



CHAPTER 1 :
PATIENT CHARACTERISTICS

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Summary

1. Patient characteristics remained similar between the 2007-2009 and 2010-2012 period.
2. Nearly all patients had at least one known cardiovascular risk factor (98.0%); therefore to improve outcomes of PCI, patients should have optimal treatment of these risk factors post-procedure.
3. Comparing against other published data from the region, Malaysian patients were more likely to have hypertension and diabetes.
4. The mean age of patients who underwent PCI in Malaysia was 57.4 years (SD 10.3) which were much younger than those in western registries. More than 1 in 5 patients were under the age of 50.0 years.
5. More Malay and Indian patients, compared to the Chinese patients, were under the age of 50.0 years.

Data from 24,459 patients obtained over a six year period from 16 centres was analysed. The main source data providers were Institut Jantung Negara (58.1%), Pusat Jantung Hospital Umum Sarawak (11.3%) and Hospital Pulau Pinang (8.7%). [Table 2.3.1] The data on patient characteristics will be reported in two periods of three years: with data obtained between 2007-2009 (10709 patients), and data obtained between 2010-2012 (13750 patients).

The rationale for this was the main findings from 2007-2009 have been published¹, and subsequent data from 2010-2012 would be compared with these. In total, of the 24459 patients, 91.7% had a single PCI procedure during these time period while the remaining had two or more. [Table 2.2]

The mean age of patients from 2007-2009 was 57.0 (SD 10.2) years, while those from 2010-2012 was 57.8 (SD 10.3) years. The largest group of patients in 2007-2009 and 2010-2012 were aged between 50 and 60 years old, 36.0% vs. 35.7%, respectively. The findings for patients aged below 50 years old were also similar: with 22.7% in 2007-2009, compared to 22.4% in 2010-2012. For gender status, 81.6% in 2007-2009 were male, compared to 82.4% in 2010-2012. [Table 2.1]

The distribution of patients from the major ethnic groups in 2007-2009 and 2010-2012 was similar for Malay, 47.6% vs. 49.0%, for Chinese, 23.9% vs. 22.7%, for Indian, 22.7% vs. 20.9%. The next major ethnic group was the Iban, with 2.0% in 2007-2009, compared to 3.1% in 2010-2012. [Table 2.1]

Cardiovascular risk factors

In terms of active smokers, there was 18.8% in 2007-2009, to 23.0% in 2010-2012. For a family history of premature cardiovascular disease, there was 19.0% in 2007-2009, to 15.4% in 2010-2012. The mean body mass index were similar in 2007-2009 and 2010-2012, with 26.5 SD 4.2 and 26.7 SD 4.4, respectively. [Table 2.1]

For dyslipidaemia, there were 73.2% in 2007-2009, and 70.8% in 2010-2012. For hypertension, there was 73.4% in 2007-2009, and 72.8% in 2010-2012. For diabetes, there was 46.1% in 2007-2009, and 45.3% in 2010-2012. For those with a previous history of myocardial infarction, there was 41.0% in

2007-2009, and 46.2% in 2010-2012. For a previous history of known coronary artery disease, there was 55.2% in 2007-2009, and 55.0% in 2010-2012. [Table 2.1]

For new onset angina, there was 24.6% in 2007-2009, and 22.9% in 2010-2012. For congestive cardiac failure, there was 4.0% in 2007-2009, and 3.4% in 2010-2012. For those with chronic renal failure, there was 6.6% in 2007-2009, and 5.4% in 2010-2012. For those with a previous history of PCI, there was 20.2% in 2007-2009, and 20.4% in 2010-2012. Finally, for those with a previous history of CABG, there was 4.0% in both blocks of years. [Table 2.1]

In total, 98.6% of patients in 2007-2009, and 97.6% in 2010-2012, had at least one cardiovascular risk factor. [Table 2.5.1]

Age, gender and ethnicity, in 2007-2009

Amongst males, in the Malay group, there was 29.1% who were under the age of 50.0 years. Among the Chinese and Indian groups, the corresponding numbers were 19.2% and 29.2%, respectively. Amongst females, in the Malay group, there was 15.4% who were under the age of 50.0 years. Among the Chinese and Indian groups, the corresponding numbers were 5.2% and 16.1%, respectively. [Table 2.4.2]

Age, gender and ethnicity, in 2010-2012

Amongst males, in the Malay group, there was 26.9% who were under the age of 50.0 years. Among the Chinese and Indian groups, the corresponding numbers were 20.1% and 22.6%, respectively. Amongst females, in the Malay group, there was 12.9% who were under the age of 50.0 years. Among the Chinese and Indian groups, the corresponding numbers were 5.8% and 11.0%, respectively. [Table 2.4.2]

Comparative analysis with published data from the region on cardiovascular risk factors

At a single tertiary centre registry in Singapore which recruited 7889 patients from a multi-ethnic population between 2002 and 2007, over 50.0% of patients were Chinese ethnicity, patients were approximately 57.0 years old; over 65.0% had hypertension, over 78.0% had dyslipidaemia, over 33.0% were diabetic, over 43.0% had a history of smoking². From the Thai National Percutaneous Coronary Intervention Registry, amongst patients under 75.0 years old, the prevalence of risk factors were as follows: 68.5% had hypertension, 78.0% had dyslipidaemia, 37.7% had diabetes, 22.4% were active smokers³.

Another published report from the region was from the Melbourne Intervention Group, who examined data from 9204 patients recruited between 2004 and 2007. They found that the mean age was 64.6 years, with 64.3% having hypertension, 71.3% having dyslipidaemia, 24.0% having diabetes, and 22.5% being current smokers⁴. Therefore, from these publications, we noted that substantially more patients in our registry, compared to the Thai, Singaporean and Australian patients, were hypertensive and were diabetic. The high, and rising, prevalence of modifiable cardiovascular risk factors in Malaysia⁵ is likely to account for a corresponding, even exponential rise, in patients who have advanced coronary disease requiring revascularisation, both with PCI and CABG.



References

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4. Yan BP, Ajani AE, Clark DJ, et al. Recent trends in Australian percutaneous coronary intervention practice: insights from the Melbourne Interventional Group Registry. Medical Journal of Australia. 2011 Aug 1;195(3):122-7
5. National Health and Morbidity Survey 2011.

Table 2.1 Characteristics of patients who underwent PCI, NCVD-PCI Registry, 2007-2012

Year	2007-2009		2010		2011		2012		2010-2012		2007-2012	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Total no. of patients	10709		4157		4487		5106		13750		24459	
Demographics												
Age, Years												
N	10709		4157		4487		5106		13750		24459	
Mean (SD)	57.0 (10.2)		57.8 (10.2)		57.7 (10.3)		57.8 (10.5)		57.8 (10.3)		57.4 (10.3)	
Median (min, max)	57.0 (22.0, 95.0)		57.5 (22.6, 89.0)		57.8 (21.1, 87.5)		57.8 (21.4, 97.7)		57.7 (21.1, 97.7)		57.3 (21.1, 97.7)	
Age group, No. (%)												
20-<30	28	0.2	13	0.4	24	0.6	24	0.4	61	0.4	89	0.4
30-<40	423	4.0	144	3.5	168	3.7	220	4.4	532	3.8	955	4.0
40-<50	2161	20.1	785	18.8	805	18.0	907	17.8	2497	18.2	4658	19.0
50-<60	3857	36.0	1492	35.8	1616	36.0	1809	35.4	4917	35.7	8774	35.8
60-<70	2993	28.0	1193	28.6	1339	29.7	1470	28.8	4002	29.1	6995	28.6
70-<80	1169	11.0	481	11.6	490	11.0	617	12.0	1588	11.6	2757	11.2
≥80	78	0.7	49	1.3	45	1.0	59	1.2	153	1.2	231	1.0
Gender, No. (%)												
Male	8731	81.6	3399	81.8	3684	82.2	4259	83.4	11342	82.4	20073	82.0
Female	1978	18.4	758	18.2	803	17.8	847	16.6	2408	17.6	4386	18.0

