAYSIA	66.5	65.5 - 67.6
State		
†Johor	67.1	64.3 - 69.8
Kedah	66.4	62.4 - 70.2
Kelantan	74.2	70.6 - 77.6
Melaka	62.2	56.0 - 68.0
Negeri Sembilan	66.3	62.8 - 69.7
Pahang	74.0	70.6 - 77.1
Pulau Pinang	74.5	70.3 - 78.3
†Perak	71.9	66.9 - 76.4
Perlis	72.2	67.7 - 76.4
Selangor	60.1	57.6 - 62.5
Terengganu	69.5	63.7 - 74.4
†Sabah & WP Labuan	69.9	66.9 - 72.9
†Sarawak	59.2	54.7 - 63.6
WP Kuala Lumpur	63.6	58.3 - 68.5
WP Putrajaya	67.5	59.8 - 74.4
Location		
Urban	65.0	63.7 - 66.3
Rural	71.3	69.6 - 73.0
Sex		
Male	71.1	69.7 - 72.4
Female	61.7	60.3 - 63.2
Age Group		
18 - 19	61.0	58.1 - 63.9
20 - 24	67.9	65.1 - 70.5
25 - 29	68.1	65.4 - 70.6
30 - 34	69.3	66.7 - 71.8
35 - 39	70.8	68.1 - 73.4
40 - 44	73.4	70.6 - 76.1
45 - 49	72.4	69.6 - 75.1
50 - 54	72.3	69.4 - 74.9
55 - 59	63.3	60.1 - 66.3
60 - 64	60.9	57.0 - 64.6
65 - 69	57.4	53.0 - 61.7
70 - 74	48.1	42.4 - 53.9
75+	30.0	25.9 - 34.4
Ethnicity		
Malays	66.8	65.5 - 68.1
Chinese	60.7	58.3 - 63.1
Indians	66.7	63.1 - 70.1
Other Bumiputras	69.0	65.8 - 72.1
Others	76.5	73.2 - 79.5

†: States with specialised psychiatric hospital
Source of data: NHMS 2015 [5]

4.2 MENTAL HEALTHCARE SYSTEM GOVERNANCE

4.2.1 Mental health policies, acts and ordinance

The mental health legislation were available since 1950's which were eventually revised and amended, or new legislation were introduced. The evolution of legislations and policy in chronological order are:-

- Mental Disorders Ordinance 1952 (This ordinance is now repealed).
- Mental Health Ordinance (Sarawak) 1961 (This ordinance is now repealed).
- Mental Health Act 2001. This act was gazetted on 27th September 2001, act 615 under law of Malaysia.
- Mental Health Regulation 2010.
- Psychiatric and Mental Health Services Operational policy. This policy is published in November 2011. (Reference: November 2011 MOH/P/PAK/219.11(BP)).
- National mental health policy 1998 (First edition)
- National mental health policy 2012 (Latest edition)

4.2.2 Guidelines, manuals and modules

To date, MOH has produced guidelines, manuals and training modules in some main areas in mental health care which are listed below.

4.2.2.1 Clinical Practice Guidelines (CPG)

There are a series of Clinical Practice Guidelines (CPG) which are crucial for references and standard clinical management which would be practice by clinicians and other health care providers. This is to enhance the adherence to standard of good clinical care. The available CPG are listed below:-

- Management of autism spectrum disorder in children and adolescent; July 2014.
- Management of bipolar disorder in adults; July 2014.
- Management of dementia; November 2009.
- Management of schizophrenia in adults; May 2009.
- Management of attention deficit hyperactive disorder in children and adolescent; October 2008.
- Management of major depressive disorder; May 2007.

4.2.2.2 Other guidelines and manuals

In addition to that, other clinical or non-clinical guidelines and manuals have been produced as listed below:-

- Guideline on Suicide Risk Management in Hospitals (2014).
- Community Mental Health Centre Implementation Guideline (2013).
- Guidelines for Mental Health Response to disaster and Psychosocial First Aid Pocket Guide (developed in collaboration with WHO).
- Manual on Mental Health and Psychosocial Response to Disaster in community.

- Guideline for Managing Doctors with Psychological Problems and Disorders in the Ministry of Health
- Guideline on Management of Aggressive Patients in MOH Facilities
- *Garis Panduan Program Perkhidmatan Pasukan Kesihatan Mental Masyarakat (2016)*

4.2.2.3 Specific guidelines incorporated in other specialised patients management

Mental health is taken as important elements in patients health care. Hence, mental health guideline has been incorporated in other clinical guidelines;

- Consensus guidelines for the treatment of parkinson's disease.
- Management of patients with HIV and AIDS.
- *Garis Panduan Pengendalian Masalah Kecelaruhan Jantina.*
- Organ Transplantation:MMC guideline.

4.2.2.4 Training modules

To enhance the skills of staff, training modules had been produced;

- Training module on suicide prevention.
- Healthy Mind Module and Training Manual on Community Mental Health.

Summary points:

- Mental Health legislation and policies are being revised and updated over the years.
- The latest operational policy was published in 2011.
- The latest national mental health policy was published in 2012, and is due for revision.
- CPG and non-clinical guidelines were added or updated.

The national mental health policies is due for review in conjunction with WHO report that the policy should be reviewed at least five yearly.

4.3 RESOURCES IN TERM OF INFRASTRUCTURES, MENTAL HEALTH WORKFORCE AND FUNDING

4.3.1 The distribution of hospitals with mental health services, 2015

As of 31 December 2015, there was a total of 134 public hospitals (MOH) in the country which in total consist of 36,447 beds, and 9 specialised medical institution with a total of 4,942 beds [6]. Among those, there are four specialised psychiatric hospitals i.e. Hospital Permai in Johor Bahru which is located in the southern region of Peninsular Malaysia and Hospital Bahagia Ulu Kinta, Ipoh, Perak which is located at the northern region of peninsular Malaysia. Two hospitals are located at the east of Malaysia; Hospital Mesra Bukit Padang in Sabah and Hospital Sentosa in Kuching, Sarawak as shown in Figure 4.2.

Figure 4.2: The specialised psychiatric hospitals in Malaysia and states populations, 2015

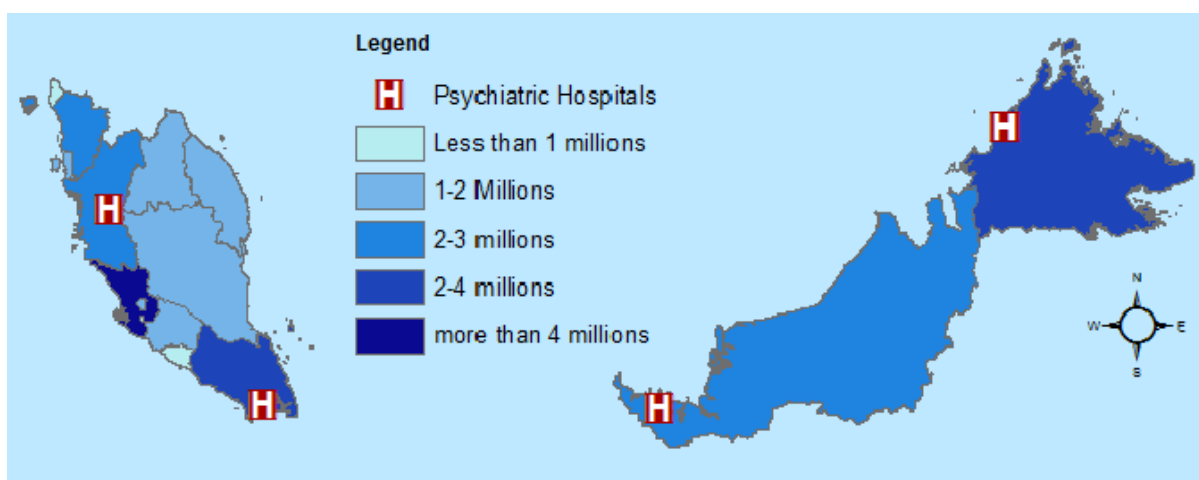
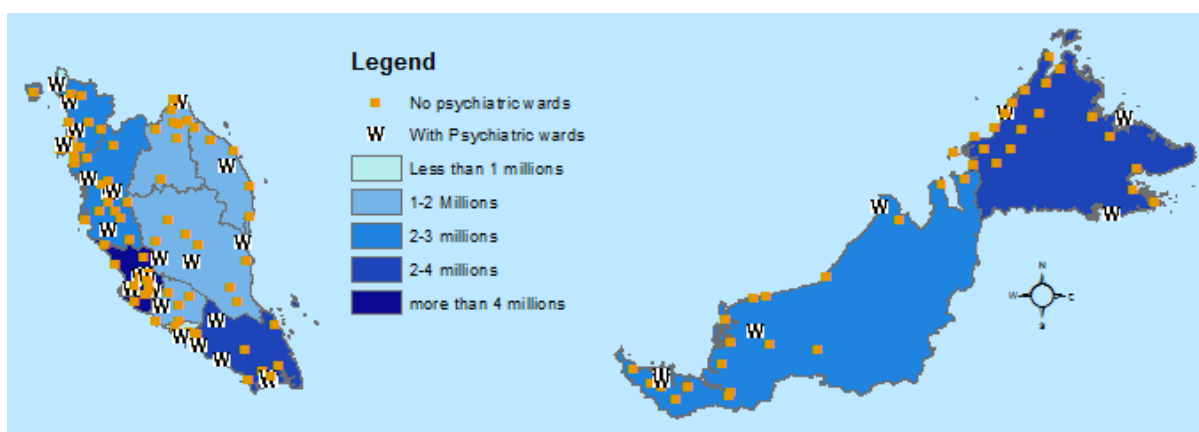


Figure 4.3: The distribution of hospitals with psychiatric services and wards availability and states population, 2015

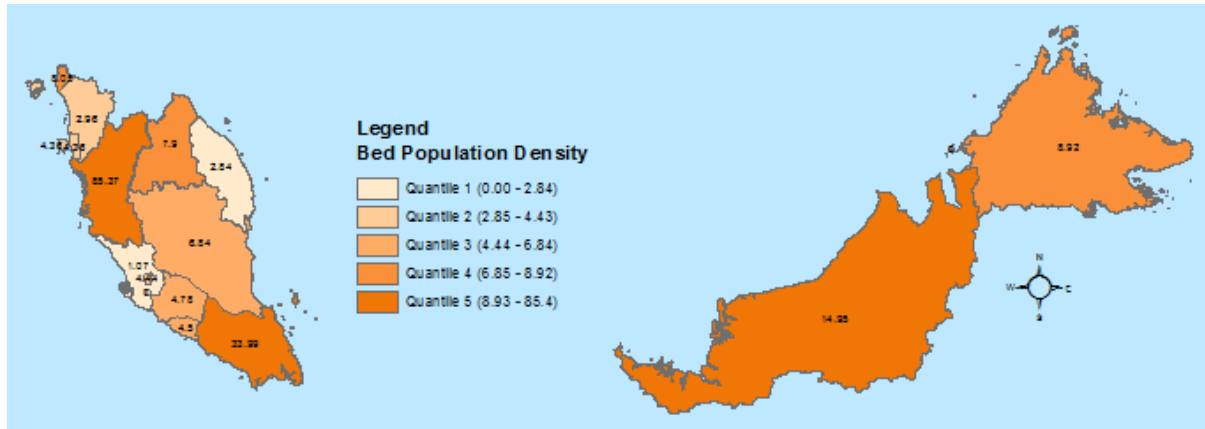


Note: States with specialised psychiatric hospitals: Perak, Johor, Sabah and Sarawak

In addition to the specialised institutions, most states hospitals have psychiatric services and beds available as shown in Figure 4.3. A total of 50 hospitals have resident psychiatrist and psychiatric services available of which 34 hospitals have dedicated psychiatric wards and beds available. The management of psychiatric patients in the remaining hospital with no dedicated wards or beds are shared with the general medical department. The overall bed-population density in 2015 was 15.2 per 100,000 population. The four states with specialised mental hospital have relatively higher bed-population density as

shown in Figure 4.4. The specialised psychiatric hospital are serving the regional population rather than the respective states only. The overall Malaysian psychiatric beds density is still lower than reported by OECD average (0.7 per 1000 population).

Figure 4.4: The quantile variation in beds density per 100,000 population, 2015



Note: States with specialised psychiatric hospitals: Perak, Johor, Sabah and Sarawak

4.3.2 The distribution of health clinics with Family Medicine Specialist (FMS)

The hospital services were complimented by 956 health clinics whereby primary health care (PHC) is part of the service package.

At the community level, PHC is the most important first point of contact, where the new cases were assessed and provisional diagnosis were made and managed accordingly. In addition, the psychiatric cases are getting accessed to health-care nearest to their home. The system may enhance the continuity of care, and substantially will minimise relapse. Primary health care settings are under the supervision of resident Family Medicine Specialist (FMS). In 2015, a total of 246 health clinics (25.73%) were with resident Family Medicine Specialists as shown in Table 4.9.

4.3.3 Mental health funding / budgets

The budgets allocation for hospital psychiatric care is part of hospital services expenditure, while the health service allocation are packaged with primary health care and public health program. Hence, in this report, we are not able to denote the specific proportion allocation of funding for psychiatric services in the hospital versus the primary health care .

The total expenditure on mental health services by states is shown in Table 4.10. Overall, the total expenditure was increased by 12.6% in 2015 as compare to 2014. Other than emolument, the biggest expenditure was on drugs which falls under the object code OA20000.

4.3.4 The density of mental healthcare work force (Human resource)

The psychiatric work force is consist of clinical personnels who were involved directly in patients care. The administrative staff were excluded in this analysis. They were psychiatrist, medical officers, Psychologist, nurses, assistant medical officers counsellors and family medicine specialist.

