



The Prince Charles Hospital



Queensland  
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Queensland Health

# The Prince Charles Hospital Cardiac Catheterisation Laboratory Annual Report 1st July 2014 - 30th June 2015



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Cardiac Catheterisation Laboratory

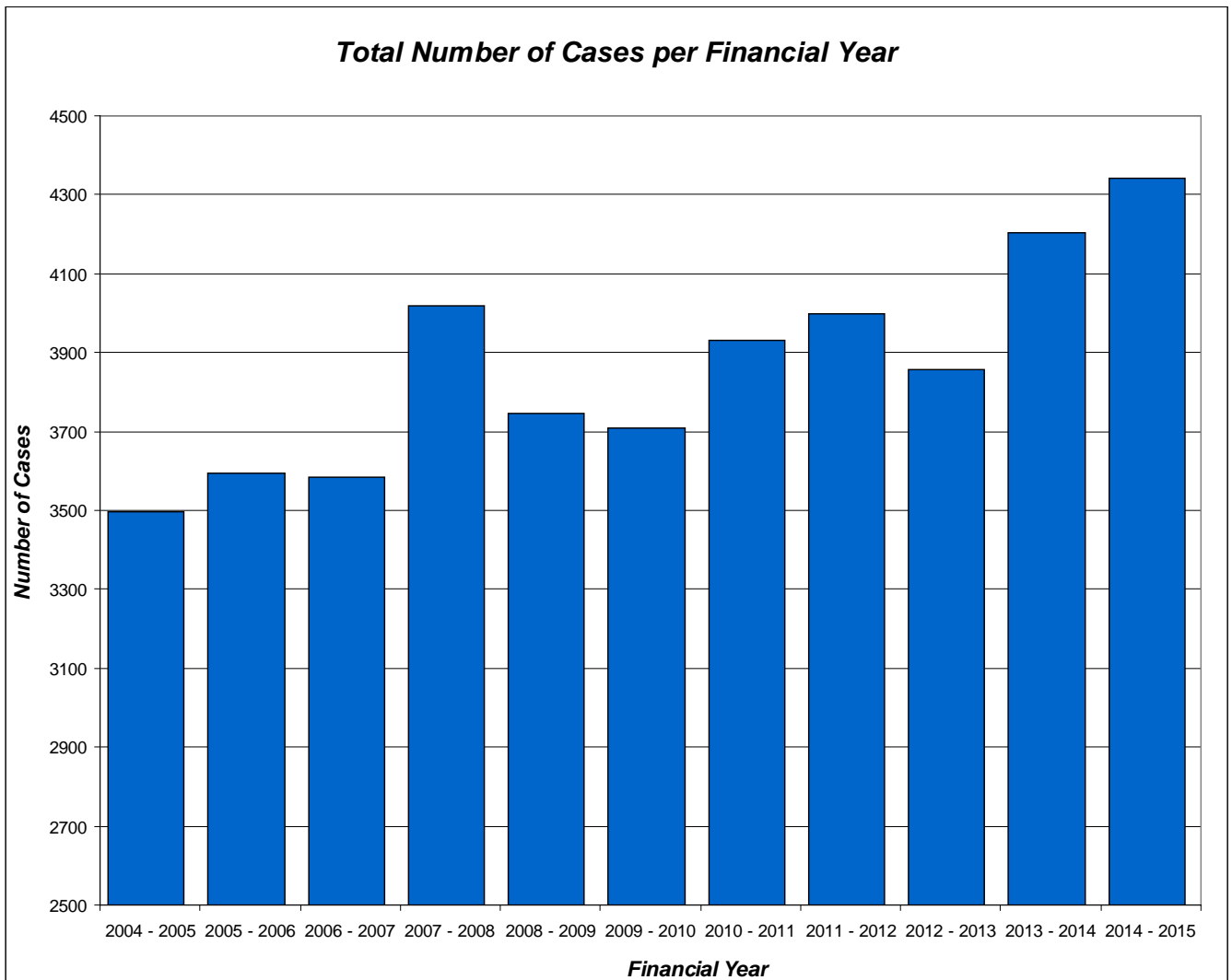
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# Clinical Year Report 2014 – 2015

## Total Number of Cases – Financial Year

Financial Year	Total Number of CCL Cases
2004 – 2005	3,495
2005 – 2006	3,595
2006 – 2007	3,585
2007 – 2008	4,020
2008 – 2009	3,747
2009 – 2010	3,708
2010 – 2011	3,931
2011 – 2012	4,000
2012 – 2013	3,857
2013 – 2014	4,204
2014 – 2015	4,343