Year	2007-2009		2010		2011		2012		2010-2012		2007-2012	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Total no. of patients	10709		4157		4487		5106		13750		24459	
Ethnic group, No. (%)												
Malay	5108	47.6	2061	49.6	2194	48.8	2478	48.6	6733	49.0	11841	48.4
Chinese	2550	23.9	895	21.6	1031	23.1	1174	23.0	3100	22.7	5650	23.1
Indian	2430	22.7	924	22.2	934	20.9	1010	19.8	2868	20.9	5298	21.7
Orang asli	0	0	1	0.0	0	0	1	0.0	2	0.0	2	0.0
Kadazan dustun	43	0.4	30	0.8	39	0.8	79	1.6	148	1.0	191	0.8
Melanau	4	0.0	6	0.2	1	0.0	5	0.0	12	0.0	16	0.0
Murut	1	0.0	1	0.0	2	0.0	4	0.0	7	0.0	8	0.0
Bajau	40	0.4	16	0.4	16	0.4	30	0.6	62	0.4	102	0.4
Bidayuh	41	0.4	11	0.2	28	0.6	28	0.6	67	0.4	108	0.4
Iban	222	2.0	108	2.6	136	3.0	175	3.4	419	3.1	641	2.7
Punjabi	121	1.2	50	1.2	29	0.6	14	0.2	93	0.6	214	0.8
Other Malaysian	87	0.8	27	0.6	45	1.0	69	1.4	141	1.0	228	1.0
Foreigner	54	0.6	23	0.6	27	0.6	31	0.6	81	0.7	135	0.7
Not available	5	0.0	4	0.0	5	0.2	8	0.2	17	0.2	22	0.0
Missing	3	0.0	0	0	0	0	0	0	0	0	3	0.0
Other coronary risk factors												
Smoking, No. (%)												
Never	4034	37.6	1689	40.6	1633	36.3	1527	30.0	4849	35.2	8883	36.3
Former (quit>30 days)	3018	28.2	1282	30.8	1282	28.5	1262	24.7	3826	27.8	6844	28.0
Current (any tobacco use within last 30 days)	2024	18.8	865	20.8	1001	22.4	1287	25.1	3153	23.0	5177	21.1
Not available	1597	15.0	321	7.8	571	12.8	1030	20.2	1922	14.0	3519	14.4

Year	2007-2009		2010		2011		2012		2010-2012		2007-2012	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Total no. of patients	10709		4157		4487		5106		13750		24459	
Family history of premature cardiovascular disease, No. (%)												
Yes	2027	19.0	793	19.1	684	15.2	647	12.6	2124	15.4	4151	17.0
No	7484	69.8	2904	69.8	3290	73.4	3738	73.2	9932	72.2	17416	71.2
Not known	1164	10.8	460	11.1	513	11.4	721	14.2	1694	12.4	2858	11.6
Missing	34	0.4	0	0	0	0	0	0	0	0	34	0.2
Body mass index (BMI), kgm ⁻²												
N	8478		3538		3636		3954		11128		19606	
Mean (SD)	26.5 (4.2)		26.9 (4.4)		26.5 (4.4)		26.5 (4.4)		26.7 (4.4)		26.6 (4.3)	
Median (min,max)	26.1 (14.0, 48.0)		26.5 (14.9, 49.2)		26.0 (14.9, 49.9)		26.0 (15.0, 47.7)		26.2 (14.9, 49.9)		26.1 (14.0, 49.9)	
Missing, No. (%)	2231	20.8	619	14.8	851	19.0	1152	22.6	2622	19.0	4853	19.8
BMI, kg/m ² , No. (%)												
<18.5	117	1.0	43	1.1	54	1.2	75	1.4	172	1.3	289	1.2
18.5-23	1510	14.2	582	14.0	666	14.8	712	14.0	1960	14.2	3470	14.2
>23-<25	1652	15.4	606	14.6	698	15.6	770	15.0	2074	15.0	3726	15.2
25-<30	3610	33.8	1566	37.6	1520	33.8	1631	32.0	4717	34.4	8327	34.0
30-<35	1266	11.8	571	13.8	550	12.2	613	12.0	1734	12.6	3000	12.3
35-<40	265	2.4	128	3.0	113	2.6	123	2.4	364	2.7	629	2.6
≥40	58	0.6	42	1.1	35	0.8	30	0.6	107	0.8	165	0.7
Missing	2231	20.8	619	14.8	851	19.0	1152	22.6	2622	19.0	4853	19.8



Year	2007-2009		2010		2011		2012		2010-2012		2007-2012	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Total no. of patients												
	10709		4157		4487		5106		13750		24459	
Co-morbidities												
Dyslipidaemia, No. (%)												
Yes	7846	73.2	3183	76.6	3361	74.9	3192	62.6	9736	70.8	17582	71.8
No	2344	21.8	781	18.8	940	20.9	1613	31.6	3334	24.2	5678	23.2
Not known	482	4.6	193	4.6	186	4.2	301	5.8	680	5.0	1162	4.8
Missing	37	0.4	0	0	0	0	0	0	0	0	37	0.2
Hypertension, No. (%)												
Yes	7857	73.4	3089	74.3	3321	74.0	3611	70.8	10021	72.8	17878	73.0
No	2679	25.0	994	24.0	1084	24.2	1289	25.2	3367	24.5	6046	24.8
Not known	155	1.4	74	1.7	82	1.8	206	4.0	362	2.7	517	2.2
Missing	18	0.2	0	0	0	0	0	0	0	0	18	0.0
Diabetes, No. (%)												
Yes	4938	46.1	2008	48.3	2022	45.0	2197	43.0	6227	45.3	11165	45.7
No	5542	51.7	2053	49.3	2377	53.0	2673	52.4	7103	51.6	12645	51.6
Not known	208	2.0	96	2.4	88	2.0	236	4.6	420	3.1	628	2.7
Missing	21	0.2	0	0	0	0	0	0	0	0	21	0.0
Type of diabetes treatment, No. (%)												
OHA	3539	33.0	1456	35.0	1627	36.2	1773	34.8	4856	35.4	8395	34.4
Insulin	517	4.8	261	6.2	202	4.6	239	4.6	702	5.2	1219	5.0
OHA + insulin	199	1.8	163	4.0	117	2.6	100	2.0	380	2.8	579	2.4
Non pharmacology therapy	26	0.2	131	3.2	77	1.8	78	1.6	286	2.0	312	1.2