Table 4.9: The number and percentage of health clinics with Family Medicine Specialists by states, 2014-2015

States	2014			2015		
	HC Total(n)	HC with FMS	%	HC Total(n)	HC with FMS	%
Perlis	9	4	44.4	9	4	44.4
Kedah	58	23	39.7	58	22	37.9
P.Pinang	30	13	43.3	30	15	50.0
†Perak	84	21	25.0	84	19	22.6
Selangor	74	34	45.9	74	40	54.1
WP KL & Putrajaya	16	15	93.8	16	15	93.8
N.Sembilan	46	16	34.8	46	16	34.8
Melaka	29	9	31.0	29	10	34.5
†Johor	95	18	18.9	95	19	20
Pahang	84	16	19.0	84	17	20.2
Terengganu	46	20	43.5	46	20	43.5
Kelantan	80	20	25.0	80	18	22.5
†Sabah	101	13	12.9	101	14	13.9
†Sarawak	203	13	6.4	203	16	7.9
WP Labuan	1	1	100.0	1	1	100.0
MALAYSIA	956	236	24.7	956	246	25.7

†: States with specialised psychiatric hospitals

Source of staff data: Psychiatric survey database

Source of Population data: Department of Statistics Malaysia

(n): count

HC : Health Center

FMS : Family Medicine Specialist

Table 4.10: The expenditure (in RM) on psychiatric services by state, 2014-2015

State	Year	OA10000	OA20000	OA40000	Total expenditure
Perlis	2014	1,582,000	750,000	0	2,332,000
	2015	1,819,300	750,000	0	2,569,300
Kedah	2014	6,780,000	2,100,000	0	8,880,000
	2015	7,797,000	2,337,889	0	10,134,889
Pulau Pinang	2014	791,000	2,400,000	0	3,191,000
	2015	909,700	2,553,856	0	3,463,556
†Perak	2014	64,410,000	15,100,000	5,000	79,515,000
	2015	74,071,500	15,293,856	5,000	89,370,356
Selangor	2014	4,972,000	3,100,000	0	8,072,000
	2015	5,717,800	3,962,719	0	9,680,519
WP Kuala Lumpur	2014	0	1,050,000	0	1,050,000
	2015	0	1,050,000	0	1,050,000
WP Putrajaya	2014	-	-	-	-
	2015	-	-	-	-
Negeri Sembilan	2014	4,068,000	1,800,000	0	5,868,000
	2015	4,678,200	1,913,856	0	6,592,056
Melaka	2014	2,712,000	1,250,000	0	3,962,000
	2015	3,118,800	1,363,856	0	4,482,656
†Johor	2014	39,550,000	10,100,000	5,000	49,655,000
	2015	45,482,500	10,402,589	5,000	55,885,589
Pahang	2014	4,520,000	5,050,000	0	9,570,000
	2015	5,198,000	5,207,889	0	10,405,889
Terengganu	2014	2,938,000	2,000,000	0	4,938,000
	2015	3,378,700	2,153,856	0	5,532,556
Kelantan	2014	7,910,000	1,950,000	0	9,860,000
	2015	9,096,500	2,107,889	0	11,204,389
†Sabah	2014	13,560,000	4,500,000	1,000	18,061,000
	2015	15,594,000	4,737,889	1,000	20,332,889
†Sarawak	2014	16,950,000	4,000,000	1,000	20,951,000
	2015	19,492,500	4,153,856	1000	23,647,356
WP Labuan	2014	0	200,000	0	200,000
	2015	0	200,000	0	200,000
HKL	2014	9,040,000	2,900,000	0	11,740,000
	2015	10,396,000	3,060,000	0	13,456,000
Malaysia	2014	179,783,000	58,250,000	12,000	238,045,000
	2015	206,750,500	61,250,000	12,000	268,012,500

†States with specialised psychiatric hospitals

Source of data: Medical Development Division, MOH

(RM): Ringgit Malaysia

Object code OA10000:Emolument

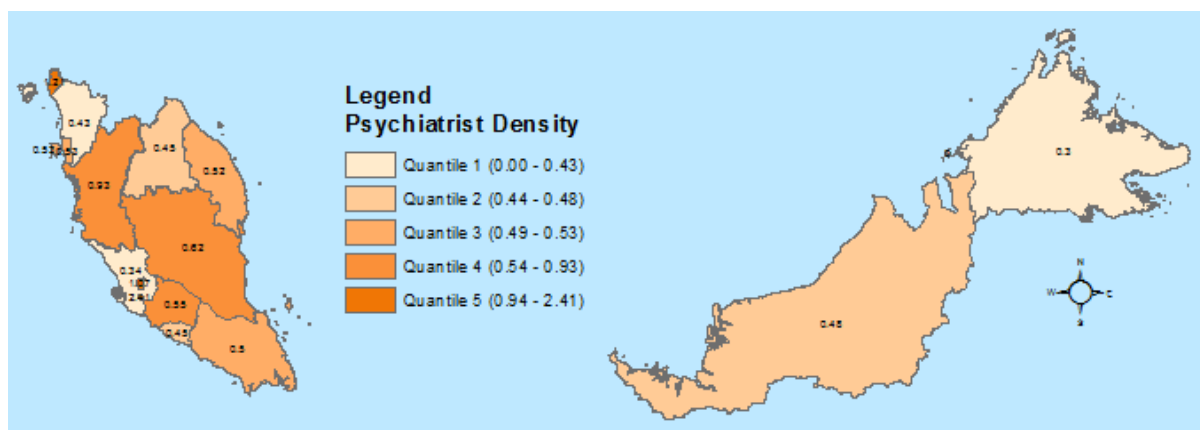
Object code OA20000:Supply

Object code OA40000:Grant

4.3.4.1 Number and density of psychiatrist in MOH hospitals per 100,000 population, 2015

Apparently, there are still very low density of psychiatrist serving the population (0.52 per 100,000 population). The density ranges from 0 to 2.41 per 100,000 population. The WP Putrajaya has the highest density, whereas WP Labuan has none and Sabah has the lowest density of 0.30 per 100,000 population as shown in Table 4.11. The states in lowest quantile were Sabah, Kedah, Selangor and WP Labuan in Figure 4.5.

Figure 4.5: Density of psychiatrist in MOH hospitals per 100,000 population; 2015



Note: States with specialised psychiatric hospitals: Perak, Johor, Sabah and Sarawak

Table 4.11: The number and density of psychiatrist within MOH facilities (per 100,000 population) by states in 2014 and 2015

States	2014			2015		
	Pop*10 ³	Psychiatrist(n)	Density	Pop*10 ³	Psychiatrist(n)	Density
Perlis	245.1	3	1.2	248.5	3	1.2
Kedah	2,062.7	9	0.4	2,096.5	9	0.4
P.Pinang	1,678.1	8	0.5	1,698.1	9	0.5
†Perak	2,458.8	22	0.9	2,466.9	23	0.9
Selangor	6,051.3	21	0.3	6,178.0	21	0.3
WP Kuala Lumpur	1,737.4	13	0.7	1,780.4	19	1.1
WP Putrajaya	80.9	2	2.5	83.0	2	2.4
N.Sembilan	1,079.6	5	0.5	1,088.8	6	0.6
Melaka	871.7	4	0.5	889.0	4	0.4
†Johor	3,559.8	18	0.5	3,610.3	18	0.5
Pahang	1,591.7	10	0.6	1,607.9	10	0.6
Terengganu	1,140.4	5	0.4	1,161.0	6	0.5
Kelantan	1,723.4	8	0.5	1,760.6	8	0.5
†Sabah	3,669.9	12	0.3	3,720.5	11	0.3
†Sarawak	2,664.0	11	0.4	2,701.5	13	0.5
WP Labuan	93.8	0	0.0	95.1	0	0.0
MALAYSIA	30,708.5	151	0.5	31,186.1	162	0.5

†States with specialised psychiatric hospitals

Source of staff data: Psychiatric survey database

Source of Population data: Department of Statistics Malaysia

(n): count

Pop: Population

4.3.4.2 The density of clinical psychologist and counsellors

The clinical psychologist within MOH are scarce. Till 2015, there were only 12 clinical psychologist providing services at the hospitals within Ministry of Health supported by a total of 49 counsellors. The density of psychologist (clinical psychologist and counsellors) was 0.2 per 100,000 population, which is very low. There were two states with no psychologist at all, i.e. Pahang and WP Labuan.

Table 4.12: The number and density (per 100,000 population) of psychologist and counsellors in MOH Malaysia, 2015

States	Clinical psychologist (n)	Counsellors(n)	Total	Density
Perlis	0	2	2	0.80
Kedah	0	4	4	0.19
Pulau Pinang	2	1	3	0.18
†Perak	1	6	7	0.28
WP Kuala Lumpur	3	0	3	0.17
WP Putrajaya	1	0	1	1.2
Selangor	1	12	13	0.21
Negeri Sembilan	0	2	2	0.18
Melaka	0	1	1	0.11
†Johor	2	10	12	0.33
Pahang	0	0	0	0
Terengganu	0	2	3	0.17
Kelantan	1	3	4	0.23
†Sabah	1	3	4	0.11
†Sarawak	0	3	3	0.11
WP Labuan 0	0	0	0	0
Malaysia	12	49	61	0.20

†States with specialised psychiatric hospital

Source of data: Psychiatric survey database

Note: data covers Ministry of Health only, no data from private health facilities

4.3.4.3 The density of nurses and assistant medical officer(AMO) in MOH psychiatric services per 100,000 population, 2015

Nurses and AMO are the key staff category of paramedics which are very important in mental healthcare system. The density of nurses and AMO working in psychiatry density per 100,000 population are shown in Table 4.13 and Table 4.14 respectively. The overall density of nurses and AMO were 4.0 and 2.4 per 100,000 population respectively.

4.3.4.4 The density of Family Medicine Specialist per 100,000 population, 2015

Family medicine specialist(FMS) is an important specialization who are functioning closer to the family and community level through the primary health care services. Enhancing primary health care services is the prime strategy for better health status of the nation which include mental health.

To date, only 25.65% of the health clinics have resident FMS. There was a total of 265 FMS with the overall FMS density of 0.85 per 100,000 population (Table 4.15).

Table 4.13: The number and density of nurses in psychiatric services within MOH facilities (per 100,000 population) by states, 2014-2015

States	2014			2015		
	Pop*10 ³	Nurse(n)	Density	Pop*10 ³	Nurse(n)	Density
Perlis	245.1	10	4.1	248.5	9	3.6
Kedah	2,062.7	26	1.3	2,096.5	36	1.7
P.Pinang	1,678.1	22	1.3	1,698.1	25	1.5
†Perak	2,458.8	318	12.9	2,466.9	336	13.6
Selangor	6,051.3	65	1.1	6,178.0	62	1.0
WP Kuala Lumpur	1,737.4	46	2.6	1,780.4	30	1.7
WP Putrajaya	80.9	3	3.7	83.0	3	3.6
N.Sembilan	1,079.6	24	2.2	1,088.8	27	2.5
Melaka	871.7	33	3.8	889.0	26	2.9
†Johor	3,559.8	298	8.4	3,610.3	266	7.4
Pahang	1,591.7	51	3.2	1,607.9	54	3.4
Terengganu	1,140.4	22	1.9	1,161.0	22	1.9
Kelantan	1,723.4	30	1.7	1,760.6	29	1.6
†Sabah	3,669.9	128	3.5	3,720.5	146	3.9
†Sarawak	2,664.0	144	5.4	2,701.5	176	6.5
WP Labuan	93.8	0	0.0	95.1	0	0.0
MALAYSIA	30,708.5	1,220	4.0	31,186.1	1,247	4.0

†States with specialised psychiatric hospitals

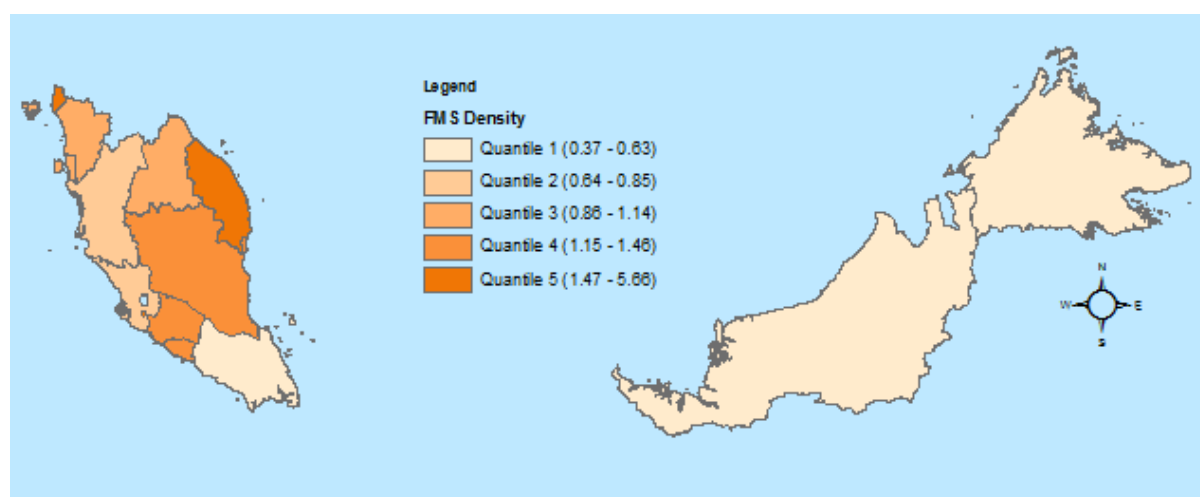
Source of staff data: Psychiatric survey database

Source of Population data: Department of Statistics Malaysia

(n): count

Pop: Population

Figure 4.6: The quantile of FMS density per 100,000 population, 2015



Note: States with specialised psychiatric hospitals: Perak, Johor, Sabah and Sarawak

Table 4.14: The number and density of AMO in psychiatric services within MOH facilities (per 100,000 population) by states, 2014-2015

States	2014			2015		
	Pop*10 ³	AMO(n)	Density	Pop*10 ³	AMO(n)	Density
Perlis	245.1	11	4.5	248.5	9	3.6
Kedah	2,062.7	25	1.2	2,096.5	30	1.4
P.Pinang	1,678.1	19	1.1	1,698.1	19	1.1
†Perak	2,458.8	197	8.0	2,466.9	205	8.3
Selangor	6,051.3	29	0.5	6,178.0	38	0.6
WP Kuala Lumpur	1,737.4	31	1.8	1,780.4	36	2.0
WP Putrajaya	80.9	1	1.2	83.0	36	2.0
N.Sembilan	1,079.6	17	1.6	1,088.8	18	1.7
Melaka	871.7	14	1.6	889.0	13	1.5
†Johor	3,559.8	129	3.6	3,610.3	132	3.7
Pahang	1,591.7	36	2.3	1,607.9	38	2.4
Terengganu	1,140.4	20	1.8	1,161.0	21	1.8
Kelantan	1,723.4	21	1.2	1,760.6	36	2.0
†Sabah	3,669.9	70	1.9	3,720.5	70	1.9
†Sarawak	2,664.0	77	2.9	2,701.5	79	2.9
WP Labuan	93.8	0	0.0	95.1	0	0.0
MALAYSIA	30,708.5	697	2.3	31,186.1	745	2.4

†States with specialised psychiatric hospitals

Source of staff data: Psychiatric survey database

Source of Population data: Department of Statistics Malaysia

(n): count

Pop: Population

4.3.4.5 Total and density of clinical workforce in psychiatric services, 2014-2015

The team of clinical personnels are crucial in the management of mental cases. This consist of psychiatrist, clinical psychologist, counsellors, medical officers, nurses and assistant medical officers(AMO). Paramedics plays an important role in the delivery of mental health services. The total workforce in 2015 was 17.7 per 100,000 population with only increased about 0.6 per 100,000 population from previous year (note: FMS was not counted in the psychiatric survey at the hospital setting).