**Patient Demographics**

**Total = 4,343**

**Adults (≥15 y.o.)**

**Total = 4,343 (100.0%)**

*Patients Average Age: 66.1 ± 13.5 (mean ± standard deviation)*

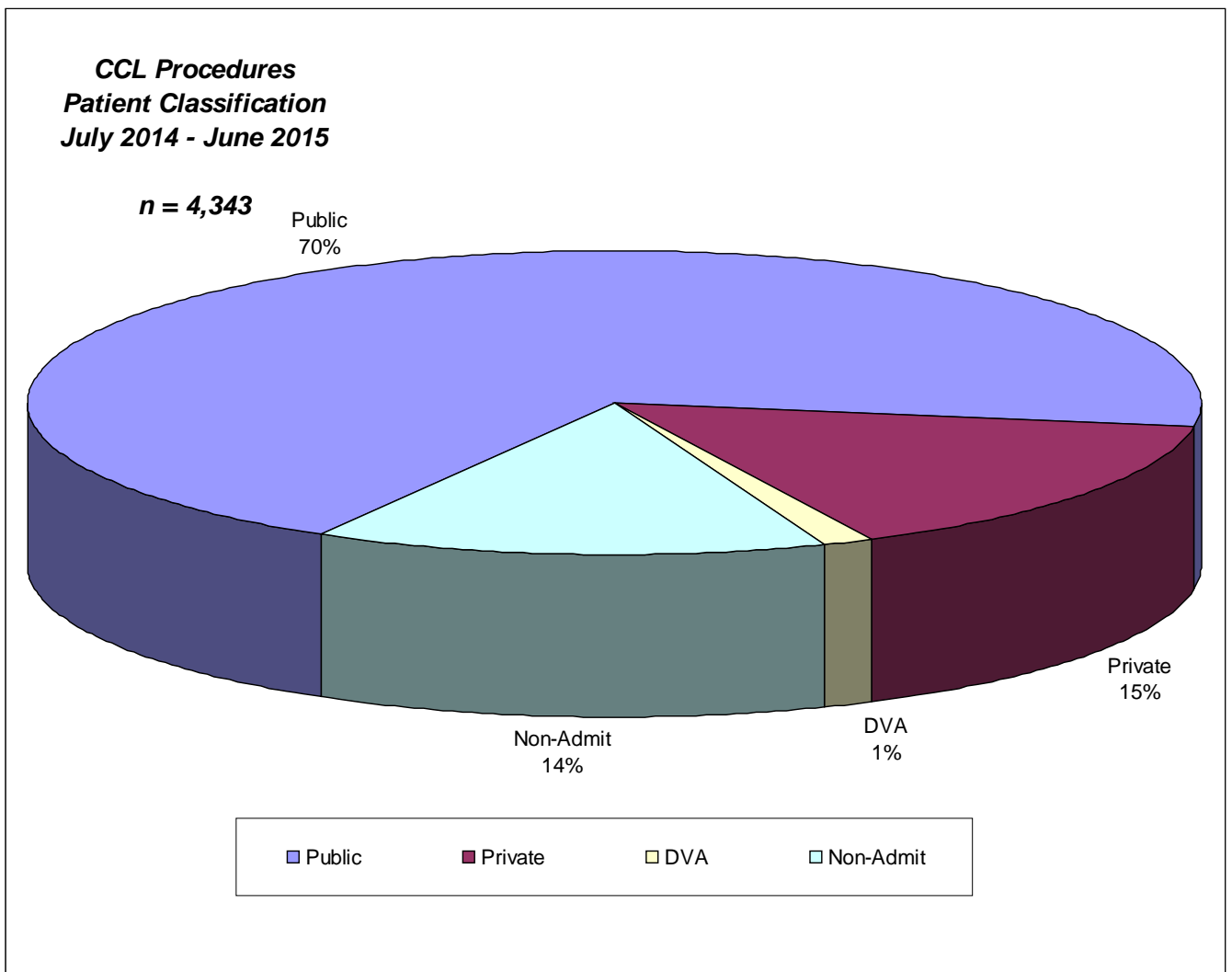
Female: **1,505 (35.1%)**

Average Age: **67.2 ± 14.1**

Male: **2,838 (64.9%)**

Average Age: **65.5 ± 13.1**

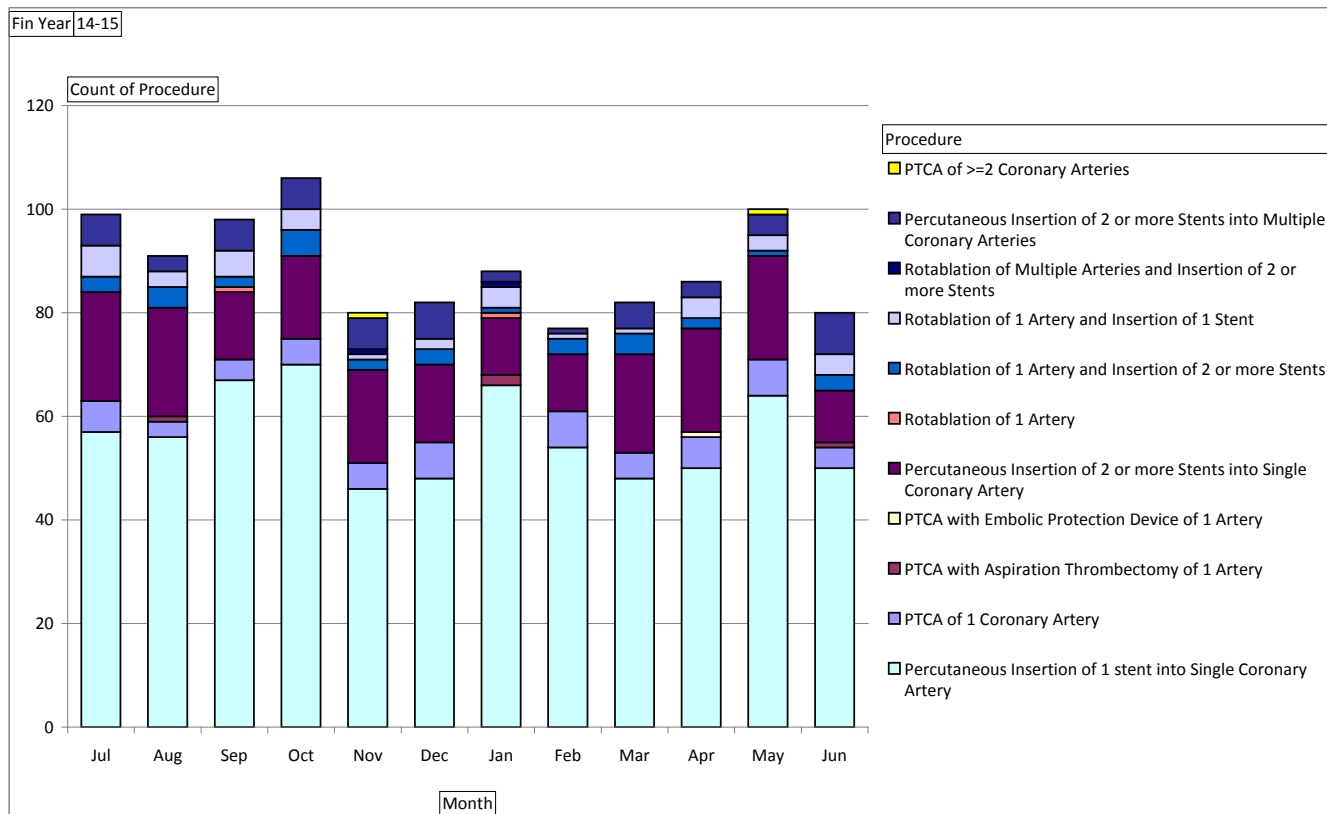
<b><i>Patient Classification</i></b>	<b>Public</b>	<b>Private</b>	<b>DVA</b>	<b>Non-Admit</b>	<b>TOTAL</b>
<b>Patients Operated on in CCL</b>	3,005	665	52	621	<b>4,343</b>



## Total CCL Procedures Performed – Adults

PROCEDURES (ADULTS)	FINANCIAL YEAR (JULY 2014 - JUNE 2015)					FINANCIAL YEAR (JULY 2013 - JUNE 2014)				
	PUBLIC	PRIV.	DVA	NON-ADMIT	TOTAL	PUBLIC	PRIV.	DVA	NON-ADMIT	TOTAL
Coronary Angiography	2587	516	34	606	3743	2573	473	46	538	3,630
Device Closures	ASD	11	1		12	15	2			17
	LAA	4	4		8	7	3			10
	PDA	2			2	3				3
	PFO	12	1		13	8	2			10
	VSD	2			2					
Paravalvular Leak Closure	2				2	5	2			7
Percutaneous Valve	47	35	8		90	39	23	8		70
Mitraclip	8	10	1		19	6	7			13
Device Total	84	49	8		141	83	39	8		130
Dilatation / Stenting	Aorta									
	Pulmonary					2	1			3
	Renal	3	1			4	2			2
	Subclavian					1	1			2
	Vena Cava	2				2	1	1		2
Embolisation	Aorta		2		2					
	Bronchial									
	Pulmonary						1			1
	Subclavian		1		1					
Graft Study	324	35	4	48	411	300	43	6	37	386
IABP	52	7	1		60	43	3	1		47
ICE	21	4			25	20	6			26
IVC Filter						3	2			5
IVUS	52	15		4	71	68	13		3	84
FFR	239	38	1	5	283	191	30	2	15	238
OCT	40	6		1	47	48	7	1	4	60
PCI +/- Stents	No Stents	58	7	1	66	62	11	1		74
	Single Vessel	729	134	8	871	644	116	10		770
	Multi Vessels	50	9		59	48	8			56
	Rotablation	63	11	1	75	73	12	3		88
Total Angioplasty	899	160	10		1069	822	146	14		982
Pericardiocentesis	18	5	2		25	17	1			18
Renal Denervation	1	2			3	11	6			17
Right Heart Catheter	265	96	13	57	431	228	73	9	50	360
RV Biopsy	16	16		5	37	19	6	1	20	46
Septal Ablation (TASH)	3				3	5			1	6
Temporary Pacing	197	76	19		292	159	50	20	1	230
Transoesophageal Echo	70	42	7		119	56	31	7		94
Valve / Lead Screening	17	1		1	19	13		4		17
Valvuloplasty	Aortic	133	63	19	215	105	43	20		168
	Mitral	9	1		10	6	1			7
	Pulmonary	3			3	1				1
	Tricuspid									
<b>TOTAL PATIENTS</b>	<b>3,005</b>	<b>665</b>	<b>52</b>	<b>621</b>	<b>4,343</b>	<b>2,976</b>	<b>589</b>	<b>71</b>	<b>568</b>	<b>4,204</b>

