



## **CHAPTER 5: OUTCOME**

### **5.1 IN-HOSPITAL OUTCOME**

### **5.2 OUTCOME AT DISCHARGE & AT 30-DAY FOLLOW UP**

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The overall in-hospital, all-cause mortality for the entire cohort for year 2007-2009 was 1% (123), of which 85% (104) were cardiac related, 2% (2) were renal related and the rest were related to other non-cardiac causes. Of total in-hospital mortality, 11.4% death occurred in cath-lab and 84.6% death occurred out of cath-lab.

The occurrences of post-procedural complications were low; cardiogenic shock in 1%, arrhythmia in 1%, bleeding 1% and new renal impairment in less than 1% of cases. Less than 1% (51) of patients had periprocedural MI and even smaller number (29) required emergency re-intervention/PCI. Only one patient needed bail-out CABG.

Only 6% (458) patients required readmission, of these patients, the majority (53%) of them were readmitted for planned PCI. Other reasons for readmission were recurrent angina, AMI, arrhythmia, heart failure, CABG and unplanned PCI.

Regarding medication, 94% of patients continued Clopidogrel during 1-year follow-up. The poor prognostic factors for in-hospital mortality among patients who underwent PCI were acute coronary syndrome (especially AMI) cases, higher Killip class at presentation and elderly patients. Female gender and diabetes showed a trend towards poor prognosis. Those who had heart rate of  $\geq 90$  beats/minute at presentation had relatively longer hospital stay.

In patients who did not achieve TIMI III, post PCI had in-hospital mortality of 7% to 11%. The overall 30-day mortality was less than 1% (33), 6-month mortality was 1% (38) and 1-year mortality was 1% (27). All the above mentioned findings were almost consistent over three years.

### Summary

1. The overall mortality rate for PCI is comparable to other registries.
2. There were low incidences of post-procedural complications.
3. The poor prognostic factors for in-hospital mortality were emergency cases, higher Killip class at presentation, increasing age and diabetes.

## 5.1 IN-HOSPITAL OUTCOME

**Table 5.1.1 Summary of in-hospital outcome for patients who underwent PCI, NCVD-PCI Registry, 2007-2009**

	2007 Total No. of Procedures =3928		2008 Total No. of Procedures =3654		2009 Total No. of Procedures =3916		2007-2009 Total No. of Procedures =11498	
	No.	%	No.	%	No.	%	No.	%
<b>Periprocedural MI, No. (%) (based on clinical diagnosis)</b>								
Yes	18	0	12	0	21	1	51	0
No	3827	97	3632	99	3892	99	11351	99
Not Available	83	2	10	0	3	0	96	1
<b>Emergency Reintervention/PCI, No. (%)</b>								
Yes	15	0	5	0	9	0	29	0
No	3828	97	3645	100	3907	100	11380	99
Not Available	85	2	4	0	0	0	89	1
<b>Bail-out CABG, No. (%)</b>								
Yes	1	0	2	0	3	0	6	0
No	3848	98	3648	100	3913	100	11409	99
Not Available	79	2	4	0	0	0	83	1
<b>Other complications</b>								
Cardiogenic shock (after procedure), No. (%)	19	0	24	1	21	1	64	1
Arrhythmia(VT/VF/Brady), No. (%)	18	0	28	1	17	0	63	1
TIA/Stroke, No. (%)	3	0	2	0	1	0	6	0
Tamponade, No. (%)	4	0	0	0	2	0	6	0
Contrast reaction, No. (%)	4	0	3	0	2	0	9	0
New onset/worsened heart failure, No. (%)	8	0	1	0	3	0	12	0
New renal impairment, No. (%)	8	0	6	0	4	0	18	0
Max post procedural rise in creatinine, No. (%)	21	1	8	0	11	0	40	0

	2007 Total No. of Procedures =3928		2008 Total No. of Procedures =3654		2009 Total No. of Procedures =3916		2007-2009 Total No. of Procedures =11498	
	No.	No.	%	No.	%	No.	%	No.
Max post procedural rise in creatinine, micromol/L								
N	21		8		11		40	
Mean (SD)	401.14 (220.04)		387.11 (267.65)		304.91 (163.55)		371.87 (215.22)	
Median(min,max)	375 (86,880)		375 (95,890)		347 (134,651)		351 (86,890)	
<b>Vascular complications</b>								
Bleeding, No. (%)	36	1	29	1	14	0	79	1
Type of bleeding, No. (%)								
Major	3	8	2	7	0	0	5	6
Minor	4	11	5	17	4	29	13	16
Minimal	24	67	21	72	8	57	53	67
Not Available	5	14	1	3	2	14	8	10
Bleeding site, No. (%)								
Retroperitoneal	1	3	0	0	0	0	1	1
Percutaneous entry site	23	64	20	69	13	93	56	71
Others	5	14	3	10	1	7	9	11
Not Available	7	19	6	21	0	0	13	16
Access site occlusion, No. (%)	0	0	7	0	3	0	10	0
Loss distal pulse, No. (%)	0	0	2	0	0	0	2	0
Dissection, No. (%)	10	0	15	0	5	0	30	0
Pseudoaneurysm, No. (%)	4	0	3	0	1	0	8	0
Management of Pseudoaneurysm, No. (%)								
Ultrasound compression	0	0	0	0	0	0	0	0
Surgery	1	25	0	0	0	0	1	13
Others	1	25	1	33	1	100	3	38
Not Available	2	50	2	67	0	0	4	50