Table 4.15: The number and density of Family Medicine Specialist within health clinics (per 100,000 population) by states, 2014-2015

States	2014			2015		
	Pop*10 ³	FMS(n)	FMS Density	Pop*10 ³	FMS(n)	FMS Density
Perlis	245.1	4	1.6	248.5	4	1.6
Kedah	2,062.7	23	1.1	2,096.5	23	1.1
P.Pinang	1,678.1	13	0.8	1,698.1	16	0.9
†Perak	2,458.8	22	0.9	2,466.9	21	0.9
Selangor	6,051.3	40	0.6	6,178.0	47	0.8
WP KL & Putrajaya	1,818.3	19	0.8	1,863.4	17	0.9
N.Sembilan	1,079.6	17	1.5	1,088.8	16	1.5
Melaka	871.7	9	1.0	889.0	11	1.2
†Johor	3,559.8	18	0.5	3,610.3	20	0.6
Pahang	1,591.7	17	1.0	1,607.9	19	1.2
Terengganu	1,140.4	21	1.8	1,161.0	19	1.6
Kelantan	1,723.4	19	1.2	1,760.6	20	1.1
†Sabah	3,669.9	14	0.4	3,720.5	14	0.4
†Sarawak	2,664.0	13	0.5	2,701.5	17	0.6
WP Labuan	93.8	1	1.1	95.1	1	1.1
MALAYSIA	30,708.5	250	0.8	31,186.1	265	0.8

†States with specialised psychiatric hospitals

Source of staff data: Psychiatric survey database

Source of Population data: Department of Statistics Malaysia

(n): count

HC : Health Center

FMS : Family Medicine Specialist

Pop: Population

Table 4.16: The total and density (per 100,000 population) of clinical workforce working in psychiatric care, MOH 2014-2015

States	2014			2015		
	Pop*10 ³	Psy. staff(n)	Density	Pop*10 ³	Psy. staff(n)	Density
Perlis	245.1	43	17.5	248.5	42	16.9
Kedah	2,062.7	131	6.4	2,096.5	143	6.8
P.Pinang	1,678.1	109	6.5	1,698.1	125	7.4
†Perak	2,458.8	1,642	66.8	2,466.9	1,855	75.2
Selangor	6,051.3	183	3.0	6,178.0	230	3.7
WP Kuala Lumpur	1,737.4	200	11.5	1,780.4	219	12.3
WP Putrajaya	80.9	16	19.8	83.0	13	15.7
N.Sembilan	1,079.6	99	9.2	1,088.8	104	9.6
Melaka	871.7	74	8.5	889.0	79	8.9
†Johor	3,559.8	1,366	38.4	3,610.3	1,298	36.0
Pahang	1,591.7	160	10.1	1,607.9	126	7.8
Terengganu	1,140.4	95	8.3	1,161.0	103	8.9
Kelantan	1,723.4	146	8.5	1,760.6	147	8.3
†Sabah	3,669.9	498	13.6	3,720.5	474	12.7
†Sarawak	2,664.0	482	18.1	2,701.5	559	20.7
WP Labuan	93.8	0	0.0	95.1	0	0.0
MALAYSIA	30,708.5	5,244	17.1	31,186.1	5,517	17.7

†States with specialised psychiatric hospitals

Source of staff data: Psychiatric survey database

Source of Population data: Department of Statistics Malaysia

(n): count

Pop: Population

Summary points:

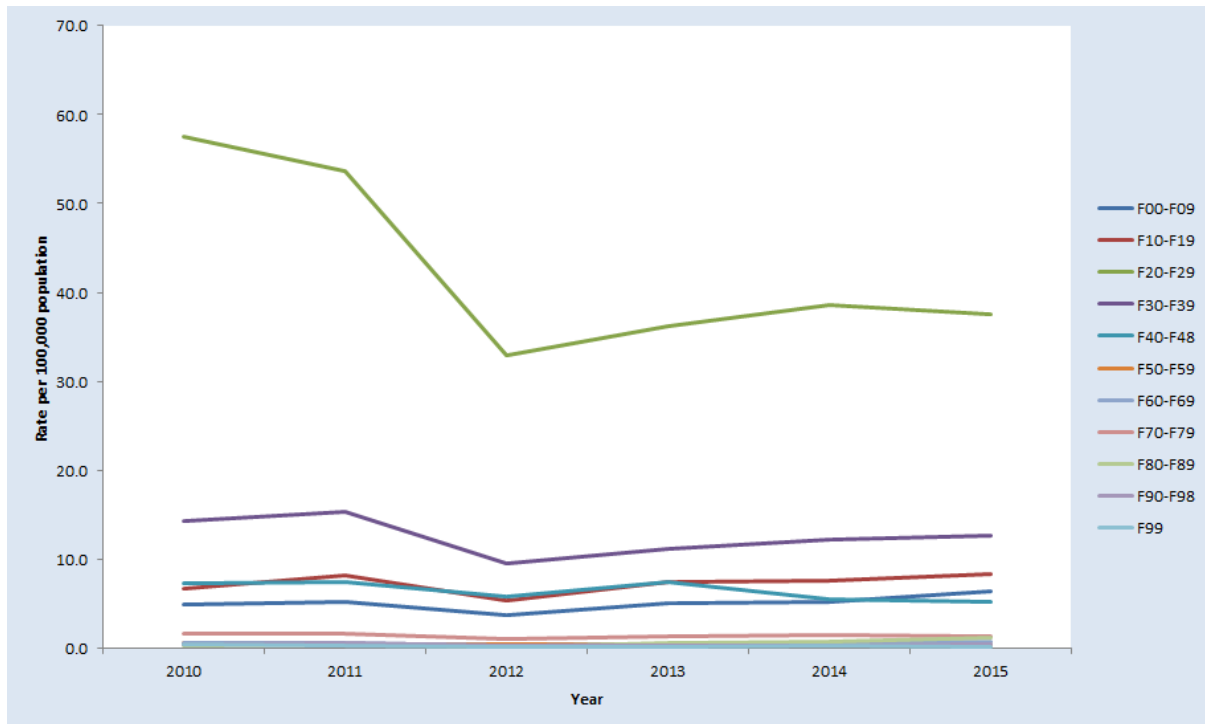
- The psychiatrist density was 0.5 per 100,000 population.
- Density of clinical workforce in psychiatric care was 17.7 with slight increased (0.6 per 100,000 population) from previous year. Although it is higher than Western Pacific Region average, it was still lower than OECD average.
- The density of FMS was 0.8 per 100,000 population with no change from previous year.

4.4 COVERAGE OF MENTAL HEALTH SERVICES AND UTILISATION

4.4.1 The trend of MOH hospital discharges for psychiatric cases

The trend of hospital admission (based on hospital discharges) were apparently decreasing over the years. It comprised of about 1.0% (range 0.83-1.58%) of total hospital admission. The dip in 2012 was due to under ascertainment resulted from migration of database to SMRP system. The main reason for hospital admission was ICD10 group F20-F29 (Schizophrenia, schizotypal and delusional disorders) followed by F30-F39(Mood or affective disorders) (Figure 4.7). The details are attached in appendix C.

Figure 4.7: The trend of hospital discharges for psychiatric cases (ICD10 class F00-F99), 2009-2014



F00-F09: Organic, including symptomatic, mental disorders

F10-F19: Mental and behavioural disorders due to psychoactive substance use

F20-F29: Schizophrenia, schizotypal and delusional disorders

F30-F39: Mood [affective] disorders

F40-F48: Neurotic, stress-related and somatoform disorders

F50-F59: Behavioural syndromes associated with physiological disturbances and physical factors

F60-F69: Disorders of adult personality and behaviour

F70-F79: Mental retardation

F80-F89: Disorders of psychological development

F90-F98: Behavioural and emotional disorders with onset usually occurring in childhood and adolescence

F99-F99: Unspecified mental disorder

Source of Data: HIC

Note: The dip in 2012 was due to under ascertainment resulted from data migration into SMRP system.

4.4.2 Total clinic attendances

The total number of cases attending out-patient psychiatric clinics is shown in table 4.17. Total attendances were increased about 16.4% in 2015 as compare to previous year. The increased were contributed both by new and follow up attendances.

Table 4.17: The number of out-patient visits, 2014 and 2015

States	2014			2015		
	New cases	Follow up	Total	New cases	Follow up	Total
Perlis	354	8,255	8,609	410	8,701	9,111
Kedah	1,965	32,290	34,255	1,917	35,788	37,705
Pulau Pinang	1,964	24,586	26,550	1,716	20,232	21,948
†Perak	2,660	42,481	45,141	3,391	50,182	53,573
Selangor	3,423	40,604	44,027	3,572	38,394	41,966
WP Kuala Lumpur	1,423	22,992	24,415	1,419	22,792	24,211
WP Putrajaya	175	2,851	3,026	236	3,343	3,579
Negeri Sembilan	1,877	19,344	21,221	1,952	17,820	19,772
Melaka	734	18,752	19,486	723	19,620	20,343
†Johor	3,989	59,669	63,658	4,815	64,519	69,334
Pahang	1,232	19,834	21,066	1,277	20,638	21,915
Kelantan	844	13,922	14,766	646	14,912	15,558
Terengganu	934	14,019	14,953	830	13,921	14,751
†Sabah	2,113	34,592	36,705	2,313	36,515	38,828
†Sarawak	2,356	46,359	48,715	2,643	50,098	52,741
MALAYSIA	26,043	356,547	382,590	27,860	417,475	445,335

†States with specialised psychiatric hospitals

Source of staff data: Psychiatric survey database

4.4.3 Specialized clinic attendances

Psychiatric clinics are also providing specialised clinic for special group of patients. The groups are geriatric group, children and adolescent age group. These groups of patients have different patterns of mental health issues which varies in treatment and management.

4.4.3.1 Geriatric (aged 60 and above) mental health

As Malaysian population dynamic is shifting into more mature population structure, the life expectancy at birth in 2015 was increasing to 74.8 years old as compared to 72.9 in year 2000 ³. Aligned with this shift, the needs for healthcare are also changing to accommodate the increasing needs of Geriatric group. These include the need for mental healthcare.

The total new clinic attendances were slightly decreased in 2015 as compared to 2014, however the total follow-up cases were increasing, hence, there was an increased in total attendances in 2015 (Table 4.18). Overall, the attendances at out patient geriatric mental specialised clinic is about 2% both in 2014 and 2015. There is no significant changes.

³Data source from <https://www.statistics.gov.my>

Table 4.18: The number of out-patient specialised geriatric (age 60 and above) psychiatric clinic attendances, 2014 and 2015

States	2014			2015		
	New	Follow-up	Total	New	Follow-up	Total
Perlis	48	872	920	41	952	993
Kedah	97	3,583	3,680	321	5,068	5,389
P.Pinang	855	12,243	13,098	498	6,166	6,664
†Perak	288	4,674	4,962	327	7,174	7,501
Selangor	521	6,546	7,067	472	7,038	7,510
WP Kuala Lumpur	107	728	835	90	942	1032
WP Putrajaya	15	57	72	56	617	676
N.Sembilan	264	3,209	3,473	261	3,090	3,351
Melaka	141	2,558	2,699	164	3,380	3,544
†Johor	786	11,299	12,085	877	10,784	11,661
Pahang	146	2,556	2,702	166	2,730	2,896
Terengganu	54	579	633	47	400	447
Kelantan	77	544	621	57	709	766
†Sabah	561	304	3,684	315	3,445	3,760
†Sarawak	389	4,001	4,390	298	8,770	9,068
WP Labuan	0	0	0	0	0	0
MALAYSIA	4,345	53,696	58,041	3,993	61,265	65,258

†States with specialised psychiatric hospitals

Source of patient data: Psychiatric survey database

4.4.3.2 Children and adolescent mental health

Children are the group of people aged ten and below whilst adolescent are those aged between ten and less than nineteen years old. There were slight increased in new outpatient attendances among the children and adolescent, and also the follow-up cases (Table 4.19).

Table 4.19: Out-patient specialised children and adolescent psychiatric clinic attendances, 2014 to 2015

States	2014			2015		
	New(n)	Follow-up(n)	Total(n)	New(n)	Follow-up(n)	Total(n)
Perlis	73	333	406	71	324	395
Kedah	412	2124	2,536	391	2,924	3,315
P.Pinang	668	4,928	5,596	561	2,444	3,005
†Perak	166	1,146	1,312	264	1,272	1,536
Selangor	743	3,444	4,187	998	3750	4,748
WP Kuala Lumpur	438	2,250	2,688	343	2,234	2,277
WP Putrajaya	20	104	124	48	179	227
N.Sembilan	315	971	1,286	305	917	1,222
Melaka	164	1,205	1,369	133	1,495	1,628
†Johor	1,145	8,535	9,680	1,112	7,422	8,534
Pahang	202	1,526	1,728	280	1,407	1,687
Terengganu	541	602	1,143	330	537	867
Kelantan	134	668	802	136	1,794	1,930
†Sabah	561	3,126	3,687	695	3,559	4,254
†Sarawak	480	1,906	2,386	458	2,573	3,031
WP Labuan	0	0	0	0	0	0
Malaysia	6,051	32,764	38,815	6,125	32,831	38,956

†States with specialised psychiatric hospitals
Source of patient data: Psychiatric survey database
(n): count

Summary points:

- Overall the total discharges for psychiatric cases were decreasing.
- The service provision covered for all ages, geriatric, adolescent and children.
- There were variations in the number of clinic attendance. The reasons need to be explored.

4.4.3.3 Substance abuse – Methadone and addictions clinics

The highest number of attendances at methadone clinics was Perak state followed by Penang and Terengganu. While the highest addiction clinics attendances were WP Kuala Lumpur and Negeri Sembilan as shown in Table 4.20.

4.5 MENTAL HEALTH PROMOTION AND PREVENTION STRATEGIES

There were two approaches of screening activities;

1. Mental health screening in school which is focusing on adolescent mental health under the initiative of *MINDA SIHAT*.
2. Mental health screening of general population through primary health programme.

In addition to the screening program, there were health education activities for mental health awareness, however, systematic monitoring and evaluation is essential in order to report the effectiveness of health education programmes.

Table 4.20: The out-patient specialised methadone and addiction clinics attendances, 2015

States	No. of centres	Methadone		Addiction	
		New(n)	Cummulative(n)	New(n)	Cummulative(n)
Perlis	2	66	668	0	0
Kedah	32	283	2,123	50	376
P.Pinang	26	290	4,474	0	0
Perak	51	332	6,592	0	0
Selangor	37	334	3,392	75	754
WP Kuala Lumpur	20	133	4,979	95	1,148
WP Putrajaya	0	0	0	0	0
N.Sembilan	47	129	2,670	247	1,051
Melaka	31	313	2,938	0	0
Johor	60	819	3,967	155	817
Pahang	64	314	4,414	0	0
Terengganu	33	337	2,534	8	23
Kelantan	71	354	2,497	6	10
Sabah	5	3	12	11	100
Sarawak	2	2	4	127	282
WP Labuan	1	1	1	0	0
Malaysia	482	3,710	41,265	774	4,561

†States with specialised psychiatric hospitals

Source of patient data: Psychiatric survey database

(n): count

Note: These data covers services by MOH hospitals only.

4.5.1 Mental health screening in school

Mental health problem emerge during adolescent period particularly depression. It is associated with deviant social outcomes such as alcoholism, smoking, illicit substance use, adolescent pregnancy, school drop out and delinquency. Early detection is crucial for provision of early intervention and thus prevent worse outcomes.

During recent years, in collaboration with MOH, Ministry of Education has initiated mental health screening program among the form four students (16 years old) using DASS21. Perlis showed high rate of mental health screening among the 16 years old students followed by WP Kuala Lumpur, Putrajaya and Terengganu. Six states achieved less than national average. The states were Sabah, Sarawak, Selangor, Kedah, Pahang dan WP Labuan. Data from Johor state was not available (Figure 4.8).