## Percutaneous Coronary Intervention



## Angioplasty Nursing Service – Episodes of Care

ANGIOPLASTY NURSING SERVICE	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total	
<b>Occasions of Inpatient Care</b>	<b>99</b>	<b>91</b>	<b>98</b>	<b>106</b>	<b>80</b>	<b>82</b>	<b>88</b>	<b>77</b>	<b>82</b>	<b>86</b>	<b>100</b>	<b>80</b>	<b>1,069</b>	
<b>Outpatient Follow Up – Episodes of Care</b>	<b>7 day</b>	77	63	77	73	53	57	50	64	57	51	71	69	<b>762</b>
	<b>1 month</b>	84	3	106	17	56	215	76	92	104	40	28	57	<b>878</b>
	<b>12 month</b>				29		1						1	<b>31</b>
	<b>Unknown</b>	1						1				6		<b>8</b>
	<b>TOTAL CARE</b>	<b>162</b>	<b>66</b>	<b>183</b>	<b>119</b>	<b>109</b>	<b>273</b>	<b>127</b>	<b>156</b>	<b>161</b>	<b>91</b>	<b>105</b>	<b>127</b>	<b>1679</b>

# Primary PCI for STEMI

**Total: 145**

Patients Average Age: **62.0 ± 11.5** (mean ± standard deviation)

