

The Prince Charles Hospital Cardiac Catheterisation Laboratory Annual Report 2015-16



The Prince Charles Hospital

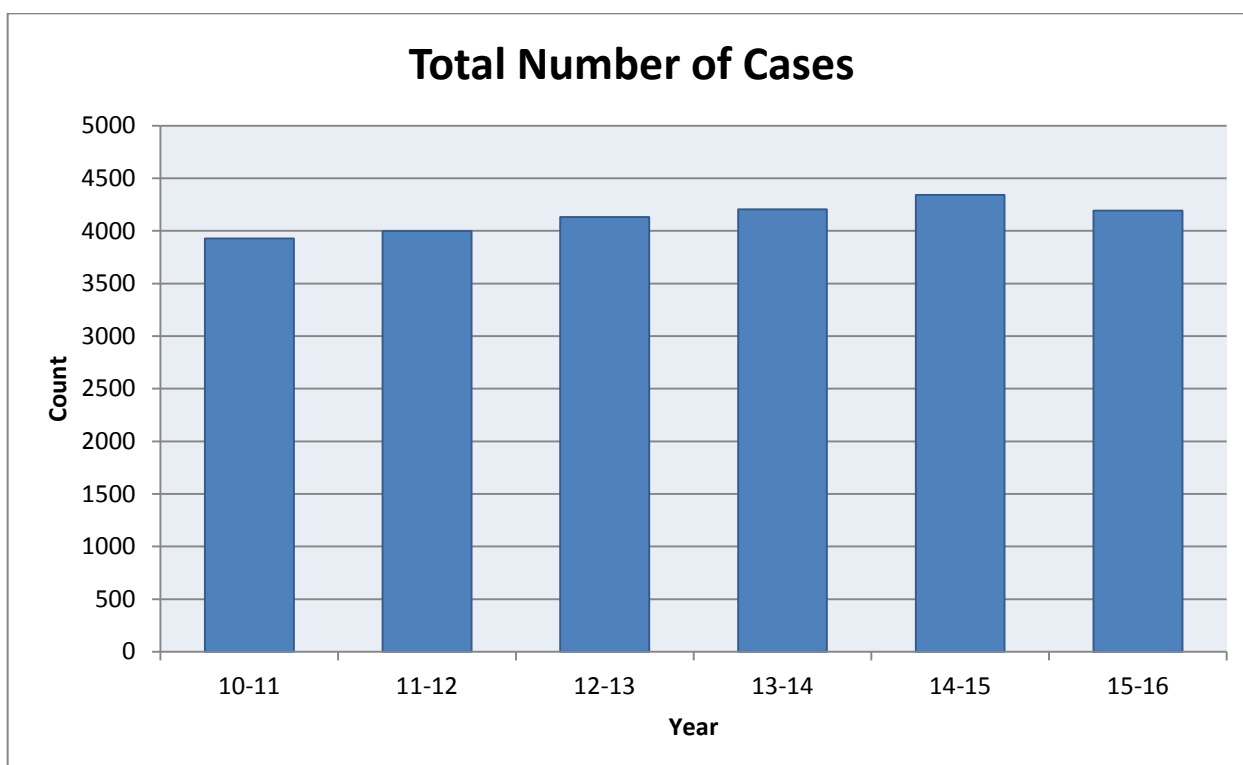
The Prince Charles Hospital
 **Heart and Lung
Institute**

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Procedural Volumes

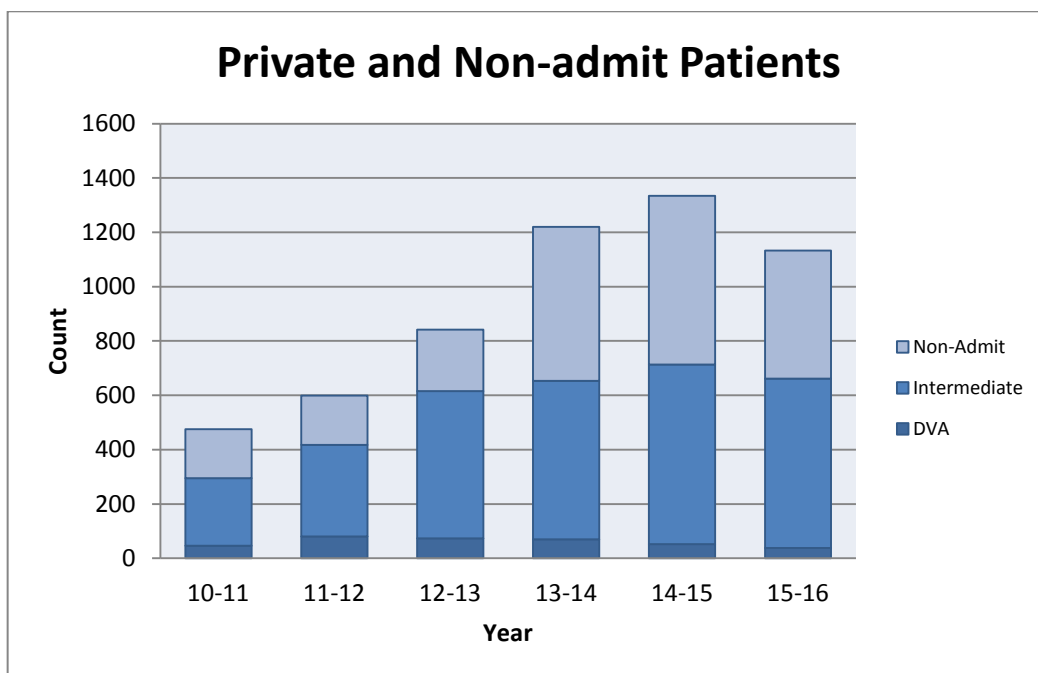
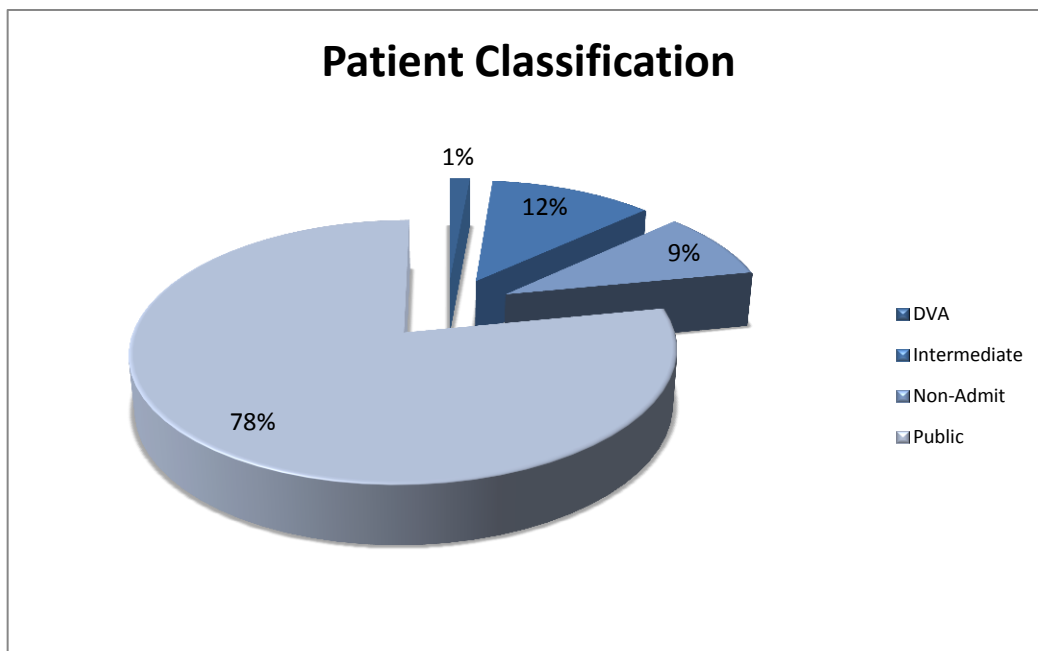
Financial Year	Total of CCL Procedures
2005 – 2006	3595
2006 – 2007	3585
2007 – 2008	4020
2008 – 2009	3747
2009 – 2010	3708
2010 – 2011	3929
2011 – 2012	3999
2012 – 2013	4133
2013 – 2014	4206
2014 – 2015	4343
2015 – 2016	4194