## 5.2 OUTCOME AT DISCHARGE & 30-DAY FOLLOW-UP

**Table 5.2.1a Overall outcome of patients who underwent PCI, NCVD-PCI Registry, 2007-2009**

	OUTCOME <sup>†</sup>	Overall outcome							
		Outcome at discharge		30-day <sup>**</sup>		6-month <sup>**</sup>		1-year <sup>**</sup>	
		No.	%	No.	%	No.	%	No.	%
2007	Death	39	1	46	1	52	1	61	2
	Alive	3579	99	1723	48	1300	36	1117	31
	Lost to follow-up	0	0	1849	51	2266	63	2440	67
2008	Death	43	1	53	1	67	2	76	3
	Alive	3331	99	2665	79	1793	53	1527	45
	Lost to follow-up	0	0	656	20	1514	45	1771	52
2009 <sup>†</sup>	Death	41	1	57	1	75	3	84	4
	Alive	3569	99	3175	88	2414	97	1959	96
	Lost to follow-up	0	0	378	11	0	0	0	0
All	Death	123	1	156	2	194	2	221	2
	Alive	10479	99	7563	71	5507	58	4603	51
	Lost to follow-up	0	0	2883	27	3781	40	4212	47

<sup>†</sup>The outcome data is derived based on data matching with the National Death Register

<sup>\*\*</sup> Includes patients who died in hospital

<sup>†</sup> For year 2009, total for 6-month and 1-year follow up were based on cases registered in the database



Table 5.2.1b Overall outcome for patients who underwent PCI, by age group (years), NCVD-PCI Registry, 2007-2009

OUTCOME*	Outcome at discharge									30-day**									6-month**									1-year**																										
	Young			Middle-aged			Elderly			Young			Middle-aged			Elderly			Young			Middle-aged			Elderly			Young			Middle-aged			Elderly																				
	No.	%		No.	%		No.	%		No.	%		No.	%		No.	%		No.	%		No.	%		No.	%		No.	%		No.	%																						
2007	Death	1	1	15	1	23	2	2	1	19	2	25	0	2	23	2	22	3	28	5	3	27	4	31	7	153	99	2040	99	1386	98	69	95	1002	97	652	97	53	75	771	96	476	93	46	72	669	93	402	90					
	Alive	0	0	0	0	0	0	0	3	4	30	3	16	2	2	2	12	1	10	2	1	1	24	3	14	0	0	0	0	0	0	3	3	12	1	10	2	1	1	24	3	14	3	14	3									
	Lost to follow-up	0	0	0	0	0	0	0	3	4	30	3	16	2	2	2	12	1	10	2	1	1	24	3	14	0	0	0	0	0	3	3	12	1	10	2	1	1	24	3	14	3	14	3										
2008	Death	1	1	14	1	28	2	2	2	16	1	35	3	2	2	19	2	46	6	2	2	2	24	3	50	138	99	1905	99	1288	98	109	92	1480	96	1076	94	82	88	983	92	728	89	65	83	827	91	635	89					
	Alive	0	0	0	0	0	0	7	6	46	3	31	3	9	10	70	6	42	5	11	14	54	6	30	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	Lost to follow-up	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0								
2009	Death	0	0	15	1	26	2	1	1	20	1	36	3	2	2	27	2	46	4	2	2	2	30	3	52	154	99	1956	99	1459	98	145	95	1729	94	1301	93	114	98	1331	95	969	93	83	93	1111	95	765	91					
	Alive	0	0	0	0	0	0	7	4	88	5	57	4	0	0	39	3	26	3	4	5	32	2	26	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	Lost to follow-up	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
All	Death	2	0	44	1	77	2	5	2	55	1	96	3	6	2	68	2	120	5	7	3	81	3	133	7	445	99	5901	99	4133	98	325	98	4212	95	3026	94	245	93	3090	94	2172	92	195	89	2607	93	1804	90					
	Alive	0	0	0	0	0	0	0	0	164	4	104	3	12	5	121	4	78	3	16	8	110	4	70	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Lost to follow-up	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

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

\*\* Includes patients who died in hospital

Note: Total for 30-day, 6-month and 1-year follow up were based on cases registered in the database

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 5.2.1c Overall outcome of patients who underwent PCI, by gender, NCVD-PCI Registry, 2007-2009

OUTCOME*	Outcome at discharge						30-day**						6-month**						1-year**					
	Male			Female			Male			Female			Male			Female			Male			Female		
	No.	%		No.	%		No.	%		No.	%		No.	%		No.	%		No.	%		No.	%	
2007	Death	29	1	10	1	36	2	10	3	39	3	13	6	48	5	13	7							
	Alive	2907	99	672	98	1431	95	292	95	1090	95	210	94	940	92	177	92							
	Lost to follow-up	0	0	0	0	43	3	6	2	23	2	1	0	36	3	3	1							
2008	Death	26	1	17	3	32	1	21	4	39	2	28	7	44	3	32	10							
	Alive	2742	99	589	97	2196	96	469	93	1456	91	337	87	1243	91	283	86							
	Lost to follow-up	0	0	0	0	67	3	17	3	99	7	22	6	80	6	15	4							
2009	Death	29	1	12	2	40	1	17	3	49	2	26	6	56	3	28	7							
	Alive	2904	99	665	98	2602	94	573	91	1988	95	426	91	1618	94	341	90							
	Lost to follow-up	0	0	0	0	115	5	37	6	49	3	17	3	50	3	12	3							
All	Death	84	1	39	2	108	2	48	3	127	3	67	6	148	4	73	8							
	Alive	8553	99	1926	98	6229	95	1334	93	4534	94	973	90	3802	92	801	89							
	Lost to follow-up	0	0	0	0	225	3	60	4	171	3	40	4	166	4	30	3							