Female: **35 (27.3%)**

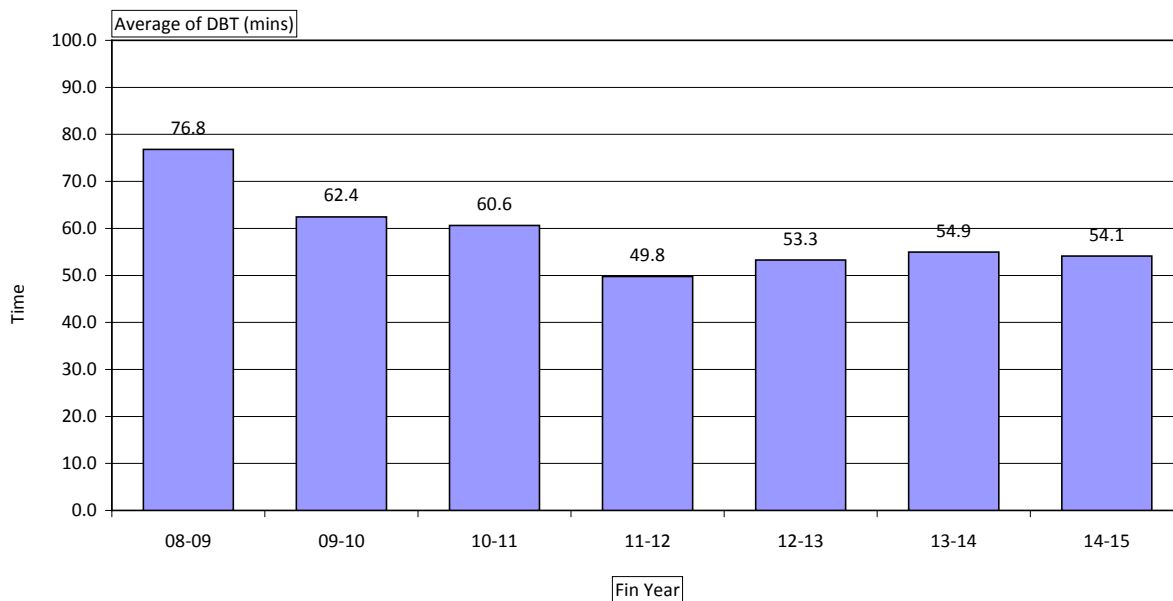
Average Age: **64.5 ± 13.2**

Male: **110 (72.7%)**

Average Age: **61.2 ± 10.8**

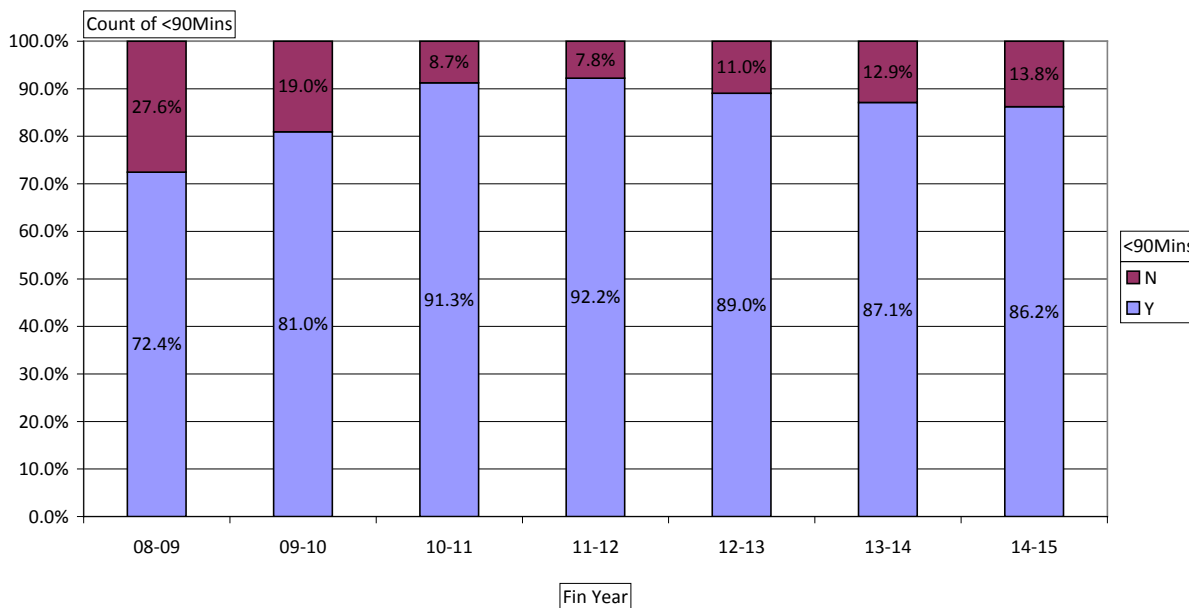
Include for Reporting  Y

Average Door to Balloon Times



Include for Reporting  Y

% Cases within 90mins



## Interhospital Transfers

Total = **1243 (28.6%)**

### Interhospital Transfers

From 01/07/2014 to 30/06/2015

**Total Identified : 2285**

**Procedure performed (excl.Cancelled after) 2199**

inc. NOT Transferred 956

inc. Transferred 1243

Status: ED Admission 731

Status: InterHospital Transfer 1243

Status: QAS Primary PCI STEMI 93

Status: Outpatient 104

Status: ER- Primary PCI STEMI 12

Status: Emergency to CCL 15

Status: <Unknown> 1

**Transferred (excl.Cancelled after) 1243**

inc. Procedure performed 1243

Status: InterHospital Transfer 1151

Status: ED Admission 34

Status: QAS Primary PCI STEMI 54

Status: Outpatient 1

Status: Emergency to CCL 3

**Discharged (excl.Cancelled after) 0**

**Removed from the list (Cancelled) 86**

inc. Procedure performed 28

inc. Procedure NOT performed 58

Status: InterHospital Transfer 71

Status: ED Admission 11

Status: <Unknown> 2

Status: Outpatient 2

inc. NOT Discharged 86

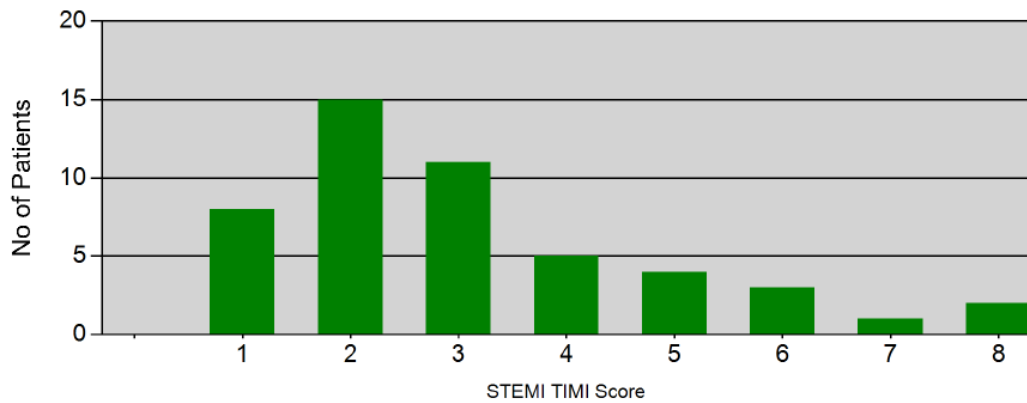
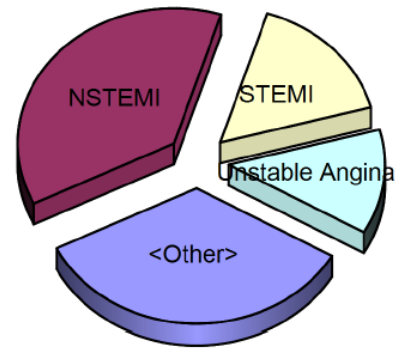
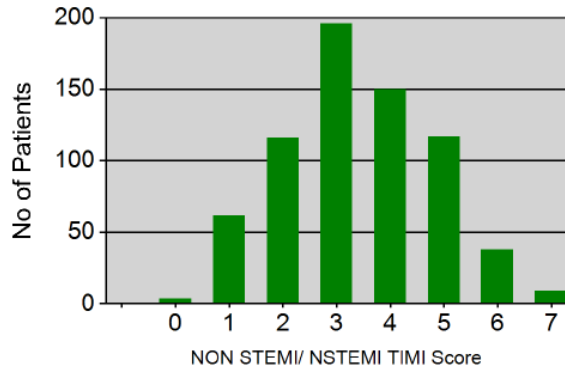
Genda / Age of Referrals:	#	%	AVG years	StDeviation
All	2285	100%	65.6	+/- 14.4
Male	1486	65%	65.0	+/- 14.0
Female	795	34.8%	66.8	+/- 15.1
Unknown	4	0.2%		

Waiting:	#	%	AVG days	StDeviation
...for Transfer	1301	57%	1.4	+/- 2.5
...for Procedure	2227	97%	2.6	+/- 4.2



## Interhospital Transfers continued

ACS Types Identified:	2285	100%
Unstable Angina	286	12.5%
STEMI	364	15.9%
NSTEMI	850	37.2%
<Other>	785	34.4%



Diagnosis Identified:	2285	100%
NSTEMI	859	37.6%
STEMI	361	15.8%
Unstable Angina	287	12.6%
Arrhythmia	141	6.2%
IHD-Other	117	5.1%
Valvular Heart Disease	106	4.6%
Heart Failure	84	3.7%
Cardiomyopathy	63	2.8%
Infected Cardiac Device	36	1.6%

Pericardial Effusion/tamponade	34	1.5%
Positive Stress Test	28	1.2%
Endocarditis	28	1.2%
Stable Angina	26	1.1%
CHB	26	1.1%
Aortic Stenosis	18	0.8%
Out of Hospital Arrest	12	0.5%
ICD/PPM Failure	10	0.4%
Cardiac Arrest	6	0.3%
Myocarditis	6	0.3%
<Unknown>	6	0.3%
Congenital Heart Disease	6	0.3%
Suspected Rejection	4	0.2%
Pericarditis	4	0.2%
Aortic Dissection	3	0.1%
PE's	3	0.1%
Pulmonary Embolus/DVT	2	0.1%
STEMI Failed Lysis	2	0.1%
Thrombus	2	0.1%
NSVT	1	0%
Pulmonary Stenosis	1	0%
Atrial Myxoma	1	0%
LMD IABP	1	0%
Chest Pain for Investigation	1	0%

<b>Reason of Removal from the list (Cancellation):</b>	<b>86</b>	<b>100%</b>
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No longer indicated	26	30.2%
Transfer to private health facility	12	14%
Medically unfit for procedure	10	11.6%
PT SELF DISCHARGED	7	8.1%
Transfer to other Q Health Facility	7	8.1%
Discharged home. For OPD angio appt	5	5.8%
For medical management	5	5.8%
Patient declined procedure	3	3.5%
Referred to EP dept	3	3.5%
Patient deceased	2	2.3%
Pt discharged. For OPD angio	2	2.3%