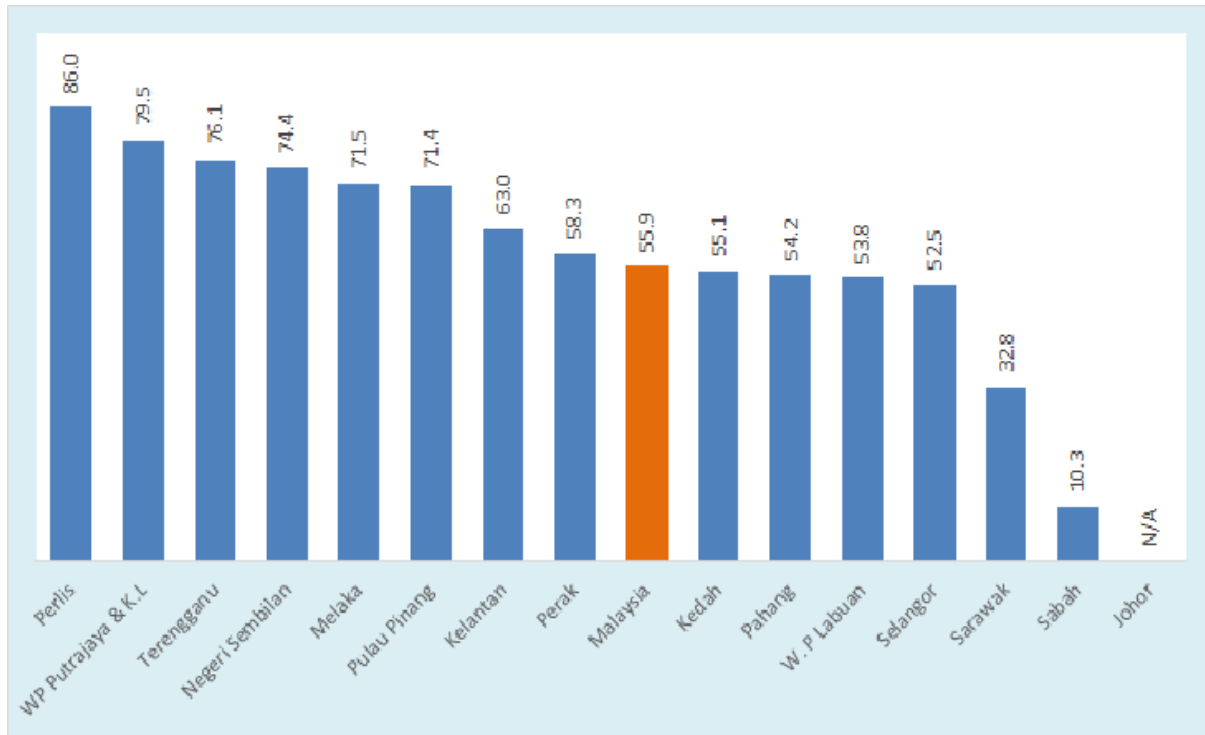
4.5.2 Mental health screening at primary care clinic(PHC)

General population, particularly adults are screened at the primary healthcare clinics using DASS21. The number of people being screened were increasing in many states (Figure 4.9). Overall, mental health screening in PHC was increasing from 7.1 per 1000 population in 2014 to 8.2 per 1000 population in 2015. Eight states showed relatively increased screening rate in 2015.

4.6 INTEGRATION OF MENTAL HEALTH CARE INTO PRIMARY HEALTH CARE AND COMMUNITY-BASED PSYCHIATRIC SERVICES

Beginning in 1990s, in order to achieve the highest attainable level of mental healthcare, Malaysia began integrating mental health services into primary health care. The PHC workers are taking the mental

Figure 4.8: Percentage of mental health screening among 16 years old students; 2015



Source of data: Ministry of Education

Figure 4.9: Rate (per 1000 population) of mental health screening in primary healthcare clinic 2014-2015

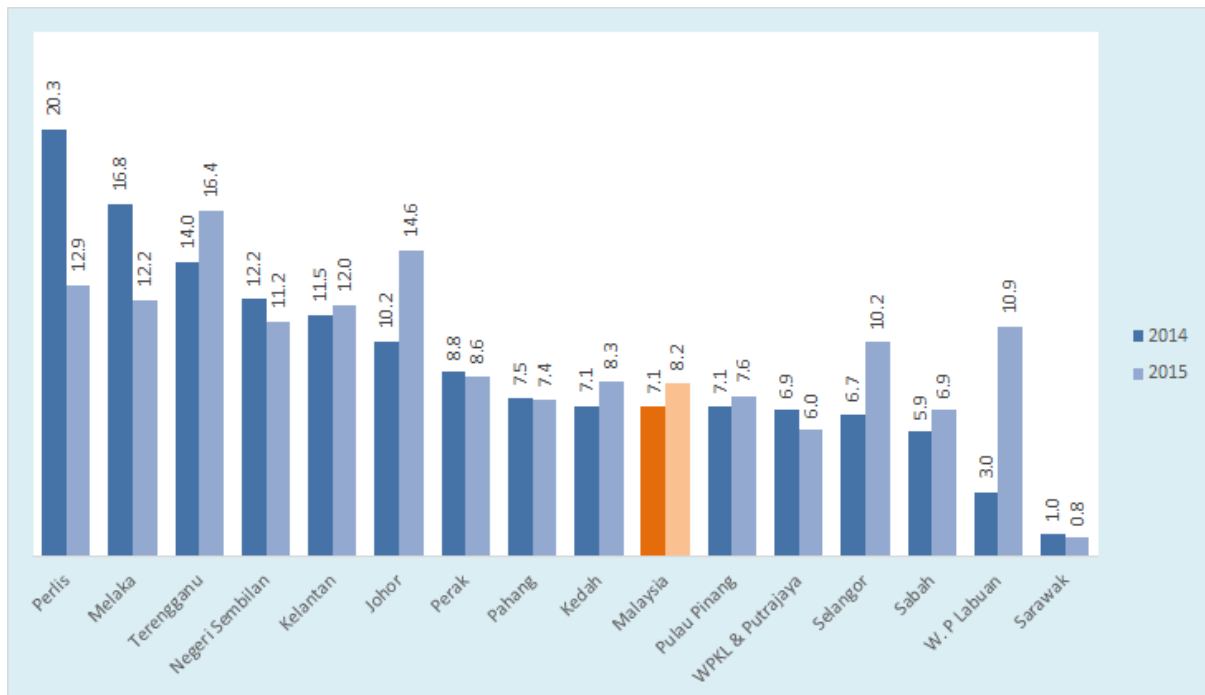


Table 4.21: FMS-mental cases referral ratio; 2014-2015

States	2014			2015		
	FMS(n)	Referral(n)	Ratio	FMS(n)	Referral(n)	Ratio
Perlis	4	152	1:38	4	328	1:82
Kedah	23	318	1:14	23	142	1:6
P.Pinang	13	286	1:22	23	142	1:6
Perak	22	494	1:23	21	937	1:45
Selangor	40	N/A		47	1158	1:25
WP KL & Putrajaya	19	904	1:48	17	632	1:37
N.Sembilan	17	362	1:21	16	245	1:15
Melaka	9	892	1:99	11	722	1:66
Johor	18	1048	1:59	20	1860	1:93
Pahang	17	183	1:11	19	150	1:8
Terengganu	21	195	1:9	19	283	1:15
Kelantan	19	553	1:29	20	839	1:42
Sabah	14	358	1:26	14	444	1:32
†Sarawak	13	46	1:4	17	39	1:2
WP Labuan	1	76	1:76	1	3	1:3
MALAYSIA	250	5867	1:23.5	265	7882	1:29.7

healthcare responsibilities including case findings, follow-up of existing mental cases and provision of mental health education to the communities, families and individuals. In situation of complex cases, the attending doctors at PHC level refer patients to psychiatrist at the hospitals with psychiatric services which are now available at most of the state's hospitals as shown in Figure 4.3.

The PHC services are complimented by community psychiatric services which were part of hospital psychiatric services activities as described in subsection 4.6.1.

In recent years, community-based specialised services which is known as MENTARI were set-up in order to bring the specialised services closer to the community. Details are described in subsection 4.6.2.

4.6.1 Community psychiatric services

Community psychiatric service is an extended service from respective hospital with psychiatric services. The paramedic psychiatric teams visiting patients at their own home. The ultimate aims were to minimize defaulter rate by ensuring the compliance through treatment and counselling to both patients and carers. In addition to that, the team is also providing support to patients and families through health education and counselling (Table 4.22).

4.6.2 Community-based specialist mental health services (MENTARI)

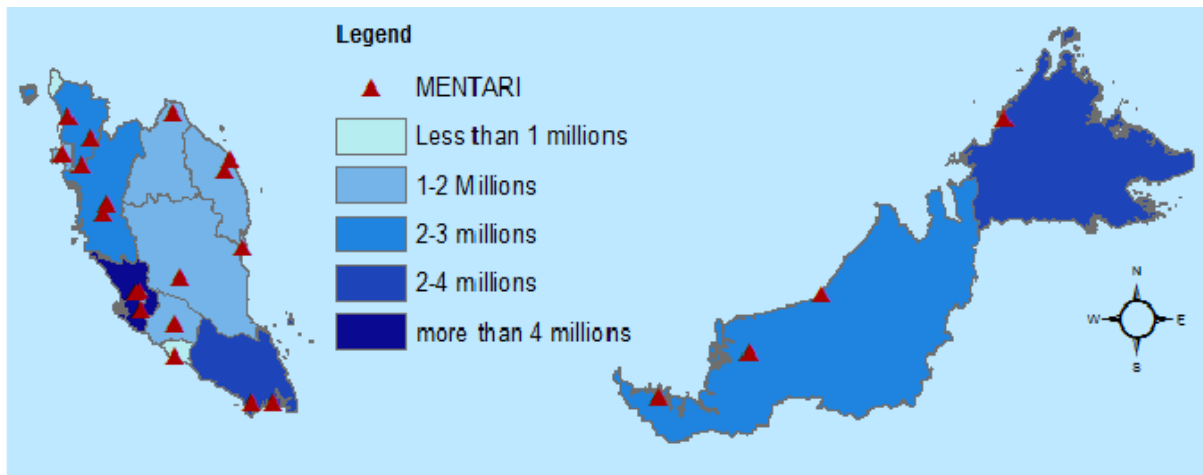
MENTARI is basically a community mental health center which was launched in 2015. Its main aim were to re-integrate patients with serious mental illnesses using work-based therapies; and preventive treatment for individuals having early symptoms. These centers are managed by psychiatric and mental health department of respective MOH hospitals. The number of MENTARI centre across the country in 2015 is shown in table 4.23 and the distribution is shown in figure 4.10.

Table 4.22: Number of community psychiatric visits in MOH hospitals, 2015

State	Acute care	Assertive	Total
Perlis	136	176	312
Kedah	876	1,028	1,904
Pulau Pinang	0	4,832	4,832
†Perak	857	18,892	19,749
Selangor	207	3,562	3,769
WP KL & WP Putrajaya	0	4,488	4,488
Negeri Sembilan	300	1,108	1,400
Melaka	337	6,267	6,604
†Johor	5,559	23,445	29,004
Pahang	83	1,883	1,966
Terengganu	79	1,817	1,896
Kelantan	482	4,189	4,671
†Sabah	381	2,587	2,968
†Sarawak	206	12,225	12,431
Labuan	0	0	0
Malaysia	9,203	85,391	94,594

†States with specialised psychiatric hospitals
 Source of data: Psychiatric survey database
 (RM): Ringgit Malaysia

Figure 4.10: The distribution of community-based mental health centre (MENTARI) and the Malaysia population by states, 2015



Note: States with specialised psychiatric hospitals: Perak, Johor, Sabah and Sarawak

Table 4.23: The cumulative number of gazetted Community-based Mental Health Center (MENTARI) in Malaysia, 2015

States	Total	Hospital-in-charge	Mentari Site
Perlis	0	-	-
Kedah	2	Hosp. Sultanah Bahiyah, Alor Star Hosp. Sultan Abd. Halim, Sg.Petani	Mentari Pendang Mentari Sultan Abd. Halim
P.Pinang	1	Hosp. Bukit Mertajam	Mentari Buttetworth
†Perak	3	Hosp. Raja Perempuan Bainun, Ipoh Hosp. Selama Hosp. Bahagia Ulu Kinta	Mentari Simee Mentari Selama Mentari Batu Gajah
Selangor	2	Hosp. Selayang Hosp. Sungai Buloh	Mentari Selayang Mentari Sungai Buloh
WP Kuala Lumpur	0	-	-
WP Putrajaya	1	Hosp. Putrajaya	Mentari Putrajaya
N.Sembilan	1	Hosp. Tuanku Ampuan Najihah	Mentari Kuala Pilah
Melaka	1	Hosp. Melaka	Mentari Melaka
†Johor	2	Hosp. Permai, Tampoi Hosp. Permai	Mentari Pekan Nenas Mentari Masai
Pahang	2	Hosp. Tengku Ampuan Afzan Hosp. Sultan Hj. Ahmad Shah	Mentari Balok Mentari Mentakab
Terengganu	2	Hosp. Hulu Terengganu Hosp. Sultanah Nurzaharah	Mentari Wakaf Tapai Mentari Hosp. Sultanah Nurzaharah
Kelantan	1	Hosp. Raja Perempuan Zainab II	Mentari Ketereh
†Sabah	1	Hosp. Mesra, Bukit Padang	Mentari Bukit Padang
†Sarawak	3	Hosp. Bintulu Hosp. Umum Sarawak, Kucing Hosp. Sibu	Mentari Bintulu Mentari Petraja Mentari Jalan Oya
WP Labuan	0	-	-
Total in Malaysia	22		

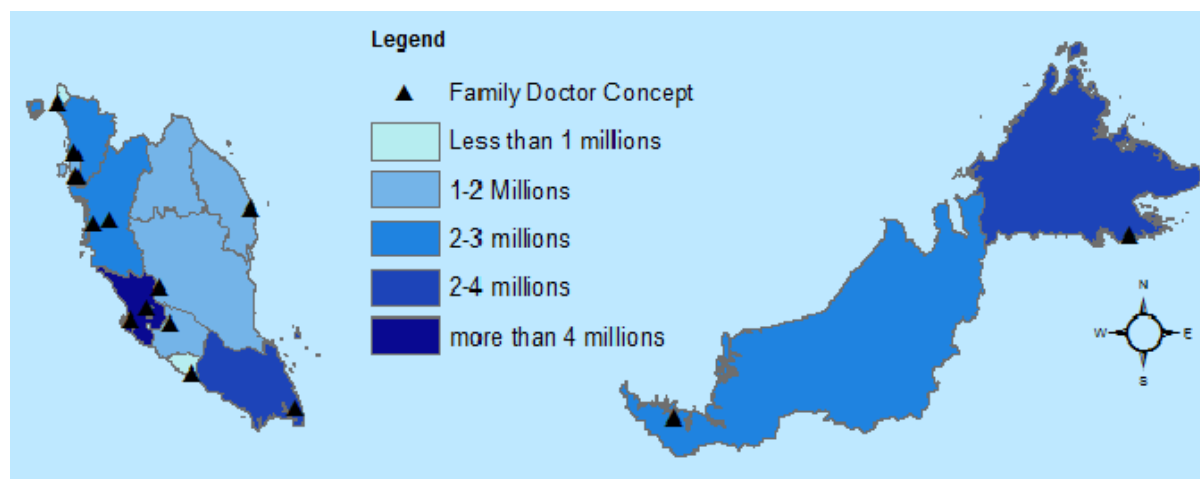
†States with specialised psychiatric hospitals
Source of data: unpublished primary data

4.6.3 Primary healthcare services

4.6.3.1 Family Doctor Concept (FDC)

The activities at primary healthcare services are described in subsection 4.5.2. In addition to those activities, the primary healthcare division had started a pilot project of "Family Doctor Concept (FDC)". By end of December 2015, there were a total of 14 clinics launched these activities as shown in Figure 4.11. Although the prime aim of this concept was to enhance the management of chronic diseases, this is also an opportunity for the point of contact for mental cases.

Figure 4.11: Clinics with pilot project of Family Doctor Concept and the Malaysia population by states, 2015



Note: States with specialised psychiatric hospitals: Perak, Johor, Sabah and Sarawak

4.6.3.2 Referral to MO/FMS for early mental health intervention

Patient or individual with symptoms of mental state who were detected through screening program *MINDA SIHAT* or through other encounters were referred to MO or FMS at PHC level for further assessment and management. WP Labuan showed the highest ratio of doctor-patient referral ratio of 1:76 in 2014 but dropped significantly in 2015. Johor state showed persistently high doctors-patient referral ratio with 1:58 and 1:93 in the year 2014 and 2015 respectively, followed by state of Melaka (Table 4.21).