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

\*\* Includes patients who died in hospital

Note: Total for 30-day, 6-month and 1-year follow up were based on cases registered in the database



**Table 5.2.1d Overall outcome of patients who underwent PCI, by pre-morbid diabetes, NCVD-PCI Registry, 2007-2009**

OUTCOME*	Outcome at discharge						30-day**						6-month**						1-year**						
	Diabetic		Non-diabetic		Not known		Diabetic		Non-diabetic		Not known		Diabetic		Non-diabetic		Not known		Diabetic		Non-diabetic		Not known		
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
2007	Death	22	1	13	1	4	5	26	3	16	2	4	10	30	5	18	2	4	12	35	7	22	3	4	15
	Alive	1632	98	1878	99	69	94	745	96	944	96	34	83	549	93	721	96	30	88	466	91	628	93	23	85
	Lost to follow-up	0	0	0	0	0	0	24	3	22	2	3	7	10	2	14	2	0	0	12	2	27	4	0	0
2008	Death	22	1	18	1	3	4	27	2	22	1	4	7	38	4	25	2	4	10	44	6	28	3	4	10
	Alive	1502	98	1764	99	65	95	1192	95	1423	95	50	93	813	90	943	91	37	90	689	90	801	91	37	90
	Lost to follow-up	0	0	0	0	0	0	38	3	46	4	0	0	51	6	70	7	0	0	45	4	50	6	0	0
2009	Death	31	2	8	0	2	3	40	2	15	1	2	3	54	4	19	1	2	9	63	6	19	2	2	18
	Alive	1685	99	1806	100	78	97	1527	94	1597	94	50	86	1172	94	1224	95	18	82	952	92	1000	95	7	64
	Lost to follow-up	0	0	0	0	0	0	53	4	93	5	6	11	20	2	44	4	2	9	21	2	39	3	2	18
All	Death	75	2	39	1	9	4	93	3	53	1	10	6	122	4	62	2	10	11	132	6	69	3	10	12
	Alive	4819	98	5448	99	212	96	3454	94	3976	95	133	88	2530	93	2894	94	83	87	2110	91	2424	93	69	85
	Lost to follow-up	0	0	0	0	0	0	115	3	161	4	9	6	81	3	128	4	2	2	79	3	115	4	2	3

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

\*\* Includes patients who died in hospital

Note: Total for 30-day, 6-month and 1-year follow up were based on cases registered in the database

Table 5.2.1e Overall outcome of patients who underwent PCI, by pre-morbid hypertension, NCD-PCI Registry, 2007-2009

OUTCOME*	Outcome at discharge						30-day**						6-month**						1-year**					
	Hypertensive		Non-Hypertensive		Not known		Hypertensive		Non-Hypertensive		Not known		Hypertensive		Non-Hypertensive		Not known		Hypertensive		Non-Hypertensive		Not known	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
2007	Death	31	1	6	1	2	3	35	3	9	2	7	39	4	11	3	2	7	46	5	13	4	2	8
	Alive	2660	98	857	99	62	97	1255	97	443	96	86	946	94	330	95	24	89	812	92	284	91	21	88
	Lost to follow-up	0	0	0	0	0	0	36	2	11	2	7	17	2	6	2	1	4	23	3	15	5	1	4
2008	Death	27	1	12	1	4	7	35	2	14	2	4	48	3	13	3	4	14	55	4	17	4	4	14
	Alive	2392	99	885	98	53	93	1941	96	688	94	36	1313	91	456	89	24	86	1137	91	366	87	24	86
	Lost to follow-up	0	0	0	0	0	0	52	2	32	4	0	79	6	42	8	0	0	59	5	36	9	0	0
2009	Death	31	1	7	1	3	7	43	2	11	1	3	58	3	14	2	3	20	67	4	14	3	3	33
	Alive	2660	99	870	99	39	93	2410	95	739	92	26	1868	95	536	94	10	67	1534	93	421	93	4	44
	Lost to follow-up	0	0	0	0	0	0	86	3	57	7	9	40	2	24	4	2	13	41	3	19	4	2	22
2010	Death	89	1	25	1	9	6	113	2	34	2	9	145	3	40	3	9	13	168	4	44	4	9	15
	Alive	7712	98	2613	99	154	94	5596	95	1879	93	88	4131	94	1320	92	56	82	3481	92	1073	91	49	80
	Lost to follow-up	0	0	0	0	0	0	174	3	100	5	11	137	3	71	5	3	5	125	4	68	5	3	5

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

\*\* Includes patients who died in hospital

Note: Total for 30-day, 6-month and 1-year follow up were based on cases registered in the database

Table 5.2.1f Overall outcome of patients who underwent PCI, by pre-morbid dyslipidaemia, NCD-PCI Registry, 2007-2009