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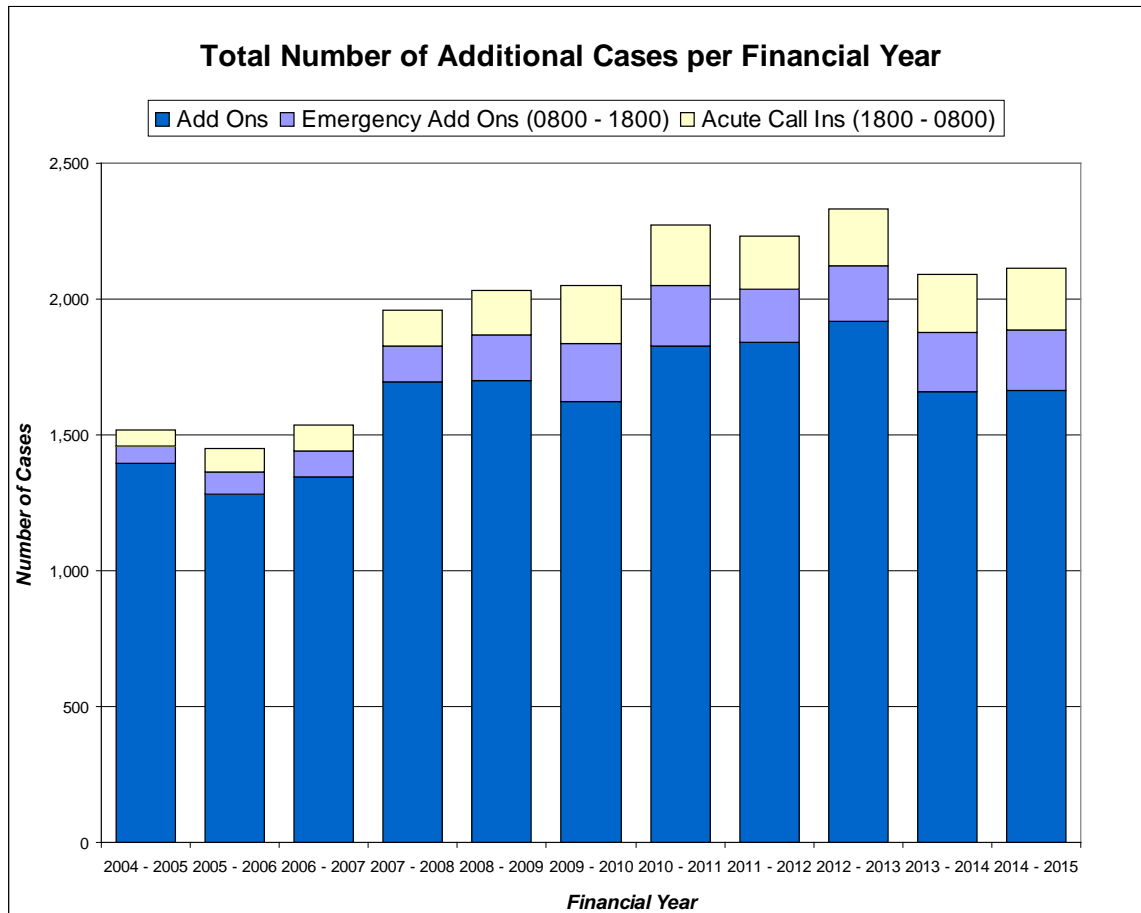
OPD angio	1	1.2%
<Unknown reason>	1	1.2%
Accepted for transfer to RBWH	1	1.2%
Surgical referral	1	1.2%

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## Additional Cases

**Total = 2,079 (47.9%)**

Additional Cases	Financial Year (2014 - 2015)	Financial Year (2013 - 2014)
Add-ons	1,658	1,661
Emergency Add-ons (0800-1800)	164	195
Acute Call-ins (1800-0800)	229	216
<b>Total</b>	<b>2,079</b>	<b>2,072</b>

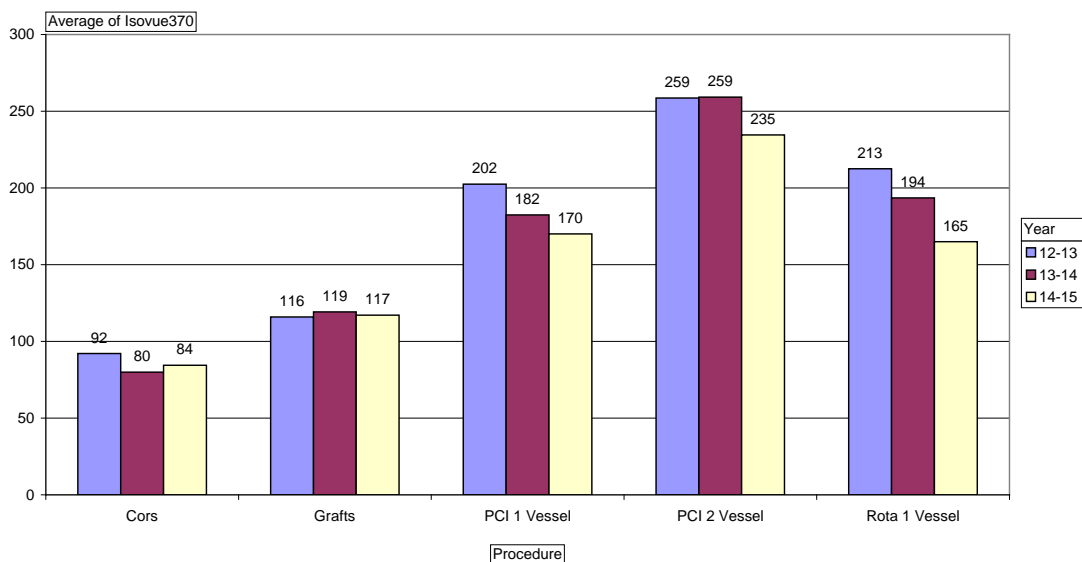


# Radiation Dosages per Case

Procedure	Contrast (mL)		Dose Area Product (uGym2)		Entrance Dose (mGy)		Fluoroscopy Time (mins)	
	Median	Avg	Median	Avg	Median	Avg	Median	Avg
	Selective Coronary Angiography	75	84	4050	4899	650	779	4.9
Graft Study	112	117	7326	7828	1068	1173	10.5	11.9
PCI and stenting of Single Vessel	170	170	8952	10056	1748	1953	13.4	15.6
Percutaneous Insertion of 2 or more Stents into Multiple Coronary Arteries	230	235	15340	15260	2847	3067	22.0	24.6
Rotablation of 1 Artery and Insertion of 1 Stent	155	165	11830	12973	2251	2407	26.3	28.0

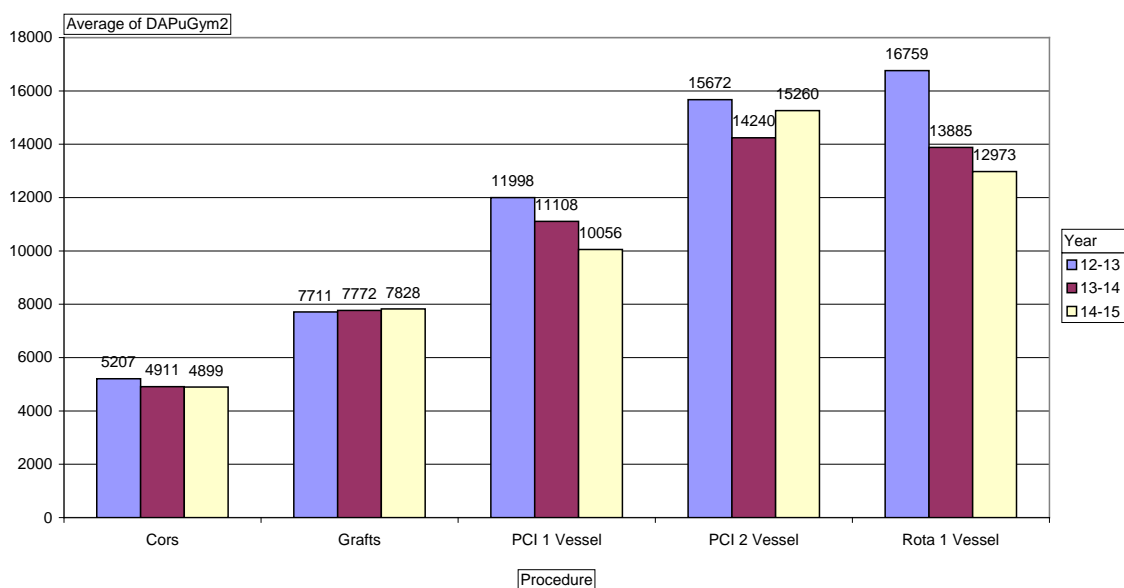
Qtr(All)