4.7 QUALITY OF PATIENT CARE AND SAFETY

Quality assurance programs has introduced six quality indicators which were monitored by Clinical Performance Surveillance Unit, MOH (CPSU). The six indicators which were reported half yearly and the result is shown in Table 4.24. The definitions of the indicators are in appendix A. For the indicators, the achievements in 2015 were above the national standards.

4.8 PATIENTS AND SERVICE OUTCOMES

4.8.1 Prevalence of mental health problem among children and adult

Refer to subsection 4.1.1.

Table 4.24: KPI achievement in psychiatric services; 2015

Indicator	Standard	Jan-Jun	Jul-Dec
Percentage of non-urgent cases that were given appointment for first consultation within (\leq) 6 weeks at Psychiatric Clinic	$\geq 80\%$	99.3%	99.1%
Percentage of patients with waiting time of ≤ 90 minutes to see the doctor at Psychiatric Clinic	$\geq 90\%$	97.5%	97.8%
Defaulter rate among psychiatric outpatients	$\leq 15\%$	6.8%	5.7%
Percentage of new outpatients received psycho-education on first visit at Psychiatric Clinic	$\geq 80\%$	98.1%	99.3%
New patients started on antipsychotic medication developing weigh gain $\geq 7\%$ from baseline after 6 months of treatment	$\leq 20\%$	3.4%	3.6%
Percentage of patients prescribed with more than 2 benzodiazepines/ hypnotics at a particular time	$\leq 10\%$	0.2%	0.1%

Source of data: Clinical Performance Surveillance Unit, Ministry of Health

4.8.2 Suicide rate and self-harm

Refer to subsection 4.1.3.

4.8.3 Detection of new cases at the primary healthcare

Detection rate is important indicator for effective preventive activities at community and primary health care level. Detection rate for severe stress, anxiety and depression among form four school children are shown in Figure 4.13 and the detection rate of severe depression among the general population screened at the primary health care level are shown in Figure 4.12 .

4.8.4 Hospitalisation rate of psychiatric cases

Hospitalisation rate may reflex the effectiveness of community mental health services and primary health-care. Patients with continual care and good compliance are expected to have less risk of experiencing acute phase that require hospitalisation or needy for prolong rehabilitation. The hospitalisation rate was decreasing over the last 5 years which may reflects better compliance and continuity of care (Figure 4.7).

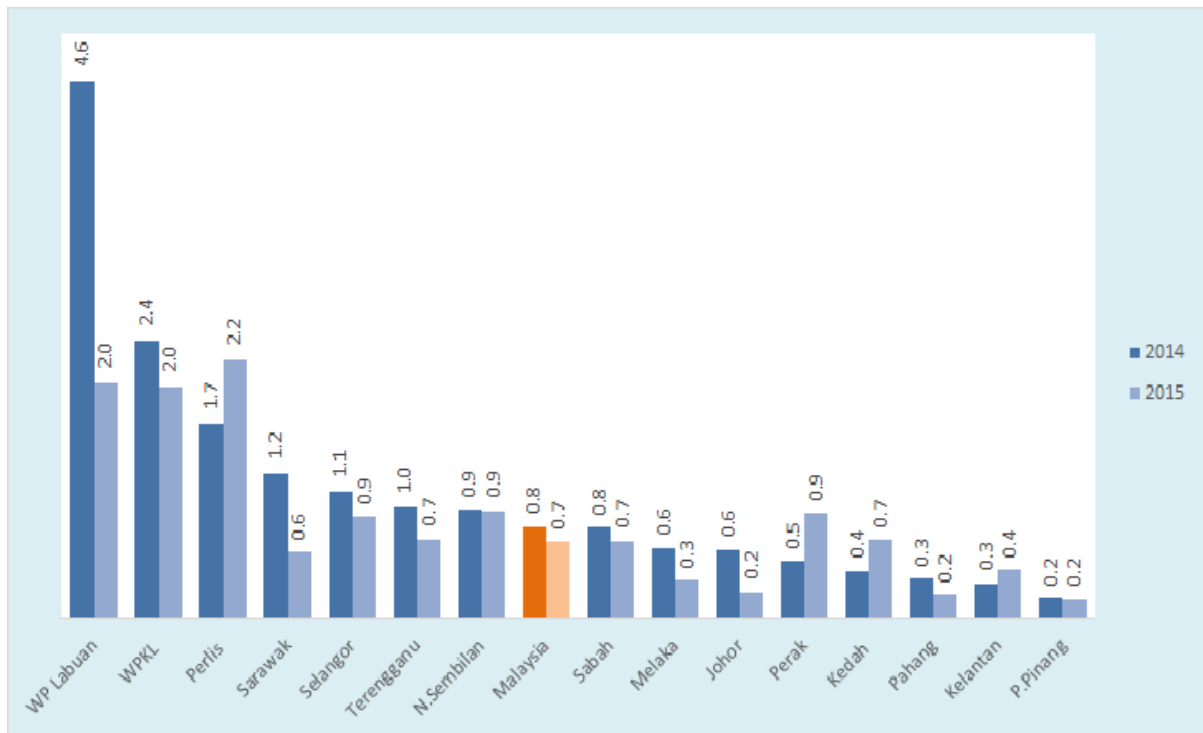
4.8.5 Re-admission rate of psychiatric cases within 30 days after discharge

Re-admission rate within 30 days is a crucial indicator to measure the effectiveness of the psychiatric care. Data is not available.

4.8.6 Patients back to employment

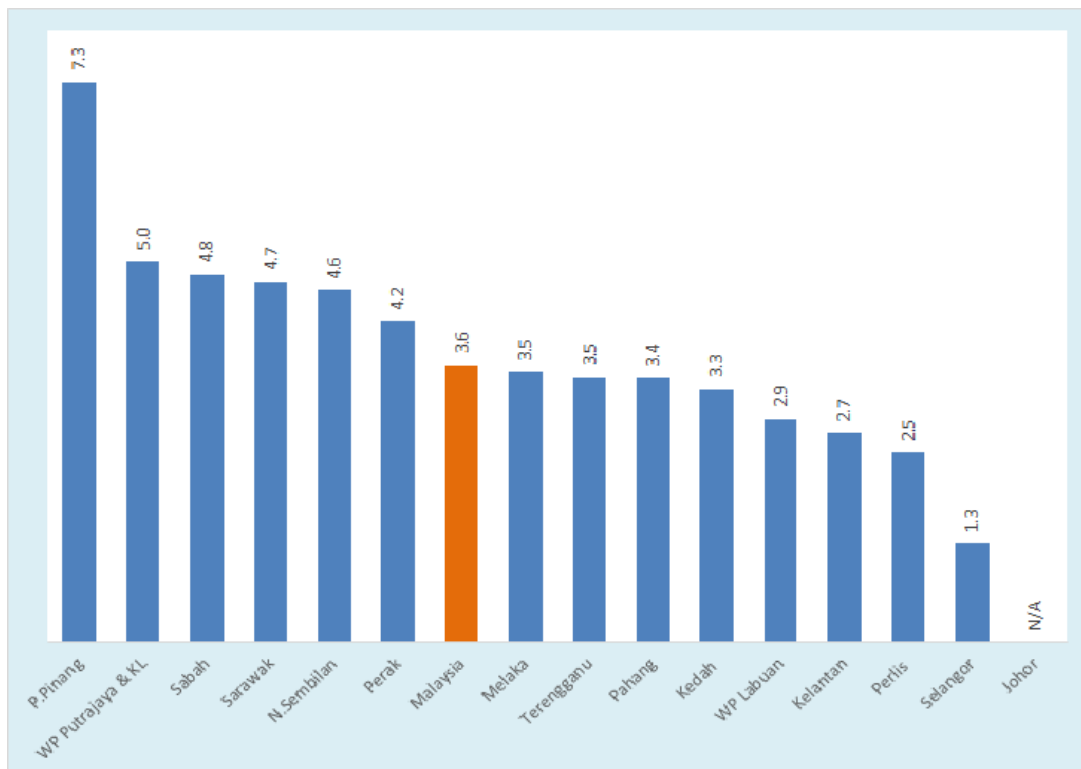
Patient back to employment is a sensitive indicator which may indicate the effectiveness of patients care and improve patients quality of life. However data is not yet well established.

Figure 4.12: Severe depression detected based on the DASS21 screening at primary health care; 2014-2015



Source of data: Mental Health Unit, Disease Control Division

Figure 4.13: Severe depression detected based on the DASS21 screening (%) among 16 years old at school, 2015



Source of data: Ministry of Education

4.8.7 Average length of stay of psychiatric cases (ALOS) and bed-occupancy rate (BOR)

The average length of stay varies between 11 days and 60 days as shown in Table 4.25. The high ALOS in four states (Perak, Johor, Sabah and Sarawak) are due to the present of specialised psychiatric hospitals where many of the cases are inmates for some legal issues. The details of ALOS and BOR by hospitals are listed in appendix.

Table 4.25: The average length of stay (ALOS) and bed-occupancy rate (BOR) of psychiatric cases by states, 2014 to 2015

States	2014			2015		
	Hospitals with psychiatric services (n)	ALOS	BOR	Hospitals with psychiatric services (n)	ALOS	BOR
Perlis	1	10.0	51.0	1	15.2	60.6
Kedah	2	30.0	79.9	3	22.3	63.5
P.Pinang	2	14.0	69.7	2	21.1	66.6
Perak	6	63.2	78.7	6	59.7	59.9
Selangor	6	13.7	61.7	6	15.4	69.6
WP Kuala Lumpur	1	13.0	97.9	1	11.5	92.1
WP Putrajaya	1	0.0	0.0	1	-	-
N.Sembilan	3	19.0	70.0	2	14.0	66.0
Melaka	1	13.8	63.9	1	15.8	74.9
Johor	7	49.2	104.5	7	24.4	39.1
Pahang	4	15.5	61.6	4	18.7	58.4
Terengganu	3	6.5	28.4	3	15.0	64.8
Kelantan	3	18.5	50.1	3	39.4	93.5
Sabah	5	34.0	52.7	5	38.1	69.4
Sarawak	5	43.8	62.8	5	52.2	50.0
WP Labuan	0	-	-	0	-	-
Malaysia	50	24.6	66.6	50	25.9	66.3
Specialized Psychiatric Hospital	4	177		4	139.1	54.8
Hospital with Psychiatric services	46	12.0		46	12.1	39.9

†States with specialised psychiatric hospitals
Source of patient data: Psychiatric survey database
(n): count
ALOS: average length of stay
BOR: bed-occupancy rate

4.9 Research and development

The research projects related to mental health and psychiatry were searched through National Medical Research Register (NMRR) using keywords as described in chapter three. Based on MREC approval, the number of research proposal was increasing. Using relevant keywords search, there were a total of 42 and 50 projects were approved by MREC committee in 2014 and 2015 respectively.

Part V

**PERFORMANCE ASSESSMENT
REPORT**

Performance of Malaysian Mental Healthcare

5.1 INTRODUCTION

In this chapter, we discussed and summarised the findings in chapter 4 in order to assess the performance of mental healthcare.

A number of core indicators are selected for the purpose of continual monitoring and assessment of performance. The selection are based on the following criteria;

- The availability of data sources
- The indicators are interpretable
- Reliable
- Actionable

As discussed in chapter 1, these indicators should be able to measure the goals that we desired to achieve which were outlined in the Psychiatric and Mental Health Services National Framework and Action Plan 2016 – 2020. Therefore, the indicators monitored should be able to reflect the achievement of the following mental healthcare goals;

Intermediate goals;

- Accessibility
- Efficiency
- Quality and effectiveness

Ultimate goals;

- Population mental health status
- Financial protection
- Responsiveness

5.2 PERFORMANCE SCORECARD

These selected indicators are monitored continually and are presented in the form of **scorecard** (refer to scorecard in page v-vi)

5.3 INTERNATIONAL COMPARISON

We compare certain indicators with other OECD countries ¹ and other regions based on WHO reports [13]. We chose OECD countries as comparison with the aim to determine how far is Malaysia in order to achieve the OECD standard.

Depending on the availability of data and the indicators reported by OECD countries, below are some comparisons. These data must be interpreted with caution due to some limitations such as variation in data ascertainment. Malaysia's data were mostly from the MOH only and also the probable variation in inclusions and exclusions .

5.3.1 List of some proxy indicators for comparisons

1. Hospitals density per 1 million population
2. Psychiatric beds-density per 100,000 population
3. Psychiatrist density per 100,000 population
4. Hospital discharges for Schizophrenic cases (ICD10 group F20-F29)
5. Hospital discharges for Mood disorders cases (ICD10 group F30-F39)
6. ALOS for Schizophrenic cases (ICD10 group F20-F29)
7. ALOS for Mood disorders cases (ICD10 group F30-F39)
8. Hospital discharge for all psychiatric admission per 100,000 population

5.3.2 Findings

Overall, mental health infrastructures with psychiatric beds-density as a proxy (figure 5.2) and psychiatrist density as a proxy of an important workforce category (figure 5.3) were still significantly low as compare to some OECD countries.

Hospital density per million population (Hospital with bed density) was higher as compared to average WPRO. However, the density for specialised psychiatric hospitals was lower than WPRO (Figure 5.1).

Psychiatric bed density per 1,000 population were higher than most WHO regional average except EURO and some OECD countries (Figure 5.2).

The density of psychiatrist in MOH Malaysia was 0.5 per 1,000 population in 2015 which is very low as compared to OECD countries.

The density of psychiatrist in MOH was 0.5 per 100,000 population in 2015. Survey by NHEWS in 2013 [11] which included private facilities. When private practices were included, the density was still low (0.8 per 100,000 population). The density was very low as compare to several OECD countries.

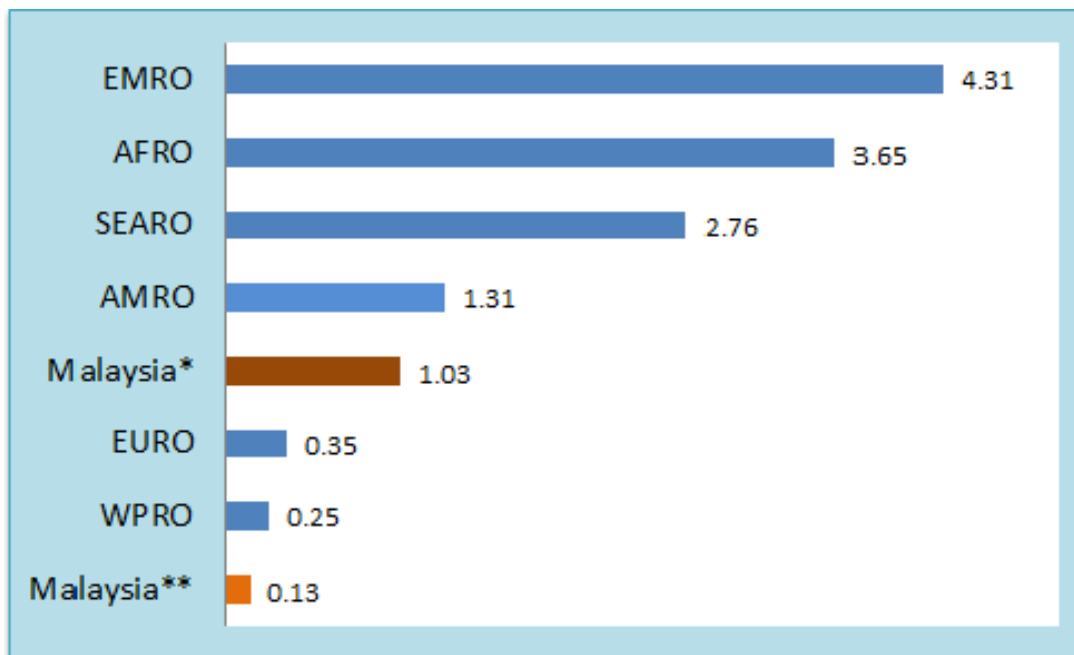
The rate of intentional self-harm is low as compared to others OECD countries although under reporting is anticipated (Figure 5.4).