Patient Demographics

Female:	1446 (34.5%)	Average Age:	67.6 ± 14.5	
Male:	2748 (65.5%)	Average Age:	65.2 ± 13.1	
		Average Age:	65.8 ± 13.7	(mean ± SD)

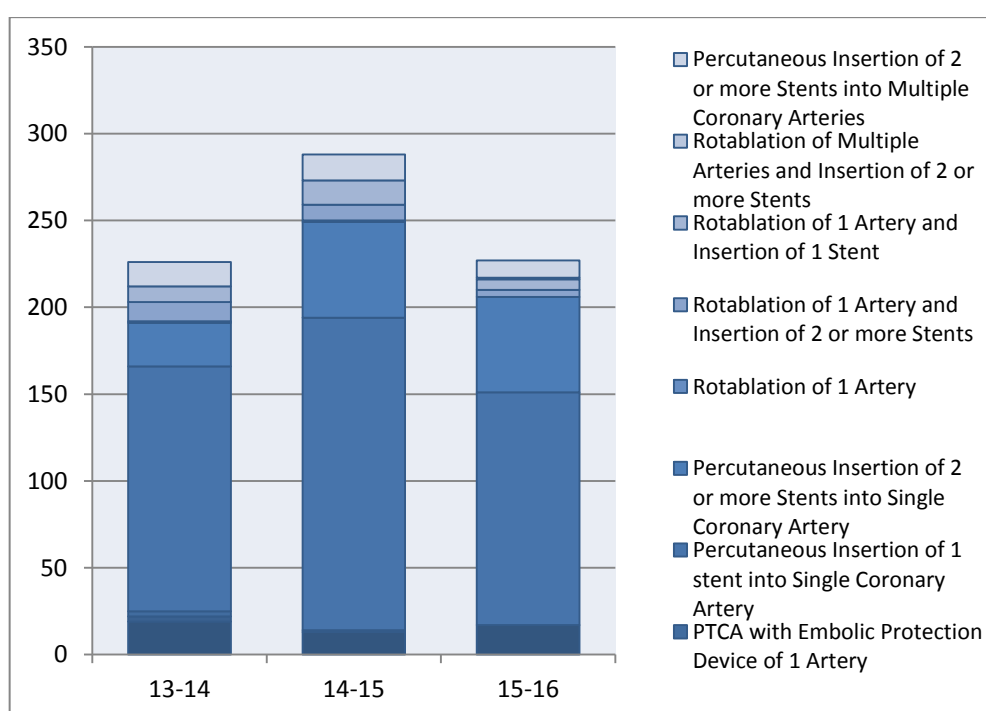
Public	Private	DVA	Non-Admit	Total
3061	624	38	471	4194



Coronary Procedures Performed

Procedure	2014-15			2015-16		
	Public	Private	Total	Public	Private	Total
Coronary Angiography	2587	1156	3743	2606	982	3588
Graft Study	324	87	411	288	66	354
IABP	52	7	59	26	9	35
IVC Filter	3		3			
IVUS	52	19	71	85	9	94
FFR	239	44	283	214	33	247
OCT	40	7	47	33	6	39
PCI +/- Stents						
No Stents	58	8	66	39	8	47
Single Vessel	729	142	871	661	121	782
Multi Vessels	49	8	57	55	6	61
Rotablation	63	12	75	57	10	67
Total PCI +/- Stents	899	170	1069	809	136	954
Pericardiocentesis	18	7	25	23	5	28
Renal Denervation	1	2	3	1		1
Right Heart Catheter	265	166	431	330	158	488
RV Biopsy	16	21	37	36	18	54
Septal Ablation (TASH)	3		3	1		1
Temporary Pacing	197	95	292	173	59	232
Valve / Lead Screening	17	2	19	14	1	15

