



CHAPTER 5: OUTCOME

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Summary

1. The in-hospital mortality rates of ACS patients remained consistent at seven to eight percent over the 3-year period from 2006 to 2008.
2. The in-hospital mortality rates for STEMI and NSTEMI (7-8%) were higher compared to rates in the GRACE 2¹ (6.2%) registry during the same period.
3. From 2006 to 2008, statistical significant factors of in-hospital death in STEMI were higher Killip class, higher TIMI risk score and pre-morbid diabetes mellitus. For NSTEMI/UA, the statistical significant factors were higher Killip class and heart failure.

In-hospital and 30-day outcome

All three years had similar in-hospital and 30-day mortality rates for the entire ACS cohort. For in-hospital mortality, the rates were between 7 and 8% while for 30 days mortality, it was between 15 and 24%. [Table 5.1] The in-hospital mortality was highest in STEMI (9-10%), slightly lower in NSTEMI (7-10%), and lowest in UA (2-4%). In contrast, the 30-day mortality of NSTEMI was slightly higher compared to STEMI (19-29% and 15-21% respectively). [Table 5.8]

The mortality rates of our patients were higher than the rates in several global and regional ACS registries within the same period. The expanded Global Registry of Acute Coronary Events (GRACE2)¹ from 2001 to 2007 reported in-hospital mortality rates of 6.2% in STEMI, 2.9% in NSTEMI and 1.7% in unstable angina patients¹. The Gulf Registry of Acute Coronary Events (Gulf RACE) conducted in 2006 reported in-hospital mortality of just 3% for the entire registry cohort².

Outcome by patient characteristics

The mortality rates according to the patients' demographics and pre-morbid medical conditions in 2007 and 2008 were similar to those noted in 2006. Specifically, higher mortality rates were observed in the elderly, female patients and patients with pre-morbid diabetes mellitus. [Table 5.2, 5.3 & 5.4]

Outcome of STEMI by treatment

Patients who received fibrinolytic therapy had lower in-hospital and 30-day mortality rates compared to those who were not on this therapy. This observation was consistent throughout the 3-year period. [Table 5.9.1]

In STEMI, the percentage of patients who had PCI and CABG at admission were similar in all three years. Mortality rates in patients who had PCI were slightly lower compared to those who did not have PCI. [Table 5.9.2] Although steady increases in mortality rates were noted

in patients who had CABG (0-38% for both in-hospital and 30-day mortality), the absolute numbers of the surgeries and deaths were extremely small. [Table 5.9.3]

Outcome of NSTEMI/UA by treatment

In NSTEMI and UA, patients who had PCI at admission appeared to have lower in-hospital mortality rates compared to those who did not have PCI. At 30 days, the survival benefit associated with PCI was even more obvious. [Table 5.10.1] The absolute number of patients who underwent CABG was very small. [Table 5.10.2]

Prognostic factors

From 2006 to 2008, statistical significant associations of in-hospital death in STEMI were higher Killip class, higher TIMI risk score and pre-morbid diabetes mellitus. The other associated factors with an increased risk of in-hospital death were fibrinolytic therapy, former or current cigarette smoking, family history of premature cardiovascular disease, dyslipidaemia, and hypertension. [Table 5.11.1-5.11.3 & Table 5.13.1-5.13.3]

For in-hospital mortality among NSTEMI/UA, the statistical significant associations were higher Killip class and history of heart failure. The other associated factors include former or current cigarette smoking, diabetes mellitus and higher TIMI risk score. [Table 5.12.1-5.12.3 & Table 5.14.1-5.14.3]

References

1. Goodman SG, Huang W, Yan AT et al; GRACE2 Investigators. The expanded Global Registry of Acute Coronary Events: Baseline characteristics, management practices, and hospital outcomes of patients with acute coronary syndromes. *Am Heart J* 2009;158:193-201.
2. Zabaid M, Rashed WA, Al-Khaja N et al. Clinical presentations and outcomes of acute coronary syndromes in the Gulf registry of Acute Coronary Events (Gulf RACE). *Saudi Med J* 2008;29(2):251-255.

Table 5.1 Outcomes for patients with ACS by year, NCVD-ACS Registry, 2006-2008

	+Outcome	Overall outcome			
		Outcome at discharge		30-day**	
		No.	%	No.	%
2006	Alive	3169	93	2615	76
	Death	253	7	807	24
2007	Alive	3355	92	2920	80
	Death	291	8	726	20
2008	Alive	2621	92	2435	85
	Death	230	8	416	15
Overall	Alive	9145	92	7970	80
	Death	774	8	1949	20

+ The outcome data is derived based on data matching with the National Death Register

*Includes patients who died in-hospital

Table 5.2 Overall outcomes for patients with ACS by age group (years), NCVD-ACS Registry, 2006-2008

	+Outcome	In-hospital						30-day*					
		Young		Middle-age		Elderly		Young		Middle-age		Elderly	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
2006	Alive	161	97	1608	96	1400	89	150	90	1424	85	1041	66
	Died	5	3	67	4	181	11	16	10	251	15	540	34
2007	Alive	179	99	1714	95	1451	87	175	97	1645	91	1321	79
	Died	2	1	86	5	214	13	6	3	155	9	344	21
2008	Alive	164	97	1271	95	1182	88	160	95	1241	92	1093	82
	Died	5	3	72	5	157	12	9	5	102	8	246	18
Overall	Alive	505	98	4599	95	4041	88	481	93	4248	88	3241	71
	Died	11	2	220	5	543	12	35	7	571	12	1343	29

+ The outcome data is derived based on data matching with the National Death Register

*Includes patients who died in-hospital

Note: Young is defined as age from 20 to less than 40 years, middle-aged is defined as age between 40 to less than 60 years and elderly is defined as 60 years and above

Table 5.3 Overall outcomes for patients with ACS by gender, NCVD-ACS Registry, 2006-2008

	+Outcome	In-hospital				30-day*			
		Male		Female		Male		Female	
		No.	%	No.	%	No.	%	No.	%
2006	Alive	2393	93	776	91	2009	78	606	71
	Died	176	7	77	9	560	22	247	29
2007	Alive	2595	93	760	90	2293	82	627	74
	Died	202	7	89	10	504	18	222	26
2008	Alive	1988	93	633	90	1864	87	571	81
	Died	159	7	71	10	283	13	133	19
Overall	Alive	6976	93	2169	90	6166	82	1804	75
	Died	537	7	237	10	1347	18	602	25

+ The outcome data is derived based on data matching with the National Death Register

*Includes patients who died in-hospital

Table 5.4 Overall outcomes for patients with ACS by pre-morbid diabetes, NCVD-ACS Registry, 2006-2008

	+Outcome	In-hospital						30-day*					
		Yes		No		Not known		Yes		No		Unknown	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
2006	Alive	1379	92	1151	94	639	91	1072	72	986	80	557	80
	Died	118	8	75	6	60	9	425	28	240	20	142	20
2007	Alive	1458	91	1428	94	469	90	1215	76	1274	83	431	83
	Died	141	9	98	6	52	10	384	24	252	17	90	17
2008	Alive	994	91	1129	94	498	91	915	83	1058	88	462	85
	Died	104	9	78	6	48	9	183	17	149	12	84	15
Overall	Alive	3831	91	3708	94	1606	91	3202	76	3318	84	1450	82
	Died	363	9	251	6	160	9	992	24	641	16	316	18

+ The outcome data is derived based on data matching with the National Death Register

*Includes patients who died in-hospital

Table 5.5 Overall outcomes for patients with ACS by pre-morbid hypertension, NCVD-ACS Registry, 2006-2008

	Outcome	In-hospital						30-day					
		Yes		No		Not known		Yes		No		Unknown	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
2006	Alive	1935	93	728	93	506	92	1537	74	646	82	432	78
	Died	149	7	58	7	46	8	547	26	140	18	120	22
2007	Alive	2083	91	872	94	400	92	1756	77	793	85	371	85
	Died	196	9	58	6	37	8	523	23	137	15	66	15
2008	Alive	1471	92	714	93	436	91	1356	85	678	88	401	83
	Died	131	8	54	7	45	9	246	15	90	12	80	17
Overall	Alive	5489	92	2314	93	1342	91	4649	78	2117	85	1204	82
	Died	476	8	170	7	128	9	1316	22	367	15	266	18

+ The outcome data is derived based on data matching with the National Death Register

*Includes patients who died in-hospital

Table 5.6 Overall outcomes for patients with ACS by pre-morbid dyslipidaemia, NCVD-ACS Registry, 2006-2008