Year	2007-2009		2010		2011		2012		2010-2012		2007-2012	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Total no. of patients	10709		4157		4487		5106		13750		24459	
Myocardial infarction history, No. (%)												
Yes	4391	41.0	1904	45.8	2195	49.0	2259	44.2	6358	46.2	10749	44.0
No	5870	54.8	2121	51.0	2179	48.5	2644	51.8	6944	50.6	12814	52.3
Not known	419	4.0	132	3.2	113	2.5	203	4.0	448	3.2	867	3.5
Missing	29	0.2	0	0	0	0	0	0	0	0	29	0.2
Documented coronary artery disease, No. (%)												
Yes	5911	55.2	2510	60.4	2763	61.6	2280	44.6	7553	55.0	13464	55.0
No	4610	43.0	1585	38.2	1649	36.8	2643	51.8	5877	42.7	10487	42.8
Not known	161	1.6	62	1.4	75	1.6	183	3.6	320	2.3	481	2.0
Missing	27	0.2	0	0	0	0	0	0	0	0	27	0.2
New onset angina (<2weeks), No. (%)												
Yes	2631	24.6	874	21.0	1054	23.4	1221	24.0	3149	22.9	5780	23.7
No	7867	73.4	3223	77.6	3372	75.2	3706	72.5	10301	74.9	18168	74.3
Not known	187	1.8	60	1.4	61	1.4	179	3.5	300	2.2	487	2.0
Missing	24	0.2	0	0	0	0	0	0	0	0	24	0.0
Congestive heart failure (2 weeks prior), No. (%)												
Yes	429	4.0	181	4.4	168	3.8	120	2.4	469	3.4	898	3.6
No	10058	94.0	3917	94.2	4252	94.8	4822	94.4	12991	94.4	23049	94.2
Not known	191	1.8	59	1.4	67	1.4	164	3.2	290	2.2	481	2.0
Missing	31	0.2	0	0	0	0	0	0	0	0	31	0.2



Year	2007-2009		2010		2011		2012		2010-2012		2007-2012	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Total no. of patients	10709		4157		4487		5106		13750		24459	
Cerebrovascular disease, No. (%)												
Yes	163	1.6	47	1.2	73	1.6	69	1.4	189	1.4	352	1.5
No	10395	97.0	4053	97.4	4349	97.0	4878	95.5	13280	96.6	23675	96.8
Not known	129	1.2	57	1.4	65	1.4	159	3.1	281	2.0	410	1.7
Missing	22	0.2	0	0	0	0	0	0	0	0	22	0.0
Peripheral vascular disease, No. (%)												
Yes	111	1.0	29	0.6	35	0.8	30	0.6	94	0.6	205	0.8
No	10443	97.6	4072	98.0	4387	97.8	4920	96.4	13379	97.4	23822	97.4
Not known	130	1.2	56	1.4	65	1.4	156	3.0	277	2.0	407	1.6
Missing	25	0.2	0	0	0	0	0	0	0	0	25	0.2
Chronic renal failure (>200micromol), No. (%)												
Yes	709	6.6	285	6.9	234	5.2	213	4.2	732	5.4	1441	5.8
No	9850	92.0	3818	91.8	4185	93.2	4736	92.8	12739	92.6	22589	92.4
Not known	122	1.2	54	1.3	68	1.6	157	3.0	279	2.0	401	1.6
Missing	28	0.2	0	0	0	0	0	0	0	0	28	0.2
*Coronary artery disease, No. (%)												
Yes	8462	79.0	3496	84.1	3765	83.9	3867	75.8	11128	80.9	19590	80.1
No	2039	19.0	601	14.5	651	14.5	1074	21.0	2326	16.9	4365	17.8
Not known	208	2.0	60	1.4	71	1.6	165	3.2	296	2.2	504	2.1

* Coronary artery disease is defined as "Yes" on any of the following co-morbidities: 1) History of myocardial infarction, 2) Documented CAD >50% stenosis, 3) New onset angina (less than 2 weeks)
 Note: Not known in coronary artery disease includes patients who do not know their co-morbidities as well as missing data

Year	2007-2009		2010		2011		2012		2010-2012		2007-2012	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Total no. of patients	10709		4157		4487		5106		13750		24459	
Baseline investigation												
Baseline creatinine, mmol/L												
N	10188		3832		3911		4290		12033		22221	
Mean(SD)	120.1 (133.0)		115.3 (113.0)		114.1 (112.2)		113.2 (108.5)		114.1 (111.1)		116.9 (121.7)	
Median, (min,max)	96.0 (44.0, 6500.0)		92.0 (44.0, 1899.0)		90.0 (44.0, 1397.0)		90.0 (44.0, 1206.0)		90.0 (44.0, 1899.0)		93.0 (44.0, 6500.0)	
Not available, No. (%)	317	3.0	115	2.8	165	3.7	306	6.0	586	4.2	903	3.7
Missing, No. (%)	204	1.9	210	5.0	411	9.2	510	10.0	1131	8.2	1335	5.4
Baseline creatinine, mmol/L, No. (%)												
<100	5753	53.7	2339	56.2	2525	56.2	2790	54.6	7654	55.6	13407	54.8
100-199	3909	36.5	1296	31.2	1189	26.4	1275	25.0	3760	27.4	7669	31.4
≥200	526	4.9	197	4.8	197	4.5	225	4.4	619	4.6	1145	4.7
Not available	317	3.0	115	2.8	165	3.7	306	6.0	586	4.2	903	3.7
Missing	204	1.9	210	5.0	411	9.2	510	10.0	1131	8.2	1335	5.4
*Glomerular filtration rate (GFR), MDRD												
N	10181		3827		3907		4291		12025		22206	
Mean(SD)	71.5 (23.7)		74.7 (26.0)		76.3 (26.0)		77.1 (26.7)		76.1 (26.3)		74.0 (25.2)	
Median, (min,max)	72.7 (0.6, 173.9)		75.8 (2.4, 178.6)		77.6 (3.3, 191.1)		78.2 (2.9, 212.5)		77.2 (2.4, 212.5)		75.0 (0.6, 212.5)	
Missing, No. (%)	528	4.9	330	7.9	580	12.9	815	16.0	1725	12.5	2253	9.2



Year	2007-2009		2010		2011		2012		2010-2012		2007-2012	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Total no. of patients	10709		4157		4487		5106		13750		24459	
*Glomerular filtration rate (GFR), MDRD, No. (%)												
<15	332	3.1	115	2.8	129	2.9	134	2.6	378	2.7	710	2.9
15-<30	216	2.0	92	2.2	81	1.8	99	1.9	272	2.0	488	2.1
30-<45	573	5.4	232	5.6	177	3.9	204	4.1	613	4.5	1186	4.8
45-<60	1605	15.0	540	13.0	507	11.4	528	10.3	1575	11.5	3180	13.0
≥60	7455	69.6	2848	68.5	3013	67.1	3326	65.1	9187	66.8	16642	68.0
Missing	528	4.9	330	7.9	580	12.9	815	16.0	1725	12.5	2253	9.2
**Total cholesterol, mmol/L												
N	4132		1776		1817		1488		5081		9213	
Mean(SD)	4.5 (1.2)		4.4 (1.3)		4.4 (1.3)		4.4 (1.2)		4.4 (1.2)		4.5 (1.2)	
Median, (min,max)	4.3 (2.1, 24.2)		4.2 (2.0, 23.0)		4.2 (2.0, 23.0)		4.2 (2.0, 12.5)		4.2 (2.0, 23.0)		4.3 (2.0, 24.2)	
Not available, No. (%)	1557	26.4	534	21.2	625	22.6	505	22.2	1664	22.0	3221	24.0
Missing, No. (%)	222	3.8	200	8.0	321	11.6	287	12.6	808	10.6	1030	7.6
**LDL levels, mmol/L												
N	4113		1743		1812		1433		4988		9101	
Mean(SD)	2.6 (1.1)		2.5 (1.1)		2.5 (1.0)		2.5 (1.2)		2.5 (1.1)		2.6 (1.1)	
Median, (min,max)	2.4 (0.7, 18.0)		2.4 (0.8, 20.0)		2.4 (0.8, 17.0)		2.3 (0.8, 17.0)		2.3 (0.8, 20.0)		2.4 (0.7, 20.0)	
Not available, No. (%)	1624	27.4	535	21.4	626	22.6	538	23.6	1699	22.4	3323	24.6
Missing, No. (%)	174	3.0	232	9.2	325	11.8	309	13.6	866	11.4	1040	7.8

