

CHAPTER 1: PROVISION OF CORONARY CARE SERVICES IN MALAYSIA

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CHAPTER 1: PROVISION OF CORONARY CARE SERVICES IN MALAYSIAOmar Ismail¹, Siti Khairani Zainal Abidin², Wan Azman Wan Ahmad³*1 Hospital Pulau Pinang, 2 Hospital Tengku Ampuan Afzan, 3 Pusat Perubatan Universiti Malaya***Summary**

1. The number and density of registered cardiologists in the National Specialist Registry, Malaysia had increased from 219 (7.3 pmp) to 236 (7.5 pmp).
2. The density of cardiologist per million populations was still low compared to more developed countries.
3. There was still an uneven distribution of cardiologists and cardiac catheterisation labs across the country despite numerous improvement measures taken by the authority.

Introduction

According to the report from the Department of Statistics Malaysia in 2014, ischaemic heart disease remained as the principal cause of death among Malaysians at 13.5%¹. Men and women across the three main ethnic groups; namely Malay, Chinese and Indian between the age 15 – 64 years old were equally affected.

Over the last decades, we have seen tremendous progress in coronary care services in Malaysia to fulfill the requirement of our population. Significant numbers of new government and private hospitals are now offering cardiac services, although there is still no homogenous distribution. Based on the last report of the Malaysian National Cardiovascular Disease Database-Acute Coronary Syndrome (NCVD-ACS) registry 2011 – 2013, the all-cause in-hospital and 30-day mortality rates were 7.6% and 9% respectively². Following STEMI, 75% of patients were treated with fibrinolytic therapy and only 9.4% received primary angioplasty. To improve outcome and timely care, prompt effective treatment for patients with ACS is considered a high priority key performance indicator for government hospitals.

Number and density of cardiologists in Malaysia

In 2015, the total number of registered cardiologists in Malaysia was 236 (Table 1.1), an increase from the previous report. Most cardiologists (83%) were employed by the private sector while only 17% were attached to the public sector (Ministry of Health [MOH] and Ministry of Higher Education [MOHE]). Nearly half of the total number of cardiologists in the country were working in the Klang Valley (Selangor, Wilayah Persekutuan (WP) Kuala Lumpur and Putrajaya).

The cardiologist density ratio in Malaysia was 0.075 per 10,000 population or 7.5 per million population (pmp). WP Kuala Lumpur had the highest density ratio of 41.5 pmp, followed by Selangor and WP Putrajaya with 6.7 pmp and Sarawak with 6.2 pmp. Similar to the previous report, there was no registered cardiologists in Perlis. Terengganu had the lowest density of cardiologist per population (0.8 pmp) followed by Sabah and WP Labuan (2 pmp).

In China, the ratio of cardiologist to population was 19 pmp in 2011³. And Europe has long surpassed Asian countries with the reported mean ratio of 58 cardiologists pmp across EU countries in the year 2000⁴. A study done by MedAxiom in 2013 on the cardiology workforce across United States revealed between 180.8 and 421.5 cardiologists for 100,000 populations⁵. This figure far exceeds our numbers where the target rate was 100 per million. Having said that, the Global Health Observatory data of World Health Organization reported that Malaysia had among the highest ratio of physician to population ratio in Southeast Asian⁶.

Number and density of cardiac catheterisation labs in Malaysia

In comparison to the previous report in 2014, there was an addition of four hospitals with cardiac catheterisation lab facilities in Malaysia (from 69 to 73) (Table 1.2). Of the total number of hospitals, 15 were public hospitals while 58 were private hospitals; and the total number of cardiac catheterisation labs was 87 (Table 1.2 and Table 1.3). This translates into 2.7 cardiac catheterisation labs pmp in Malaysia in 2015. Pulau Pinang had the highest density (8.2 pmp) while Sabah and WP Labuan had the lowest (0.7 pmp). Generally across the nation, there were more cardiac catheterisation labs in the private sector compared to the government except in Kelantan and Terengganu.

Number of CCU beds in government hospitals in Malaysia

There was a total of 274 allocated CCU beds in all the government hospitals in 2015; 225 beds in MOH hospitals and the remaining 49 beds in MOHE hospitals (Table 1.4). As expected, the number of CCU beds was highest in Selangor, WP Putrajaya and WP Kuala Lumpur. By region, the northern part of the country (Penang, Kedah and Perlis) had 32 CCU beds for 4.05 million population, the central region (Perak, Selangor, WP Putrajaya, WP Kuala Lumpur and Negeri Sembilan) had 131 CCU beds for 11.6 million population, the southern region (Johor and Melaka) had 38 CCU beds for 4.5 million population, the East Coast (Kelantan, Terengganu and Pahang) had 44 CCU beds for 4.53 million population, Sabah and WP Labuan had 14 CCU beds for 3.82 million population, and Sarawak had 15 CCU beds for 2.7 million population. Although most of the cardiac patients were cared for in the CCU, many were treated in high dependency units or the general medical wards as there was a limited number of CCU beds available.

