


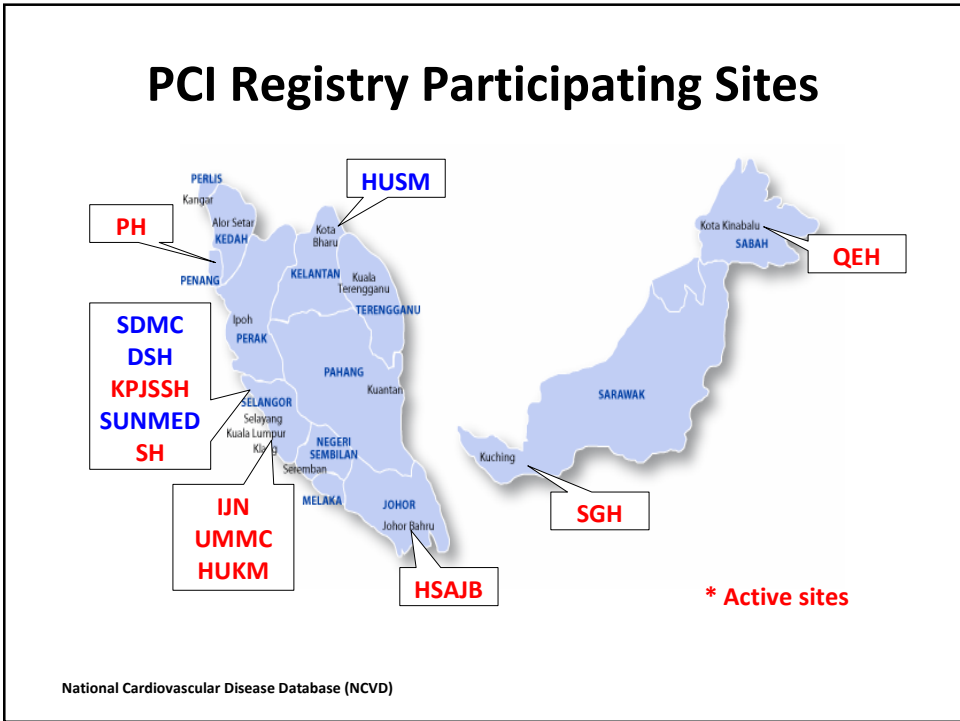


**National Cardiovascular Disease Database
Percutaneous Coronary Intervention
(PCI) Registry**

**Malaysia NCVD-PCI Registry –
Are We Any Different?**

Presented by:
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Chairman of NCVD-PCI Registry
Hilton Kuala Lumpur
30th July 2009 (Malaysia LIVE 2009)



NCVD-PCI Registry Participating sites:

PH	Penang Hospital
SDMC	Sime Darby Medical Centre
UMMC	University Malaya Medical Centre
DSH	KPJ Damansara Specialist Hospital
KPJSSH	KPJ Selangor Specialist Hospital
SUNMED	Sunway Medical Centre
SH	Serdang Hospital
HUSM	Universiti Sains Malaysia Hospital
HSAJB	Sultanah Aminah Hospital
SGH	Sarawak General Hospital
QEH	Queen Elizabeth Hospital
IJN	Institut Jantung Negara
HUKM	Universiti Kebangsaan Malaysia Hospital

National Cardiovascular Disease Database (NCVD)

NCVD-PCI Registry
Results as of 9th April 2009
(based on unclean data)

As of 9th April 2009:

Total PCI Procedures done	8,236
Total Lesions treated	11,508
Total Stents Used for procedures	13,150
Follow Up	
Total 30 Days Follow Up done	3,470
Total 6 Months Follow Up done	1,700

National Cardiovascular Disease Database (NCVD)

Patient Demographics

Age	
Min, Max	22, 95 years
Mean \pm sd	56.7 \pm 10.06 years
<i>Age <40 years</i>	<i>0.33 %</i>
<i>Age >40 years</i>	<i>0.55%</i>
Gender	
Male	81.99 %
Female	18.01 %

National Cardiovascular Disease Database (NCVD)