Year	2007-2009		2010		2011		2012		2010-2012		2007-2012	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Total no. of patients	10709		4157		4487		5106		13750		24459	
Previous intervention												
Previous PCI, No. (%)												
Yes	2159	20.2	920	22.2	872	19.4	1002	19.6	2794	20.4	4953	20.3
No	8532	79.6	3237	77.8	3615	80.6	4104	80.4	10956	79.6	19488	79.7
Missing	18	0.2	0	0	0	0	0	0	0	0	18	0.0
Previous CABG, No. (%)												
Yes	430	4.0	207	5.0	152	3.4	184	3.6	543	4.0	973	4.0
No	10255	95.8	3950	95.0	4335	96.6	4922	96.4	13207	96.0	23462	96.0
Missing	24	0.2	0	0	0	0	0	0	0	0	24	0.0

*Glomerular filtration rate calculated based on MDRD formula

** Mean (SD) of Total Cholesterol, mmol/L and LDL levels, mmol/L is of the patients who had documented coronary artery disease

**Table 2.2 Distribution of patients by number of procedures, NCVD-PCI Registry, 2007-2012**

		No. of patients in					
Year		2007-2009	2010	2011	2012	2010-2012	2007-2012
No. of procedures	1	10709	4157	4487	5106	13750	24459
	2	867	294	384	387	1065	1932
	3	41	11	15	18	44	85
	4	4	0	1	2	3	7
	Total	11621	4462	4887	5513	14862	26483

Table 2.3.1 Distribution of patients who underwent PCI, by SDP, NCVD-PCI Registry, 2007-2012

No.	Source data provider	2007-2009 Total no. of patients = 10709		2010-2012 Total no. of patients = 13750		2007-2012 Total no. of patients = 24459	
		No.	%	No.	%	No.	%
1	Pusat Perubatan Universiti Malaya	868	8.1	316	2.2	1184	4.8
2	Institut Jantung Negara	6431	60.0	7752	56.5	14183	58.1
3	Hospital Pulau Pinang	725	6.8	1374	10.1	2099	8.7
4	Hospital Umum Sarawak	1069	10.0	1654	12.1	2723	11.3
5	Hospital Sultanah Aminah	1023	9.5	754	5.4	1777	7.3
6	Hospital Sultanah Bahiyah	238	2.2	804	5.9	1042	4.2
7	Hospital Queen Elizabeth	242	2.2	203	1.4	445	1.8
8	Hospital Pakar KPJ Selangor	69	0.6	1	0.0	70	0.2
9	Hospital Serdang	12	0.2	136	1.0	148	0.6
10	Pusat Perubatan Universiti Kebangsaan Malaysia	20	0.2	0	0	20	0.0
11	Pusat Perubatan Mahkota	12	0.2	0	0	12	0.0
12	Hospital Sultanah Nur Zahirah	0	0	110	0.8	110	0.4
13	Hospital Tengku Ampuan Afzan	0	0	28	0.2	28	0.2
14	Pusat Perubatan Sime Darby	0	0	91	0.6	91	0.4
15	Pusat Jantung Hospital Queen Elizabeth 2	0	0	508	3.6	508	2.0
16	Hospital Pantai Ipoh	0	0	19	0.2	19	0.0
Total		10709	100.0	13750	100.0	24459	100.0

* Each SDP started to contribute data at different time period

Table 2.3.2 Distribution of PCI procedures performed by Source Data Providers (SDPs), NCVD-PCI Registry, 2007-2012

No.	Source data provider	2007-2009 Total no. of patients = 11621		2010-2012 Total no. of patients = 14862		ALL Total no. of patients = 26483	
		No.	%	No.	%	No.	%
1	Pusat Perubatan Universiti Malaya	964	8.2	329	2.2	1293	4.8
2	Institut Jantung Negara	6919	59.6	8456	56.8	15375	58.0
3	Hospital Pulau Pinang	811	7.0	1558	10.4	2369	9.0
4	Hospital Umum Sarawak	1196	10.2	1756	11.8	2952	11.2
5	Hospital Sultanah Aminah	1108	9.6	794	5.4	1902	7.2
6	Hospital Sultanah Bahiyah	265	2.2	853	5.8	1118	4.2
7	Hospital Queen Elizabeth	243	2.0	210	1.4	453	1.8
8	Hospital Pakar KPJ Selangor	71	0.6	1	0.0	72	0.2
9	Hospital Serdang	12	0.2	136	1.0	148	0.6
10	Pusat Perubatan Universiti Kebangsaan Malaysia	20	0.2	0	0	20	0.0
11	Pusat Perubatan Mahkota	12	0.2	0	0	12	0.0
12	Hospital Sultanah Nur Zahirah	0	0	111	0.8	111	0.4
13	Hospital Tengku Ampuan Afzan	0	0	29	0.2	29	0.2
14	Pusat Perubatan Sime Darby	0	0	92	0.6	92	0.4
15	Pusat Jantung Hospital Queen Elizabeth 2	0	0	518	3.4	518	2.0
16	Hospital Pantai Ipoh	0	0	19	0.2	19	0.0
Total		11621	100.0	14862	100.0	26483	100.0

* Each SDP started to contribute data at different time period

Table 2.4.1 Age-gender distribution of patients who underwent PCI, NCVD-PCI Registry, 2007-2012

Age group	2007-2009		2010-2012		2007-2012	
	Total no. of patients = 10709		Total no. of patients = 13750		Total no. of patients = 24459	
	Male	Female	Male	Female	Male	Female
	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)
20-<30	25 (0.2)	3 (0.2)	56 (0.4)	5 (0.2)	81 (0.4)	8 (0.2)
30-<40	391 (4.4)	32 (1.6)	501 (4.4)	31 (1.2)	892 (4.4)	63 (1.4)
40-<50	1947 (22.3)	214 (10.8)	2265 (20.0)	232 (9.6)	4212 (21.0)	446 (10.2)
50-<60	3272 (37.5)	585 (29.5)	4213 (37.1)	704 (29.3)	7485 (37.3)	1289 (29.4)
60-<70	2254 (25.9)	739 (37.3)	3100 (27.3)	902 (37.5)	5354 (26.7)	1641 (37.4)
70-<80	786 (9.1)	383 (19.4)	1101 (9.8)	487 (20.2)	1887 (9.4)	870 (19.8)
≥80	56 (0.6)	22 (1.2)	106 (1.0)	47 (2.0)	162 (0.8)	69 (1.6)
Total	8731 (100.0)	1978 (100.0)	11342 (100.0)	2408 (100.0)	20073 (100.0)	4386 (100.0)

Table 2.4.2 Age-gender distribution of patients who underwent PCI, by ethnic group, NCD-PCI Registry, 2007-2012