Percutaneous Coronary Intervention

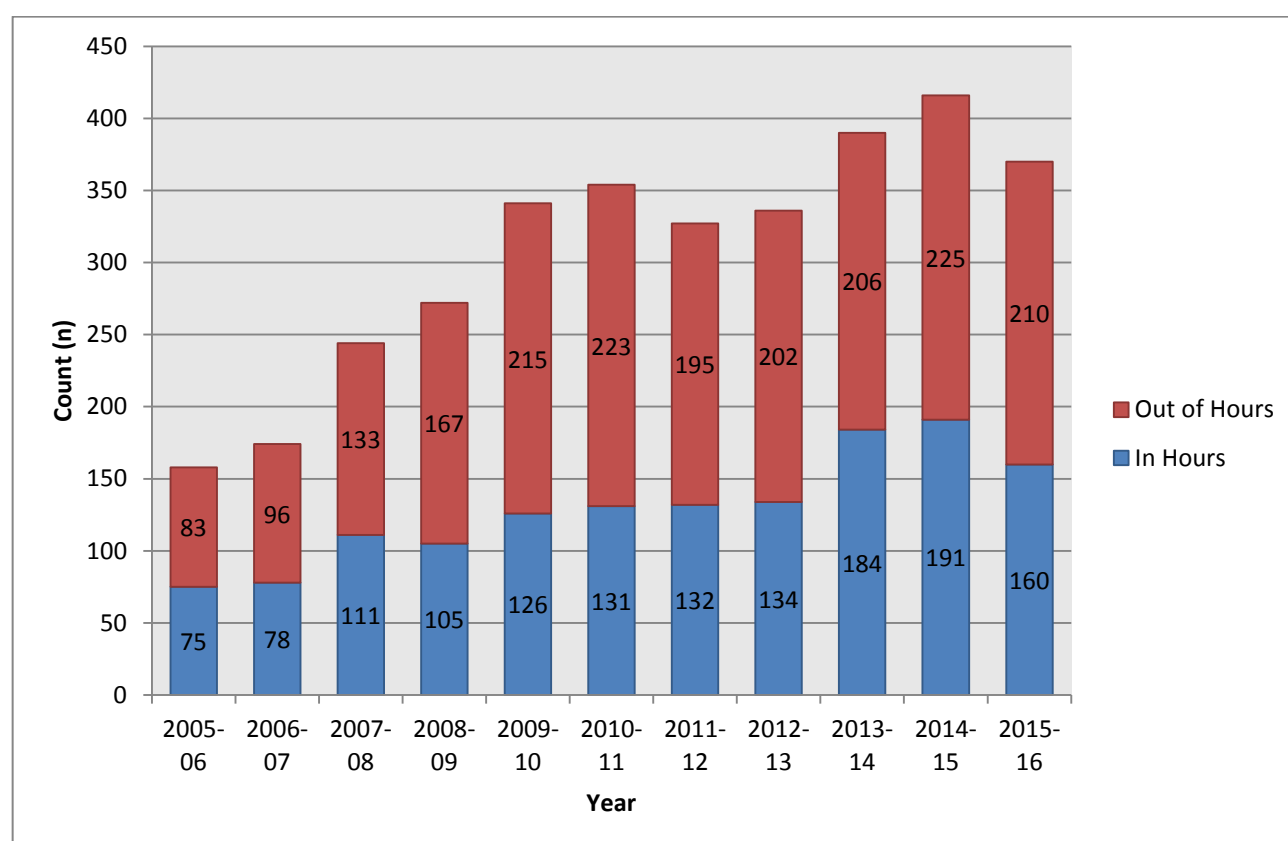


Structural Heart Procedures Performed

Procedure	2014-15			2015-16		
	Public	Private	Total	Public	Private	Total
Dilatation / Stenting						
Aorta	3	2	5	2	3	5
Pulmonary	3	1	4	2	2	4
Renal				2		2
Subclavian	2		2	3		3
Vena Cava		2	2		2	2
Embolisation						
Aorta / Coronary						
Pulmonary		1	1			
Renal						
Subclavian						
Valvuloplasty						
Aortic	134	83	217	121	45	166
Mitral	9	1	10	5		5
Pulmonary	3		3	1	2	3
Tricuspid				1		1
Device Closures						
ASD	11	1	12	13	4	17
LAA	4	4	8	8	6	14
PDA	2		2	1		1
PFO	12	1	13	17	3	20
VSD	2		2	1		1
Device Total	31	6	37	43	13	56
Valve Intervention						
Paravalvular Leak Closure	3		3	5		5
Percutaneous Valve	47	43	90	63	39	102
Mitraclip	8	11	19	9	8	17
Valve Intervention Total	58	54	112	77	47	124
Total Structural Interventions	243	150	393	254	114	368
ICE	21	4	25	23	5	28
TOE	70	49	119	88	45	133