Clinical Presentation

Previous Interventions	
Previous PCI	22.21 %
Previous CABG	4.02 %
Acute Coronary Syndrome (n=2,039)	
STEMI	44.92 %
NSTEMI	32.81 %
Unstable Angina	19.86 %

National Cardiovascular Disease Database (NCVD)

Clinical Background & CV Risk Factors

Baseline (n=8,236)	
Dyslipidaemia	73.42 %
Hypertension	73.03 %
Diabetes	45.41 %
<i>OHA</i>	77.94 %
<i>Insulin</i>	13.60 %
Chronic Renal Failure	6.23 %
Family history of premature CVD	16.57 %
MI History	38.19 %
Documented CAD	55.28 %

National Cardiovascular Disease Database (NCVD)

Clinical Background & CV Risk Factors

Baseline (n=8,236)

New Onset Angina (< 2 weeks)	23.08 %
Congestive Heart Failure (> 2 weeks prior)	3.68 %
Chronic Lung Disease	1.29 %
Cerebrovascular Disease	1.51 %
Peripheral vascular disease	1.03 %

National Cardiovascular Disease Database (NCVD)

Clinical Background & CV Risk Factors

Baseline (n=8,236)

Smoking status	
Never	36.78 %
Former (quit >30 days)	27.84 %
Current (any tobacco use within last 30 days)	18.43 %
Not Available	16.95 %

National Cardiovascular Disease Database (NCVD)

PCI Status

Baseline (n=8,236)

Elective (n=7,439)	90.32 %
<i>Staged PCI</i>	22.06 %
Urgent (NSTEMI/UA)	4.66 %
Rescue	2.09 %
Primary	2.48 %
Missing	0.45 %
Cath/ PCI in same setting (ad hoc)	84.12 %

National Cardiovascular Disease Database (NCVD)

PCI Procedures

Baseline (n=11,508)

AHA-ACC Lesion Morphology Type	
A	11.76 %
B1	25.14 %
B2	19.38 %
C	39.45 %
Missing	3.47 %

National Cardiovascular Disease Database (NCVD)

PCI Procedures

Baseline (n=11,508)

Lesion Description	
Ostial	6.33 %
Bifurcation	7.69 %
CTO < 3 mo	3.02 %
CTO > 3 mo	7.10 %
Thrombus	3.21 %
Not Applicable	70.20 %

National Cardiovascular Disease Database (NCVD)

PCI Procedures

Baseline (n=11,508)

Pre-stenosis %, 84.52 ± 12.08		Post-stenosis %, 3.94 ± 17.08	
TIMI Flow		TIMI Flow	
0	11.44 %	0	1.77 %
1	4.13 %	1	0.37 %
2	15.53 %	2	1.10 %
3	63.21 %	3	90.98 %

National Cardiovascular Disease Database (NCVD)

PCI Procedures

Intracoronary Devices Used (% of lesions treated)	
No device used	2.58 %
Balloon only (POBA)	7.69 %
Bare Metal Stent	38.40 %
Drug Eluting Balloon	2.67 %
Distal Embolic Protection (n=15)	0.47 %
<i>Filter</i>	96.30 %
Cutting Balloon	2.20 %

National Cardiovascular Disease Database (NCVD)

PCI Procedures

Intracoronary Devices Used (% of lesions treated)	
Drug Eluting Stent	46.23 %
Flowire	0.01%
IVUS	3.86 %
Rotablator	0.85 %
Others (eg. Thromboaspiration)	3.53 %
Closure Device	5.12 %

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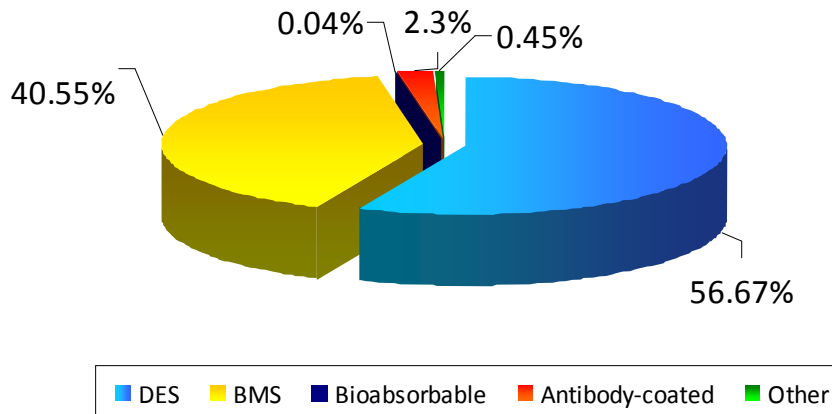
PCI Procedures