Gender	Age group	2007-2009					2010-2012					2007-2012					
		Total no. of patients = 10709					Total no. of patients = 13750					Total no. of patients = 24459					
		Malay	Chinese	Indian	Others	Not Available	Malay	Chinese	Indian	Others	Not Available	Malay	Chinese	Indian	Others	Not Available	
No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)		
Male	20 -< 30	10 (0.2)	5 (0.0)	6 (0.0)	4 (0.0)	0 (0.0)	33 (0.2)	6 (0.0)	11 (0.0)	6 (0.0)	0 (0.0)	43 (0.2)	11 (0.0)	17 (0.0)	10 (0.0)	0 (0.0)	
	30 -< 40	222 (2.6)	56 (0.6)	82 (1.0)	31 (0.4)	0 (0.0)	279 (0.6)	76 (0.6)	94 (0.8)	51 (0.4)	1 (0.0)	501 (2.4)	132 (0.6)	176 (0.8)	82 (0.4)	1 (0.0)	
	40 -< 50	1024 (11.8)	325 (3.8)	464 (5.4)	133 (1.6)	1 (0.0)	1212 (10.6)	427 (4.0)	415 (3.6)	208 (1.8)	3 (0.0)	2236 (11.2)	752 (3.8)	879 (4.4)	341 (1.7)	4 (0.0)	
	50 -< 60	1698 (19.5)	698 (8.0)	711 (8.2)	162 (1.8)	3 (0.0)	2180 (19.3)	817 (7.2)	921 (8.4)	291 (2.7)	4 (0.0)	3878 (19.5)	1515 (7.6)	1632 (8.3)	453 (2.3)	7 (0.0)	
	60 -< 70	1020 (11.6)	650 (7.5)	456 (5.2)	126 (1.4)	2 (0.0)	1426 (12.6)	823 (7.2)	645 (5.6)	200 (1.8)	6 (0.0)	2446 (12.2)	1473 (7.4)	1101 (5.5)	326 (1.7)	8 (0.0)	
	70 -< 80	317 (3.6)	256 (3.0)	164 (1.8)	49 (0.6)	0 (0.0)	494 (4.4)	345 (3.0)	195 (1.8)	66 (0.6)	1 (0.0)	811 (4.0)	601 (3.0)	359 (1.8)	115 (0.6)	1 (0.0)	
	≥ 80	19 (0.2)	23 (0.2)	7 (0.0)	7 (0.0)	0 (0.0)	39 (0.4)	36 (0.4)	24 (0.2)	7 (0.0)	0 (0.0)	58 (0.2)	59 (0.2)	31 (0.2)	14 (0.0)	0 (0.0)	
	Total	4310 (49.5)	2013 (23.1)	1890 (21.6)	512 (5.8)	6 (0.0)	5663 (49.9)	2530 (22.4)	2305 (20.4)	829 (7.3)	15 (0.0)	9973 (49.7)	4543 (22.6)	4195 (21.0)	1341 (6.7)	21 (0.0)	
	Female	20 -< 30	3 (0.2)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	4 (0.2)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	7 (0.2)	0 (0.0)	0 (0.0)	1 (0.0)	0 (0.0)
		30 -< 40	18 (1.0)	3 (0.2)	11 (0.6)	0 (0.0)	0 (0.0)	19 (0.8)	3 (0.2)	5 (0.2)	3 (0.2)	1 (0.0)	37 (0.8)	6 (0.2)	16 (0.4)	3 (0.0)	1 (0.0)
40 -< 50		102 (5.2)	25 (1.2)	76 (3.8)	10 (0.6)	1 (0.0)	115 (4.8)	30 (1.2)	57 (2.4)	30 (1.2)	0 (0.0)	217 (5.0)	55 (1.2)	133 (3.0)	40 (1.0)	1 (0.0)	
50 -< 60		268 (13.5)	120 (6.0)	160 (8.0)	37 (1.8)	0 (0.0)	359 (15.0)	115 (4.8)	177 (7.4)	53 (2.2)	0 (0.0)	627 (14.3)	235 (5.4)	337 (7.7)	90 (2.0)	2 (0.0)	
60 -< 70		295 (15.0)	217 (11.0)	190 (9.5)	36 (1.8)	1 (0.0)	382 (15.7)	239 (10.0)	215 (9.0)	65 (2.5)	1 (0.0)	677 (15.5)	456 (10.5)	405 (9.3)	101 (2.5)	1 (0.0)	
70 -< 80		109 (5.6)	160 (8.0)	98 (5.0)	16 (0.8)	0 (0.0)	182 (7.6)	166 (6.8)	90 (3.8)	49 (2.0)	0 (0.0)	291 (6.6)	326 (7.4)	188 (4.2)	65 (1.4)	0 (0.0)	
≥ 80		3 (0.2)	12 (0.6)	5 (0.2)	2 (0.2)	0 (0.0)	9 (0.4)	17 (0.8)	19 (0.8)	2 (0.0)	0 (0.0)	12 (0.2)	29 (0.6)	24 (0.6)	4 (0.0)	0 (0.0)	
Total		798 (40.7)	537 (27.0)	540 (27.1)	101 (5.2)	2 (0.0)	1070 (44.5)	570 (23.8)	563 (23.6)	203 (8.1)	2 (0.0)	1868 (42.6)	1107 (25.3)	1103 (25.2)	304 (6.9)	4 (0.0)	

* 'Others' includes Orang asli, Kadazan, Melanau, Murut, Bajau, Bidayuh, Iban, other Malaysian and Foreigner

Table 2.4.3 Age-gender distribution of patients who underwent PCI, by pre-morbid diabetes, NCV-D-PCI Registry, 2007-2012