Contrast Usage (mL)



Qtr(All)

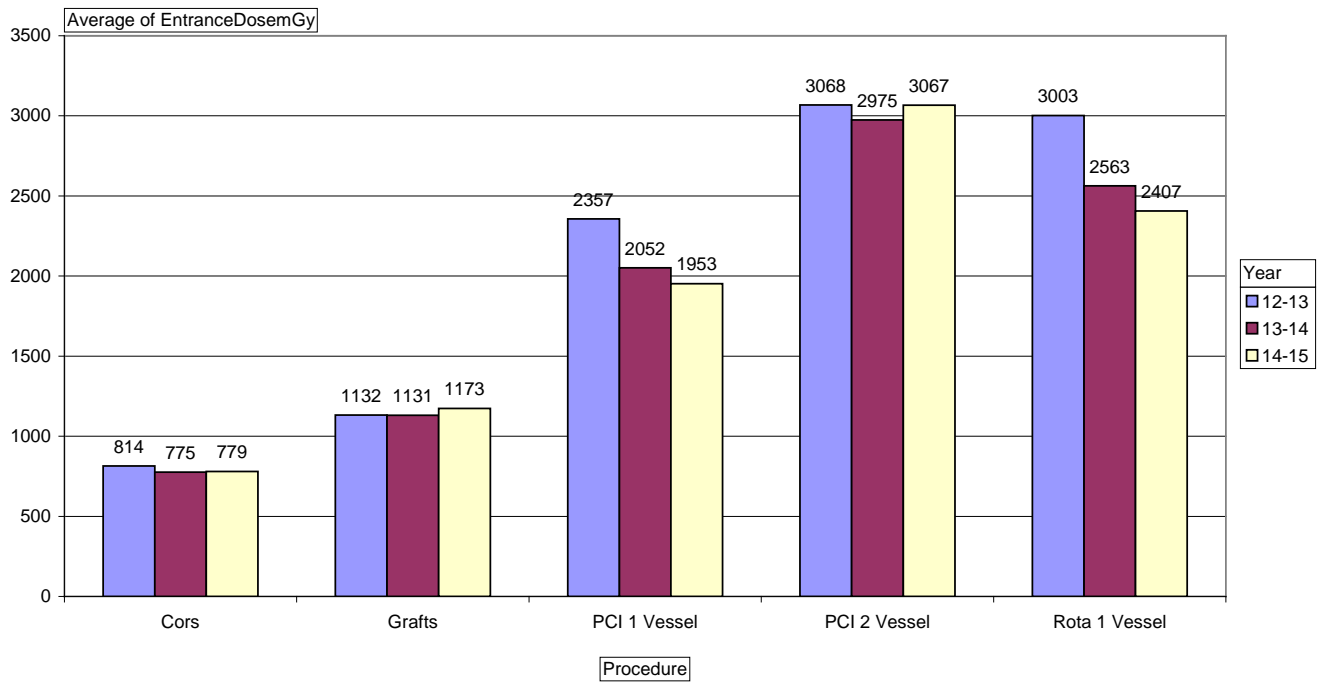
Dose Area Product (uGym2)



# Radiation Continued

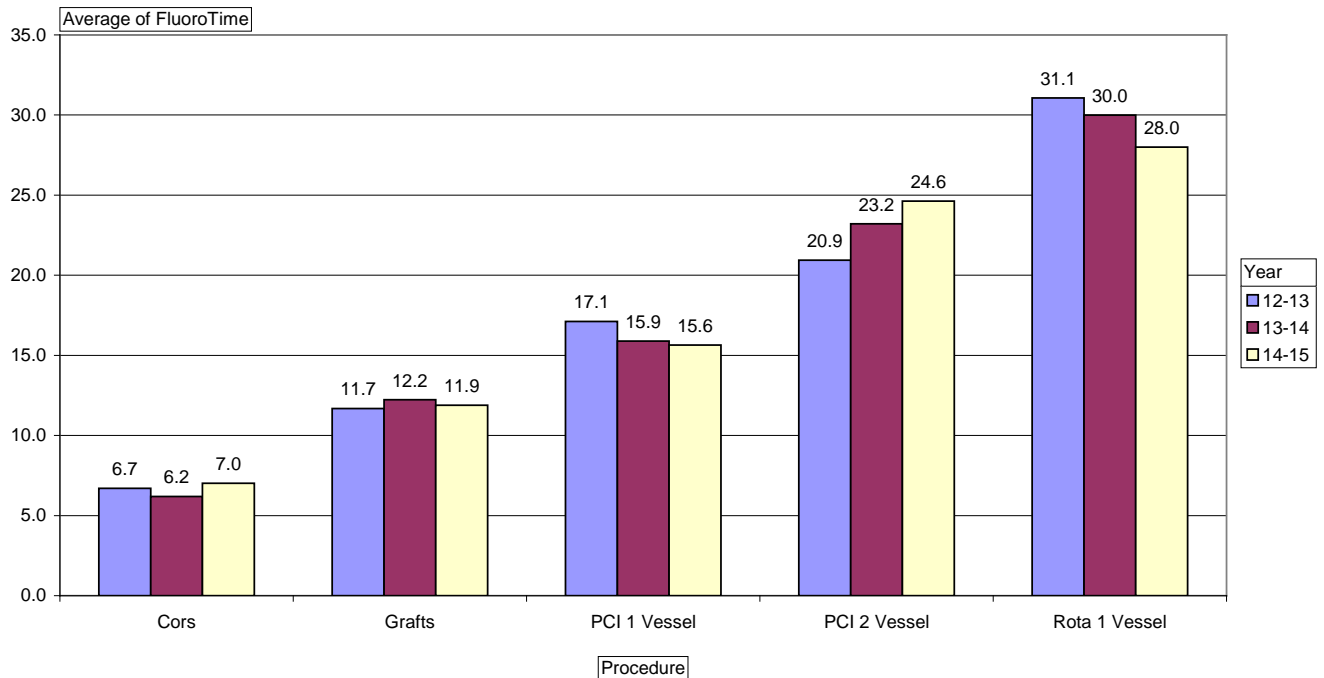
Qtr (All)

## Entrance Dose (uGy)



Qtr (All)