	Outcome	In-hospital						30-day					
		Yes		No		Not known		Yes		No		Unknown	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
2006	Alive	1069	95	831	92	1269	91	871	77	689	76	1055	76
	Died	62	5	71	8	120	9	260	23	213	24	334	24
2007	Alive	1203	93	1093	92	1059	91	1036	80	953	80	931	80
	Died	88	7	92	8	111	9	255	20	232	20	239	20
2008	Alive	822	93	919	92	880	91	762	86	862	87	811	83
	Died	61	7	77	8	92	9	121	14	134	13	161	17
Overall	Alive	3094	94	2843	92	3208	91	2669	81	2504	81	2797	79
	Died	211	6	240	8	323	9	636	19	579	19	734	21

+ The outcome data is derived based on data matching with the National Death Register

*Includes patients who died in-hospital

Table 5.7 Overall outcomes for patients by types of centre, NCVd-ACS Registry, 2007-2008

	Outcome	In-hospital				30-day			
		Physician Centre		Cardiologist Centre		Physician Centre		Cardiologist Centre	
		No.	%	No.	%	No.	%	No.	%
2006	Alive	978	92	2191	93	803	75	1812	77
	Died	87	8	166	7	262	25	545	23
2007	Alive	1350	90	2005	94	1158	77	1762	82
	Died	152	10	139	6	344	23	382	18
2008	Alive	1056	92	1565	92	979	85	1456	85
	Died	92	8	138	8	169	15	247	15
Overall	Alive	3384	91	5761	93	2940	79	5030	81
	Died	331	9	443	7	775	21	1174	19

+ The outcome data is derived based on data matching with the National Death Register

*Includes patients who died in-hospital

Table 5.8 Overall outcomes for patients with ACS by ACS stratum, NCVd-ACS Registry, 2006-2008

	Outcome	In-hospital						30-day					
		STEMI		NSTEMI		UA		STEMI		NSTEMI		UA	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
2006	Alive	1309	91	1048	93	812	96	1135	79	804	71	676	80
	Died	136	9	84	7	33	4	310	21	328	29	169	20
2007	Alive	1513	90	907	91	935	98	1373	81	745	74	802	84
	Died	174	10	94	9	23	2	314	19	256	26	156	16
2008	Alive	1388	90	598	90	635	97	1307	85	537	81	591	90
	Died	146	10	64	10	20	3	227	15	125	19	64	10
Overall	Alive	4210	90	2553	91	2382	97	3815	82	2086	75	2069	84
	Died	456	10	242	9	76	3	851	18	709	25	389	16

+ The outcome data is derived based on data matching with the National Death Register

*Includes patients who died in-hospital

Table 5.9.1 Overall outcomes for patients with STEMI by fibrinolytic therapy, NCVD-ACS Registry, 2006-2008

	+Outcome	In-hospital				30-day*			
		Yes		No		Yes		No	
		No.	%	No.	%	No.	%	No.	%
2006	Alive	941	92	368	86	830	82	305	71
	Died	77	8	59	14	188	18	122	29
2007	Alive	1123	91	390	86	1023	83	350	77
	Died	108	9	66	14	208	17	106	23
2008	Alive	1045	91	343	88	993	87	314	80
	Died	98	9	48	12	150	13	77	20
Overall	Alive	3109	92	1101	86	2846	84	969	76
	Died	283	8	173	14	546	16	305	24

+ The outcome data is derived based on data matching with the National Death Register

*Includes patients who died in-hospital

Table 5.9.2 Overall outcomes for patients with STEMI by Percutaneous Coronary Intervention at admission, NCVD-ACS Registry, 2006-2008

	+Outcome	In-hospital				30-day*			
		Yes		No		Yes		No	
		No.	%	No.	%	No.	%	No.	%
2006	Alive	282	92	1027	90	259	84	876	77
	Died	26	8	110	10	49	16	261	23
2007	Alive	270	91	1243	89	253	85	1120	81
	Died	27	9	147	11	44	15	270	19
2008	Alive	233	90	1155	91	218	84	1089	85
	Died	25	10	121	9	40	16	187	15
Overall	Alive	785	91	3425	90	730	85	3085	81
	Died	78	9	378	10	133	15	718	19

+ The outcome data is derived based on data matching with the National Death Register

*Includes patients who died in-hospital

Table 5.9.3 Overall outcomes for patients with STEMI by CABG at admission, NCVD-ACS Registry, 2006-2008

	+Outcome	In-hospital				30-day*			
		Yes		No		Yes		No	
		No.	%	No.	%	No.	%	No.	%
2006	Alive	10	100	1299	91	8	80	1127	79
	Died	0	0	136	9	2	20	308	21
2007	Alive	9	90	1504	90	9	90	1364	81
	Died	1	10	173	10	1	10	313	19
2008	Alive	6	75	1382	91	5	63	1302	85
	Died	2	25	144	9	3	38	224	15
Overall	Alive	25	89	4185	90	22	79	3793	82
	Died	3	11	453	10	6	21	845	18

+ The outcome data is derived based on data matching with the National Death Register

*Includes patients who died in-hospital

Table 5.9.4 Overall outcomes for patients with STEMI by pre-admission aspirin use, NCVD-ACS Registry, 2006-2008

	+Outcome	In-hospital						30-day*					
		Yes		No		Not known		Yes		No		Unknown	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
2006	Alive	198	87	885	92	226	89	162	71	780	81	193	76
	Died	29	13	80	8	27	11	65	29	185	19	60	24
2007	Alive	321	87	1112	91	80	83	283	76	1016	83	74	77
	Died	49	13	109	9	16	17	87	24	205	17	22	23
2008	Alive	242	87	1032	91	114	92	227	82	974	86	106	85
	Died	35	13	101	9	10	8	50	18	159	14	18	15
Overall	Alive	761	87	3029	91	420	89	672	77	2770	83	373	79
	Died	113	13	290	9	53	11	202	23	549	17	100	21

+ The outcome data is derived based on data matching with the National Death Register

*Includes patients who died in-hospital

Table 5.10.1 Overall outcomes for patients with NSTEMI/UA by Percutaneous Coronary Intervention at admission, NCVD-ACS Registry, 2006-2008

	+Outcome	In-hospital				30-day*			
		Yes		No		Yes		No	
		No.	%	No.	%	No.	%	No.	%
2006	Alive	232	96	1628	94	210	87	1270	73
	Died	9	4	108	6	31	13	466	27
2007	Alive	226	95	1616	94	207	87	1340	78
	Died	12	5	105	6	31	13	381	22
2008	Alive	102	93	1131	94	100	91	1028	85
	Died	8	7	76	6	10	9	179	15
Overall	Alive	560	95	4375	94	517	88	3638	78
	Died	29	5	289	6	72	12	1026	22

+ The outcome data is derived based on data matching with the National Death Register

*Includes patients who died in-hospital

Table 5.10.2 Overall outcomes for patients with NSTEMI/UA by CABG at admission, NCVD-ACS Registry, 2006-2008

	+Outcome	In-hospital				30-day*			
		Yes		No		Yes		No	
		No.	%	No.	%	No.	%	No.	%
2006	Alive	49	86	1811	94	42	74	1438	75
	Died	8	14	109	6	15	26	482	25
2007	Alive	37	100	1805	94	35	95	1512	79
	Died	0	0	117	6	2	5	410	21
2008	Alive	12	67	1221	94	12	67	1116	86
	Died	6	33	78	6	6	33	183	14
Overall	Alive	98	88	4837	94	89	79	4066	79
	Died	14	13	304	6	23	21	1075	21

+ The outcome data is derived based on data matching with the National Death Register

*Includes patients who died in-hospital

Table 5.10.3 Overall outcomes for patients with NSTEMI/UA by pre-admission aspirin use, NCVS-ACS Registry, 2006-2008

	+Outcome	In-hospital						30-day*					
		Yes		No		Not known		Yes		No		Unknown	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
2006	Alive	792	95	681	94	387	93	617	74	555	77	308	74
	Died	45	5	44	6	28	7	220	26	170	23	107	26
2007	Alive	914	94	801	94	127	94	743	76	694	81	110	81
	Died	58	6	51	6	8	6	229	24	158	19	25	19
2008	Alive	566	94	491	93	176	94	513	85	453	86	162	87
	Died	38	6	35	7	11	6	91	15	73	14	25	13
Overall	Alive	2272	94	1973	94	690	94	1873	78	1702	81	580	79
	Died	141	6	130	6	47	6	540	22	401	19	157	21

+ The outcome data is derived based on data matching with the National Death Register

*Includes patients who died in-hospital

Table 5.11.1 Prognosis factors for death in hospital among STEMI patients, NCVD-ACS Registry, 2006