¹[https:// stats.oecd.org/index.aspx?DataSetCode =HEALTH_STAT](https://stats.oecd.org/index.aspx?DataSetCode=HEALTH_STAT)

Hospital discharges rate for all mental cases in Malaysia was high as compared to other WHO regions except Europe (Figure 5.5). Highest discharged rate were observed in two commonest group of disease; ICD10 F20-F29 (schizophrenia, schizotypal and delusional disorders)(Figure 5.6) and ICD10 F30-F39 (Mood disorders) (Figure 5.7). The discharge rate were highest as compared to OECD countries.

ALOS for ICD10 F20-F29 was higher then most OECD countries except Korea and UK (Figure 5.8). However, ALOS for mood disorders (ICD10: F30-F39) was fairly lower (Figure 5.9).

Figure 5.1: Hospitals density per 1 million population and international comparison, 2015

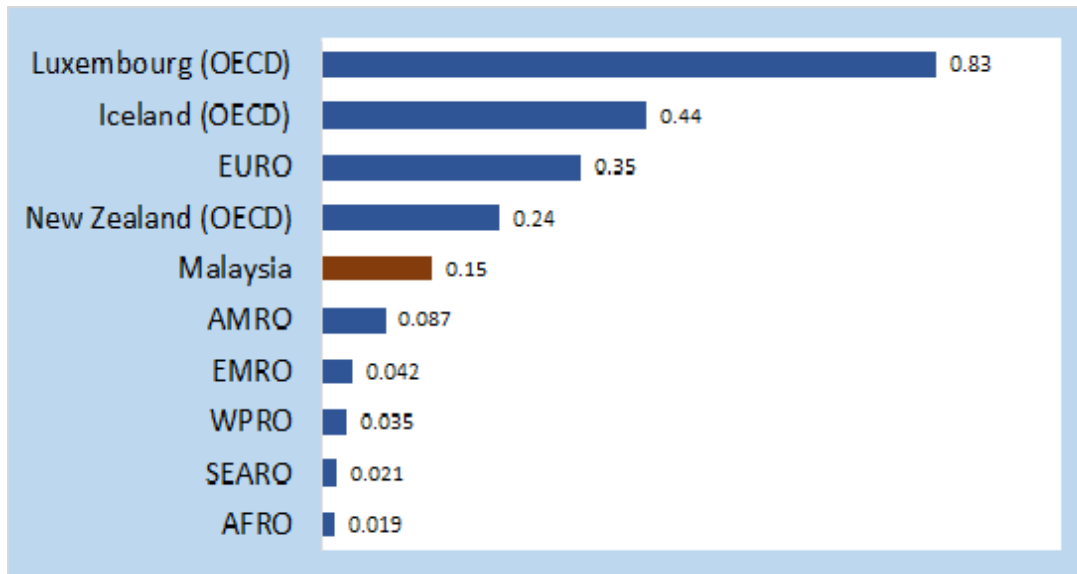


* All hospitals with psychiatric services

** Specialised psychiatric hospitals

Source of data: Mental Health Atlas 2014

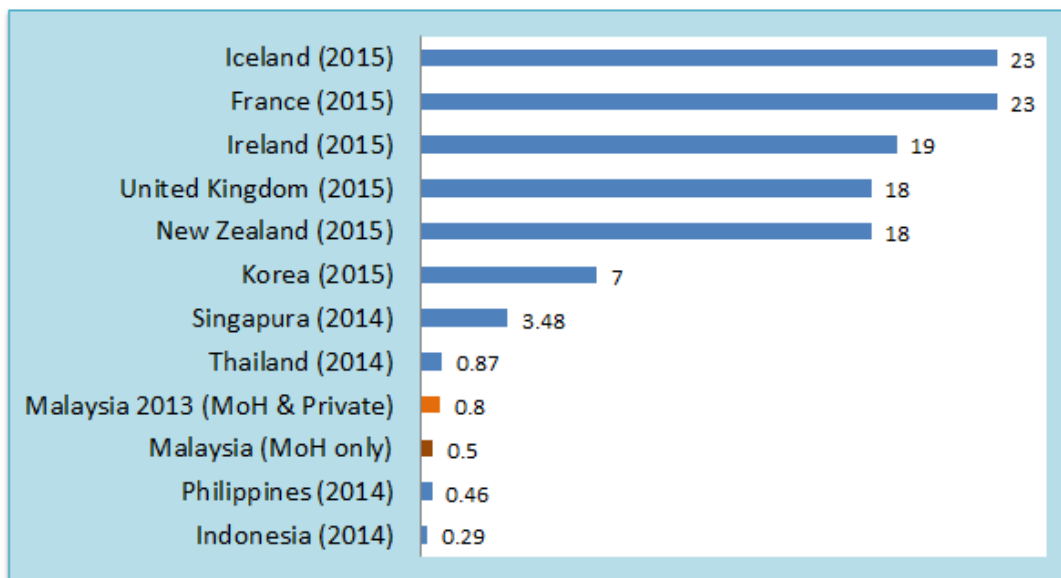
Figure 5.2: Psychiatric beds-density per 1,000 population and international comparison, 2015



Source of data: OECD data 2015

Source of data: Mental Health Atlas 2014

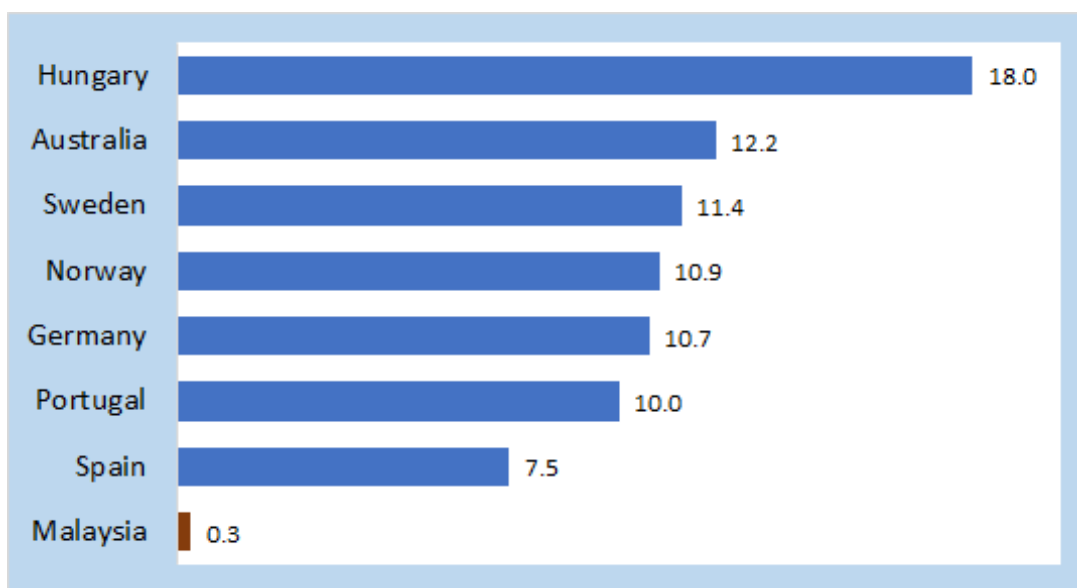
Figure 5.3: Psychiatrist density per 100,000 population; Malaysia and international comparisons, 2015.



Source of data: OECD data 2015

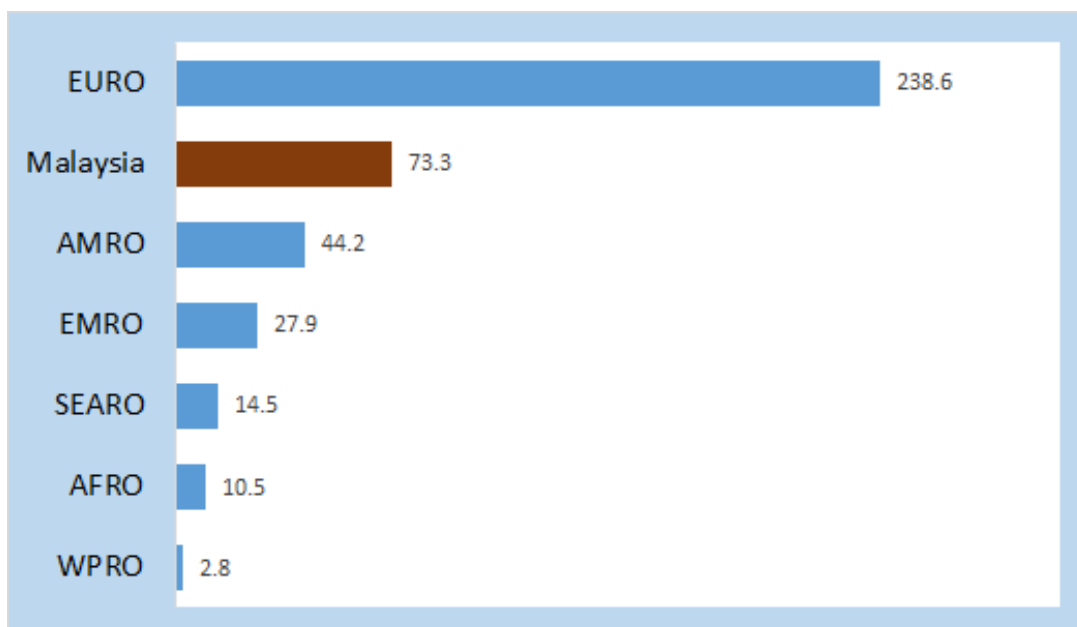
Source of Malaysia data: Psychiatric survey database and NHEWS

Figure 5.4: Intentional self harm hospital discharges rate per 100,000 population; Malaysia and international comparisons, 2014.



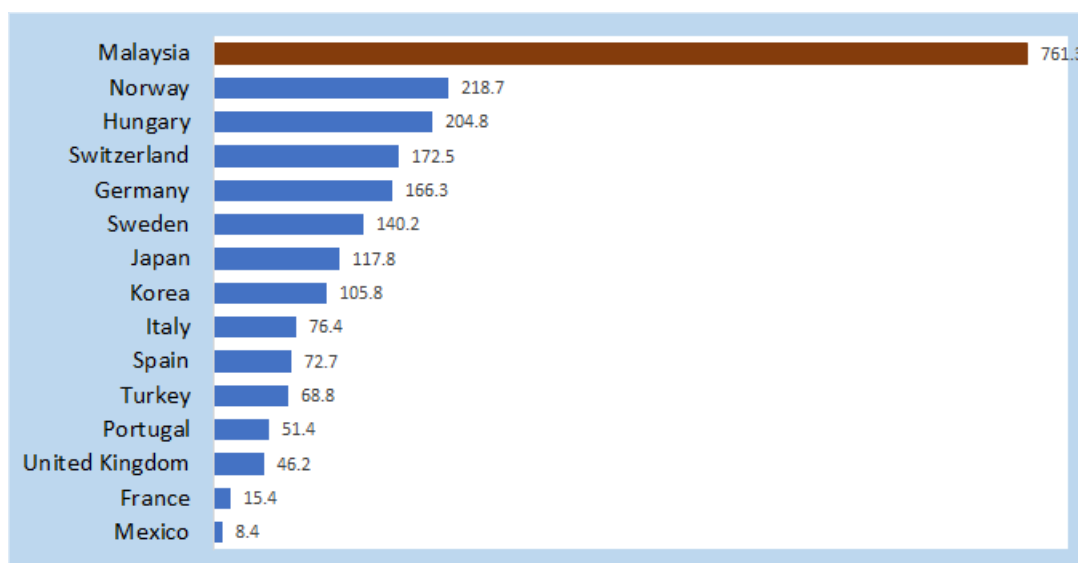
Source of discharges data: HIC, MOH
Source of OECD data: www.stats.OECD.org

Figure 5.5: Hospital discharges rate per 100,000 population: Malaysia and international comparisons, 2014.



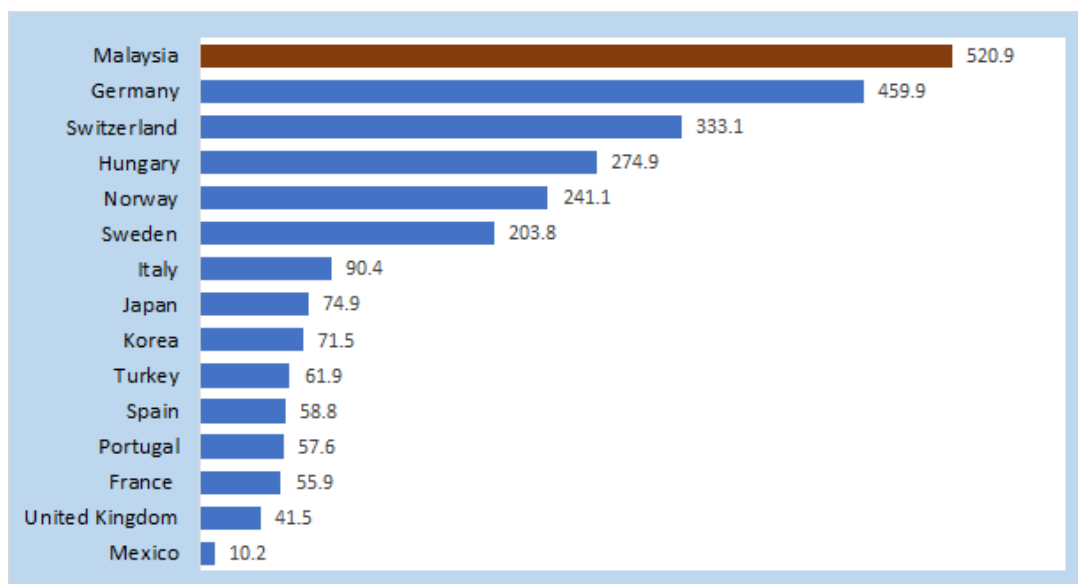
Source of discharges data: HIC, MOH : data included MOH facilities and private
Source of data: Mental Health Atlas 2014

Figure 5.6: Schizophrenia, schizotypal and delusional disorders (ICD10: F20-F29) hospital discharges rate per 100,000 population; Malaysia and international comparisons, 2014.