OUTCOME*	Outcome at discharge						30-day**						6-month**						1-year**						
	Dyslipidaemic		Non-dyslipidaemic		Not known		Dyslipidaemic		Non-dyslipidaemic		Not known		Dyslipidaemic		Non-dyslipidaemic		Not known		Dyslipidaemic		Non-dyslipidaemic		Not known		
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
2007	Death	24	1	8	1	7	4	28	2	11	3	7	7	33	3	12	4	7	9	40	5	13	5	8	12
	Alive	2748	99	669	99	162	95	1276	95	364	95	83	86	933	95	300	95	67	87	802	92	258	92	57	84
	Lost to follow-up	0	0	0	0	0	0	34	3	8	2	7	7	16	2	5	1	3	4	28	3	8	3	3	4
2008	Death	12	1	19	2	12	8	20	1	20	3	13	10	26	2	24	5	17	16	34	3	25	6	17	16
	Alive	2355	99	840	98	136	92	1874	97	676	92	115	89	1270	93	434	86	89	83	1088	92	350	85	89	83
	Lost to follow-up	0	0	0	0	0	0	47	2	36	5	1	1	73	5	47	9	1	1	59	5	35	9	1	1
2009	Death	26	1	12	2	3	2	38	1	16	2	3	2	53	3	19	4	3	6	61	4	20	6	3	13
	Alive	2615	99	785	98	169	98	2458	95	607	89	110	87	1971	96	401	91	42	84	1636	94	307	89	16	70
	Lost to follow-up	0	0	0	0	0	0	78	4	60	9	14	11	39	1	22	5	5	10	40	2	18	5	4	17
All	Death	62	1	39	2	22	4	86	1	47	3	23	7	111	3	56	4	27	12	134	4	59	6	28	14
	Alive	7718	99	2294	99	466	95	5604	96	1654	91	305	87	4174	95	1135	90	198	85	3522	93	917	89	164	82
	Lost to follow-up	0	0	0	0	0	0	157	3	107	6	21	6	127	2	75	6	9	3	128	3	60	5	8	5

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

\*\* Includes patients who died in hospital

Note: Total for 30-day, 6-month and 1-year follow up were based on cases registered in the database

Table 5.2.1g Overall outcome of patients who underwent PCI, by PCI status, NCVD-PCI Registry, 2007-2009

OUTCOME*	Outcome at discharge						30-day**						6-month**						1-year**					
	ELECTIVE			NON-ELECTIVE			ELECTIVE			NON-ELECTIVE			ELECTIVE			NON-ELECTIVE			ELECTIVE			NON-ELECTIVE		
	No.	%		No.	%		No.	%		No.	%		No.	%		No.	%		No.	%		No.	%	
2007	Death	14	0	24	7	20	1	25	13	24	2	27	17	30	3	30	3	21	30	3	30	21		
	Alive	3265	99	307	93	1561	96	159	83	1169	96	128	82	1004	94	110	77	77	1004	94	110	77		
	Lost to follow-up	0	0	0	0	41	3	8	4	22	2	2	1	37	3	2	2	2	37	3	2	2		
2008	Death	11	0	32	11	17	1	36	16	28	2	39	21	37	2	39	2	24	37	2	39	24		
	Alive	3064	99	264	89	2478	96	185	80	1659	92	133	72	1414	92	112	69	69	1414	92	112	69		
	Lost to follow-up	0	0	0	0	74	3	9	4	107	6	12	7	92	5	11	7	7	92	5	11	7		
2009	Death	10	0	31	9	23	2	34	12	41	2	34	20	49	2	35	26	26	49	2	35	26		
	Alive	3233	100	320	91	2952	87	217	78	2281	96	130	77	1862	95	95	71	71	1862	95	95	71		
	Lost to follow-up	0	0	0	0	122	11	26	10	62	2	4	3	58	3	4	3	3	58	3	4	3		
All	Death	35	0	87	9	59	1	96	14	92	2	101	20	115	3	105	24	24	115	3	105	24		
	Alive	9562	99	891	91	6997	96	555	80	5115	95	384	76	4285	94	312	72	72	4285	94	312	72		
	Lost to follow-up	0	0	0	0	236	3	44	6	191	3	18	4	177	3	17	4	4	177	3	17	4		

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

\*\* Includes patients who died in hospital

Note: Total for 30-day, 6-month and 1-year follow up were based on cases registered in the database



**Table 5.2.1h Overall outcome of patients who underwent PCI, by acute coronary syndrome, NCD-PCI Registry, 2007-2009**

OUTCOME*	Outcome at discharge						30-day**						6-month**						1-year**						
	STEMI		NSTEMI		UA		STEMI		NSTEMI		UA		STEMI		NSTEMI		UA		STEMI		NSTEMI		UA		
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
2007	Death	24	4	5	1	1	1	24	7	8	2	1	2	27	10	2	2	1	2	31	13	9	3	4	9
	Alive	568	96	464	99	128	99	308	90	350	96	61	95	226	88	322	96	54	96	194	83	310	95	41	89
	Lost to follow-up	0	0	0	0	0	0	11	3	7	2	2	3	5	2	5	2	1	2	10	4	6	2	1	2
2008	Death	28	4	6	1	1	1	32	6	9	2	2	3	36	9	13	3	2	37	11	15	5	3	5	
	Alive	604	95	523	99	94	99	471	90	431	89	73	97	306	80	351	85	52	271	80	252	83	49	86	
	Lost to follow-up	0	0	0	0	0	0	23	4	47	9	0	0	39	11	47	12	7	32	9	38	12	5	9	
2009	Death	26	2	10	1	1	0	30	3	13	2	1	0	31	4	19	5	2	34	5	22	7	3	3	
	Alive	1125	98	738	99	228	100	1008	92	592	91	199	98	805	94	372	93	140	653	92	285	92	107	94	
	Lost to follow-up	0	0	0	0	0	0	53	5	48	7	4	2	21	2	7	2	3	23	3	3	1	4	3	
All	Death	78	3	21	1	3	1	87	4	30	2	4	1	95	6	40	4	5	102	8	46	5	10	5	
	Alive	2297	97	1824	98	450	99	1775	91	1388	91	337	97	1332	89	1040	91	250	1111	87	848	90	199	90	
	Lost to follow-up	0	0	0	0	0	0	87	5	102	7	6	2	64	5	58	5	13	66	5	46	5	10	5	