Factors	N	Odds Ratio	95% CI		P-value
Age group, years					
20 - <40 (ref)	113	1.00			-
40 - <60	803	0.75	0.24	2.37	0.624
≥60	529	1.56	0.49	5.01	0.454
Gender					
Male (ref)	1230	1.00			-
Female	215	1.22	0.63	2.36	0.549
Ethnic group*					
Malay (ref)	780	1.00			-
Chinese	301	0.98	0.57	1.69	0.950
Indian	286	0.92	0.52	1.63	0.788
Others	78	1.11	0.42	2.90	0.835
Killip classification					
I (ref)	802	1.00			-
II	288	2.29	1.28	4.10	0.005
III	62	4.18	1.88	9.25	<0.001
IV	66	11.16	5.36	23.23	<0.001
Not stated/inadequately described/missing	227	1.42	0.73	2.75	0.303
Percutaneous Coronary Intervention					
Yes	308	0.87	0.36	2.10	0.762
No (ref)	1137	1.00			-
Cardiac catheterisation					
Yes	298	0.92	0.37	2.27	0.858
No (ref)	1147	1.00			-
TIMI risk score					
0-2 (ref)	643	1.00			-
3-4	377	1.16	0.59	2.27	0.659
5-7	337	2.03	1.10	3.76	0.023
>7	88	6.50	3.11	13.57	<0.001
Fibrinolytic therapy					
Given	1018	0.64	0.41	0.99	0.047
Not given (ref)	427	1.00			-

Table 5.11.1 Prognosis factors for death in hospital among STEMI patients, NCVS-ACS Registry, 2006

Factors	N	Odds Ratio	95% CI		P-value
Smoking					
Never (ref)	417	1.00			-
Former (quit >30 days)	272	5.18	2.22	12.08	<0.001
Current (any tobacco use within last 30 days)	723	3.85	1.67	8.88	0.002
Unknown	33	2.18	0.73	6.51	0.163
Family history of premature cardiovascular disease					
Yes	168	4.36	1.70	11.19	0.002
No (ref)	742	1.00			-
Unknown	535	0.77	0.42	1.41	0.397
Dyslipidaemia					
Yes	278	2.91	1.21	7.02	0.017
No (ref)	458	1.00			-
Unknown	709	1.24	0.69	2.23	0.471
Hypertension					
Yes	681	5.81	2.54	13.28	<0.001
No (ref)	433	1.00			-
Unknown	331	1.01	0.44	2.30	0.986
Diabetes					
Yes	525	7.02	3.22	15.31	<0.001
No (ref)	538	1.00			-
Unknown	382	1.62	0.76	3.46	0.213
Heart failure					
Yes	48	1.34	0.55	3.30	0.520
No (ref)	1008	1.00			-
Unknown	389	1.28	0.58	2.83	0.535
Coronary artery disease**					
Yes	779	0.97	0.55	1.69	0.901
No (ref)	306	1.00			-
Unknown	360	0.97	0.39	2.40	0.941

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

***Coronary artery disease is defined as 'Yes' to any of the following co-morbidities: 1) History of myocardial infarction, 2) Documented CAD >50% stenosis, 3) Chronic angina (onset more than 2 weeks ago), 4) New onset angina (less than 2 weeks)*

Table 5.11.2 Prognosis factors for death in hospital among STEMI patients, NCVS-ACS Registry, 2007

Factors	N	Odds Ratio	95% CI		P-value
Age group, years					
20 - <40 (ref)	112	1.00			-
40 - <60	954	3.84	0.51	29.19	0.193
≥60	621	7.10	0.93	54.03	0.058
Gender					
Male (ref)	1447	1.00			-
Female	240	0.60	0.35	1.04	0.067
Ethnic group*					
Malay (ref)	893	1.00			-
Chinese	356	0.65	0.40	1.05	0.081
Indian	322	0.74	0.43	1.27	0.280
Others	115	0.64	0.27	1.50	0.306
Killip classification code					
I (ref)	903	1.00			-
II	307	0.95	0.54	1.68	0.867
III	66	4.57	2.24	9.33	<0.001
IV	95	9.26	4.82	17.80	<0.001
Not stated/inadequately described/missing	316	1.38	0.80	2.39	0.249
Percutaneous Coronary Intervention					
Yes	297	1.84	0.55	6.15	0.324
No (ref)	1390	1.00			-
Cardiac catheterisation					
Yes	351	0.42	0.13	1.36	0.148
No (ref)	1336	1.00			-
TIMI risk score					
0-2 (ref)	534	1.00			-
3-4	560	1.21	0.59	2.49	0.599
5-7	466	3.44	1.70	6.97	0.001
>7	127	4.79	2.00	11.44	<0.001
Fibrinolytic therapy					
Given	1231	0.76	0.50	1.14	0.187
Not given (ref)	456	1.00			-

Table 5.11.2 Prognosis factors for death in hospital among STEMI patients, NCVS-ACS Registry, 2007

Factors	N	Odds Ratio	95% CI		P-value
Smoking					
Never (ref)	480	1.00			-
Former (quit >30 days)	303	2.09	1.04	4.20	0.038
Current (any tobacco use within last 30 days)	824	1.32	0.67	2.60	0.425
Unknown	80	0.86	0.39	1.88	0.706
Family history of premature cardiovascular disease					
Yes	207	2.46	1.09	5.57	0.030
No (ref)	1008	1.00			-
Unknown	472	0.71	0.42	1.19	0.190
Dyslipidaemia					
Yes	381	3.49	1.73	7.03	<0.001
No (ref)	614	1.00			-
Unknown	692	1.46	0.88	2.42	0.148
Hypertension					
Yes	840	4.01	1.97	8.14	<0.001
No (ref)	545	1.00			-
Unknown	302	0.65	0.27	1.57	0.341
Diabetes					
Yes	612	4.33	2.24	8.40	<0.001
No (ref)	734	1.00			-
Unknown	341	1.34	0.61	2.92	0.465
Heart failure					
Yes	56	2.59	1.21	5.54	0.014
No (ref)	1338	1.00			-
Unknown	293	1.52	0.72	3.20	0.273
Coronary artery disease**					
Yes	1033	0.77	0.47	1.24	0.279
No (ref)	374	1.00			-
Unknown	280	0.61	0.26	1.43	0.255

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

**Coronary artery disease is defined as 'Yes' to any of the following co-morbidities: 1) History of myocardial infarction, 2) Documented CAD >50% stenosis, 3) Chronic angina (onset more than 2 weeks ago), 4) New onset angina (less than 2 weeks)

Table 5.11.3 Prognosis factors for death in hospital among STEMI patients, NCVD-ACS Registry, 2008

Factors	N	Odds Ratio	95% CI		P-value
Age group, years					
20 - <40 (ref)	119	1.00			-
40 - <60	812	1.22	0.39	3.80	0.738
≥60	603	1.73	0.55	5.46	0.352
Gender					
Male (ref)	1281	1.00			-
Female	253	1.20	0.68	2.12	0.535
Ethnic group*					
Malay (ref)	852	1.00			-
Chinese	301	1.07	0.64	1.77	0.798
Indian	271	0.85	0.47	1.56	0.604
Others	105	0.87	0.34	2.20	0.764
Killip classification code					
I (ref)	785	1.00			-
II	320	0.77	0.43	1.40	0.398
III	56	1.54	0.66	3.60	0.323
IV	90	6.75	3.53	12.92	<0.001
Not stated/inadequately described/missing	283	1.29	0.69	2.41	0.420
Percutaneous Coronary Intervention					
Yes	258	0.43	0.18	1.02	0.056
No (ref)	1276	1.00			-
Cardiac catheterisation					
Yes	299	2.93	1.34	6.43	0.007
No (ref)	1235	1.00			-
TIMI risk score					
0-2 (ref)	476	1.00			-
3-4	465	1.97	0.83	4.68	0.123
5-7	471	5.04	2.17	11.71	<0.001
>7	122	13.23	5.00	34.98	<0.001
Fibrinolytic therapy					
Given	1143	1.01	0.63	1.63	0.956
Not given (ref)	391	1.00			-

Table 5.11.3 Prognosis factors for death in hospital among STEMI patients, NCVD-ACS Registry, 2008