Additional Cases

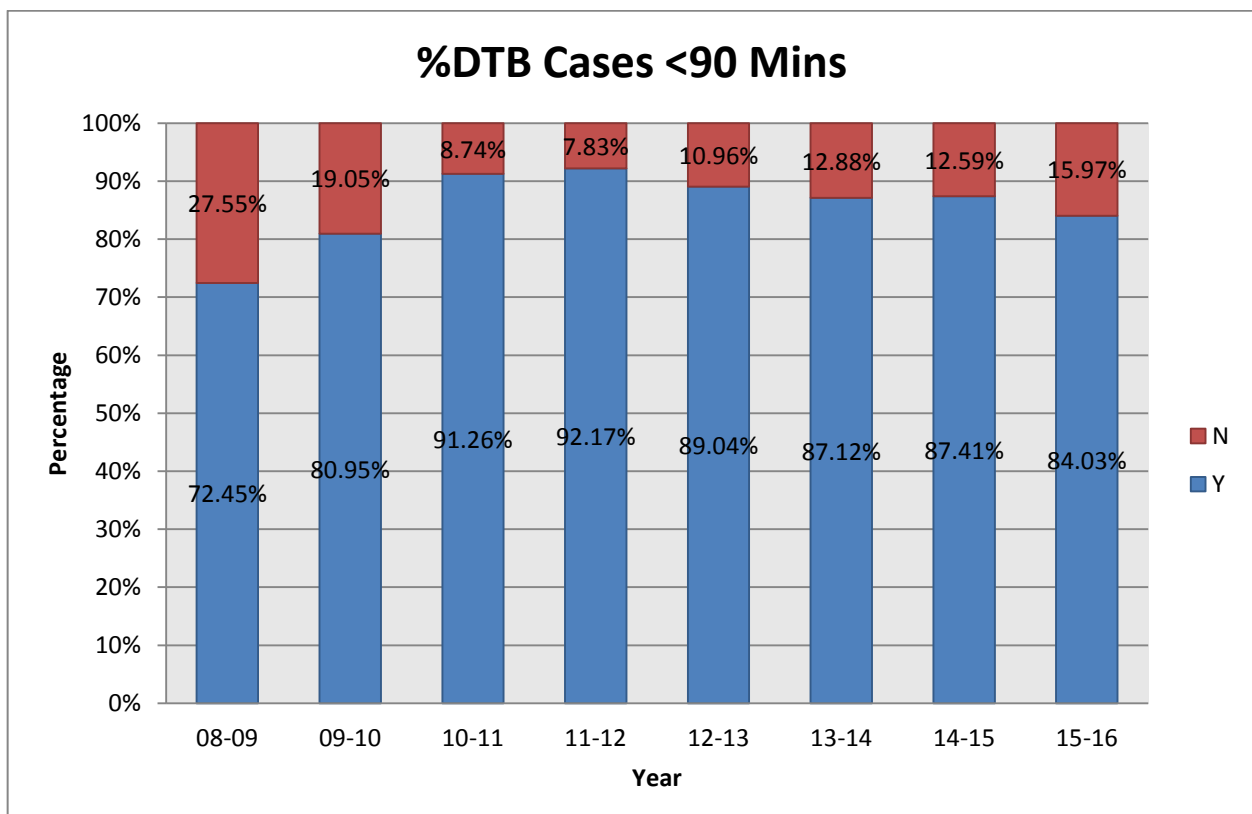
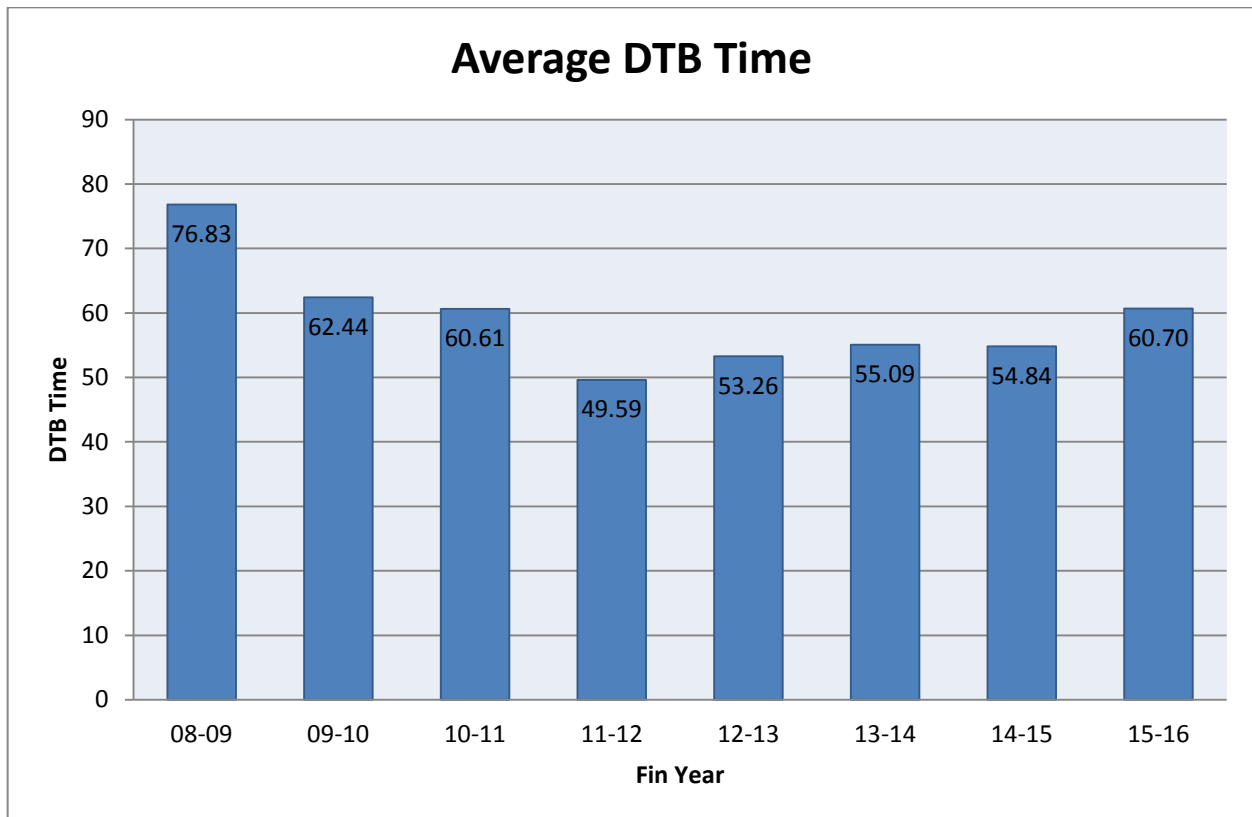
	2014-15	2015-16
Add-ons	1659	1723
In Hours Emergency Add-ons (0800-1800)	191	160
Out of Hours Acute Call-ins (1800-0800)	225	210
Total	2075 (47.8%)	2460 (58.7%)



Angioplasty Nursing Service

	Total
Occasions of PCI	954
Outpatient Follow Up	
7 Day	664
1 month	840
Total	1504

Primary PCI



Inter-hospital Transfers



Inter-Hospital Transfers Summary

Start Date: Wednesday, 1 July 2015

End Date: Thursday, 30 June 2016

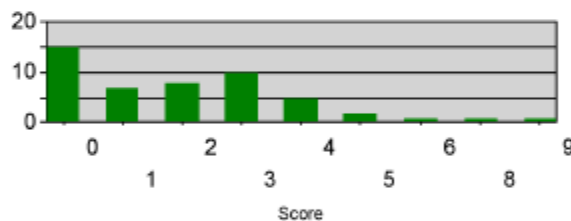
Selection Criteria: Hospital: <All>; Treating Hospital: TPCH; Gender: <All>; Diagnosis:<All>

Total Transferred Referrals:	638
Interventions	463
Medically-Treated	175

Average Age of Referrals:			Av 65.5 years	Dev +/- 14.2
Male	421	66%	64.8 years	14.4
Female	217	34%	66.9 years	13.6

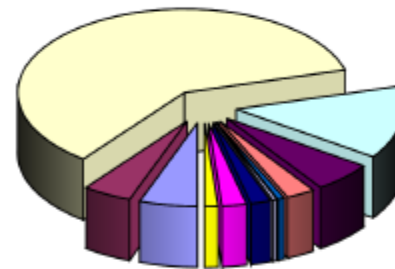
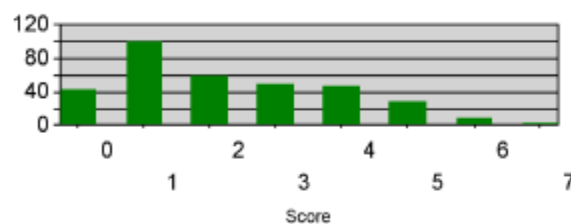
Risk Calculations:

STEMI diagnosis - 50



- STEMI with Fibrinolysis
- STEMI without Fibrinolysis
- NSTEMI with Troponin positive
- Unstable Angina
- Arrhythmia
- Cardiac Failure
- Endocarditis/Myocarditis/Pericarditis
- Pericardial Effusion
- Stable Angina
- Valvular Heart Disease
- Other