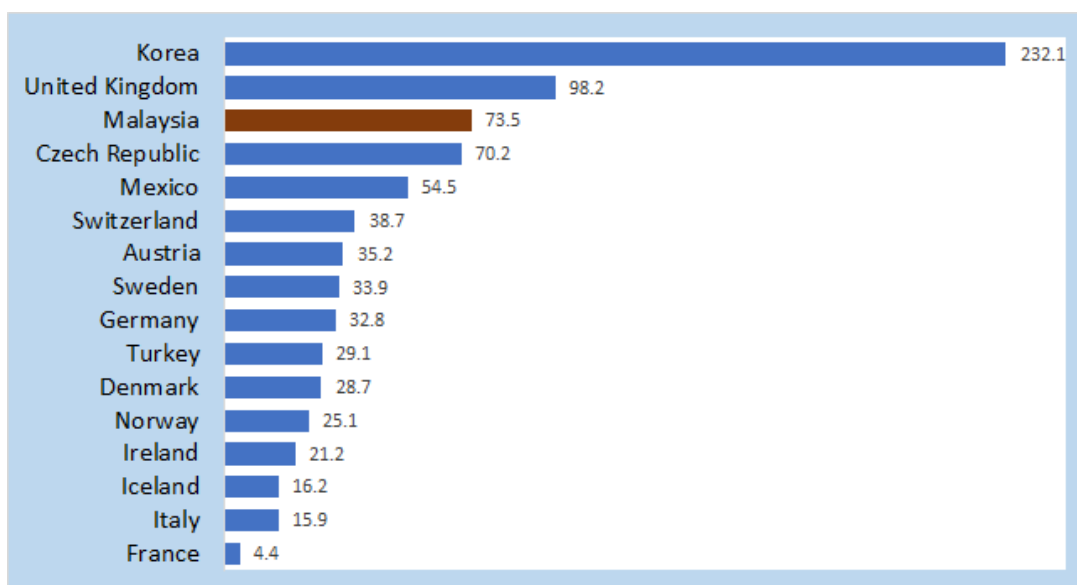
Source of discharges data: HIC, MOH
 Source of OECD data: www.stats.OECD.org

Figure 5.7: Mood disorders (ICD10: F30-F39) hospital discharges rate per 100,000 population; Malaysia and international comparisons, 2014.



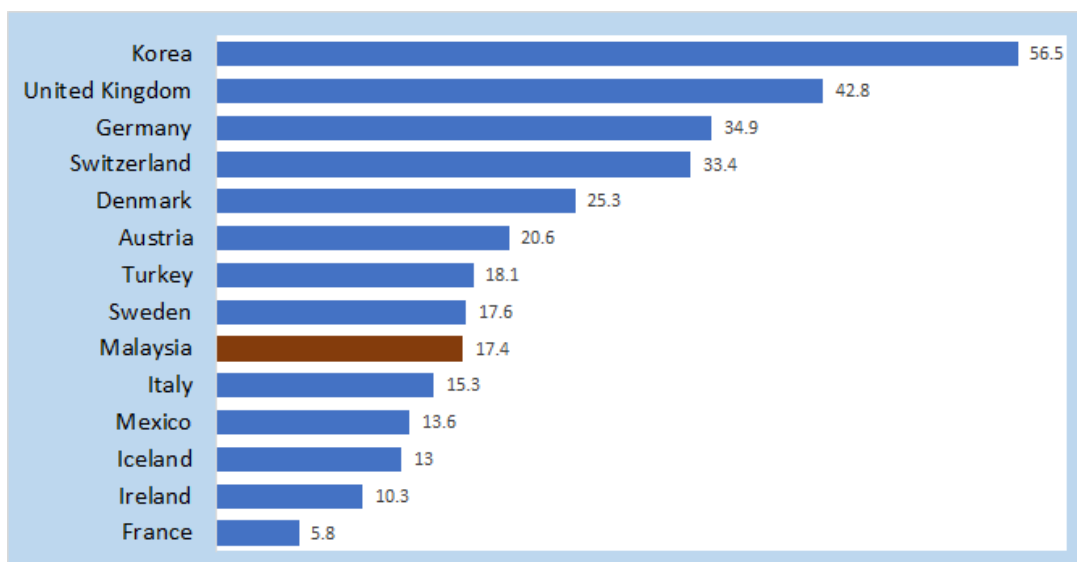
Source of discharges data: HIC, MOH
 Source of OECD data: www.stats.OECD.org

Figure 5.8: Schizophrenia, schizotypal and delusional disorders (ICD10: F20-F29) average length of stay; Malaysia and international comparisons, 2015.



Source of discharges data: HIC, MOH
 Source of OECD data: www.stats.OECD.org

Figure 5.9: Mood disorders (ICD10: F30-F39) average length of stay; Malaysia and international comparisons, 2015.



Source of discharges data: HIC, MOH
 Source of OECD data: www.stats.OECD.org ²

5.4 ASSESSMENT OF MENTAL HEALTHCARE PERFORMANCE





The assessment of mental healthcare performance are discussed by four dimensions. The listed indicators were based on the criteria for selection which were described earlier in this chapter, and consensual by stakeholders or advisers. **Dimension 1** is an assessment on the mental health status of the population. **Dimension 2** is assessing the responsiveness in term of patients satisfaction in quality of care, and also the accessibility of health services. **Dimension 3** is looking at the fairness in mental healthcare financing and **Dimension 4** is assessing whether the mental healthcare system is sustainable.

5.4.1 DIMENSION 1: ACHIEVING BETTER MENTAL HEALTH STATUS






5.4.1.1 List of indicators;-

1. Prevalence of mental health problem for children (5-15 years old).
2. Prevalence of mental health problem for adult (≥ 16 years old).
3. Prevalence of mental health problem for geriatric (≥ 60 years old).
4. Prevalence of suicide attempt (≥ 16 years old).
5. Suicide rate.
6. Prevalence of physically active.
7. Prevalence of identified drug abuse per 100,000 population.
8. Prevalence of binge drinker among ≥ 18 years old.

5.4.1.2 Policy questions and findings

Sub Dimension	Policy Questions	Findings	Assessment
Improving the mental health status.	(1) Does the population live in better mental health status?	The prevalence of mental problem among adult and children were 29.2% and 12.1% respectively (refer table 4.1), which were apparently high.	
	(2) What was the trends in suicidality?	Data on suicide were under ascertained. Based on NHMS 2011, the prevalence of suicidal attempt among adult was 0.5%. The suicidality among the teenagers was high. NHMS 2012, prevalence suicidal attempt among 13 to 17 years 1 or more time was 6.8% (Table 4.4).	
Improving equity in health	(1) What is the extent of differences in health status related to sex?	The prevalence of mental health problem is slightly higher among female (30.8%) than male (27.6%) (Table 4.1) but not significant.	
	(2) What is the extent of geographical variations in mental health status?	There was geographical variation in mental health problem. Higher prevalence in rural area (Table 4.1) but not significant.	

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	(3) What is the extent of variation in mental health status related to age?	Based on NHMS survey related to mental health problem, the rural adult had 1.5% higher among young adults prevalence of mental problem as compare to urban. The rural children had 1.2% higher prevalence as compare to urban children however the difference are not significant (Table 4.1).	
	(4) What is the extent of variation in mental health status related to ethnicity?	Highest prevalence of mental problem among the minority ethnic (Other Bumiputera) and others (Table 4.1).	
Addressing the main risk factors and promoting healthier lifestyle.	(1) How has the prevalence of insufficient physical activity habit?	Living active lifestyle is a known preventive factor for mental health problem. Recent survey showed only 33.5% of Malaysian were physically inactive, which is relatively high as compare to other neighbouring countries. (Table 4.8)	
	(2) What are the patterns of drug abuse?	Based on registered cases from AADK, the prevalence of drug abuse was increasing in recent years (refer table 4.6).	
	(3) What are the patterns of alcohol consumptions and binge drinker among ≥ 18 years old?	Survey showed the prevalence of current drinker was 7.7% predominantly male, younger age group and ethnic chinese or others (refer table ??). The prevalence of binge drinker among ≥ 18 years old was 5.0%. Lowest among malays. This could be influenced by culture and religion.	

5.4.2 DIMENSION 2: ENSURING CONFIDENCE AND SATISFACTION IN HIGH QUALITY, ACCESSIBILITY HEALTH SERVICES

5.4.2.1 List of indicators;-

1. Patient satisfaction survey.
2. Percentage of patients with waiting time of ≤ 90 minutes to see the doctor at psychiatric clinic.
3. Percentage of non-urgent cases that were given appointment for first consultation within ≤ 6 weeks at psychiatric clinic.
4. FMS mental-cases referral ratio.
5. The number of CPG.
6. Percentage of patients prescribed with more than 2 benzodiazepines/ hypnotics at a particular time.
7. Defaulter rate among psychiatric out-patient.
8. Number of MENTARI.
9. Number of health clinics provide mental healthcare services.

5.4.2.2 Policy questions and findings

Sub Dimension	Policy Questions	Findings	Assessment
Health system responsiveness.	(1) How do individuals perceive the health system in general?	NHMS 2013: vol III: healthcare demands perception on Malaysia's healthcare delivery systems: 77.8% scored good/excellence for government clinics, 79.6% for government hospitals.	
	(2) How do individuals assess the availability and quality of mental healthcare services?	Patient satisfaction survey (No data).	
	(3) What is the extent of waiting time to first consultation of psychiatric clinic?	Most of non-urgent referrals for consultation at psychiatric clinic were seen before 6 weeks. This had achieved the national standard (refer table 4.24).	
Access to health service.	(1) Are there problems with planning services to response to healthcare needs that results in unreasonable waiting time?	There was a need to provide psychiatric service closer to home, thus integration of psychiatric services into family health system and primary health care were commenced since mid 90s.	
	(2) Do individuals access services at the appropriate level?	Individual who were found having certain degree of mental issues were referred to FMS at nearest health clinic (Table 4.21).Each FMS seeing more referral in 2015 as compared to previous year.	
Quality, safety and outcomes of healthcare services.	(1) Are best practice guidelines developed and implemented to promote appropriate care?	Yes. The CPG are available for major illnesses, and added from time to time including non-clinical guidelines	
	(2) Are healthcare services delivered safely to patients?	Excessive weight gain is common side effect of psychotropic drug. The percentage of patient gain weight excessively were less than national standard.	
		Polypharmacy is less than national standard.	
	(3) Are healthcare services delivering clinical outcomes?	Insufficient information on re-admission rate within 30 days of discharge.	
		Defaulter rate among psychiatric outpatient was less than 10%.	

5.4.3 DIMENSION 3: ENSURING FAIR FINANCING

5.4.3.1 List of indicators;-

1. Public spending on mental healthcare as a percentage of total current health expenditure.

5.4.3.2 Policy questions and findings

Sub Dimension	Policy questions	Finding	Assessment
Social and financial risk protection.	(1) Does the health system protect households against the financial risk of mentally ill?	Insufficient data.	●
Equity in finance.	(1) Is the health system funded in a way that is fair and equitable?	Insufficient data.	●
	(2) What is the extent of coverage under private insurance plans?	Insufficient data.	●
Inequalities in access to healthcare services.	(1) Do the methods of health system financing influence the utilization of healthcare services?	Insufficient data.	●

5.4.4 DIMENSION 4: HEALTH SYSTEM SUSTAINABILITY


5.4.4.1 List of indicators;-

1. Total current public mental healthcare expenditure as a percentage of GDP.
2. Total current public mental healthcare expenditure per capita.
3. Hospital admission rate per 100,000 population (public & private).
4. Psychiatrist per 100,000 population.
5. Psychologist per 100,000 population.
6. Paramedic (nurses and AMO) per 100,000 population.
7. Average length of stay (Hospital with psychiatric services).
8. Average length of stay (Specialized psychiatric hospitals).
9. Bed occupancy rate (BOR)(Hospital with psychiatric services).
10. Bed occupancy rate (BOR)(Specialized psychiatric hospitals).

5.4.4.2 Policy questions and findings





Sub Dimension	Policy Questions	Findings	Assessment
Patterns in health system spending and financial sustainability.	(1) How is the pattern of healthcare spending changing?	Insufficient information.	●
	(2) Are health system resources invested or allocated to the sectors in the most cost-effective way?	It is known the spending on primary care and prevention more cost effective. There were insufficient information on percentage of spending on primary care.	●
	(3) How effective overall is healthcare spending in achieving improved health?	Overall pattern of hospital admission is apparently decreasing over recent years (Figure 4.7).	●
Non-financial sustainability.	(1) Is the mix of human resources for mental health system appropriate for delivering high quality health services and covering populations healthcare needs?	The density of psychiatrist per population was relatively low (0.52 per 100,000 population). Clinical psychologist were sparse. There was 12 clinical psychologist serving in MOH hospital. No recent data from private hospital and other public. Overall, the clinical workforce working in psychiatric care was 70.7 per 100,000 population which is low as compared to OECD average.	●
	(2) Are pharmaceuticals being used in an effective way?	High expenditure on drug although Insufficient information on per capita expenditure on psychotropic drug medication.	●
		insufficient information on percentage of generics medicine used.	●
(3) Are mental health information resources sufficient to enable evidence based policy making and health system planning?	The number of policy related research on mental health is scarce.	●	
Health system efficiency.	(1) Are mental healthcare services being delivered more efficiently?	Non-acute patient should be able to be managed as out-patients. Thus, it minimize the costly tertiary care. ALOS for F20-F29 was 73.5 and F30-39 was 17.4 which were higher than many OECD countries (Figure 5.8 and Figure 5.9). The utilization of psychiatric bed (BOR) was fairly high (66%).	●

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	(2) Is Malaysia promoting the integration of mental health care into primary care?	Yes. Emphasis were given to early detection and early treatment at primary health care level which are closer to community. Certain essential psychotropic drugs were available for early intervention and follow up cases. The introduction of Family Doctor Concept (FDC) will enhance the various level of preventative effort.	
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5.5 SUMMARY FINDINGS

Table 5.4: Summary of performance assessment level

Grading	Interpretation	Details
	On track.	<ul style="list-style-type: none"> • Quality of care • Integration into PHC • Community-based mental health program and facility
	Further scrutiny needed	<ul style="list-style-type: none"> • Apparently high prevalence of mental health problem among the minority ethnic • Health system responsiveness need to be upgraded. • High ALOS and high BOR
	Requires immediate attention or action	<ul style="list-style-type: none"> • High prevalence of mental health disorders • High prevalence of drug abuse. • Low prevalence of exercising in lifestyle • The psychiatrist density is still low • High suicidality among adolescent
	More data and analysis required	<ul style="list-style-type: none"> • Need data on patients perception or satisfaction on mental health services. • Need a database for suicide and parasuicide. • Need more data on mental healthcare financing.

5.6 RECOMMENDATION

Mental healthcare services need to be incorporated in all programs of other agencies, and non-governmental organisation to enable people with mental health problems and disorders to participate more in the community.

Health care providers for patients with mental health should be given more resources to enhance the more holistic approach of mental healthcare. Currently, budget allocated for hospitals were mainly for curative, yet more instances that promotional and preventive work are equally crucial, hence more allocation should be given to the hospitals for that purpose.

Complementing the hospital psychiatric care, management of mental health cases at primary health care could be step-up aligned with other non-communicable diseases.

Availability and highly ascertained data is essential in monitoring the performance of mental healthcare. Thus, the establishment of psychiatric database either in the form of a surveillance system or patients registry is a way forward.

Last but not least, we would like to recommend the setting up of a National Institute for Mental Health to step up effort in improving care for patients with mental illness, promotive preventive work and training of mental health staffs.