Factors	N	Odds Ratio	95% CI		P-value
Smoking					
Never (ref)	438	1.00			-
Former (quit >30 days)	269	1.67	0.77	3.66	0.196
Current (any tobacco use within last 30 days)	712	1.32	0.62	2.84	0.474
Unknown	115	0.78	0.32	1.89	0.578
Family history of premature cardiovascular disease					
Yes	160	0.75	0.23	2.44	0.628
No (ref)	920	1.00			-
Unknown	454	1.12	0.59	2.12	0.729
Dyslipidaemia					
Yes	349	1.37	0.63	2.97	0.423
No (ref)	559	1.00			-
Unknown	626	1.01	0.56	1.84	0.962
Hypertension					
Yes	731	1.66	0.82	3.38	0.159
No (ref)	530	1.00			-
Unknown	273	1.68	0.66	4.29	0.278
Diabetes					
Yes	515	2.35	1.19	4.63	0.014
No (ref)	705	1.00			-
Unknown	314	0.75	0.30	1.87	0.542
Heart failure					
Yes	34	2.30	0.90	5.87	0.082
No (ref)	1165	1.00			-
Unknown	335	0.69	0.30	1.59	0.389
Coronary artery disease**					
Yes	798	1.16	0.67	2.01	0.600
No (ref)	403	1.00			-
Unknown	333	1.96	0.83	4.67	0.126

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

***Coronary artery disease is defined as 'Yes' to any of the following co-morbidities: 1) History of myocardial infarction, 2) Documented CAD >50% stenosis, 3) Chronic angina (onset more than 2 weeks ago), 4) New onset angina (less than 2 weeks)*

Table 5.11.4 Prognosis factors for death in hospital among STEMI patients, NCVD-ACS Registry, 2006-2008

Factors	N	Odds Ratio	95% CI		P-value
Age group, years					
20 - <40 (ref)	344	1.00			-
40 - <60	2569	1.40	0.68	2.88	0.361
≥60	1753	2.47	1.19	5.10	0.015
Gender					
Male (ref)	3958	1.00			-
Female	708	0.86	0.62	1.19	0.359
Ethnic group*					
Malay (ref)	2525	1.00			-
Chinese	958	0.89	0.67	1.19	0.442
Indian	879	0.83	0.61	1.14	0.256
Others	298	0.81	0.49	1.35	0.430
Killip classification code					
I (ref)	2490	1.00			-
II	915	1.27	0.92	1.75	0.149
III	184	3.07	2.00	4.71	<0.001
IV	251	8.73	6.00	12.70	<0.001
Not stated/inadequately described/missing	826	1.34	0.96	1.88	0.090
Percutaneous Coronary Intervention					
Yes	863	0.83	0.49	1.41	0.490
No (ref)	3803	1.00			-
Cardiac catheterisation					
Yes	948	1.12	0.67	1.86	0.666
No (ref)	3718	1.00			-
TIMI risk score					
0-2 (ref)	1653	1.00			-
3-4	1402	1.31	0.87	1.97	0.200
5-7	1274	3.02	2.05	4.44	<0.001
>7	337	6.44	4.06	10.23	<0.001
Fibrinolytic therapy					
Given	3392	0.76	0.59	0.96	0.024
Not given (ref)	1274	1.00			-

Table 5.11.4 Prognosis factors for death in hospital among STEMI patients, NCVI-ACS Registry, 2006-2008

Factors	N	Odds Ratio	95% CI		P-value
Smoking					
Never (ref)	1335	1.00			-
Former (quit >30 days)	844	2.60	1.70	3.99	<0.001
Current (any tobacco use within last 30 days)	2259	1.83	1.20	2.78	0.005
Unknown	228	1.00	0.61	1.63	0.985
Family history of premature cardiovascular disease					
Yes	535	2.07	1.24	3.46	0.006
No (ref)	2670	1.00			-
Unknown	1461	0.82	0.59	1.13	0.227
Dyslipidaemia					
Yes	1008	2.42	1.58	3.72	<0.001
No (ref)	1631	1.00			-
Unknown	2027	1.21	0.89	1.65	0.217
Hypertension					
Yes	2252	3.32	2.20	5.02	<0.001
No (ref)	1508	1.00			-
Unknown	906	1.00	0.61	1.61	0.986
Diabetes					
Yes	1652	4.02	2.72	5.95	<0.001
No (ref)	1977	1.00			-
Unknown	1037	1.25	0.80	1.94	0.330
Heart failure					
Yes	138	1.97	1.23	3.16	0.005
No (ref)	3511	1.00			-
Unknown	1017	1.18	0.76	1.82	0.455
Coronary artery disease**					
Yes	2610	0.92	0.69	1.23	0.570
No (ref)	1083	1.00			-
Unknown	973	0.98	0.61	1.60	0.948

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

**Coronary artery disease is defined as 'Yes' to any of the following co-morbidities: 1) History of myocardial infarction, 2) Documented CAD >50% stenosis, 3) Chronic angina (onset more than 2 weeks ago), 4) New onset angina (less than 2 weeks)

Table 5.12.1 Prognosis factors for death in hospital among NSTEMI/UA patients, NCVD-ACS Registry, 2006

Factors	N	Odds ratio	95% CI		P-value
Age group, years					
20 - <40 (ref)	53	1.00			-
40 - < 60	872	1.43	0.17	11.96	0.739
≥60	1052	4.00	0.49	32.49	0.195
Gender					
Male (ref)	1339	1.00			-
Female	638	1.16	0.70	1.94	0.559
Ethnic group*					
Malay (ref)	904	1.00			-
Chinese	485	0.50	0.29	0.84	0.010
Indian	513	0.59	0.35	1.02	0.061
Others	75	0.51	0.15	1.77	0.290
Killip classification code					
I (ref)	866	1.00			-
II	304	2.55	1.34	4.85	0.004
III	91	5.80	2.64	12.74	<0.001
IV	34	13.18	5.15	33.76	<0.001
Not stated/ inadequately described	682	1.89	1.05	3.40	0.034
Percutaneous Coronary Intervention					
Yes	241	0.62	0.25	1.55	0.306
No (ref)	1736	1.00			-
Cardiac catheterisation					
Yes	357	1.81	0.86	3.80	0.117
No (ref)	1620	1.00			-
TIMI risk score					
0-2 (ref)	1140	1.00			-
3-4	689	0.72	0.45	1.16	0.182
5-7	148	2.13	1.01	4.48	0.046
Smoking					
Never (ref)	953	1.00			-
Former (quit >30 days)	533	3.01	1.46	6.24	0.003
Current (any tobacco use within last 30 days)	415	2.28	1.00	5.17	0.049
Unknown	76	2.35	0.98	5.65	0.055

Table 5.12.1 Prognosis factors for death in hospital among NSTEMI/UA patients, NCVD-ACS Registry, 2006

Factors	N	Odds Ratio	95% CI		P-value
Family history of premature cardiovascular disease					
Yes	236	0.90	0.31	2.65	0.854
No (ref)	942	1.00			-
Unknown	799	1.07	0.63	1.82	0.798
Dyslipidaemia					
Yes	853	1.34	0.63	2.88	0.450
No (ref)	444	1.00			-
Unknown	680	0.73	0.39	1.36	0.327
Hypertension					
Yes	1403	1.43	0.68	3.02	0.349
No (ref)	353	1.00			-
Unknown	221	0.39	0.15	1.00	0.050
Diabetes					
Yes	972	2.42	1.19	4.89	0.014
No (ref)	688	1.00			-
Unknown	317	1.72	0.77	3.82	0.183
Heart failure					
Yes	236	1.97	1.12	3.45	0.018
No (ref)	1281	1.00			-
Unknown	460	1.58	0.79	3.16	0.193
Coronary artery disease**					
Yes	1420	0.97	0.50	1.88	0.924
No (ref)	226	1.00			-
Unknown	331	0.75	0.31	1.85	0.536

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

***Coronary artery disease is defined as 'Yes' to any of the following co-morbidities: 1) History of myocardial infarction, 2) Documented CAD >50% stenosis, 3) Chronic angina (onset more than 2 weeks ago), 4) New onset angina (less than 2 weeks)*

Table 5.12.2 Prognosis factors for death in hospital among NSTEMI/UA patients, NCVD-ACS Registry, 2007