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

\*\* Includes patients who died in hospital

Note: Total for 30-day, 6-month and 1-year follow up were based on cases registered in the database

**Table 5.2.2 Medication for patients who underwent PCI, NCVD-PCI Registry, 2007-2009**

	Medication	Outcome at discharge		30-day		6-month		1-year	
		No.	%	No.	%	No.	%	No.	%
2007	N	3561		1599		1226		1079	
	Aspirin	3401	96	1519	95	1168	95	1029	95
	Clopidogrel	3382	95	1520	95	1157	94	1020	95
	Ticlopidine	271	8	201	13	144	12	135	13
	**Dual antiplatelet	3285	92	1470	92	1125	92	991	92
	Statin	3199	90	1420	89	1080	88	950	88
	Beta blocker	2475	70	1099	69	840	69	739	68
	Ace inhibitor	1938	54	776	49	570	46	493	46
	ARB	468	13	207	13	153	12	126	12
Warfarin	43	1	16	1	12	1	10	1	
2008	N	3325		2519		1749		1479	
	Aspirin	3244	98	2469	98	1721	98	1454	98
	Clopidogrel	3144	95	2392	95	1664	95	1401	95
	Ticlopidine	109	3	86	3	57	3	55	4
	**Dual antiplatelet	3116	94	2381	95	1660	95	1400	95
	Statin	3074	92	2334	93	1605	92	1349	91
	Beta blocker	2455	74	1854	74	1304	75	1106	75
	Ace inhibitor	1847	56	1388	55	927	53	793	54
	ARB	467	14	365	14	253	14	220	15
Warfarin	32	1	24	1	16	1	14	1	
2009	N	3540		3059		2286		1845	
	Aspirin	3467	98	2996	98	2236	98	1798	97
	Clopidogrel	3357	95	2901	95	2174	95	1753	95
	Ticlopidine	145	4	135	4	105	5	93	5
	**Dual antiplatelet	3346	95	2894	95	2166	95	1744	95
	Statin	3309	93	2859	93	2144	94	1738	94
	Beta blocker	2497	71	2155	70	1634	71	1315	71
	Ace inhibitor	1874	53	1666	54	1307	57	1058	57
	ARB	524	15	471	15	364	16	320	17
Warfarin	36	1	31	1	21	1	15	1	
All	N	10,426		7177		5261		4403	
	Aspirin	10112	97	6984	97	5125	97	4281	97
	Clopidogrel	9883	95	6813	95	4995	95	4174	95
	Ticlopidine	525	5	422	6	306	6	283	6
	**Dual antiplatelet	9747	93	6745	94	4951	94	4135	94
	Statin	9582	92	6613	92	4829	92	4037	92
	Beta blocker	7427	71	5108	71	3778	72	3160	72
	Ace inhibitor	5659	54	3830	53	2804	53	2344	53
	ARB	1459	14	1043	15	770	15	666	15
Warfarin	111	1	71	1	49	1	39	1	

*Available for those who are alive*

*\*\* Dual antiplatelet is combination of Aspirin and Clopidogrel or Ticlopidine*



**Table 5.2.3 Cause of death of patients who underwent PCI, NCVD-PCI Registry, 2007-2009**

	*Cause of death	Outcome at discharge		30-day**		6-month**		1-year**	
		No.	%	No.	%	No.	%	No.	%
2007	N	39		46		52		61	
	Cardiac	31	79	31	67	31	60	31	51
	Renal	0	0	0	0	0	0	0	0
	Other	2	5	2	4	2	4	2	3
	Infection	1	3	1	2	1	2	1	2
	Neurological	1	3	1	2	1	2	1	2
	Vascular	1	3	1	2	1	2	1	2
	Pulmonary	0	0	0	0	0	0	0	0
	Non cardiac	0	0	0	0	0	0	0	0
	Not Available	3	8	10	23	16	30	25	39
2008	N	43		53		67		76	
	Cardiac	39	91	39	76	39	58	39	51
	Renal	0	0	0	0	0	0	0	0
	Other	1	2	1	2	1	2	1	1
	Infection	1	2	1	2	1	2	1	1
	Neurological	1	2	1	2	1	2	1	1
	Vascular	0	0	0	0	0	0	0	0
	Pulmonary	0	0	0	0	0	0	0	0
	Non cardiac	0	0	0	0	0	0	0	0
	Not Available	1	2	11	18	25	36	34	45
2009	N	41		57		75		84	
	Cardiac	34	83	34	60	34	45	34	40
	Renal	2	5	2	4	2	3	2	2
	Other	3	7	3	5	3	4	3	4
	Infection	1	2	1	2	1	1	1	1
	Neurological	0	0	0	0	0	0	0	0
	Vascular	0	0	0	0	0	0	0	0
	Pulmonary	0	0	0	0	0	0	0	0
	Non cardiac	0	0	0	0	0	0	0	0
	Not Available	1	2	17	30	35	47	44	52
All	N	123		156		194		221	
	Cardiac	104	85	104	67	104	54	104	47
	Renal	2	2	2	1	2	1	2	1
	Other	6	5	6	4	6	3	6	3
	Infection	3	2	3	2	3	2	3	1
	Neurological	2	2	2	1	2	1	2	1
	Vascular	1	1	1	1	1	1	1	0
	Pulmonary	0	0	0	0	0	0	0	0
	Non cardiac	0	0	0	0	0	0	0	0
	Not Available	5	4	38	24	76	39	103	47