Stent type used	Baseline (n=13,150)
Drug Eluting Stent	56.67 %
Bare Metal Stent	40.55 %
Bio-absorbable stent	0.04 %
Antibody-coated	2.30 %
Other stent	0.41 %

*'Other' refers to stent other than listed in the *Reference Stent List*

National Cardiovascular Disease Database (NCVD)

Percentage of stent type by total number of stents used (n=13,150)



*'Other' refers to stent other than listed in the *Reference Stent List*

National Cardiovascular Disease Database (NCVD)

PCI Procedures

Procedural Characteristics	Baseline (n=11,508)
Stent length (mm)	22.52 ± 7.32
Stent diameter (mm)	2.99 ± 0.46
Lesion length (mm)	23.87 ± 14.7
Max balloon size (mm)	3.06 ± 0.58
Max stent/balloon deploy pressure (mm)	15.77 ± 3.81
Direct stenting	18.67 %

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Procedural Complications

	Baseline (n=8,236)
Periprocedural MI	0.44 %
Emergency Reintervention (n=20)	0.24 %
<i>Stent thrombosis</i>	50.00 %
<i>Dissection</i>	35.00 %
<i>Perforation</i>	0.00 %
<i>Others</i>	30.00 %
Bail-out CABG	0.04 %
Cardiogenic Shock	0.53 %
Arrhythmia (VT/VF/Brady)	0.61 %
TIA/ Stroke	0.05 %
Tamponade	0.05 %

National Cardiovascular Disease Database (NCVD)

Procedural Complications

Baseline (n=8,236)

Contrast Reaction	0.06 %
New onset/ worsened heart failure	0.11 %
New renal impairment	0.16 %
Vascular Complications	
Bleeding	
Yes (n=28)	0.74 %
<i>Minor</i>	13.11 %
<i>Major</i>	8.20 %
<i>Minimal</i>	68.85 %
No	97.29 %

*For 162 cases, the information on Bleeding Complications are Missing

National Cardiovascular Disease Database (NCVD)

In Hospital Outcome

Baseline (n=8,236)

Outcome	
Alive	98.14 %
Death	1.03 %
Transferred to other centre	0.04 %
Missing	0.79 %

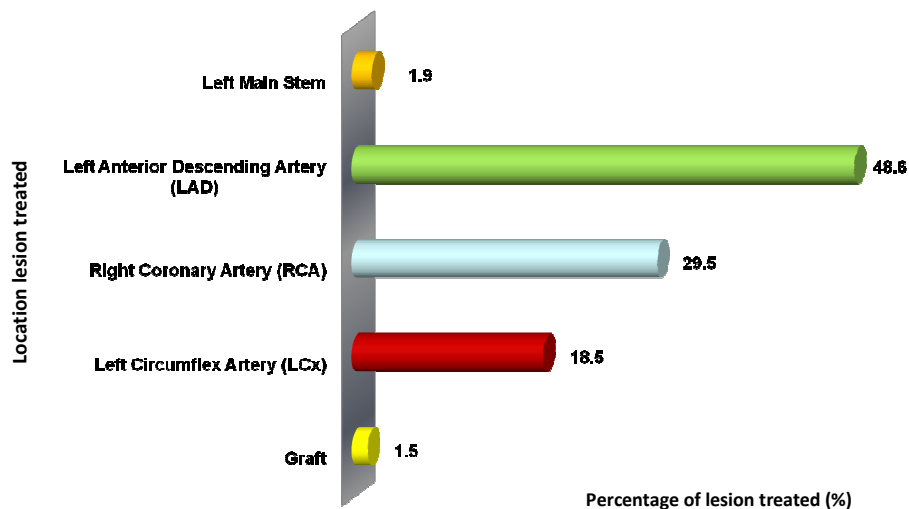
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In Hospital Outcome