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Indicators Definitions

Indicators	Description/definition	What does it measure	Numerators	Denominators
Prevalence of mental health problem for child 5-15 years old.	Information on mental health among children age 5 to 15 years was obtained from their parents or guardian. The informants reported the scores by answering the Strengths and Difficulties Questionnaire (SDQ). A child is considered as having mental health problems if total difficulties score was 14 or more.	Population Mental Health status	Number of respondent with score of 14 and above	Total respondents aged 5 to 15 years
Prevalence of mental health problem for adult (≥ 16 years old).	Mental health problem or psychiatric disorder is defined as disorders of psychological function that have been systematically described among the clients of psychiatrists. The 12-items General Health Questionnaire (GHQ-12) was administered as self-administered questionnaire. There were 12 statements related to mental health with of four responses for each statement, in a modified Likert scale which is a graduated scale of positive to negative responses. Score of 3 and above were considered as a case or having mental health problem.	Population mental health status	Number of respondent aged ≥ 16 years old with score of 3 and above	Total respondents aged ≥ 16 years old
Prevalence of mental health problem for geriatric age 60 years and above.	same as above	Population mental health status	Number of respondent aged ≥ 60 years old with score of 3 and above	Total respondents aged ≥ 60 years old
Prevalence of suicide attempt (≥ 16 years old).	Respondent who did something where he or she could possibly be injured, with at least a slight intent to die.	Population mental health status	Number of responders with suicide attempt	Total respondents aged ≥ 16 years old
Suicide rate	The suicide rate per year is the number of residents' suicidal deaths recorded during the calendar year divided by the resident population	Population mental health status	Number of suicide cases	Total population
Prevalence of physically active.	Based on International Physical Activity Questionnaire (IPAQ). Those individuals who meet criteria for Categories 2 (Minimally active) or 3 (HEPA active) are considered "physically active".	Risk factor	Number of respondents who meet criteria for Categories 2 or 3	Total respondents aged 16 years and above

Prevalence of identified drug abuse per 100 000 population.	Substance abuse refers to the harmful or hazardous use of psychoactive substances, including alcohol and illicit drugs	Risk factor	Number of cases recorded by AADK	Total population aged 13 years and above
Prevalence of binge drinker among 18 years and above.	Binge drinking was defined as consumption of 6 and more of standard drink per-sitting among current drinkers	Risk factor	Number of respondents with consumption of 6 and more standard drink per-sitting	Total respondents aged 18 years and above
The customers satisfaction	Customer Satisfaction survey: which was conducted through SERVQUAL or any MOH gazetted customer satisfaction survey in the hospital.	Customer centeredness	Number of participating hospital customers who were "satisfied" in the customer satisfaction survey.	Total number of customer who participated in the hospital customer satisfaction survey.
Percentage of patients with waiting time of \leq 90 minutes to see the doctor at psychiatric clinic.	Waiting time: Time of registration or appointment (whichever is later) to the time patient is first seen by the doctor.	Customer centeredness	Number of patients with waiting time of \leq 90 minutes to see the doctor at Psychiatry clinic	Total number of patients seen at Psychiatry clinic
Percentage of non-urgent cases that were given appointment for first consultations within \leq 6 weeks at psychiatric clinic.	Appointment: Time taken from the date of referral received to the date of first consultation with the doctor.	Customer centeredness	Number of non-urgent cases that were given appointment for first consultation within \leq 6 weeks at Psychiatry Clinic	Total number of non-urgent cases referred to Psychiatric Clinic
FMS mental cases referral ratio.	Patient or individual with symptoms of mental state that were detected through screening program MINDA SIHAT or through other encounters were referred to MO and FMS at PHC level for further assessment and management.	Access to health service	Number of patients referred to FMS at PHC level	Number of FMS at primary health care
The number of CPG.	Number of new Clinical Practice Guidelines (CPG) and existing CPG updated per year.	Quality of care	Number of CPG	-
Percentage of patients prescribed with more than 2 benzodiazepines or hypnotics at a particular time.	Hypnotics Drugs used to help induce sleep.	Patient safety	Number of patients prescribed with more than 2 benzodiazepines or hypnotics at a particular time	Total number of patients on benzodiazepines or hypnotics
Defaulter rate among psychiatric out-patient.	Patient who failed to attend outpatient clinic within \leq one month of the appointment date.	Customer centeredness	Number of psychiatric outpatients defaulting Psychiatric Clinic follow-up	Total number of psychiatric outpatients attending Psychiatric Clinic
Number of MENTARI.	MENTARI is a community mental health centre aimed to re-integrate patients with serious mental illnesses using work-based therapies; and preventive treatment for individuals having early symptoms.	Access to health service	Number of MENTARI.	-
Public spending on mental healthcare as a percentage of total current health expenditure.	Total expenditure on health: the sum of general government health expenditure and private health expenditure in a given year	Sustainability – Health Financing	Total public spending on mental healthcare	Total current health expenditure
Total current public mental healthcare expenditure as a percentage of GDP.	GDP: the value of all goods and services provided in a country by residents and non-residents without regard to their allocation among domestic and foreign claims. This corresponds to the total sum of expenditure (consumption and investment) of the private and government agents.	Sustainability – Health Financing	Total current public mental healthcare expenditure	
Total current public mental healthcare expenditure per capita.	Total expenditure on health: the sum of general government health expenditure and private health expenditure in a given year	Sustainability – Health Financing	Total current public mental healthcare expenditure	Total population
Hospital admission rate per 100 000 population (public & private).	Number of hospital admission or discharges for psychiatric cases (ICD10 class F00-F99)	Health System Sustainability	Number of hospital admission for ICD10 class F00-F99	Total hospital admission

Psychiatrist density	Number of Psychiatrist per 100,000 population	Health System Sustainability	Number of Psychiatrist	Total population
Psychologist density	Number of Psychologist per 100,000 population	Health System Sustainability	Number of Psychologist	Total population
Psychiatric clinical workforce density	Psychiatric clinical workforce consists of doctors, psychologist, nurses and assistant medical officer per 100,000 population	Health System Sustainability	The number of Psychiatric clinical workforce	Total population
Average length of stay (Hospital with psychiatric services).	Average number of days that patients spend in hospital with psychiatric services	Efficiency	The total no of days stayed by psychiatric inpatients during a year	The number of discharges
Average length of stay (Specialised psychiatric hospitals).	Average number of days that patients spend in specialised psychiatric hospital	Efficiency	The total no of days stayed by psychiatric inpatients during a year	The number of discharges
Bed occupancy rate (BOR)(Hospital with psychiatric services).	The percentage of inpatient beds occupied for a given period of time in hospital with psychiatric services	Efficiency	Inpatient Days of Care	Bed Days Available
Bed occupancy rate (BOR)(Specialized psychiatric hospitals).	The percentage of inpatient beds occupied for a given period of time in specialized psychiatric hospitals	Efficiency	Inpatient Days of Care	Bed Days Available



MOH hospitals with psychiatric services, psychiatric beds-density per 100,000 population, 2015

State	Hospital	Wards	Beds(n)	Population *10 ³	*Beds density
Perlis	H.Tuanku Fauziah	+	20	248.5	8.05
Kedah	H.Sul. Bahiyah	+	30	2,096.5	2.96
	H.S. Abd. Halim	+	28		
	H.Kulim	+	4		
P.Pinang	H.Bukit Mertajam	-	0	1,698.1	4.36
	H.Penang	+	74		
Perak	H.Taiping	+	48	2,466.9	85.37
	H.R.P. Bainun, Ipoh	+	30		
	H.Teluk Intan	+	20		
	H.Slim River	-	6		
	H.Seri Manjung	-	2		
	H.Bhg. Ulu Kinta	+	2000		
WPKL	H.K.Lumpur	+	79	1,780.4	4.44
WP Putrajaya	H.Putrajaya	-	0	83.0	0.0
Selangor	HTAR,Klang	+	20	6,178.0	1.07
	H.Selayang	+	20		
	H.Sg.Buloh	+	6		
	H.Ampang	-	0		
	H.Kajang	+	20		
	H.Serdang	-	0		
N. Sembilan	H. Tuanku Jaafar	+	52	1,088.8	4.78
	H. T.Amp. Najihah	-	0		
Melaka	H.Melaka	+	40	889.0	4.50
Johor	HSA	+	20	3,610.3	33.99

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	HSI	-	0		
	HPSF, Muar	+	24		
	H.Segamat	+	23		
	H.EBH Kalsom	-	0		
	HSNI,BP	+	28		
	H.Permai	+	1,132		
Pahang	H.T.A Afzan	+	68	1,607.9	6.84
	H.S.H.Ahmad Shah	+	22		
	H.Bentong	+	20		
	H.K.Lipis	-	0		
Terengganu	H.Hulu TGG	+	30	1,161.0	2.84
	HSNZ	-	0		
	H.Kemaman	+	3		
Kelantan	HRPZ II,KB	+	139	1,760.6	7.90
	H.K.Krai	-	0		
	H.Tanah Merah	-	0		
Sabah	H.QE	-	0	3,720.5	8.92
	H. Keningau	-	0		
	H. Tawau	+	12		
	H.D. of Kent	+	20		
	H.Mesra, Bkt Padang	+	300		
Sarawak	H.Sentosa,Kuching	+	318	2,701.5	14.95
	H.Bintulu	-	0		
	H.Umum,Kuching	+	20		
	H.Sibu	+	40		
	H.Miri	+	26		
WP Labuan		-	0	95.1	
MALAYSIA			4744	31,186.1	15.21

* Psychiatric beds density per 100,000 population
Source of data: Psychiatric survey database



MOH and private hospitals discharges for ICD10 codes F00-F99 per 100,000 population

ICD groups	Description	2010	2011	2012	2013	2014	2015
F00-F09	Organic, including symptomatic, mental disorders	4.9	5.2	3.7	5.0	5.2	6.5
F10-F19	Mental and behavioural disorders due to psychoactive substance use	6.7	8.2	5.3	7.4	7.6	8.3
F20-F29	Schizophrenia, schizotypal and delusional disorders	57.5	53.6	32.9	36.2	38.7	37.5
F30-F39	Mood [affective] disorders	14.4	15.3	9.6	11.2	12.3	12.7
F40-F48	Neurotic, stress-related and somatoform disorders	7.3	7.4	5.8	7.4	5.5	5.1
F50-F59	Behavioural syndromes associated with physiological disturbances and physical factors	0.6	0.5	0.4	0.4	0.4	0.4
F60-F69	Disorders of adult personality and behaviour	0.7	0.6	0.3	0.5	0.6	0.7
F70-F79	Mental retardation	1.6	1.7	1.1	1.4	1.5	1.4
F80-F89	Disorders of psychological development	0.3	0.4	0.2	0.6	0.8	1.1
F90-F98	Behavioural and emotional disorders with onset usually occurring in childhood and adolescence	0.5	0.5	0.3	0.3	0.4	0.4
F99	Unspecified mental disorder	0.4	0.3	0.2	0.2	0.3	0.2

Source of data: Health Informatic Centre, MOH



Summary of Performance Dimensions, Policy Questions and Performance Indicators

D.1 Achieving better mental health

Performance Dimension	Policy Question	Performance Indicator
Improving the mental health status.	(1) Does the population live in better mental health status?	<ul style="list-style-type: none"> • Prevalence of problem mental health.
	(2) What was the trends in suicidality?	<ul style="list-style-type: none"> • Prevalence of suicide attempt. • The admission rate for intentional self harm. • Standardized suicide rate.
	(3) Do individuals live their lives in a better state of mental health?	<ul style="list-style-type: none"> • Detection rate of GAD using DASS. • Detection rate of depression.
Improving equity in health.	(1) What is the extent of differences in health status related to sex?	<ul style="list-style-type: none"> • Prevalence rate of mental health problem by sex. • Prevalence of suicide attempt by sex.
	(2) What is the extent of geographical variations in mental health status?	<ul style="list-style-type: none"> • Prevalence of mental health problem by urban rural.
	(3) What is the extent of variation in mental health status related to age?	<ul style="list-style-type: none"> • Prevalence of mental health problem by states.
	(4) What is the extent of variation in mental health status related to education and others social economic factors?	<ul style="list-style-type: none"> • Prevalence of mental health problem by level of education.
Addressing the main risk factors and promoting healthier lifestyle.	(1) How has the prevalence of insufficient physical activity habit?	<ul style="list-style-type: none"> • Prevalence of physical activity by sex and level of education.
	(2) What are the patterns of drug abuse?	<ul style="list-style-type: none"> • Prevalence of drug abuse by sex and age group.
	(3) What are the patterns of alcohol consumption?	<ul style="list-style-type: none"> • Prevalence of alcohol consumptions by sex and age group.

D.2 Ensuring confidence and satisfaction in high quality, accessibility health services

Performance Dimension	Policy Questions	Performance Indicator
Health system responsiveness.	(1) How do individuals perceive the health system in general?	<ul style="list-style-type: none"> • Patient satisfaction survey.
	(2) How do individuals assess the availability and quality of mental healthcare services?	<ul style="list-style-type: none"> • Percentage of patients with waiting time of ≤ 90 minutes to see the doctor at psychiatric clinic.

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Access to health service.	(1) Are there problems with planning services to response to healthcare needs that results in unreasonable waiting time?	<ul style="list-style-type: none"> Percentage of non-urgent cases that were given appointment for first consultation within ≤ 6 weeks at psychiatric clinic. Percentage seen at the clinic.
	(2) Do individuals access services at the appropriate level?	<ul style="list-style-type: none"> The percentage patient referred to MO/FMS.
Quality, safety and outcomes of healthcare services.	(1) Are best practice guidelines developed and implemented to promote appropriate care?	<ul style="list-style-type: none"> The number of CPG and their guidelines.
	(2) Are healthcare services delivered safely to patients?	<ul style="list-style-type: none"> Polytherapy.
	(3) Are healthcare services delivering clinical outcomes?	<ul style="list-style-type: none"> Re-admission rate of 30 days of discharge. Defaulter rate.

D.3 Fair financing

Performance Dimension	Policy Questions	Performance Indicator
Social and financial risk protection.	(1) Does the health system protect households against the financial risk of mentally ill?	<ul style="list-style-type: none"> Out-of-pocket payments for healthcare services and medicines as a percentage of household capacity to pay by income quintile.
Equity in finance.	(1) Is the health system funded in a way that is fair and equitable?	<ul style="list-style-type: none"> Out-of-pocket payments as a percentage of total healthcare spending. Total private expenditure as a percentage of total healthcare spending.
	(2) What is the extent of coverage under private insurance plans?	<ul style="list-style-type: none">
Inequalities in access to healthcare services.	(1) Do the methods of health system financing influence the utilization of healthcare services?	<ul style="list-style-type: none"> Study on level of income related inequity in physician visits.

D.4 Health system sustainability

Performance Dimension	Policy Questions	Performance Indicator
Patterns in health system spending and financial sustainability.	(1) How is the pattern of healthcare spending changing?	<ul style="list-style-type: none"> Total current mental healthcare expenditure as a percentage of GDP. Total current mental healthcare expenditure per capita. Public spending on mental healthcare as a percentage of total current health expenditure.
	(2) Are health system resources invested or allocated to the sectors in the most cost-effective way?	<ul style="list-style-type: none"> Percentage of healthcare spending devoted to primary care and health promotion.
	(3) How effective overall is healthcare spending in achieving improved health?	<ul style="list-style-type: none"> Hospital admission rate.
Non-financial sustainability.	(1) Is the mix of human resources for mental health system appropriate for delivering high quality health services and covering populations healthcare needs?	<ul style="list-style-type: none"> Psychiatrists per 1,000 population. Nurses per 1,000 population.
	(2) Are pharmaceuticals being used in an effective way?	<ul style="list-style-type: none"> Per capita expenditure on psychotropic drugs medications. Percentage of generics in the medicines market.
	(3) Are mental health information resources sufficient to enable evidence based policy making and health system planning?	<ul style="list-style-type: none"> Research and development (R&D). Database.

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Health system efficiency.	(1) Are mental healthcare services being delivered more efficiently?	<ul style="list-style-type: none">• Average length of stay for F20–F29 and F30–F39.• Bed occupancy rate (BOR).
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