## Fluoro Time (mins)



## Complications

**Total = 222 (5.11%)**

**MACE = 10 (0.23%)**

COMPLICATIONS	REPORTABLE ADVERSE EVENTS (Financial Year 2014 - 2015)							
	1 <sup>st</sup> QTR	2 <sup>nd</sup> QTR	3 <sup>rd</sup> QTR	4 <sup>th</sup> QTR	TOTAL	% of Comp.	% of Cases	Financial Year (2013 - 14)
Access Site Occlusion		1		1	2	0.90%	0.05%	
Acute Respiratory Failure	1	3		1	5	2.25%	0.12%	
Anaphylactic/Allergic Reaction	1	3	1	2	7	3.15%	0.16%	6
Asystole	4	1	2	2	9	4.05%	0.21%	3
Atrial Fibrillation	1	1	2	2	6	2.70%	0.14%	5
Cardiogenic Shock	2				2	0.90%	0.05%	2
Dissection Coronary Artery	7	5	4	1	17	7.66%	0.39%	12
Emergency PCI	1				1	0.45%	0.02%	
Haematoma >5cm x 5cm	5	9	3	5	22	9.91%	0.51%	29
Heart Block	6	7	3	5	21	9.46%	0.48%	13
Hypotension	5	3	4	4	16	7.21%	0.37%	4
Other						0.00%	0.00%	2
Perforation of Artery or Vessel	1	1			2	0.90%	0.05%	4
Pseudoaneurysm		1			1	0.45%	0.02%	
Pulmonary Oedema	1	3		1	5	2.25%	0.12%	1
Radiation Reportable Dose	9	9	13	10	41	18.47%	0.94%	46
Retroperitoneal Bleeding		1		1	2	0.90%	0.05%	
Stroke			1	1	2	0.90%	0.05%	2
Sustained Bradycardia						0.00%	0.00%	1
Tamponade	2			1	3	1.35%	0.07%	1
Transient Ischaemic Attack	1			1	2	0.90%	0.05%	
Unplanned Return to CCL			1		1	0.45%	0.02%	
Vascular Injury	2	2		1	5	2.25%	0.12%	8
Vaso-Vagal	3	1	7	2	13	5.86%	0.30%	11
Ventricular Fibrillation	7	2	5	3	17	7.66%	0.39%	11
Ventricular Tachycardia	6	2	1	5	14	6.31%	0.32%	9
Vomiting	3	1		2	6	2.70%	0.14%	
<b>TOTAL</b>	<b>68</b>	<b>56</b>	<b>47</b>	<b>51</b>	<b>222</b>	<b>100.00%</b>	<b>5.11%</b>	<b>138</b>

<b>MACE = Major Adverse Cardiac Event (Death, MI, Stroke, Urgent Revascularisation)</b>	<b>10</b>	-	0.23%	<b>10</b>
<b>Total Mortality in the Laboratory</b>	<b>3</b>	-	0.07%	<b>2</b>
<b>Complication Associated Mortality</b>	<b>3</b>	-	0.07%	<b>1</b>
<b>30 Day All Cause Mortality</b>	<b>57</b>	-	1.31%	<b>33</b>
<b>30 Day Post PCI Mortality</b>	<b>7</b>	-	0.16%	-

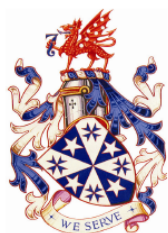
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**Ass Prof Darren Walters**  
**Clinical Director**  
**Cardiac Catheterisation Laboratory**  
Date:

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**Michael Savage**  
**Consultant Cardiac Scientist**  
**Cardiac Catheterisation Laboratory**  
Date:

## APPENDIX C - PCI REPORT (JULY 2014- JUNE 2015)



# THE PRINCE CHARLES HOSPITAL CARDIAC CATHETER LABORATORY



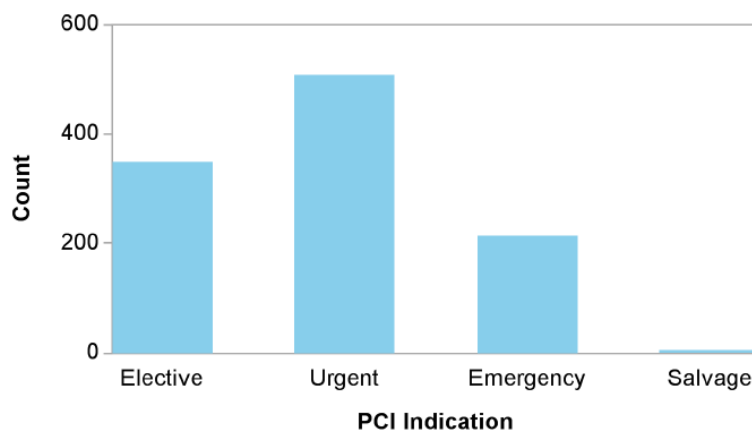
## PCI Procedure Report

1/07/2014 - 30/06/2015

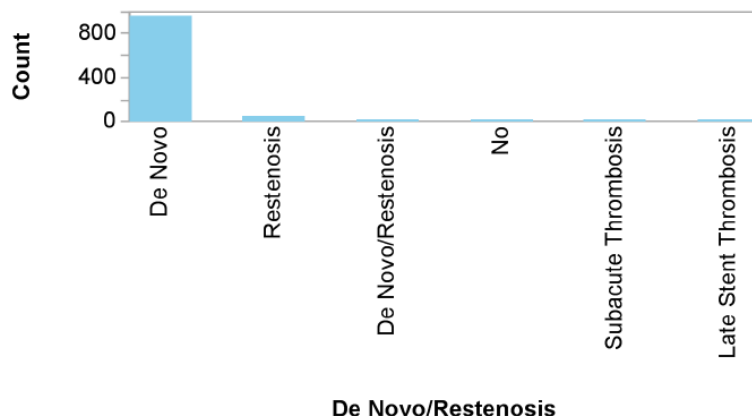
Patient Age			
Male	799	74.74 %	Av 64 +/- 12
Female	270	25.26 %	Av 67 +/- 13
	<b>1069</b>	<b>100%</b>	<b>Av 65 +/- 12</b>

PCI Status	Number of Cases	%
Elective	350	32.74 %
Emergency	212	19.83 %
Salvage	1	0.09 %
Urgent	506	47.33 %
	<b>1069</b>	<b>100%</b>