Factors	N	Odds ratio	95% CI		P-value
Age group, years					
20 - <40 (ref)	69	1.00			-
40 - < 60	846	1.68	0.22	12.98	0.618
≥60	1044	3.23	0.42	24.61	0.258
Gender					
Male (ref)	1350	1.00			-
Female	609	0.96	0.58	1.60	0.886
Ethnic group*					
Malay (ref)	847	1.00			-
Chinese	497	0.86	0.52	1.41	0.550
Indian	525	0.57	0.32	1.01	0.056
Others	87	0.13	0.02	1.00	0.050
Killip classification code					
I (ref)	884	1.00			-
II	280	2.47	1.32	4.62	0.005
III	65	5.93	2.72	12.93	<0.001
IV	31	29.07	11.53	73.27	<0.001
Not stated/ inadequately described	699	1.99	1.15	3.46	0.014
Percutaneous Coronary Intervention					
Yes	238	1.44	0.53	3.86	0.474
No (ref)	1721	1.00			-
Cardiac catheterisation					
Yes	382	0.99	0.42	2.32	0.977
No (ref)	1577	1.00			-
TIMI risk score					
0-2 (ref)	1050	1.00			-
3-4	757	1.05	0.63	1.75	0.844
5-7	152	3.47	1.58	7.61	0.002
Smoking					
Never (ref)	878	1.00			-
Former (quit >30 days)	515	3.24	1.35	7.80	0.009
Current (any tobacco use within last 30 days)	426	3.40	1.35	8.57	0.009
Unknown	140	1.97	0.93	4.16	0.077

Table 5.12.2 Prognosis factors for death in hospital among NSTEMI/UA patients, NCVD-ACS Registry, 2007

Factors	N	Odds Ratio	95% CI		P-value
Family history of premature cardiovascular disease					
Yes	271	2.27	0.88	5.89	0.092
No (ref)	1193	1.00			-
Unknown	495	0.85	0.48	1.49	0.565
Dyslipidaemia					
Yes	910	3.19	1.38	7.33	0.006
No (ref)	571	1.00			-
Unknown	478	0.89	0.46	1.72	0.720
Hypertension					
Yes	1439	4.64	1.94	11.10	0.001
No (ref)	385	1.00			-
Unknown	135	1.72	0.50	5.89	0.391
Diabetes					
Yes	987	5.33	2.36	12.04	<0.001
No (ref)	792	1.00			-
Unknown	180	1.44	0.49	4.23	0.508
Heart failure					
Yes	192	2.73	1.59	4.68	<0.001
No (ref)	1534	1.00			-
Unknown	233	0.87	0.36	2.09	0.751
Coronary artery disease**					
Yes	1467	0.51	0.30	0.88	0.015
No (ref)	323	1.00			-
Unknown	169	0.96	0.38	2.44	0.938

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

**Coronary artery disease is defined as 'Yes' to any of the following co-morbidities: 1) History of myocardial infarction, 2) Documented CAD >50% stenosis, 3) Chronic angina (onset more than 2 weeks ago), 4) New onset angina (less than 2 weeks)

Table 5.12.3 Prognosis factors for death in hospital among NSTEMI/UA patients, NCVD-ACS Registry, 2008

Factors	N	Odds ratio	95% CI		P-value
Age group, years					
20 - <40 (ref)	50	1.00			-
40 - < 60	532	512017.00	0.00	-	0.981
≥60	735	1194447.00	0.00	-	0.980
Gender					
Male (ref)	866	1.00			-
Female	451	0.81	0.45	1.46	0.490
Ethnic group*					
Malay (ref)	574	1.00			-
Chinese	359	1.22	0.70	2.16	0.484
Indian	330	0.89	0.44	1.80	0.754
Others	51	1.65	0.56	4.91	0.364
Killip classification code					
I (ref)	501	1.00			-
II	208	2.13	0.93	4.85	0.073
III	50	16.18	6.62	39.53	<0.001
IV	25	18.34	5.88	57.20	<0.001
Not stated/ inadequately described	533	2.18	1.05	4.52	0.036
Percutaneous Coronary Intervention					
Yes	110	0.91	0.32	2.63	0.866
No (ref)	1207	1.00			-
Cardiac catheterisation					
Yes	185	1.90	0.81	4.44	0.139
No (ref)	1132	1.00			-
TIMI risk score					
0-2 (ref)	793	1.00			-
3-4	455	1.03	0.56	1.87	0.932
5-7	69	0.61	0.18	2.04	0.423
Smoking					
Never (ref)	575	1.00			-
Former (quit >30 days)	286	1.06	0.45	2.50	0.887
Current (any tobacco use within last 30 days)	259	1.03	0.41	2.58	0.944
Unknown	197	0.95	0.36	2.54	0.920

Table 5.12.3 Prognosis factors for death in hospital among NSTEMI/UA patients, NCVD-ACS Registry, 2008

Factors	N	Odds Ratio	95% CI		P-value
Family history of premature cardiovascular disease					
Yes	100	1.05	0.33	3.27	0.939
No (ref)	773	1.00			-
Unknown	444	1.45	0.74	2.87	0.281
Dyslipidaemia					
Yes	534	1.27	0.58	2.77	0.548
No (ref)	437	1.00			-
Unknown	346	0.51	0.18	1.42	0.197
Hypertension					
Yes	871	1.09	0.42	2.83	0.857
No (ref)	238	1.00			-
Unknown	208	0.96	0.19	4.85	0.963
Diabetes					
Yes	583	1.59	0.70	3.62	0.271
No (ref)	502	1.00			-
Unknown	232	1.36	0.32	5.88	0.678
Heart failure					
Yes	107	3.42	1.71	6.82	<0.001
No (ref)	959	1.00			-
Unknown	251	2.12	0.71	6.29	0.178
Coronary artery disease**					
Yes	878	0.79	0.40	1.59	0.512
No (ref)	216	1.00			-
Unknown	223	0.49	0.12	1.99	0.321

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

***Coronary artery disease is defined as 'Yes' to any of the following co-morbidities: 1) History of myocardial infarction, 2) Documented CAD >50% stenosis, 3) Chronic angina (onset more than 2 weeks ago), 4) New onset angina (less than 2 weeks)*

Table 5.12.4 Prognosis factors for death in hospital among NSTEMI/UA patients, NCVD-ACS Registry, 2006-2008

Factors	N	Odds ratio	95% CI		P-value
Age group, years					
20 - <40 (ref)	172	1.00			-
40 - < 60	2250	2.75	0.65	11.60	0.168
≥60	2831	6.10	1.46	25.51	0.013
Gender					
Male (ref)	3555	1.00			-
Female	1698	0.99	0.74	1.34	0.970
Ethnic group*					
Malay (ref)	2325	1.00			-
Chinese	1341	0.75	0.56	1.00	0.048
Indian	1368	0.61	0.43	0.85	0.003
Others	213	0.51	0.25	1.04	0.065
Killip classification code					
I (ref)	2251	1.00			-
II	792	2.41	1.64	3.55	<0.001
III	206	7.47	4.78	11.69	<0.001
IV	90	17.41	10.11	29.97	<0.001
Not stated/ inadequately described	1914	1.99	1.41	2.80	<0.001
Percutaneous Coronary Intervention					
Yes	589	0.89	0.51	1.52	0.661
No (ref)	4664	1.00			-
Cardiac catheterisation					
Yes	924	1.53	0.98	2.39	0.063
No (ref)	4329	1.00			-
TIMI risk score					
0-2 (ref)	2983	1.00			-
3-4	1901	0.94	0.70	1.25	0.664
5-7	369	1.95	1.22	3.12	0.006
Smoking					
Never (ref)	2406	1.00			-
Former (quit >30 days)	1334	2.07	1.33	3.22	0.001
Current (any tobacco use within last 30 days)	1100	1.95	1.21	3.15	0.006
Unknown	413	1.44	0.90	2.28	0.125

Table 5.12.4 Prognosis factors for death in hospital among NSTEMI/UA patients, NCVD-ACS Registry, 2006-2008

Factors	N	Odds Ratio	95% CI		P-value
Family history of premature cardiovascular disease					
Yes	607	1.23	0.69	2.19	0.479
No (ref)	2908	1.00			-
Unknown	1738	1.03	0.74	1.43	0.868
Dyslipidaemia					
Yes	2297	1.56	1.01	2.39	0.043
No (ref)	1452	1.00			-
Unknown	1504	0.70	0.47	1.04	0.074
Hypertension					
Yes	3713	1.89	1.20	2.98	0.006
No (ref)	976	1.00			-
Unknown	564	0.71	0.37	1.34	0.292
Diabetes					
Yes	2542	2.60	1.70	3.96	<0.001
No (ref)	1982	1.00			-
Unknown	729	1.64	0.93	2.87	0.086
Heart failure					
Yes	535	2.43	1.75	3.37	<0.001
No (ref)	3774	1.00			-
Unknown	944	1.42	0.89	2.27	0.142
Coronary artery disease**					
Yes	3765	0.68	0.49	0.96	0.030
No (ref)	765	1.00			-
Unknown	723	0.65	0.37	1.13	0.124

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

***Coronary artery disease is defined as 'Yes' to any of the following co-morbidities: 1) History of myocardial infarction, 2) Documented CAD >50% stenosis, 3) Chronic angina (onset more than 2 weeks ago), 4) New onset angina (less than 2 weeks)*