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

\*\* Includes patients who died in hospital

Note: Patients may have more than one condition that caused death

**Table 5.2.4 Location of death of patients who underwent PCI, NCVD-PCI Registry, 2007-2009**

Location of death	2007		2008		2009		All	
	In-hospital Mortality		In-hospital Mortality		In-hospital Mortality		In-hospital Mortality	
	No.	%	No.	%	No.	%	No.	%
In Lab	4	10.3	1	2.3	9	22	14	11.4
Out of Lab	32	82.1	42	97.7	30	73.2	104	84.6
Not Available	3	7.7	0	0	2	4.9	5	4.1

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

**Table 5.2.5 Outcome at discharge of patients who developed cardiogenic shock peri-procedure, NCVD-PCI Registry, 2007-2009**

	Outcome*	Cardiogenic Shock Peri-Procedure					
		Yes		No		Missing	
		No.	%	No.	%	No.	%
2007	Death	15	79	23	1	1	1
	Alive	4	21	3507	99	68	98
	Lost to follow-up	0	0	0	0	0	0
2008	Death	17	74	26	1	0	0
	Alive	6	26	3321	99	4	100
	Lost to follow-up	0	0	0	0	0	0
2009	Death	11	55	30	1	0	0
	Alive	9	45	3560	99	0	0
	Lost to follow-up	0	0	0	0	0	0
All	Death	43	69	79	1	1	1
	Alive	19	31	10388	99	72	98
	Lost to follow-up	0	0	0	0	0	0

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

**Table 5.2.6 Outcome at discharge, by post PCI TIMI flow, NCVD-PCI Registry, 2007-2009**

	*Outcome at discharge	Post PCI TIMI flow									
		0		1		2		3		Not Available	
		No.	%	No.	%	No.	%	No.	%	No.	%
2007	Death	6	8	3	13	4	8	26	1	2	1
	Alive	73	92	21	88	45	92	3299	99	139	98
	Lost to follow-up	0	0	0	0	0	0	0	0	0	0
2008	Death	1	2	1	10	5	15	28	1	5	3
	Alive	54	98	9	90	29	85	3099	99	143	97
	Lost to follow-up	0	0	0	0	0	0	0	0	0	0
2009	Death	5	9	2	6	6	13	29	1	1	1
	Alive	51	91	32	94	41	87	3303	99	140	99
	Lost to follow-up	0	0	0	0	0	0	0	0	0	0
All	Death	11	5	4	7	13	10	87	1	8	2
	Alive	195	95	54	93	112	90	9701	99	417	98
	Lost to follow-up	0	0	0	0	0	0	0	0	0	0

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

**Table 5.2.7 Outcome at discharge, by contrast volume used, NCVD-PCI Registry, 2007-2009 (row percentage)**

Contrast volume, ml	2007				2008				2009				All			
	Death*		Alive**		Death*		Alive**		Death*		Alive**		Death*		Alive**	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
≥300	6	2	264	98	3	2	170	98	1	0	201	100	10	2	635	98
<300	25	1	2659	99	36	1	2724	99	37	1	3210	99	98	1	8593	99

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

\*\*Alive includes those transferred to another centres

**Table 5.2.8 Summary of 30-day readmission status of patients who underwent PCI, NCVD-PCI Registry, 2007-2009 (N = total no. of procedures for 30-day follow- up)**

	Readmission	No.	%
2007	Yes	120	7
	No	1608	91
	Not Available	48	3
	Readmission reason, no.%		
	CHF	2	2
	AMI	1	1
	Recurrent angina	18	15
	Arrhythmia	0	0
	PCI-planned	63	53
	PCI-unplanned	2	2
	CABG	2	2
	Others	18	15
	Not Available	14	12
	2008	Yes	178
No		2573	94
Not Available		0	0
Readmission reason, no.%			
CHF		3	2
AMI		3	2
Recurrent angina		21	12
Arrhythmia		0	0
PCI-planned		100	56
PCI-unplanned		7	4
CABG		0	0
Others		31	17
Not Available		13	7

**Table 5.2.8 Summary of 30-day readmission status of patients who underwent PCI, NCVD-PCI Registry, 2007-2009 (N = total no. of procedures for 30-day follow-up)**