NSTEMI diagnosis - 342

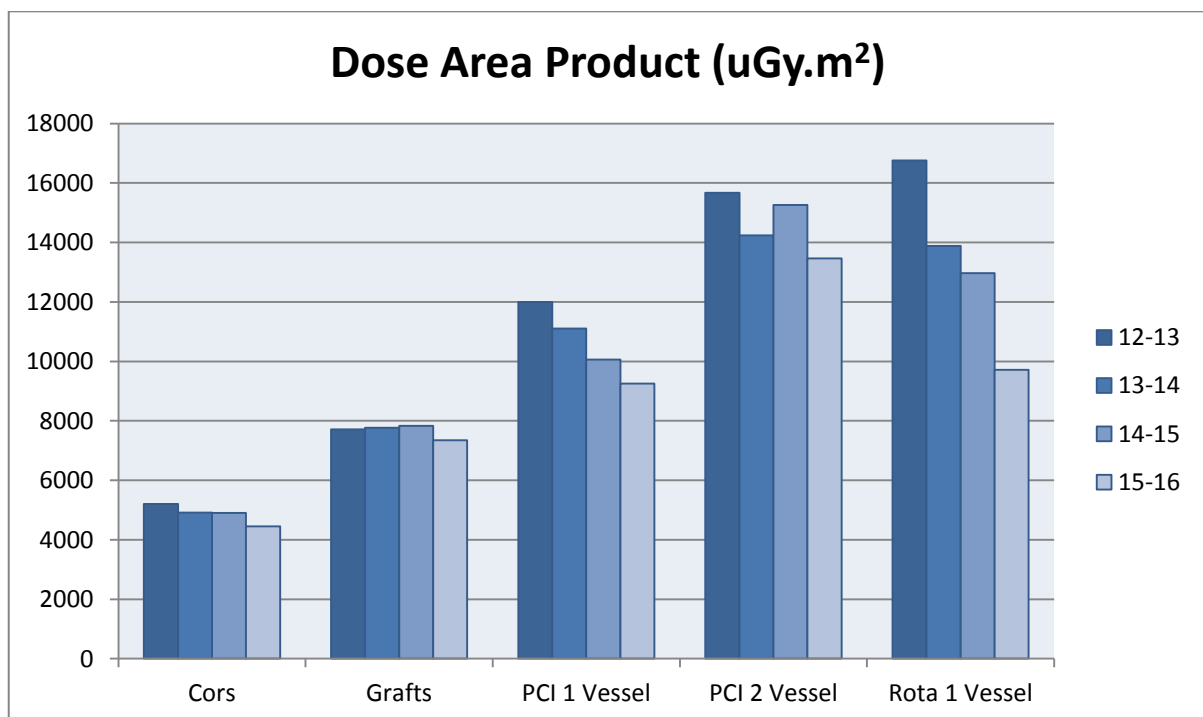
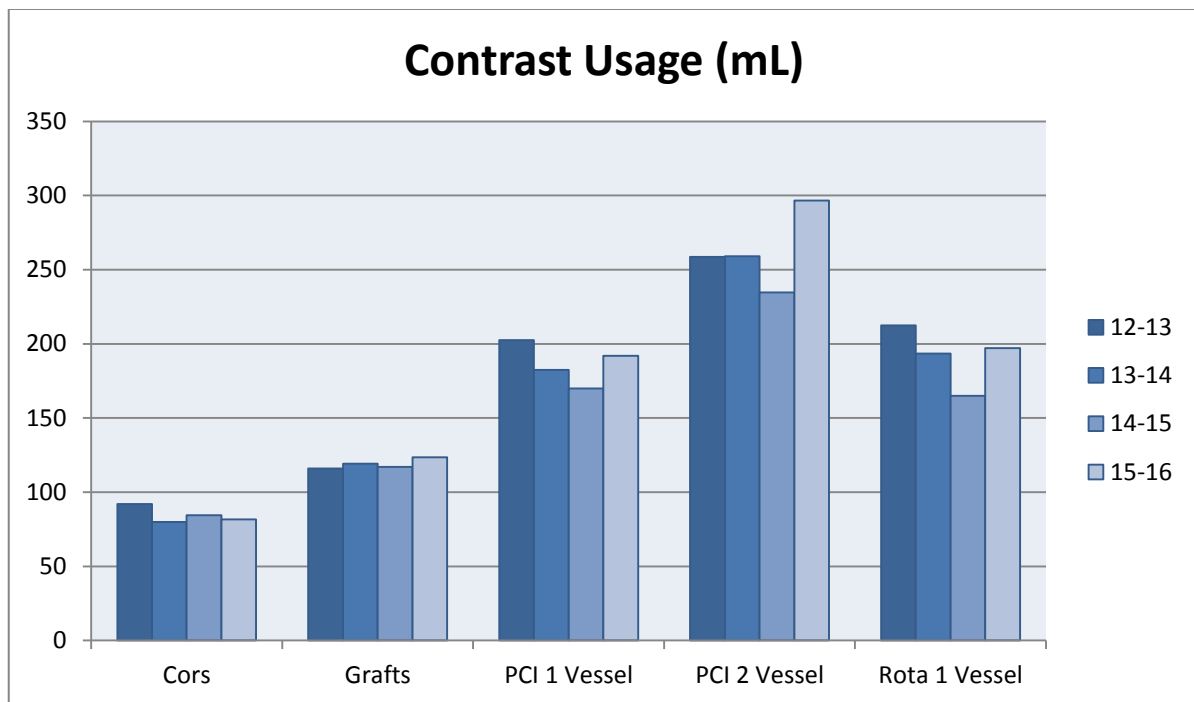


Days Waiting from Referral to Transfer:

Total:	638	100%	Av 57:47 hours	Dev +/- 43.1
Emergency	52	8.2%	15:3	14.6
Urgent	376	58.9%	48:24	36
Semi-Urgent	205	32.1%	85:6	44.2
Semi-Elective	5	0.8%	86:34	31.1