Table 5.13.1 Prognosis factors for death within 30 days among STEMI patients, NCVD-ACS Registry, 2006

Factors	N	Odds Ratio	95% CI		P-value
Age group, years					
20 - <40 (ref)	113	1			-
40 - <60	803	1.32	0.62	2.85	0.472
≥60	529	2.70	1.23	5.92	0.013
Gender					
Male (ref)	1230	1			-
Female	215	1.38	0.86	2.22	0.182
Ethnic group*					
Malay (ref)	780	1			-
Chinese	301	0.81	0.55	1.18	0.276
Indian	286	0.87	0.59	1.28	0.476
Others	78	0.53	0.25	1.09	0.085
Killip classification code					
I (ref)	802	1			-
II	288	1.56	1.06	2.29	0.025
III	62	3.06	1.63	5.72	<0.001
IV	66	4.19	2.28	7.72	<0.001
Not stated/inadequately described/missing	227	1.33	0.88	2.00	0.178
Percutaneous Coronary Intervention					
Yes	308	0.57	0.31	1.04	0.065
No (ref)	1137	1			-
Cardiac catheterisation					
Yes	298	1.00	0.55	1.83	0.990
No (ref)	1147	1			-
TIMI risk score					
0-2 (ref)	643	1			-
3-4	377	1.33	0.90	1.96	0.151
5-7	337	1.99	1.33	2.99	0.001
>7	88	4.10	2.26	7.43	<0.001
Fibrinolytic therapy					
Given	1018	0.59	0.43	0.81	0.001
Not given (ref)	427	1			-

Table 5.13.1 Prognosis factors for death within 30 days among STEMI patients, NCVS-ACS Registry, 2006

Factors	N	Odds Ratio	95% CI		P-value
Smoking					
Never (ref)	417	1			-
Former (quit >30 days)	272	2.09	1.19	3.68	0.010
Current (any tobacco use within last 30 days)	723	2.08	1.22	3.56	0.008
Unknown	33	2.20	0.92	5.24	0.074
Family history of premature cardiovascular disease					
Yes	168	1.57	0.86	2.85	0.138
No (ref)	742	1			-
Unknown	535	0.76	0.50	1.16	0.204
Dyslipidaemia					
Yes	278	1.12	0.65	1.94	0.680
No (ref)	458	1			-
Unknown	709	0.98	0.66	1.46	0.929
Hypertension					
Yes	681	3.01	1.81	5.03	<0.001
No (ref)	433	1			-
Unknown	331	1.36	0.77	2.39	0.290
Diabetes					
Yes	525	2.80	1.73	4.54	<0.001
No (ref)	538	1			-
Unknown	382	1.08	0.64	1.82	0.783
Heart failure					
Yes	48	1.83	0.91	3.70	0.092
No (ref)	1008	1			-
Unknown	389	1.77	1.05	3.00	0.033
Coronary artery disease**					
Yes	779	0.97	0.66	1.42	0.866
No (ref)	306	1			-
Unknown	360	0.99	0.54	1.81	0.981

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

**Coronary artery disease is defined as 'Yes' to any of the following co-morbidities: 1) History of myocardial infarction, 2) Documented CAD >50% stenosis, 3) Chronic angina (onset more than 2 weeks ago), 4) New onset angina (less than 2 weeks)

Table 5.13.2 Prognosis factors for death within 30 days among STEMI patients, NCVD-ACS Registry, 2007

Factors	N	Odds Ratio	95% CI		P-value
Age group, years					
20 - <40 (ref)	112	1			-
40 - <60	954	1.49	0.61	3.60	0.380
≥60	621	3.35	1.37	8.18	0.008
Gender					
Male (ref)	1447	1			-
Female	240	0.78	0.51	1.19	0.252
Ethnic group*					
Malay (ref)	893	1			-
Chinese	356	0.73	0.50	1.06	0.097
Indian	322	0.88	0.59	1.31	0.521
Others	115	1.10	0.62	1.96	0.738
Killip classification code					
I (ref)	903	1			-
II	307	1.22	0.82	1.83	0.329
III	66	3.32	1.79	6.14	<0.001
IV	95	4.65	2.66	8.14	<0.001
Not stated/inadequately described/missing	316	1.15	0.77	1.73	0.490
Percutaneous Coronary Intervention					
Yes	297	0.77	0.35	1.69	0.520
No (ref)	1390	1			-
Cardiac catheterisation					
Yes	351	0.88	0.42	1.82	0.722
No (ref)	1336	1			-
TIMI risk score					
0-2 (ref)	534	1			-
3-4	560	1.45	0.91	2.31	0.113
5-7	466	2.83	1.73	4.61	<0.001
>7	127	4.12	2.13	7.95	<0.001
Fibrinolytic therapy					
Given	1231	0.78	0.57	1.08	0.138
Not given (ref)	456	1			-

Table 5.13.2 Prognosis factors for death within 30 days among STEMI patients, NCVS-ACS Registry, 2007

Factors	N	Odds Ratio	95% CI		P-value
Smoking					
Never (ref)	480	1			-
Former (quit >30 days)	303	1.50	0.90	2.50	0.123
Current (any tobacco use within last 30 days)	824	1.07	0.66	1.74	0.794
Unknown	80	0.83	0.44	1.59	0.580
Family history of premature cardiovascular disease					
Yes	207	1.77	1.00	3.13	0.050
No (ref)	1008	1			-
Unknown	472	1.49	1.01	2.19	0.043
Dyslipidaemia					
Yes	381	1.49	0.90	2.45	0.118
No (ref)	614	1			-
Unknown	692	1.41	0.96	2.07	0.079
Hypertension					
Yes	840	2.51	1.53	4.12	<0.001
No (ref)	545	1			-
Unknown	302	0.97	0.50	1.90	0.940
Diabetes					
Yes	612	2.12	1.34	3.35	0.001
No (ref)	734	1			-
Unknown	341	0.89	0.48	1.62	0.693
Heart failure					
Yes	56	2.46	1.30	4.65	0.006
No (ref)	1338	1			-
Unknown	293	0.91	0.51	1.61	0.737
Coronary artery disease**					
Yes	1033	0.99	0.68	1.43	0.947
No (ref)	374	1			-
Unknown	280	0.71	0.37	1.37	0.302

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

**Coronary artery disease is defined as 'Yes' to any of the following co-morbidities: 1) History of myocardial infarction, 2) Documented CAD >50% stenosis, 3) Chronic angina (onset more than 2 weeks ago), 4) New onset angina (less than 2 weeks)

Table 5.13.3 Prognosis factors for death within 30 days among STEMI patients, NCVS-ACS Registry, 2008

Factors	N	Odds Ratio	95% CI		P-value
Age group, years					
20 - <40 (ref)	119	1			-
40 - <60	812	1.02	0.43	2.46	0.958
≥60	603	1.89	0.78	4.60	0.159
Gender					
Male (ref)	1281	1			-
Female	253	1.07	0.66	1.73	0.786
Ethnic group*					
Malay (ref)	852	1			-
Chinese	301	0.77	0.50	1.18	0.226
Indian	271	0.82	0.50	1.33	0.423
Others	105	0.52	0.23	1.17	0.112
Killip classification code					
I (ref)	785	1			-
II	320	1.09	0.68	1.74	0.720
III	56	1.78	0.86	3.68	0.120
IV	90	5.29	2.91	9.62	<0.001
Not stated/inadequately described/missing	283	1.37	0.83	2.26	0.222
Percutaneous Coronary Intervention					
Yes	258	0.43	0.20	0.90	0.026
No (ref)	1276	1			-
Cardiac catheterisation					
Yes	299	2.78	1.41	5.49	0.003
No (ref)	1235	1			-
TIMI risk score					
0-2 (ref)	476	1			-
3-4	465	2.08	1.09	3.97	0.026
5-7	471	4.94	2.59	9.41	<0.001
>7	122	12.98	5.92	28.47	<0.001
Fibrinolytic therapy					
Given	1143	0.81	0.55	1.20	0.299
Not given (ref)	391	1			-

Table 5.13.3 Prognosis factors for death within 30 days among STEMI patients, NCVD-ACS Registry, 2008

