



CHAPTER 1: PROVISION OF CORONARY CARE SERVICES IN MALAYSIA

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Summary

1. The number and density of registered cardiologists in the National Specialist Registry, Malaysia has increased slightly from 186 (6 pmp) to 219 (7.3 pmp) as compared to the previous reports.
2. There was still an uneven distribution of cardiologists and cardiac catheterisation laboratories in Malaysia; which were more in the West Coast of Peninsula Malaysia especially in the Klang Valley, Pulau Pinang and Melaka as compared to the East Coast and Sabah.

Coronary care services had been largely managed by the Medical Department until early mid-80's when the Cardiology Department at Hospital Kuala Lumpur, University Hospital and private hospitals, mainly in Klang Valley were established. The contribution of cardiologists in this vital care has improved significantly after the corporatisation of Institut Jantung Negara in the early 90's and the expansion of cardiology services in the MOH hospitals all over the country as well as private specialist hospitals in the recent years. Despite this progress, the rate of reported primary PCI for STEMI was still low (<10%). Most of the STEMI patients were admitted to MOH hospitals and majority were treated with thrombolytic agents (70%).

Concomitantly, for the last 3 years, there was an increase in the rate of PCI for STEMI patients using pharmacoinvasive strategy, where patients were initially managed medically and then referred for PCI during the same admission. This had resulted in a significant reduction in both in-hospital and 30-days mortality as described in the subsequent chapters in this report. Hence, the MOH has recently reduced the target of KPI for both STEMI (mortality from <15% to <10%) and NSTEMI (mortality from <10% to <7%) for all its hospitals.

Number and density of Cardiologists in Malaysia

As compared to the previous report, there was a small increase in the ratio of cardiologists per million population (pmp) from 6 to 7.3 pmp, predominantly in the Klang Valley, Pulau Pinang and Melaka and also in other regions i.e. Perak, Kedah, Johor and Sarawak. In 2014, there were a total of 219 cardiologists registered with NSR in Malaysia (184 private and 35 in public). In comparison, there were 57 cardiologists pmp in USA¹, 23 pmp in Singapore² and 18 pmp in United Kingdom³. The highest density was in Wilayah Persekutuan Kuala Lumpur (WPKL) (41.8 pmp) followed by Pulau Pinang (20 pmp) and Melaka (9.4 pmp). These figures were slightly higher than the previous report. On the contrary, the lowest density was in Perlis (0) followed by Sabah (1.6 pmp), Kelantan and Terengganu (1.7 pmp) respectively. [Table 1.1]

Number and density of Cardiac Catheterisation Lab in Malaysia

The number of cardiac catheterisation lab had increased significantly for the last 3 years from 55 to 69 (55 in private hospitals and 14 in public hospitals) which translated into 2.3 laboratories pmp as compared to 2.0 pmp in the previous report. There were no public cardiac catheterisation laboratories in Perlis, Melaka and Negeri Sembilan and none in the private sector in Terengganu.

The distribution of cardiac catheterisation labs were also uneven, and which were highest in WPKL (6.9 pmp) followed by Pulau Pinang (6 pmp) and Melaka (3.5). The region with the lower density were Perlis (0), Sabah (0.5 pmp) and Terengganu (0.8 pmp). [Table 1.3]

Several studies have shown that cardiac patients have improved outcome if part of their care is provided by cardiologists with cardiac catheterisation lab facilities. In the USA, patients who have a myocardial infarction or



develop heart failure in the areas with low density of cardiologists have a slightly higher risk of death at 30 days and one year compared with those who have the same clinical events in an area with higher density⁴.

Hopefully by the year 2020, Malaysia can achieve the target of at least 10 cardiologists pmp with cardiac catheterisation lab in all MOH tertiary hospitals. If we can train at least another 80 cardiologists, we can have 300 cardiologists serving a 30 million population. At present less than 10 fellow cardiologists completed their training annually nationwide. Hence, major training centres in MOH, Institut Jantung Negara and universities have to recruit at least 16 new fellows annually, 9-10 in MOH, 3-4 in IJN and another 3-4 from universities.

References

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Table 1.1 Number and Density of Cardiologist in Malaysia by State and Sector, 2014

State	Sector	Number	Population in Malaysia (2013)*	Per 10,000 population
Malaysia	Public	35		
Malaysia	Private	184		
Malaysia	Total	219	29,947,600	0.073
Perlis	Public	-		
Perlis	Private	-		
Perlis	Total	-	240,200	-
Kedah	Public	0		
Kedah	Private	8		
Kedah	Total	8	2,012,500	0.039
Pulau Pinang	Public	5		
Pulau Pinang	Private	28		
Pulau Pinang	Total	33	1,647,700	0.200
Perak	Public	1		
Perak	Private	13		
Perak	Total	14	2,446,600	0.057
Selangor & WP Putrajaya	Public	4		
Selangor & WP Putrajaya	Private	30		
Selangor & WP Putrajaya	Total	34	5,871,200	0.058
WP Kuala Lumpur	Public	9		
WP Kuala Lumpur	Private	63		
WP Kuala Lumpur	Total	72	1,724,500	0.418
Negeri Sembilan	Public	0		
Negeri Sembilan	Private	3		
Negeri Sembilan	Total	3	1,079,800	0.027
Melaka	Public	0		
Melaka	Private	8		
Melaka	Total	8	849,400	0.094
Johor	Public	2		
Johor	Private	8		
Johor	Total	10	3,496,600	0.028
Pahang	Public	3		
Pahang	Private	5		
Pahang	Total	8	1,571,700	0.051
Kelantan	Public	1		
Kelantan	Private	2		
Kelantan	Total	3	1,675,100	0.017
Terengganu	Public	1		
Terengganu	Private	1		
Terengganu	Total	2	1,125,000	0.017
Sabah & WP Labuan	Public	1		
Sabah & WP Labuan	Private	5		
Sabah & WP Labuan	Total	6	3,587,900	0.016
Sarawak	Public	8		
Sarawak	Private	10		
Sarawak	Total	18	2,619,300	0.068