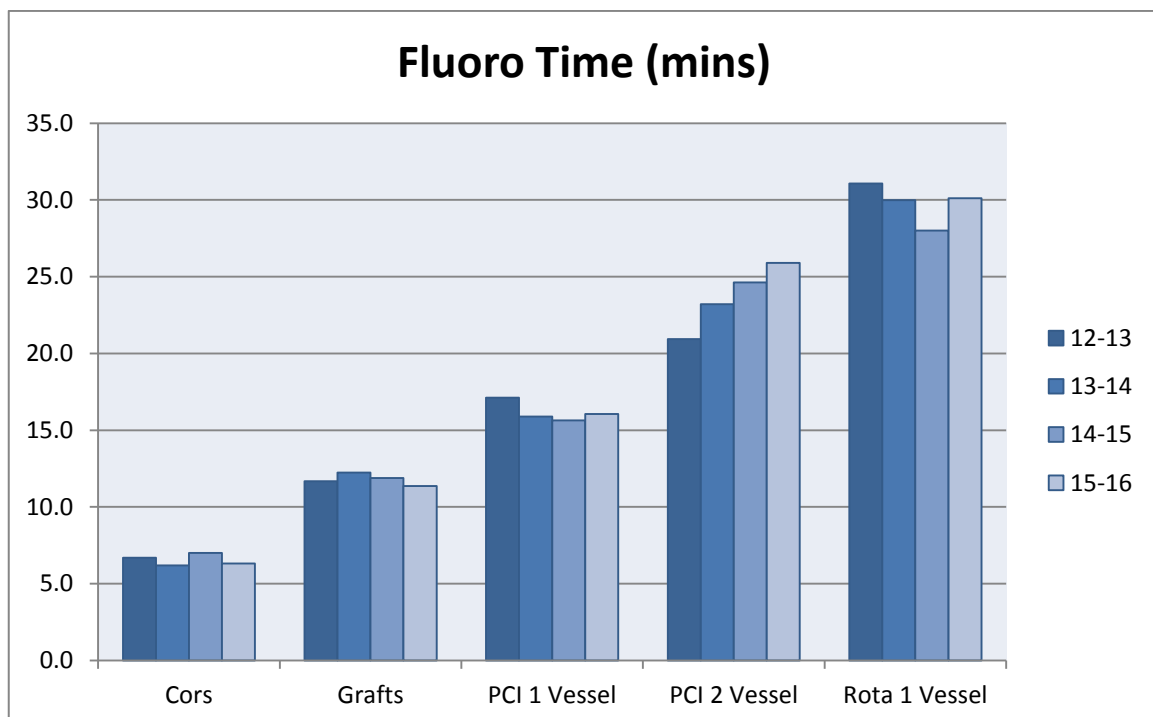
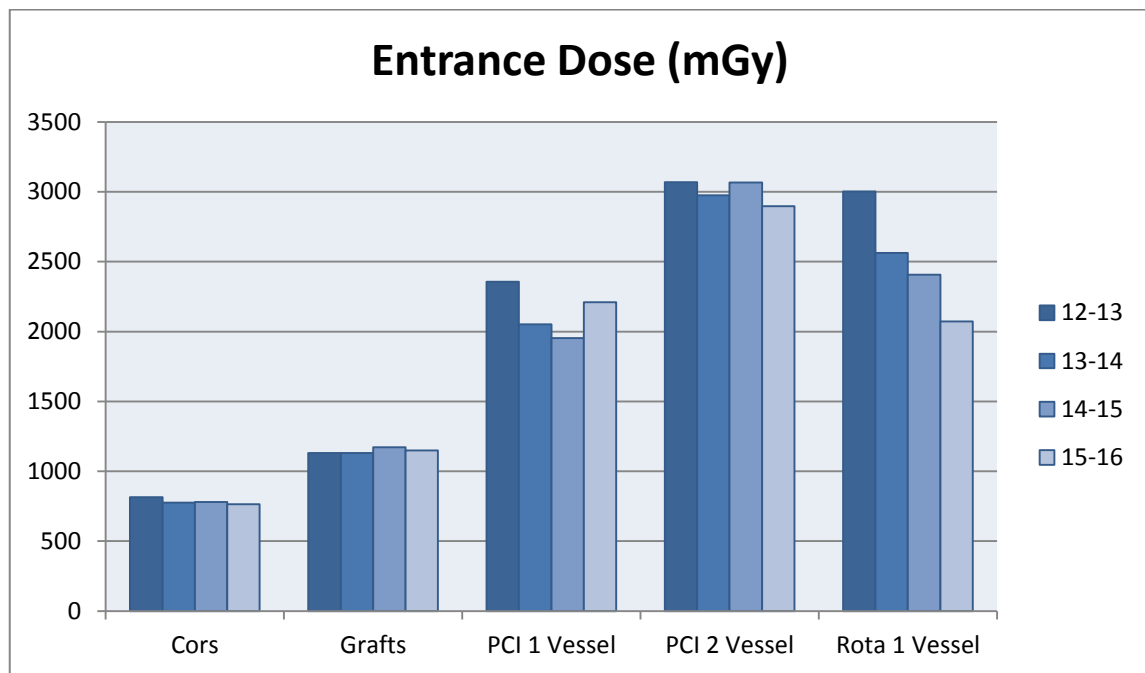
Patient Radiation Doses

	CORS	GRAFTS	PCI 1 Vessel	PCI >2 Vessel	Rota 1 Vessel
	Mean	Mean	Mean	Mean	Mean
Contrast (ml)	83.4	120.3	197.8	272.7	206.8
Dose Area Product (cGy*cm ²)	3948	6683	8618	11195	9536



Patient Radiation Doses

	CORS	GRAFTS	PCI 1 Vessel	PCI >2 Vessel	Rota 1 Vessel
	Mean	Mean	Mean	Mean	Mean
Entrance Dose (mGy)	678	1031	1906	2549	2031
Fluoroscopy Time (min)	6.3	11.4	17.0	26.0	30.8