Factors	N	Odds Ratio	95% CI		P-value
Smoking					
Never (ref)	438	1			-
Former (quit >30 days)	269	1.42	0.75	2.70	0.280
Current (any tobacco use within last 30 days)	712	1.31	0.70	2.43	0.396
Unknown	115	0.92	0.45	1.88	0.822
Family history of premature cardiovascular disease					
Yes	160	0.60	0.24	1.49	0.269
No (ref)	920	1			-
Unknown	454	1.16	0.68	1.96	0.593
Dyslipidaemia					
Yes	349	1.14	0.62	2.12	0.670
No (ref)	559	1			-
Unknown	626	0.98	0.60	1.61	0.945
Hypertension					
Yes	731	1.44	0.81	2.54	0.212
No (ref)	530	1			-
Unknown	273	1.89	0.87	4.10	0.108
Diabetes					
Yes	515	2.02	1.16	3.51	0.014
No (ref)	705	1			-
Unknown	314	0.90	0.42	1.92	0.785
Heart failure					
Yes	34	1.55	0.65	3.69	0.321
No (ref)	1165	1			-
Unknown	335	0.60	0.30	1.21	0.150
Coronary artery disease**					
Yes	798	1.13	0.72	1.76	0.591
No (ref)	403	1			-
Unknown	333	1.44	0.69	2.97	0.329

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

**Coronary artery disease is defined as 'Yes' to any of the following co-morbidities: 1) History of myocardial infarction, 2) Documented CAD >50% stenosis, 3) Chronic angina (onset more than 2 weeks ago), 4) New onset angina (less than 2 weeks)

Table 5.13.4 Prognosis factors for death within 30 days among STEMI patients, NCVS-ACS Registry, 2006-2008

Factors	N	Odds Ratio	95% CI		P-value
Age group, years					
20 - <40 (ref)	344	1			-
40 - <60	2569	1.36	0.85	2.17	0.203
≥60	1753	2.78	1.73	4.48	<0.001
Gender					
Male (ref)	3958	1			-
Female	708	0.97	0.75	1.25	0.798
Ethnic group*					
Malay (ref)	2525	1			-
Chinese	958	0.78	0.63	0.98	0.029
Indian	879	0.85	0.67	1.08	0.186
Others	298	0.75	0.51	1.09	0.130
Killip classification code					
I (ref)	2490	1			-
II	915	1.39	1.10	1.75	0.006
III	184	2.76	1.92	3.95	<0.001
IV	251	4.79	3.45	6.64	<0.001
Not stated/inadequately described/missing	826	1.26	0.99	1.61	0.060
Percutaneous Coronary Intervention					
Yes	863	0.65	0.44	0.97	0.033
No (ref)	3803	1			-
Cardiac catheterisation					
Yes	948	1.19	0.82	1.73	0.368
No (ref)	3718	1			-
TIMI risk score					
0-2 (ref)	1653	1			-
3-4	1402	1.33	1.03	1.72	0.030
5-7	1274	2.35	1.81	3.06	<0.001
>7	337	4.54	3.18	6.48	<0.001
Fibrinolytic therapy					
Given	3392	0.70	0.58	0.85	<0.001
Not given (ref)	1274	1			-

Table 5.13.4 Prognosis factors for death within 30 days among STEMI patients, NCVS-ACS Registry, 2006-2008

Factors	N	Odds Ratio	95% CI		P-value
Smoking					
Never (ref)	1335	1			-
Former (quit >30 days)	844	1.61	1.18	2.21	0.003
Current (any tobacco use within last 30 days)	2259	1.38	1.02	1.86	0.037
Unknown	228	0.96	0.65	1.42	0.833
Family history of premature cardiovascular disease					
Yes	535	1.35	0.95	1.93	0.097
No (ref)	2670	1			-
Unknown	1461	1.13	0.88	1.43	0.337
Dyslipidaemia					
Yes	1008	1.18	0.87	1.59	0.296
No (ref)	1631	1			-
Unknown	2027	1.10	0.87	1.38	0.430
Hypertension					
Yes	2252	2.25	1.68	3.02	0.000
No (ref)	1508	1			-
Unknown	906	1.29	0.90	1.87	0.167
Diabetes					
Yes	1652	2.25	1.71	2.97	<0.001
No (ref)	1977	1			-
Unknown	1037	1.00	0.71	1.40	0.979
Heart failure					
Yes	138	1.96	1.31	2.92	0.001
No (ref)	3511	1			-
Unknown	1017	1.07	0.77	1.49	0.684
Coronary artery disease**					
Yes	2610	1.07	0.86	1.34	0.519
No (ref)	1083	1			-
Unknown	973	0.98	0.67	1.41	0.894

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

**Coronary artery disease is defined as 'Yes' to any of the following co-morbidities: 1) History of myocardial infarction, 2) Documented CAD >50% stenosis, 3) Chronic angina (onset more than 2 weeks ago), 4) New onset angina (less than 2 weeks)

Table 5.14.1 Prognosis factors for death within 30 days among NSTEMI/UA patients, NCVd-ACS Registry, 2006

Factors	N	Odds ratio	95% CI		P-value
Age group, years					
20 - <40 (ref)	53	1.00			-
40 - < 60	872	0.92	0.38	2.20	0.849
≥60	1052	2.29	0.96	5.46	0.062
Gender					
Male (ref)	1339	1.00			-
Female	638	0.94	0.70	1.25	0.663
Ethnic group*					
Malay (ref)	904	1.00			-
Chinese	485	0.73	0.56	0.97	0.030
Indian	513	0.65	0.48	0.87	0.004
Others	75	0.81	0.44	1.49	0.493
Killip classification code					
I (ref)	866	1.00			-
II	304	2.25	1.61	3.12	<0.001
III	91	3.40	2.06	5.62	<0.001
IV	34	6.12	2.74	13.65	<0.001
Not stated/ inadequately described	682	1.47	1.11	1.96	0.008
Percutaneous Coronary Intervention					
Yes	241	0.48	0.29	0.80	0.005
No (ref)	1736	1.00			-
Cardiac catheterisation					
Yes	357	1.14	0.76	1.71	0.524
No (ref)	1620	1.00			-
TIMI risk score					
0-2 (ref)	1140	1.00			-
3-4	689	1.05	0.81	1.35	0.712
5-7	148	1.52	0.98	2.35	0.061
Smoking					
Never (ref)	953	1.00			-
Former (quit >30 days)	533	2.34	1.62	3.39	<0.001
Current (any tobacco use within last 30 days)	415	1.83	1.21	2.76	0.004
Unknown	76	1.25	0.69	2.24	0.464

Table 5.14.1 Prognosis factors for death within 30 days among NSTEMI/UA patients, NCVDA-ACS Registry, 2006

Factors	N	Odds Ratio	95% CI		P-value
Family history of premature cardiovascular disease					
Yes	236	1.37	0.86	2.19	0.182
No (ref)	942	1.00			-
Unknown	799	1.16	0.87	1.54	0.318
Dyslipidaemia					
Yes	853	1.14	0.77	1.68	0.513
No (ref)	444	1.00			-
Unknown	680	0.79	0.55	1.12	0.179
Hypertension					
Yes	1403	2.05	1.35	3.10	0.001
No (ref)	353	1.00			-
Unknown	221	1.00	0.58	1.72	0.996
Diabetes					
Yes	972	2.41	1.69	3.44	<0.001
No (ref)	688	1.00			-
Unknown	317	0.78	0.49	1.23	0.281
Heart failure					
Yes	236	2.24	1.60	3.15	<0.001
No (ref)	1281	1.00			-
Unknown	460	1.26	0.87	1.83	0.218
Coronary artery disease**					
Yes	1420	1.06	0.73	1.55	0.756
No (ref)	226	1.00			-
Unknown	331	1.02	0.62	1.69	0.935

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

***Coronary artery disease is defined as 'Yes' to any of the following co-morbidities: 1) History of myocardial infarction, 2) Documented CAD >50% stenosis, 3) Chronic angina (onset more than 2 weeks ago), 4) New onset angina (less than 2 weeks)*

Table 5.14.2 Prognosis factors for death within 30 days among NSTEMI/UA patients, NCVS-ACS Registry, 2007

Factors	N	Odds ratio	95% CI		P-value
Age group, years					
20 - <40 (ref)	69	1.00			-
40 - < 60	846	1.48	0.57	3.84	0.417
≥60	1044	3.29	1.28	8.48	0.014
Gender					
Male (ref)	1350	1.00			-
Female	609	1.10	0.81	1.50	0.552
Ethnic group*					
Malay (ref)	847	1.00			-
Chinese	497	0.76	0.56	1.02	0.068
Indian	525	0.83	0.61	1.12	0.214
Others	87	0.67	0.35	1.27	0.216
Killip classification code					
I (ref)	884	1.00			-
II	280	1.51	1.06	2.14	0.022
III	65	2.76	1.57	4.84	<0.001
IV	31	4.73	2.11	10.60	<0.001
Not stated/ inadequately described	699	1.47	1.11	1.94	0.007
Percutaneous Coronary Intervention					
Yes	238	1.19	0.66	2.15	0.556
No (ref)	1721	1.00			-
Cardiac catheterisation					
Yes	382	0.51	0.31	0.84	0.008
No (ref)	1577	1.00			-
TIMI risk score					
0-2 (ref)	1050	1.00			-
3-4	757	1.22	0.92	1.62	0.163
5-7	152	2.23	1.40	3.55	0.001
Smoking					
Never (ref)	878	1.00			-
Former (quit >30 days)	515	1.99	1.31	3.04	0.001
Current (any tobacco use within last 30 days)	426	1.75	1.10	2.77	0.018
Unknown	140	1.16	0.71	1.88	0.560