	<b>Readmission</b>	<b>No.</b>	<b>%</b>
<b>2009</b>	<b>Yes</b>	<b>160</b>	<b>5</b>
	<b>No</b>	<b>3181</b>	<b>95</b>
	<b>Not Available</b>	<b>0</b>	<b>0</b>
	<b>Readmission reason, no.%</b>		
	<b>CHF</b>	<b>1</b>	<b>1</b>
	<b>AMI</b>	<b>3</b>	<b>2</b>
	<b>Recurrent angina</b>	<b>22</b>	<b>14</b>
	<b>Arrhythmia</b>	<b>1</b>	<b>1</b>
	<b>PCI-planned</b>	<b>81</b>	<b>51</b>
	<b>PCI-unplanned</b>	<b>5</b>	<b>3</b>
	<b>CABG</b>	<b>2</b>	<b>1</b>
	<b>Others</b>	<b>37</b>	<b>23</b>
	<b>Not Available</b>	<b>8</b>	<b>5</b>
<b>All</b>	<b>Yes</b>	<b>458</b>	<b>6</b>
	<b>No</b>	<b>7362</b>	<b>94</b>
	<b>Not Available</b>	<b>48</b>	<b>1</b>
	<b>Readmission reason, no.%</b>		
	<b>CHF</b>	<b>6</b>	<b>1</b>
	<b>AMI</b>	<b>7</b>	<b>2</b>
	<b>Recurrent angina</b>	<b>61</b>	<b>13</b>
	<b>Arrhythmia</b>	<b>1</b>	<b>0</b>
	<b>PCI-planned</b>	<b>244</b>	<b>53</b>
	<b>PCI-unplanned</b>	<b>14</b>	<b>3</b>
	<b>CABG</b>	<b>4</b>	<b>1</b>
	<b>Others</b>	<b>86</b>	<b>19</b>
	<b>Not Available</b>	<b>35</b>	<b>8</b>

**Table 5.2.9.1 Procedural complications and clinical outcomes, according to PCI status, NCVD-PCI Registry, 2007**

	Elective N=3279		NSTEMI/UA N=172		AMI N=159		Not Available N=8	
	No.	%	No.	%	No.	%	No.	%
*Death	14	35.9	8	20.5	16	41.0	1	2.6
Procedural complications								
Periprocedural MI	4	0	0	0	0	0	0	0
Emergency Reintervention/PCI	5	0	0	0	1	1	0	0
Stent thrombosis	2		0		1		0	
Dissection	3		0		0		0	
Perforation	0		0		0		0	
Bail-out CABG	0	0	0	0	0	0	0	0
Cardiogenic shock	4	0	0	2	1	1	0	0
Arrhythmia	2	0	3	2	0	0	1	13
TIA/Stroke	0	0	1	1	8	5	0	0
Tamponade	0	0	0	0	2	1	0	0
Contrast reaction	0	0	0	0	0	0	0	0
New onset/worsen heart failure	2	0	1	1	1	1	0	0
New renal impairment	0	0	0	0	0	0	0	0
Bleeding	1	0	2	1	2	1	0	0
Access site occlusion	0	0	0	0	3	2	0	0
Loss of distal pulse	0	0	0	0	1	1	0	0
Dissection	0	0	0	0	0	0	0	0
Pseudoaneurysm	0	0	0	0	0	0	0	0

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



**Table 5.2.9.2 Procedural complications and clinical outcomes, according to PCI status, NCVD-PCI Registry, 2008**

	Elective N=3075		NSTEMI/UA N=157		AMI N=139		Not Available N=3	
	No.	%	No.	%	No.	%	No.	%
*Death	11	0.4	5	3.2	27	19.4	0	0
Procedural complications								
Periprocedural MI	3	0	0	0	3	2	0	0
Emergency Reintervention/PCI	0	0	0	0	0	0	0	0
Stent thrombosis	0		0		0		0	
Dissection	0		0		0		0	
Perforation	0		0		0		0	
Bail-out CABG	0	0	0	0	0	0	0	0
Cardiogenic shock	5	0	1	1	11	8	0	0
Arrhythmia	5	0	0	0	4	3	0	0
TIA/Stroke	0	0	0	0	0	0	0	0
Tamponade	0	0	0	0	0	0	0	0
Contrast reaction	0	0	0	0	0	0	0	0
New onset/worsen heart failure	0	0	0	0	0	0	0	0
New renal impairment	0	0	1	1	3	2	0	0
Bleeding	0	0	0	0	5	4	0	0
Access site occlusion	0	0	0	0	0	0	0	0
Loss of distal pulse	0	0	0	0	0	0	0	0
Dissection	0	0	0	0	0	0	0	0
Pseudoaneurysm	0	0	0	0	0	0	0	0

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

**Table 5.2.9.3 Procedural complications and clinical outcomes, according to PCI status, NCVD-PCI Registry, 2009**

	Elective N=3243		NSTEMI/UA N=146		AMI N=205		Not Available N=16	
	No.	%	No.	%	No.	%	No.	%
*Death	10	0.3	6	4.1	25	12.2	0	0
Procedural complications								
Periprocedural MI	0	0	0	0	2	1	0	0
Emergency Reintervention/PCI	1	0	1	1	0	0	0	0
Stent thrombosis	0		0		0		0	
Dissection	1		1		0		0	
Perforation	0		0		0		0	
Bail-out CABG	0	0	0	0	1	0	0	0
Cardiogenic shock	2	0	1	1	8	4	0	0
Arrhythmia	2	0	0	0	6	3	0	0
TIA/Stroke	0	0	0	0	0	0	0	0
Tamponade	0	0	0	0	0	0	0	0
Contrast reaction	0	0	0	0	0	0	0	0
New onset/worsen heart failure	0	0	0	0	2	1	0	0
New renal impairment	0	0	0	0	4	2	0	0
Bleeding	0	0	0	0	2	1	0	0
Access site occlusion	0	0	0	0	0	0	0	0
Loss of distal pulse	0	0	0	0	0	0	0	0
Dissection	0	0	0	0	0	0	0	0
Pseudoaneurysm	0	0	0	0	0	0	0	0