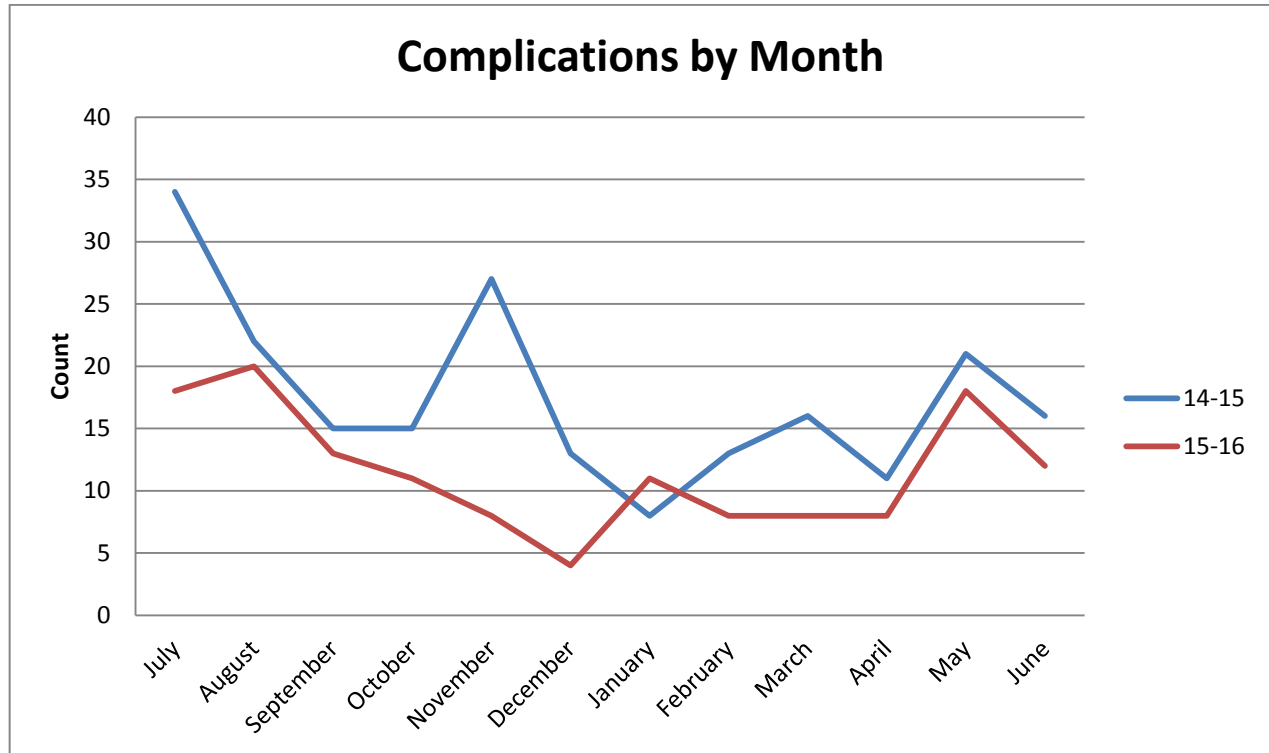


Complications

Total = 123 (0.29%)

Complications	2014-15		2015-16	
Access Site Occlusion	2	0.95%		0.00%
Acute Respiratory Failure	5	2.37%	1	0.81%
Asystole	9	4.27%	1	0.81%
Atrial Fibrillation/Flutter	6	2.84%	5	4.07%
Bleeding - other cause		0.00%	2	1.63%
Bleeding - Other/Unknown	2	0.95%		0.00%
Bleeding at Percutaneous	14	6.64%	9	7.32%
Cardiogenic Shock	2	0.95%		0.00%
Cardiogenic shock.		0.00%	2	1.63%
Contrast reaction.	7	3.32%	5	4.07%
Coronary Dissection requiring	17	8.06%	6	4.88%
Coronary Embolisation /	1	0.47%	1	0.81%
CVA/stroke.	1	0.47%	3	2.44%
Dissection	5	2.37%		0.00%
Emergency PCI	1	0.47%		0.00%
Heart Block	21	9.95%	9	7.32%
Haematoma >5cm x 5cm	22	10.43%		0.00%
Hematoma >10cm.		0.00%	5	4.07%
Hematoma 5-10cm.		0.00%	5	4.07%
Hypotension	16	7.58%	9	7.32%
Other vascular complication	3	1.42%	3	2.44%
Perforation of Artery	2	0.95%		0.00%
Perforation of Coronary		0.00%	3	2.44%
Peripheral Dissection		0.00%	6	4.88%
Peri-procedural MI.		0.00%	1	0.81%
Prolonged Angina		0.00%	1	0.81%
Pseudoaneurysm	1	0.47%	1	0.81%
Pulmonary Oedema	5	2.37%	3	2.44%
Radiation Dose Exceeded	10	4.74%	9	7.32%
RBC/Whole blood		0.00%	1	0.81%
Retroperitoneal Bleeding	2	0.95%		0.00%
Supraventricular Tachycardia	1	0.47%	1	0.81%
Tamponade	3	1.42%		0.00%
Transient Ischaemic Attack	2	0.95%		0.00%
Unplanned Return to CCL	1	0.47%		0.00%
Vaso-vagal Reaction	13	6.16%	14	11.38%
Ventricular Fibrillation	17	8.06%	7	5.69%
Ventricular Tachycardia	14	6.64%	8	6.50%
Vomiting	6	2.84%	2	1.63%

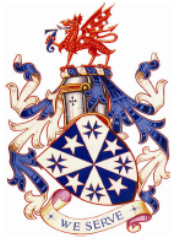
Complications



Prof Darren Walters
Clinical Director
Cardiac Catheterisation Laboratory
Date:

Michael Savage
Consultant Cardiac Scientist
Cardiac Catheterisation Laboratory
Date:

APPENDIX A



THE PRINCE CHARLES HOSPITAL CARDIAC CATHETER LABORATORY

PCI Procedure Report - July 2014 Onwards

1/07/2015 - 30/06/2016

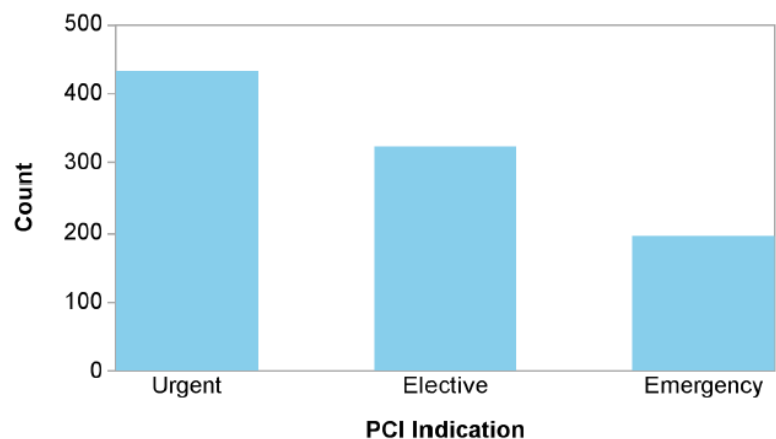


Patient Age

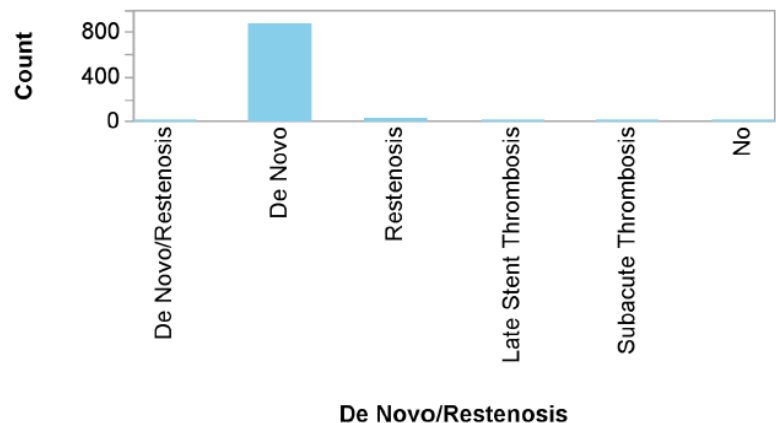
Male	710	74.42 %	Av 64 +/- 12
Female	244	25.58 %	Av 68 +/- 12
	954	100%	Av 65 +/- 12