Table 5.14.2 Prognosis factors for death within 30 days among NSTEMI/UA patients, NCVDA-ACS Registry, 2007

Factors	N	Odds Ratio	95% CI		P-value
Family history of premature cardiovascular disease					
Yes	271	0.94	0.58	1.51	0.786
No (ref)	1193	1.00			-
Unknown	495	1.29	0.94	1.76	0.115
Dyslipidaemia					
Yes	910	1.12	0.76	1.65	0.567
No (ref)	571	1.00			-
Unknown	478	0.82	0.57	1.19	0.305
Hypertension					
Yes	1439	1.85	1.20	2.84	0.005
No (ref)	385	1.00			-
Unknown	135	0.94	0.44	2.00	0.869
Diabetes					
Yes	987	2.24	1.53	3.28	<0.001
No (ref)	792	1.00			-
Unknown	180	1.01	0.53	1.92	0.974
Heart failure					
Yes	192	2.64	1.86	3.73	<0.001
No (ref)	1534	1.00			-
Unknown	233	0.87	0.53	1.41	0.567
Coronary artery disease**					
Yes	1467	0.66	0.48	0.92	0.013
No (ref)	323	1.00			-
Unknown	169	0.95	0.54	1.69	0.874

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

***Coronary artery disease is defined as 'Yes' to any of the following co-morbidities: 1) History of myocardial infarction, 2) Documented CAD >50% stenosis, 3) Chronic angina (onset more than 2 weeks ago), 4) New onset angina (less than 2 weeks)*

Table 5.14.3 Prognosis factors for death within 30 days among NSTEMI/UA patients, NCVS-ACS Registry, 2008

Factors	N	Odds ratio	95% CI		P-value
Age group, years					
20 - <40 (ref)	50	1.00			-
40 - < 60	532	3.38	0.44	25.76	0.239
≥60	735	9.27	1.23	69.77	0.031
Gender					
Male (ref)	866	1.00			-
Female	451	0.89	0.59	1.35	0.583
Ethnic group*					
Malay (ref)	574	1.00			-
Chinese	359	1.66	1.11	2.46	0.012
Indian	330	1.09	0.68	1.77	0.714
Others	51	0.86	0.33	2.27	0.766
Killip classification code					
I (ref)	501	1.00			-
II	208	1.32	0.79	2.18	0.286
III	50	7.51	3.73	15.10	<0.001
IV	25	4.90	1.91	12.56	0.001
Not stated/ inadequately described	533	1.09	0.70	1.70	0.706
Percutaneous Coronary Intervention					
Yes	110	0.45	0.19	1.08	0.075
No (ref)	1207	1.00			-
Cardiac catheterisation					
Yes	185	1.67	0.89	3.13	0.112
No (ref)	1132	1.00			-
TIMI risk score					
0-2 (ref)	793	1.00			-
3-4	455	1.09	0.71	1.66	0.704
5-7	69	1.81	0.87	3.75	0.112
Smoking					
Never (ref)	575	1.00			-
Former (quit >30 days)	286	1.42	0.78	2.58	0.247
Current (any tobacco use within last 30 days)	259	1.13	0.59	2.18	0.711
Unknown	197	0.84	0.40	1.75	0.636

Table 5.14.3 Prognosis factors for death within 30 days among NSTEMI/UA patients, NCVD-ACS Registry, 2008

Factors	N	Odds Ratio	95% CI		P-value
Family history of premature cardiovascular disease					
Yes	100	1.06	0.47	2.41	0.889
No (ref)	773	1.00			-
Unknown	444	1.07	0.66	1.75	0.784
Dyslipidaemia					
Yes	534	1.39	0.80	2.43	0.242
No (ref)	437	1.00			-
Unknown	346	1.62	0.86	3.07	0.135
Hypertension					
Yes	871	1.59	0.80	3.14	0.183
No (ref)	238	1.00			-
Unknown	208	1.66	0.49	5.65	0.420
Diabetes					
Yes	583	1.34	0.76	2.36	0.312
No (ref)	502	1.00			-
Unknown	232	0.78	0.25	2.41	0.662
Heart failure					
Yes	107	3.07	1.83	5.14	<0.001
No (ref)	959	1.00			-
Unknown	251	0.59	0.23	1.48	0.258
Coronary artery disease**					
Yes	878	0.51	0.32	0.82	0.005
No (ref)	216	1.00			-
Unknown	223	0.72	0.28	1.86	0.498

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

**Coronary artery disease is defined as 'Yes' to any of the following co-morbidities: 1) History of myocardial infarction, 2) Documented CAD >50% stenosis, 3) Chronic angina (onset more than 2 weeks ago), 4) New onset angina (less than 2 weeks)

Table 5.14.4 Prognosis factors for death within 30 days among NSTEMI/UA patients, NCVS-ACS Registry, 2006-2008

Factors	N	Odds ratio	95% CI		P-value
Age group, years					
20 - <40 (ref)	172	1.00			-
40 - < 60	2250	1.49	0.82	2.70	0.194
≥60	2831	3.48	1.92	6.30	<0.001
Gender					
Male (ref)	3555	1.00			-
Female	1698	0.98	0.82	1.18	0.845
Ethnic group*					
Malay (ref)	2325	1.00			-
Chinese	1341	0.84	0.70	1.00	0.052
Indian	1368	0.77	0.64	0.93	0.006
Others	213	0.71	0.48	1.06	0.093
Killip classification code					
I (ref)	2251	1.00			-
II	792	1.74	1.41	2.15	<0.001
III	206	3.73	2.70	5.14	<0.001
IV	90	4.91	3.07	7.84	<0.001
Not stated/ inadequately described	1914	1.41	1.18	1.68	<0.001
Percutaneous Coronary Intervention					
Yes	589	0.67	0.48	0.95	0.023
No (ref)	4664	1.00			-
Cardiac catheterisation					
Yes	924	0.94	0.72	1.23	0.652
No (ref)	4329	1.00			-
TIMI risk score					
0-2 (ref)	2983	1.00			-
3-4	1901	1.07	0.91	1.27	0.417
5-7	369	1.84	1.39	2.45	<0.001
Smoking					
Never (ref)	2406	1.00			-
Former (quit >30 days)	1334	2.03	1.59	2.59	<0.001
Current (any tobacco use within last 30 days)	1100	1.67	1.27	2.19	<0.001
Unknown	413	0.95	0.70	1.29	0.726

Table 5.14.4 Prognosis factors for death within 30 days among NSTEMI/UA patients, NCVDA-ACS Registry, 2006-2008

Factors	N	Odds Ratio	95% CI		P-value
Family history of premature cardiovascular disease					
Yes	607	1.17	0.86	1.58	0.318
No (ref)	2908	1.00			-
Unknown	1738	1.22	1.01	1.47	0.038
Dyslipidaemia					
Yes	2297	1.24	0.98	1.57	0.074
No (ref)	1452	1.00			-
Unknown	1504	0.96	0.76	1.20	0.712
Hypertension					
Yes	3713	1.88	1.44	2.46	<0.001
No (ref)	976	1.00			-
Unknown	564	0.97	0.65	1.44	0.884
Diabetes					
Yes	2542	2.11	1.68	2.66	<0.001
No (ref)	1982	1.00			-
Unknown	729	0.80	0.56	1.13	0.212
Heart failure					
Yes	535	2.60	2.10	3.22	<0.001
No (ref)	3774	1.00			-
Unknown	944	1.12	0.85	1.47	0.414
Coronary artery disease**					
Yes	3765	0.76	0.62	0.94	0.012
No (ref)	765	1.00			-
Unknown	723	0.86	0.62	1.21	0.395

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

**Coronary artery disease is defined as 'Yes' to any of the following co-morbidities: 1) History of myocardial infarction, 2) Documented CAD >50% stenosis, 3) Chronic angina (onset more than 2 weeks ago), 4) New onset angina (less than 2 weeks)