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Table 1.1 Number and density of cardiologists in Malaysia by state and sector, 2015

State	Public sector	Private sector	Total	*Population in Malaysia (2015)	Per 10,000 population	Per million population
Perlis	0	0	0	250,000	0	0
Kedah	2	8	10	2,100,000	0.047	4.7
Pulau Pinang	6	28	34	1,700,000	0.2	20
Perak	1	13	14	2,470,000	0.056	5.6
Selangor & WP Putrajaya	4	38	42	6,260,000	0.067	6.7
WP Kuala Lumpur	11	63	74	1,780,000	0.415	41.5
Negeri Sembilan	0	4	4	1,090,000	0.036	3.6
Melaka	0	9	9	890,000	0.101	10.1
Johor	2	8	10	3,610,000	0.027	2.7
Pahang	3	5	8	1,610,000	0.049	4.9
Kelantan	3	2	5	1,760,000	0.028	2.8
Terengganu	0	1	1	1,160,000	0.008	0.8
Sabah & WP Labuan	1	7	8	3,820,000	0.02	2
Sarawak	8	9	17	2,700,000	0.062	6.2
Malaysia	41	195	236	31,200,000	0.075	7.5

* From Department of Statistics, Malaysia (www.dosm.gov.my)

Table 1.2 Number and density of hospital with catheterisation laboratory in Malaysia by state and sector, 2015

State	Public sector	Private sector	Total	*Population in Malaysia (2015)	Per 10,000 population	Per million population
Perlis	0	0	0	250,000	0	0
Kedah	1	5	6	2,100,000	0.028	2.8
Pulau Pinang	1	9	10	1,700,000	0.058	5.8
Perak	1	3	4	2,470,000	0.016	1.6
Selangor & WP Putrajaya	2	14	16	6,260,000	0.025	2.5
WP Kuala Lumpur	3	9	12	1,780,000	0.067	6.7
Negeri Sembilan	0	2	2	1,090,000	0.018	1.8
Melaka	0	4	4	890,000	0.044	4.4
Johor	1	4	5	3,610,000	0.013	1.3
Pahang	1	1	2	1,610,000	0.012	1.2
Kelantan	2	1	3	1,760,000	0.017	1.7
Terengganu	1	0	1	1,160,000	0.008	0.8
Sabah & WP Labuan	1	2	3	3,820,000	0.007	0.7
Sarawak	1	4	5	2,700,000	0.018	1.8
Malaysia	15	58	73	31,200,000	0.023	2.3

* From Department of Statistics, Malaysia (www.dosm.gov.my)

Table 1.3 Number and density of catheterisation laboratories in Malaysia by state and sector, 2015

State	Public sector	Private sector	Total	*Population in Malaysia (2015)	Per 10,000 population	Per million population
Perlis	0	0	0	250,000	0	0
Kedah	1	5	6	2,100,000	0.028	2.8
Pulau Pinang	2	12	14	1,700,000	0.082	8.2
Perak	1	3	4	2,470,000	0.016	1.6
Selangor & WP Putrajaya	3	15	18	6,260,000	0.028	2.8
WP Kuala Lumpur	5	15	20	1,780,000	0.112	11.2
Negeri Sembilan	0	2	2	1,090,000	0.018	1.5
Melaka	0	4	4	890,000	0.044	4.4
Johor	1	4	5	3,610,000	0.013	1.3
Pahang	1	1	2	1,610,000	0.012	1.2
Kelantan	2	1	3	1,760,000	0.017	1.7
Terengganu	1	0	1	1,160,000	0.008	0.8
Sabah & WP Labuan	1	2	3	3,820,000	0.007	0.7
Sarawak	1	4	5	2,700,000	0.018	1.8
Malaysia	19	68	87	31,200,000	0.027	2.7

* From Department of Statistics, Malaysia (www.dosm.gov.my)

Table 1.4 Number of CCU beds in MOH and MOHE hospitals by state, 2015

State	Number of CCU beds in MOH hospitals	Number of CCU beds in MOE hospitals	Total CCU beds	*Population in Malaysia (2015)	Number of CCU beds per 10,000 population	Number of CCU beds per one million population
Perlis	4	-	4	250,000	0.16	16
Kedah	17	-	17	2,100,000	0.08	8
Pulau Pinang	11	-	11	1,700,000	0.06	6
Perak	17	-	17	2,470,000	0.07	7
Selangor & WP Putrajaya	46	6	52	6,260,000	0.08	8
WP Kuala Lumpur	8	37	45	1,780,000	0.25	25
Negeri Sembilan	17	-	17	1,090,000	0.15	15
Melaka	6	-	6	890,000	0.07	7
Johor	32	-	32	3,610,000	0.09	9
Pahang	12	-	12	1,610,000	0.07	7
Kelantan	20	6	26	1,760,000	0.15	15
Terengganu	6	-	6	1,160,000	0.05	5
Sabah & WP Labuan	14	-	14	3,820,000	0.04	4
Sarawak	15	-	15	2,700,000	0.05	5
Malaysia	225	49	274	31,200,000	0.09	9

* From Department of Statistics, Malaysia (www.dosm.gov.my)