Gender	Age group	2007-2009						2010-2012						2007-2012								
		Pre-morbid diabetes			Missing	Pre-morbid diabetes			Diabetic	Non Diabetic	Not known	Pre-morbid diabetes			Diabetic	Non Diabetic	Not known	Pre-morbid diabetes				
		Diabetic	Non Diabetic	Not known		Diabetic	Non Diabetic	Not known				Diabetic	Non Diabetic	Not known				Diabetic	Non Diabetic	Not known	Diabetic	Non Diabetic
No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)		
Male	20-<30	5 (0.0)	17 (0.2)	3 (0.0)	0 (0.0)	5 (0.0)	42 (0.4)	9 (0.0)	10 (0.0)	59 (0.2)	12 (0.0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	
	30-<40	113 (1.2)	271 (3.2)	7 (0.0)	0 (0.0)	132 (1.2)	345 (3.0)	24 (0.2)	245 (1.2)	616 (3.0)	31 (0.2)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	
	40-<50	686 (7.8)	1226 (14.0)	33 (0.4)	2 (0.0)	798 (7.0)	1397 (12.4)	70 (0.6)	1484 (7.4)	2623 (13.0)	103 (0.6)	2 (0.0)	2 (0.0)	2 (0.0)	2 (0.0)	2 (0.0)	2 (0.0)	2 (0.0)	2 (0.0)	2 (0.0)	2 (0.0)	2 (0.0)
	50-<60	1484 (17.0)	1715 (19.7)	64 (0.8)	9 (0.2)	1890 (16.7)	2191 (19.5)	132 (1.2)	3374 (16.8)	3906 (19.5)	196 (1.1)	9 (0.0)	9 (0.0)	9 (0.0)	9 (0.0)	9 (0.0)	9 (0.0)	9 (0.0)	9 (0.0)	9 (0.0)	9 (0.0)	9 (0.0)
	60-<70	1032 (11.9)	1165 (13.4)	51 (0.6)	6 (0.0)	1458 (12.8)	1553 (13.6)	89 (0.8)	2490 (12.4)	2718 (13.7)	140 (0.6)	6 (0.0)	6 (0.0)	6 (0.0)	6 (0.0)	6 (0.0)	6 (0.0)	6 (0.0)	6 (0.0)	6 (0.0)	6 (0.0)	6 (0.0)
	70-<80	352 (4.0)	411 (4.8)	22 (0.2)	1 (0.0)	479 (4.2)	586 (5.2)	36 (0.4)	831 (4.2)	997 (5.1)	58 (0.2)	1 (0.0)	1 (0.0)	1 (0.0)	1 (0.0)	1 (0.0)	1 (0.0)	1 (0.0)	1 (0.0)	1 (0.0)	1 (0.0)	1 (0.0)
	≥80	20 (0.2)	34 (0.4)	2 (0.0)	0 (0.0)	47 (0.4)	55 (0.4)	4 (0.0)	67 (0.4)	89 (0.4)	6 (0.0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	Total	3692 (42.1)	4839 (55.7)	182 (2.0)	18 (0.2)	4809 (42.3)	6169 (54.5)	364 (3.2)	8501 (42.4)	11008 (54.9)	546 (2.7)	18 (0.0)	18 (0.0)	18 (0.0)	18 (0.0)	18 (0.0)	18 (0.0)	18 (0.0)	18 (0.0)	18 (0.0)	18 (0.0)	18 (0.0)
	Female	20-<30	1 (0.0)	2 (0.20)	0 (0.0)	0 (0.0)	1 (0.0)	4 (0.2)	0 (0.0)	2 (0.0)	6 (0.2)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
		30-<40	21 (1.0)	11 (0.6)	0 (0.0)	0 (0.0)	17 (0.8)	12 (0.4)	2 (0.0)	38 (0.8)	23 (0.6)	2 (0.0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
40-<50		158 (8.0)	53 (2.6)	2 (0.2)	1 (0.0)	120 (5.0)	101 (4.2)	11 (0.4)	278 (6.4)	154 (3.6)	13 (0.2)	1 (0.0)	1 (0.0)	1 (0.0)	1 (0.0)	1 (0.0)	1 (0.0)	1 (0.0)	1 (0.0)	1 (0.0)	1 (0.0)	
50-<60		386 (19.6)	189 (9.6)	9 (0.4)	1 (0.0)	446 (18.7)	246 (10.2)	12 (0.4)	832 (19.0)	435 (10.0)	21 (0.4)	1 (0.0)	1 (0.0)	1 (0.0)	1 (0.0)	1 (0.0)	1 (0.0)	1 (0.0)	1 (0.0)	1 (0.0)	1 (0.0)	
60-<70		465 (23.5)	266 (13.3)	7 (0.4)	1 (0.0)	546 (22.6)	338 (14.1)	18 (0.8)	1011 (23.1)	604 (13.9)	25 (0.6)	1 (0.0)	1 (0.0)	1 (0.0)	1 (0.0)	1 (0.0)	1 (0.0)	1 (0.0)	1 (0.0)	1 (0.0)	1 (0.0)	
70-<80		204 (10.4)	171 (8.6)	8 (0.4)	0 (0.0)	260 (10.8)	216 (9.0)	11 (0.4)	464 (10.6)	387 (8.8)	19 (0.4)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	
≥80		11 (0.6)	11 (0.6)	0 (0.0)	0 (0.0)	28 (1.2)	17 (0.8)	2 (0.0)	39 (0.8)	28 (0.6)	2 (0.0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Total		1246 (63.1)	703 (35.5)	26 (1.4)	3 (0.0)	1418 (59.1)	934 (38.9)	56 (2.0)	2664 (60.7)	1637 (37.7)	82 (1.6)	3 (0.0)	3 (0.0)	3 (0.0)	3 (0.0)	3 (0.0)	3 (0.0)	3 (0.0)	3 (0.0)	3 (0.0)	3 (0.0)	3 (0.0)

Table 2.4.4 Age-gender distribution of patients who underwent PCI, by pre-morbid hypertension, NCVD-PCI Registry, 2007-2012

Gender	Age group	2007-2009				2010-2012				2007-2012					
		Pre-morbid hypertension		Missing	Pre-morbid hypertension		Not Known	Hypertensive	Non-Hypertensive	Pre-morbid hypertension		Not Known	Hypertensive	Non-Hypertensive	Missing
		Hypertensive	Non-Hypertensive		Hypertensive	Non-Hypertensive				Hypertensive	Non-Hypertensive				
No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	
Male	20-<30	7 (0.0)	15 (0.2)	3 (0.0)	0 (0)	13 (0.2)	36 (0.4)	7 (0.0)	20 (0.0)	51 (0.2)	10 (0.0)	0 (0)			
	30-<40	192 (2.2)	189 (2.2)	9 (0.2)	1 (0.0)	245 (2.2)	230 (2.0)	26 (0.2)	437 (2.2)	419 (2.0)	35 (0.2)	1 (0.0)			
	40-<50	1186 (13.6)	731 (8.4)	29 (0.4)	1 (0.0)	1359 (12.0)	836 (7.4)	70 (0.6)	2545 (12.7)	1567 (7.8)	99 (0.4)	1 (0.0)			
	50-<60	2363 (27.0)	851 (9.7)	51 (0.6)	7 (0.0)	2992 (26.4)	1110 (9.8)	111 (1.0)	5355 (26.7)	1961 (9.9)	162 (0.9)	7 (0.0)			
	60-<70	1724 (19.7)	498 (5.8)	28 (0.4)	4 (0.0)	2419 (21.4)	605 (5.4)	76 (0.6)	4143 (20.7)	1103 (5.4)	104 (0.6)	4 (0.0)			
	70-<80	640 (7.4)	130 (1.4)	15 (0.2)	1 (0.0)	891 (7.8)	177 (1.6)	33 (0.2)	1531 (7.7)	307 (1.6)	48 (0.2)	1 (0.0)			
	≥80	49 (0.6)	6 (0.0)	1 (0.0)	0 (0)	79 (0.6)	26 (0.2)	1 (0.0)	128 (0.6)	32 (0.2)	2 (0.0)	0 (0)			
	Total	6161 (70.5)	2420 (27.7)	136 (1.8)	14 (0.0)	7998 (70.6)	3020 (26.8)	324 (2.6)	14159 (70.6)	5440 (27.1)	460 (2.3)	14 (0.0)			
	Female	20-<30	1 (0.0)	2 (0.2)	0 (0)	0 (0)	4 (0.2)	1 (0.0)	0 (0)	5 (0.2)	3 (0.0)	0 (0)	0 (0)		
		30-<40	20 (1.0)	12 (0.6)	0 (0)	0 (0)	19 (0.8)	10 (0.4)	2 (0.0)	39 (0.8)	22 (0.6)	2 (0.0)	0 (0)		
40-<50		167 (8.4)	44 (2.2)	1 (0.0)	2 (0.2)	171 (7.2)	51 (2.2)	10 (0.4)	338 (7.8)	95 (2.2)	11 (0.2)	2 (0.0)			
50-<60		487 (24.6)	90 (4.6)	7 (0.4)	1 (0.0)	582 (24.2)	113 (4.6)	9 (0.4)	1069 (24.4)	203 (4.6)	16 (0.4)	1 (0.0)			
60-<70		658 (33.2)	73 (3.6)	7 (0.4)	1 (0.0)	785 (32.6)	107 (4.4)	10 (0.4)	1443 (33.0)	180 (4.2)	17 (0.4)	1 (0.0)			
70-<80		344 (17.4)	35 (1.8)	4 (0.2)	0 (0)	424 (17.6)	57 (2.4)	6 (0.2)	768 (17.6)	92 (2.0)	10 (0.2)	0 (0)			
≥80		19 (1.0)	3 (0.2)	0 (0)	0 (0)	38 (1.6)	8 (0.4)	1 (0.0)	57 (1.2)	11 (0.2)	1 (0.0)	0 (0)			
Total		1696 (100.0)	259 (13.2)	19 (1.0)	4 (0.2)	2023 (84.2)	347 (14.4)	38 (1.4)	3719 (85.0)	606 (13.8)	57 (1.2)	4 (0.0)			