* Indicator Demographics Malaysia 2013 was referred as the data for 2014 was not available at the publication of this report.



Table 1.2 Number and Density of Hospital with Catheterisation Laboratory in Malaysia by State and Sector, 2014

State	Sector	Number	Population in Malaysia (2013)*	Per 10,000 population
Malaysia	Public	14		
Malaysia	Private	55		
Malaysia	Total	69	29,947,600	0.023
Perlis	Public	-		
Perlis	Private	-		
Perlis	Total	-	240,200	-
Kedah	Public	1		
Kedah	Private	5		
Kedah	Total	6	2,012,500	0.029
Pulau Pinang	Public	1		
Pulau Pinang	Private	9		
Pulau Pinang	Total	10	1,647,700	0.060
Perak	Public	1		
Perak	Private	3		
Perak	Total	4	2,446,600	0.016
Selangor & WP Putrajaya	Public	2		
Selangor & WP Putrajaya	Private	14		
Selangor & WP Putrajaya	Total	16	5,871,200	0.027
WP Kuala Lumpur	Public	3		
WP Kuala Lumpur	Private	9		
WP Kuala Lumpur	Total	12	1,724,500	0.069
Negeri Sembilan	Public	-		
Negeri Sembilan	Private	2		
Negeri Sembilan	Total	2	1,079,800	0.018
Melaka	Public	-		
Melaka	Private	3		
Melaka	Total	3	849,400	0.035
Johor	Public	1		
Johor	Private	3		
Johor	Total	4	3,496,600	0.011
Pahang	Public	1		
Pahang	Private	1		
Pahang	Total	2	1,571,700	0.012
Kelantan	Public	1		
Kelantan	Private	1		
Kelantan	Total	2	1,675,100	0.011
Terengganu	Public	1		
Terengganu	Private	-		
Terengganu	Total	1	1,125,000	0.008
Sabah & WP Labuan	Public	1		
Sabah & WP Labuan	Private	1		
Sabah & WP Labuan	Total	2	3,587,900	0.005
Sarawak	Public	1		
Sarawak	Private	4		
Sarawak	Total	5	2,619,300	0.019

* Indicator Demographics Malaysia 2013 was referred as the data for 2014 was not available at the publication of this report.

Table 1.3 Number and Density of Catheterisation Laboratory in Malaysia by State and Sector, 2014

State	Sector	Number	Population in Malaysia (2013)*	Per 10,000 population
Malaysia	Public	19		
Malaysia	Private	66		
Malaysia	Total	85	29,947,600	0.028
Perlis	Public	-		
Perlis	Private	-		
Perlis	Total	-	240,200	-
Kedah	Public	1		
Kedah	Private	5		
Kedah	Total	6	2,012,500	0.029
Pulau Pinang	Public	2		
Pulau Pinang	Private	12		
Pulau Pinang	Total	14	1,647,700	0.084
Perak	Public	1		
Perak	Private	3		
Perak	Total	4	2,446,600	0.016
Selangor & WP Putrajaya	Public	3		
Selangor & WP Putrajaya	Private	15		
Selangor & WP Putrajaya	Total	18	5,871,200	0.030
WP Kuala Lumpur	Public	6		
WP Kuala Lumpur	Private	16		
WP Kuala Lumpur	Total	22	1,724,500	0.127
Negeri Sembilan	Public	-		
Negeri Sembilan	Private	2		
Negeri Sembilan	Total	2	1,079,800	0.018
Melaka	Public	-		
Melaka	Private	3		
Melaka	Total	3	849,400	0.035
Johor	Public	1		
Johor	Private	3		
Johor	Total	4	3,496,600	0.011
Pahang	Public	1		
Pahang	Private	1		
Pahang	Total	2	1,571,700	0.013
Kelantan	Public	1		
Kelantan	Private	1		
Kelantan	Total	2	1,675,100	0.011
Terengganu	Public	1		
Terengganu	Private	-		
Terengganu	Total	1	1,125,000	0.008
Sabah & WP Labuan	Public	1		
Sabah & WP Labuan	Private	1		
Sabah & WP Labuan	Total	2	3,587,900	0.005
Sarawak	Public	1		
Sarawak	Private	4		
Sarawak	Total	5	2,619,300	0.019

* Indicator Demographics Malaysia 2013 was referred as the data for 2014 was not available at the publication of this report.