Cause of Death (n=85)	
Cardiac	88.24 %
Vascular	4.71 %
Renal	1.18 %
Pulmonary	1.18 %
Missing	2.35 %
Location	
In lab	5.88 %
Out of lab	90.59 %

National Cardiovascular Disease Database (NCVD)

Summary of location lesion treated, NCVD-PCI Registry
as of 9th April 2009 (N=11,168)



*There is missing information for 340 lesions treated
** Based on real-time data in NCVD-PCI Registry

Left Main Stem PCI & Outcomes (n=210)

Outcome	In-hospital (%)	30 days FU (%)
<i>Alive</i>	94.8	34.8
<i>Death</i>	5.2	-
<i>Follow Up Not Available</i>	-	65.2

National Cardiovascular Disease Database (NCVD)

Acute Coronary Syndrome (ACS) & Outcome

Acute Coronary Syndrome	Total Procedure	
	n	%
ACS	2039	24.8
<i>STEMI</i>	<i>916</i>	<i>44.9</i>
<i>NSTEMI</i>	<i>669</i>	<i>32.8</i>
<i>UA</i>	<i>405</i>	<i>19.9</i>
<i>Missing</i>	<i>49</i>	<i>2.41</i>
Stable CAD	6080	73.8
Missing	117	1.42
Total	8236	100

National Cardiovascular Disease Database (NCVD)

Acute Coronary Syndrome & Outcome

ACS stratum	Outcome at discharge (%) (N=8,236)			Outcome at 30 days FU (%) (N=8,123)		
	Alive	Death	Missing	Alive	Death	Lost to FU
ACS	23.9	0.7	0.15	10.9	0.15	13.4
Stable	73.0	0.2	0.5	29.1	0.15	45.0
Missing	1.3	0.04	0.21	0.7	0	0.6

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Follow Up Outcome

Outcome	At Discharge	At 30 Days	At 6 months
Alive	98.14 %	96.54 %	96.06 %
Death	0.69 %	0.69 %	0.41 %
Transferred	1.04 %	0.06 %	0.06 %
Lost to FU	-	2.71 %	3.47 %
Missing	0.78 %	-	-

Total 30 Days FU done = 3,470 as of 9th April 2009

Total 6 months FU done = 1,700 as of 9th April 2009

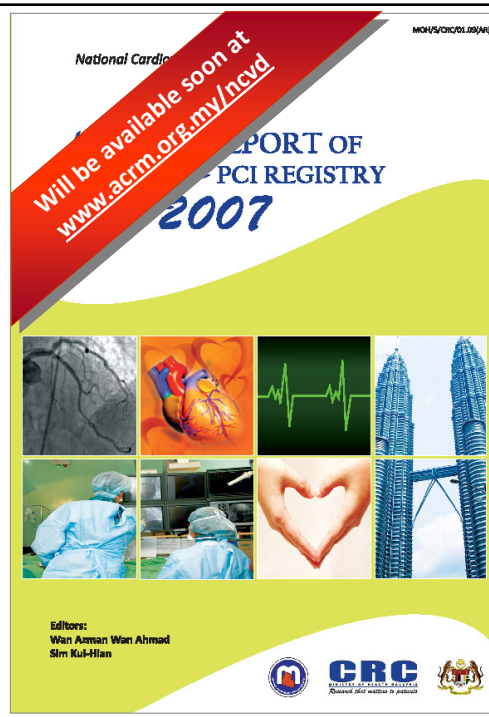
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Follow Up Outcome

Follow Up Duration	At 30 Days (n=244)	At 6 months (n=114)
Readmission	7.03 %	6.71 %
Readmission Reason		
CHF	1.64 %	2.63 %
Recurrent Angina	11.07 %	7.89 %
PCI – planned	56.97 %	42.11 %
PCI – unplanned	2.87 %	6.14 %
AMI	1.64 %	4.39 %
CABG	0.82 %	2.63 %
Others	14.75 %	27.19 %
Missing	9.84 %	4.39 %

National Cardiovascular Disease Database (NCVD)

Inaugural Annual Report of the NCVD-PCI Registry 2007



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THANK YOU

Prepared by:
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