Table 2.4.5 Age-gender distribution of patients who underwent PCI, by pre-morbid dyslipidaemia, NCVI-PCI Registry, 2007-2012

Gender	Age group	2007-2009						2010-2012						2007-2012						
		Pre-morbid dyslipidaemia			Pre-morbid dyslipidaemia			Pre-morbid dyslipidaemia			Pre-morbid dyslipidaemia			Pre-morbid dyslipidaemia			Pre-morbid dyslipidaemia			
		Yes	No	Missing	Yes	No	Missing	Yes	No	Missing	Yes	No	Missing	Yes	No	Missing	Yes	No	Missing	
No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	
Male	20-<30	13 (0.2)	9 (0.2)	0 (0)	24 (0.2)	21 (0.2)	11 (0.0)	37 (0.2)	30 (0.2)	14 (0.0)	0 (0)	37 (0.2)	30 (0.2)	14 (0.0)	0 (0)	37 (0.2)	30 (0.2)	14 (0.0)	0 (0)	0 (0)
	30-<40	282 (3.2)	92 (1.0)	1 (0.0)	310 (2.8)	159 (1.4)	32 (0.2)	592 (3.0)	251 (1.2)	48 (0.2)	1 (0.0)	592 (3.0)	251 (1.2)	48 (0.2)	1 (0.0)	592 (3.0)	251 (1.2)	48 (0.2)	1 (0.0)	1 (0.0)
	40-<50	1390 (16.0)	467 (5.4)	7 (0.0)	1513 (13.4)	630 (5.7)	122 (1.0)	2903 (14.4)	1097 (5.5)	205 (1.1)	7 (0.0)	2903 (14.4)	1097 (5.5)	205 (1.1)	7 (0.0)	2903 (14.4)	1097 (5.5)	205 (1.1)	7 (0.0)	7 (0.0)
	50-<60	2405 (27.5)	710 (8.1)	15 (0.2)	3055 (27.0)	955 (8.4)	203 (1.8)	5460 (27.2)	1665 (8.3)	345 (1.9)	15 (0.2)	5460 (27.2)	1665 (8.3)	345 (1.9)	15 (0.0)	5460 (27.2)	1665 (8.3)	345 (1.9)	15 (0.0)	15 (0.0)
	60-<70	1653 (19.0)	485 (5.6)	5 (0.0)	2234 (19.7)	722 (6.4)	144 (1.2)	3887 (19.4)	1207 (6.1)	255 (1.3)	5 (0.0)	3887 (19.4)	1207 (6.1)	255 (1.3)	5 (0.0)	3887 (19.4)	1207 (6.1)	255 (1.3)	5 (0.0)	5 (0.0)
	70-<80	585 (6.8)	162 (1.8)	1 (0.0)	758 (6.6)	281 (2.4)	62 (0.6)	1343 (6.6)	443 (2.2)	100 (0.4)	1 (0.0)	1343 (6.6)	443 (2.2)	100 (0.4)	1 (0.0)	1343 (6.6)	443 (2.2)	100 (0.4)	1 (0.0)	1 (0.0)
	≥80	43 (0.4)	12 (0.2)	0 (0)	62 (0.6)	39 (0.4)	5 (0.0)	105 (0.6)	51 (0.2)	6 (0.0)	0 (0)	105 (0.6)	51 (0.2)	6 (0.0)	0 (0)	105 (0.6)	51 (0.2)	6 (0.0)	0 (0)	0 (0)
	Total	6371 (73.1)	1937 (22.3)	29 (0.2)	7956 (70.3)	2807 (24.9)	579 (4.8)	14327 (71.4)	4744 (23.7)	973 (4.9)	29 (0.0)	14327 (71.4)	4744 (23.7)	973 (4.9)	29 (0.0)	14327 (71.4)	4744 (23.7)	973 (4.9)	29 (0.0)	29 (0.0)
Female	20-<30	3 (0.2)	0 (0)	0 (0)	2 (0.0)	3 (0.2)	0 (0)	5 (0.2)	3 (0.0)	0 (0)	0 (0)	5 (0.2)	3 (0.0)	0 (0)	0 (0)	5 (0.2)	3 (0.0)	0 (0)	0 (0)	0 (0)
	30-<40	24 (1.2)	5 (0.2)	0 (0)	19 (0.8)	10 (0.4)	2 (0.0)	43 (1.0)	15 (0.4)	5 (0.2)	0 (0)	43 (1.0)	15 (0.4)	5 (0.2)	0 (0)	43 (1.0)	15 (0.4)	5 (0.2)	0 (0)	0 (0)
	40-<50	167 (8.4)	35 (1.8)	2 (0.2)	161 (6.6)	53 (2.2)	18 (0.8)	328 (7.4)	88 (2.0)	28 (0.6)	2 (0.0)	328 (7.4)	88 (2.0)	28 (0.6)	2 (0.0)	328 (7.4)	88 (2.0)	28 (0.6)	2 (0.0)	2 (0.0)
	50-<60	460 (23.2)	106 (5.4)	3 (0.2)	529 (22.0)	151 (6.2)	24 (1.0)	989 (22.6)	257 (5.8)	40 (1.0)	3 (0.2)	989 (22.6)	257 (5.8)	40 (1.0)	3 (0.0)	989 (22.6)	257 (5.8)	40 (1.0)	3 (0.0)	3 (0.0)
	60-<70	544 (27.5)	161 (8.1)	2 (0.2)	680 (28.3)	183 (7.7)	39 (1.6)	1224 (28.0)	344 (7.8)	71 (1.6)	2 (0.2)	1224 (28.0)	344 (7.8)	71 (1.6)	2 (0.0)	1224 (28.0)	344 (7.8)	71 (1.6)	2 (0.0)	2 (0.0)
	70-<80	266 (13.4)	92 (4.6)	1 (0.0)	357 (14.8)	113 (4.6)	17 (0.8)	623 (14.2)	205 (4.6)	41 (1.0)	1 (0.0)	623 (14.2)	205 (4.6)	41 (1.0)	1 (0.0)	623 (14.2)	205 (4.6)	41 (1.0)	1 (0.0)	1 (0.0)
	≥80	11 (0.6)	8 (0.4)	0 (0)	32 (1.4)	14 (0.6)	1 (0.0)	43 (1.0)	22 (0.6)	4 (0.0)	0 (0)	43 (1.0)	22 (0.6)	4 (0.0)	0 (0)	43 (1.0)	22 (0.6)	4 (0.0)	0 (0)	0 (0)
	Total	1475 (74.5)	407 (20.5)	8 (0.6)	1780 (73.9)	527 (21.9)	101 (4.2)	3255 (74.4)	934 (21.2)	189 (4.4)	8 (0.0)	3255 (74.4)	934 (21.2)	189 (4.4)	8 (0.0)	3255 (74.4)	934 (21.2)	189 (4.4)	8 (0.0)	8 (0.0)