### Indications

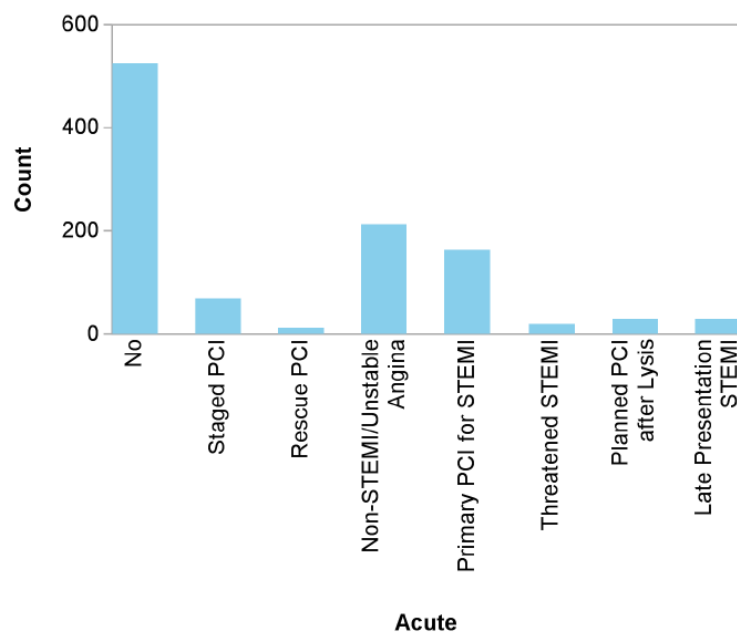


De Novo/Restenosis	Number of Cases	%
De Novo	970	90.74 %
De Novo/Restenosis	26	2.43 %
Late Stent Thrombosis	1	0.09 %
No	8	0.75 %
Restenosis	58	5.43 %
Subacute Thrombosis	6	0.56 %
	<b>1069</b>	<b>100%</b>





Acute	Number of Cases	%
Late Presentation STEMI	29	2.71 %
No	525	49.11 %
Non-STEMI/Unstable Angina	215	20.11 %
Planned PCI after Lysis	29	2.71 %
Primary PCI for STEMI	164	15.34 %
Rescue PCI	15	1.40 %
Staged PCI	70	6.55 %
Threatened STEMI	22	2.06 %
	<b>1069</b>	<b>100%</b>



Cardiac Indications	Number of Indications	% of total cases
Angina.	69	6.45 %
Cardiogenic Shock.	5	0.47 %
Chest pain.	594	55.57 %
Exertional dyspnoea.	153	14.31 %
Known coronary artery disease.	304	28.44 %
NSTEMI.	265	24.79 %
Out of hospital arrest.	10	0.94 %
Positive CT Coronary Angiogram.	57	5.33 %
Positive EST.	42	3.93 %
Positive stress echo.	25	2.34 %
Previous MI	76	7.11 %
STEMI.	203	18.99 %
Stable angina.	4	0.37 %
Thrombolysed STEMI.	40	3.74 %
Unstable angina.	28	2.62 %
	<b>1875</b>	

Risk Factors	Number of Factors	% of total cases
Anxiety	82	7.67 %
Cerebrovascular Disease	76	7.11 %
CHF	48	4.49 %
Chronic Lung Disease	165	15.43 %
Current smoker	249	23.29 %
Depression	110	10.29 %
Diabetes	318	29.75 %
Dyslipidemia	689	64.45 %
Family History	411	38.45 %
Hypertension	736	68.85 %
Obesity	434	40.60 %
Renal Failure	100	9.35 %
	<b>3418</b>	

Lesions Risk	Number	% of total cases
Type A Lesion	80	7.48 %
Type B1 Lesion	404	37.79 %
Type B2 Lesion	193	18.05 %
Type C Lesion	614	57.44 %
	<b>1291</b>	

Approach	Number	% of total cases
Brachial	1	0.09 %
Femoral	505	47.24 %
Other	1	0.09 %
Radial	562	52.57 %
	<b>1069</b>	<b>100%</b>

Complications	Number	% of total cases
Asystole	1	0.09 %
Heart Block	1	0.09 %
Pulmonary Oedema	1	0.09 %
	<b>3</b>	

### Previous Procedures

Previous Procedures	Number	% of total cases
Previous CABG	141	13.19 %
Previous PCI	266	24.88 %
Previous valvular surgery	16	1.50 %
	<b>423</b>	

Stent Type	Number	%
Drug Eluting Stent	1148	81.42 %
Bare Metal Stent	260	18.44 %
Covered Stent	2	0.14 %
	<b>1410</b>	<b>100%</b>

### Technical Data and Lesion Characteristics

Guide Size	Number	%	Balloon Size	Number	%
Null	4	0.28 %	Null	2	0.06 %
5	8	0.55 %	1.00	2	0.06 %
6	1143	78.88 %	1.10	2	0.06 %
6.5	8	0.55 %	1.20	1	0.03 %
7	227	15.67 %	1.25	57	1.61 %
7.5	20	1.38 %	1.50	103	2.92 %
8	39	2.69 %	2.00	541	15.31 %
	<b>1449</b>	<b>100%</b>	2.25	20	0.57 %
			2.50	1067	30.20 %
			2.75	163	4.61 %
			3.00	588	16.64 %
			3.25	157	4.44 %
			3.50	432	12.23 %
			3.75	97	2.75 %
			4.00	194	5.49 %
			4.50	72	2.04 %
			5.00	30	0.85 %
			5.50	2	0.06 %
			6.00	3	0.08 %
				<b>3533</b>	<b>100%</b>

### Technical Data and Lesion Characteristics

Stent Width	Number	%	Stent Length	Number	%
2.00	1	0.07 %	8	21	1.49 %
2.25	110	7.80 %	9	3	0.21 %
2.50	323	22.91 %	11	3	0.21 %
2.75	148	10.50 %	12	94	6.67 %
3.00	395	28.01 %	13	2	0.14 %
3.25	15	1.06 %	14	8	0.57 %
3.50	289	20.50 %	15	187	13.26 %
4.00	119	8.44 %	16	57	4.04 %
4.50	5	0.35 %	18	226	16.03 %
5.00	5	0.35 %	20	52	3.69 %
	<b>1410</b>	<b>100%</b>	22	37	2.62 %
			23	175	12.41 %
			24	53	3.76 %
			26	44	3.12 %
			28	159	11.28 %
			30	29	2.06 %
			32	18	1.28 %
			33	112	7.94 %
			34	5	0.35 %
			38	125	8.87 %
				<b>1410</b>	<b>100%</b>

## 30 Day Outcomes

Quality of Life	Number	%
Better	926	90.87 %
No Improvement	72	7.07 %
Worse	21	2.06 %
	<b>1019</b>	<b>100%</b>

Cardiac Rehab Attended	Number	%
Attended	324	34.39 %
Not Attended	618	65.61 %
	<b>942</b>	<b>100%</b>

Exercise Compliance	Number	%
No	217	21.61 %
Yes	787	78.39 %
	<b>1004</b>	<b>100%</b>

Angina	Number	%
Class I (Strenuous Activity)	78	7.60 %
Class II (Ordinary Activity)	73	7.12 %
Class III (Marked Limitations)	21	2.05 %
Class IV (At Rest)	83	8.09 %
No Pain	767	74.76 %
Unknown	4	0.39 %
	<b>1026</b>	<b>100%</b>

Access Site	Number	%
Bruising	9	50.00 %
Haematoma	7	38.89 %
Persistent Pain	2	11.11 %
	<b>18</b>	<b>100%</b>

Smoking	Number	%
Recommended Smoking at One Month Post Procedure	32	91.43 %
Referred to Quit Programme	3	8.57 %
	<b>35</b>	<b>100%</b>

Medication Compliance	Number	%
No	5	0.55 %
Yes	907	99.45 %
	<b>912</b>	<b>100%</b>

Adverse Events	Number	%
CVA	5	83.33 %
Death	1	16.67 %
	<b>6</b>	<b>100%</b>