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

**Table 5.2.9.4 Procedural complications and clinical outcomes, according to PCI status, NCVD-PCI Registry, 2007-2009**

	Elective N=9597		NSTEMI/UA N=475		AMI N=503		Not Available N=27	
	No.	%	No.	%	No.	%	No.	%
*Death	35	0.4	19	4.0	68	13.5	1	3.7
Procedural complications								
Periprocedural MI	7	0	0	0	5	1	0	0
Emergency Reintervention/PCI	6	0	1	0	1	0	0	0
Stent thrombosis	2		0		1		0	
Dissection	4		1		0		0	
Perforation	0		0		0		0	
Bail-out CABG	0	0	0	0	1	0	0	0
Cardiogenic shock	11	0	5	1	27	5	0	0
Arrhythmia	9	0	3	1	12	2	1	4
TIA/Stroke	0	0	1	0	0	0	0	0
Tamponade	0	0	0	0	1	0	0	0
Contrast reaction	0	0	0	0	0	0	0	0
New onset/worsen heart failure	2	0	1	0	4	1	0	0
New renal impairment	0	0	1	0	10	2	0	0
Bleeding	1	0	2	0	8	2	0	0
Access site occlusion	0	0	0	0	0	0	0	0
Loss of distal pulse	0	0	0	0	0	0	0	0
Dissection	0	0	0	0	2	0	0	0
Pseudoaneurysm	0	0	0	0	0	0	0	0

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

Table 5.2.10 Heart rate at presentation versus outcome, NCD-PCI Registry, 2007-2009

Heart rate at presentation, beats/minute	2007				2008				2009				All			
	Alive		Death*		Alive		Death*		Alive		Death*		Alive		Death*	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
<90	2906	82	21	54	2574	77	21	49	3019	85	21	51	8499	81	63	51
≥90	387	11	16	41	311	9	21	49	447	13	17	41	1145	11	54	44
Missing	270	7	2	5	441	4	1	1	76	2	3	10	787	8	6	5
<b>Total</b>	<b>3563</b>	<b>100</b>	<b>39</b>	<b>100</b>	<b>3326</b>	<b>100</b>	<b>43</b>	<b>100</b>	<b>1542</b>	<b>100</b>	<b>41</b>	<b>100</b>	<b>10431</b>	<b>100</b>	<b>123</b>	<b>100</b>

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

Table 5.2.11 Heart rate at presentation versus length of stay, NCD-PCI Registry, 2007-2009

Heart rate at presentation, beats/minute	2007				2008				2009				All			
	<90		≥90		<90		≥90		<90		≥90		<90		≥90	
	N	Mean(SD)	N	Mean(SD)	N	Mean(SD)	N	Mean(SD)	N	Mean(SD)	N	Mean(SD)	N	Mean(SD)	N	Mean(SD)
N	2888	3.8 (18.9)	400	8.1 (37.4)	2559	3.8 (20.4)	327	5.2 (20.9)	3003	3.3 (22.4)	461	7.0 (48.2)	8450	3.6 (20.7)	1188	6.9 (38.7)
Median, (min,max)	2 (0, 401)	2 (0, 379)	2 (0, 379)	2 (0, 370)	2 (0, 370)	2 (0, 368)	2 (0, 368)	2 (0, 368)	2 (0, 1097)	2 (0, 1097)	2 (0, 733)	2 (0, 733)	2 (0, 1097)	2 (0, 1097)	2 (0, 733)	2 (0, 733)
Missing	52	2	5	1	40	2	6	2	52	2	5	1	40	2	6	2

**Table 5.2.12 Prognostic factors for in-hospital mortality among patients who underwent PCI, NCVD-PCI Registry, 2007-2009**

Factor	N	Hazard ratio	95% CI	*P value
<b>Age group</b>				
20 - <60 (ref)	6344	1.00		
>= 60	4178	1.92	(1.05, 3.50)	0.034
<b>Gender</b>				
Male (ref)	8569	1.00		
Female	1954	1.35	(0.73, 2.51)	0.341
<b>PCI status</b>				
Elective (ref)	9555	1.00		
NSTEMI/UA	469	3.10	(1.14, 8.41)	0.026
AMI	499	8.84	(4.04, 19.34)	<0.001
<b>Diabetes mellitus</b>				
No (ref)	5446	1.00		
Yes	4859	1.70	(0.95, 3.04)	0.075
<b>Myocardial infarction history</b>				
No (ref)	5747	1.00		
Yes	4363	0.99	(0.55, 1.79)	0.980
<b>Hypertension</b>				
No (ref)	2623	1.00		
Yes	7739	1.06	(0.55, 2.06)	0.854
<b>Killip class</b>				
I (ref)	2298	1.00		
II	1054	1.23	(0.56, 2.70)	0.606
III	107	2.33	(0.88, 6.20)	0.090
IV	101	5.79	(2.88, 11.65)	<0.001

\* using Cox regression with forward variable selection