Table 2.4.6 Age-gender distribution of patients who underwent PCI, by family history of premature cardiovascular disease, NCVI-PCI Registry, 2007-2012

Gender	Age group	2007-2009						2010-2012						2007-2012							
		Family history of premature cardiovascular disease			Family history of premature cardiovascular disease			Family history of premature cardiovascular disease			Family history of premature cardiovascular disease			Family history of premature cardiovascular disease			Family history of premature cardiovascular disease				
		Yes	No	Missing	Yes	No	Missing	Yes	No	Missing	Yes	No	Missing	Yes	No	Missing	Yes	No	Missing		
No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)		
Male	20-<30	8 (0.0)	14 (0.2)	0 (0)	17 (0.2)	30 (0.2)	0 (0)	17 (0.2)	30 (0.2)	9 (0.0)	25 (0.2)	44 (0.2)	12 (0.0)	0 (0)							
	30-<40	108 (1.2)	256 (3.0)	0 (0)	113 (1.0)	334 (3.0)	0 (0)	113 (1.0)	334 (3.0)	54 (0.4)	221 (1.2)	590 (3.0)	81 (0.4)	0 (0)							
	40-<50	441 (5.1)	1334 (15.2)	7 (0.0)	471 (4.2)	1544 (13.6)	7 (0.0)	471 (4.2)	1544 (13.6)	250 (2.2)	912 (4.6)	2878 (14.4)	415 (2.0)	7 (0.0)							
	50-<60	629 (7.3)	2266 (26.0)	11 (0.2)	685 (6.0)	2996 (26.4)	11 (0.2)	685 (6.0)	2996 (26.4)	532 (4.6)	1314 (6.6)	5262 (26.2)	898 (4.4)	11 (0.0)							
	60-<70	354 (4.1)	1635 (18.8)	7 (0.0)	381 (3.4)	2362 (20.8)	7 (0.0)	381 (3.4)	2362 (20.8)	357 (3.2)	735 (3.6)	3997 (20.0)	615 (3.0)	7 (0.0)							
	70-<80	126 (1.4)	548 (6.2)	2 (0.0)	90 (0.8)	851 (7.6)	2 (0.0)	90 (0.8)	851 (7.6)	160 (1.4)	216 (1.0)	1399 (7.0)	270 (1.4)	2 (0.0)							
	≥80	4 (0.0)	43 (0.4)	0 (0)	6 (0.0)	88 (0.8)	0 (0)	6 (0.0)	88 (0.8)	12 (0.2)	10 (0.0)	131 (0.6)	21 (0.2)	0 (0)							
	Total	1670 (19.1)	6096 (69.8)	27 (0.2)	1763 (15.6)	8205 (72.4)	27 (0.2)	1763 (15.6)	8205 (72.4)	1374 (12.0)	3433 (17.2)	14301 (71.4)	2312 (11.4)	27 (0.0)							
	Female	20-<30	0 (0)	3 (0.2)	0 (0)	2 (0.0)	3 (0.2)	0 (0)	2 (0.0)	3 (0.2)	0 (0)	2 (0.0)	6 (0.2)	0 (0)	0 (0)						
		30-<40	16 (0.8)	15 (0.8)	0 (0)	9 (0.4)	16 (0.6)	0 (0)	9 (0.4)	16 (0.6)	6 (0.2)	25 (0.6)	31 (0.8)	7 (0.2)	0 (0)						
40-<50		56 (2.8)	129 (6.6)	1 (0.0)	51 (2.2)	143 (6.0)	1 (0.0)	51 (2.2)	143 (6.0)	38 (1.6)	107 (2.4)	272 (6.2)	66 (1.6)	1 (0.0)							
50-<60		116 (5.8)	401 (20.2)	5 (0.2)	124 (5.2)	498 (20.6)	5 (0.2)	124 (5.2)	498 (20.6)	82 (3.4)	240 (5.4)	899 (20.3)	145 (3.4)	5 (0.2)							
60-<70		117 (6.0)	545 (27.6)	1 (0.0)	129 (5.4)	647 (26.8)	1 (0.0)	129 (5.4)	647 (26.8)	126 (5.2)	246 (5.5)	1192 (27.1)	202 (4.5)	1 (0.0)							
70-<80		50 (2.6)	278 (14.0)	0 (0)	43 (1.8)	385 (16.0)	0 (0)	43 (1.8)	385 (16.0)	59 (2.4)	93 (2.2)	663 (15.2)	114 (2.6)	0 (0)							
≥80		2 (0.2)	17 (0.8)	0 (0)	3 (0.2)	35 (1.4)	0 (0)	3 (0.2)	35 (1.4)	9 (0.4)	5 (0.2)	52 (1.2)	12 (0.2)	0 (0)							
Total		357 (18.2)	1388 (70.2)	7 (0.2)	361 (15.2)	1727 (71.6)	7 (0.2)	361 (15.2)	1727 (71.6)	320 (13.2)	718 (16.3)	3115 (71.0)	546 (12.5)	7 (0.2)							

Table 2.5.1 Presence of cumulative risk factors, NCVD-PCI Registry, 2007-2012

Presence of cumulative risk factors *	2007-2009		2010-2012		2007-2012	
	Total no. of patients = 10709		Total no. of patients = 13750		Total no. of patients = 24459	
	No.	%	No.	%	No.	%
None	154	1.4	329	2.4	483	2.0
1 risk factor	730	6.8	1068	7.8	1798	7.4
2 risk factors	2031	19.0	2358	17.2	4389	18.0
3 risk factors	3275	30.6	3975	28.9	7250	29.6
>3 risk factors	4519	42.2	6020	43.7	10539	43.0
Total	10709	100.0	13750	100.0	24459	100.0

* Risk factors are defined as presence of 1) dyslipidaemia, 2) hypertension, 3) diabetes, 4) family history of premature cardiovascular disease, 5) smoking [current smokers & former smokers (quit more than 30 days)] and 6) obesity (BMI>=23.0)

Table 2.5.2 Presence of cumulative risk factors by gender, NCVD-PCI Registry, 2007-2012

Gender	Presence of cumulative risk factors *	2007-2009		2010-2012		2007-2012	
		Total no. of patients = 10709		Total no. of patients = 13750		Total no. of patients = 24459	
		No.	%	No.	%	No.	%
Male	None	122	1.4	266	2.4	388	2.0
	1 risk factor	599	6.8	883	7.8	1482	7.4
	2 risk factors	1605	18.4	1898	16.7	3503	17.4
	3 risk factors	2613	30.0	3174	28.0	5787	28.8
	>3 risk factors	3792	43.4	5121	45.1	8913	44.4
	Total	8731	100.0	11342	100.0	20073	100.0
Female	None	32	1.6	63	2.6	95	2.2
	1 risk factor	131	6.6	185	7.6	316	7.2
	2 risk factors	426	21.6	460	19.2	886	20.2
	3 risk factors	662	33.4	801	33.2	1463	33.4
	>3 risk factors	727	36.8	899	37.4	1626	37.0
	Total	1978	100.0	2408	100.0	4386	100.0

* Risk factors are defined as presence of 1) dyslipidaemia, 2) hypertension, 3) diabetes, 4) family history of premature cardiovascular disease, 5) smoking [included current smokers & former smokers(quit more than 30 days)] and 6) obesity (BMI>=23.0)