Indications

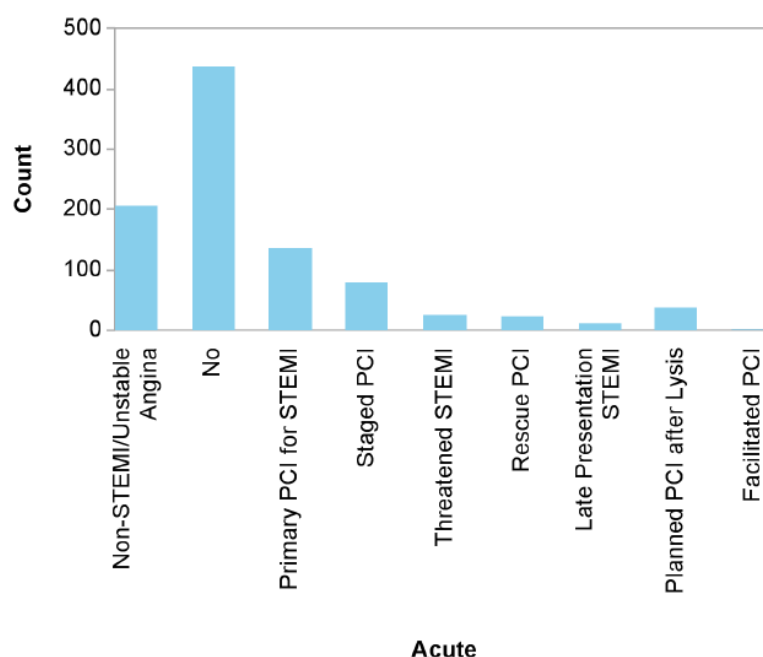
PCI Status	Number of Cases	%
Elective	324	33.96 %
Emergency	196	20.55 %
Urgent	434	45.49 %
	954	100%



De Novo/Restenosis	Number of Cases	%
De Novo	885	92.77 %
De Novo/Restenosis	17	1.78 %
Late Stent Thrombosis	6	0.63 %
No	2	0.21 %
Restenosis	37	3.88 %
Subacute Thrombosis	7	0.73 %
	954	100%



Acute	Number of Cases	%
Facilitated PCI	1	0.10 %
Late Presentation STEMI	10	1.05 %
No	438	45.91 %
Non-STEMI/Unstable Angina	207	21.70 %
Planned PCI after Lysis	36	3.77 %
Primary PCI for STEMI	136	14.26 %
Rescue PCI	23	2.41 %
Staged PCI	78	8.18 %
Threatened STEMI	25	2.62 %
	954	100%



Lesions Risk	Number	% of total cases
Type A Lesion	50	5.24 %
Type B1 Lesion	315	33.02 %
Type B2 Lesion	203	21.28 %
Type C Lesion	573	60.06 %
	1141	

Approach	Number	% of total cases
Brachial	4	0.42 %
Femoral	336	35.22 %
Other	1	0.10 %
Radial	613	64.26 %
	954	100%

Cardiac Indications	Number of Indications	% of total cases
Angina.	42	4.40 %
Cardiogenic Shock.	5	0.52 %
Chest pain.	536	56.18 %
Exertional dyspnoea.	112	11.74 %
Known coronary artery disease.	316	33.12 %
NSTEMI.	241	25.26 %
Out of hospital arrest.	20	2.10 %
Positive CT Coronary Angiogram.	64	6.71 %
Positive EST.	42	4.40 %
Positive stress echo.	37	3.88 %
Post infarct angina.	2	0.21 %
Previous MI	59	6.18 %
STEMI.	163	17.09 %
Thrombolysed STEMI.	55	5.77 %
Unstable angina.	18	1.89 %
1712		

Risk Factors	Number of Factors	% of total cases
Anxiety	59	6.18 %
Cerebrovascular Disease	62	6.50 %
CHF	55	5.77 %
Chronic Lung Disease	156	16.35 %
Current smoker	202	21.17 %
Depression	94	9.85 %
Diabetes	256	26.83 %
Dyslipidemia	618	64.78 %
Family History	364	38.16 %
Hypertension	632	66.25 %
Obesity	368	38.57 %
Renal Failure	72	7.55 %
2938		

Complications	Number	% of total cases
Acute Respiratory Failure	1	0.10 %
Atrial Fibrillation/Flutter	1	0.10 %
Bleeding at Percutaneous Entry Site	1	0.10 %
Contrast Reaction	4	0.42 %
Coronary Dissection	6	0.63 %
CVA-Stroke	1	0.10 %
Heart Block	2	0.21 %
Hematoma at Access Site	17	1.78 %
Hypotension	2	0.21 %
Perforation of Artery	3	0.31 %
Peripheral Dissection	2	0.21 %
Periprocedural MI	1	0.10 %
Prolonged Angina	1	0.10 %
Pulmonary Oedema	1	0.10 %
Radiation Dose Exceeded	8	0.84 %
Vaso-vagal	5	0.52 %
Ventricular Fibrillation	4	0.42 %
Ventricular Tachycardia	5	0.52 %
Vomiting	1	0.10 %
66		

Previous Procedures

Previous Procedures	Number	% of total cases
Previous CABG	113	11.84 %
Previous PCI	233	24.42 %
Previous valvular surgery	13	1.36 %
359		

Technical Data and Lesion Characteristics

Stent Type	Number	%
Drug Eluting Stent	1277	92.14 %
Bare Metal Stent	106	7.65 %
Covered Stent	3	0.22 %
1386		100%

Technical Data and Lesion Characteristics

Guide Size	Number	%	Balloon Size	Number	%
Null	4	0.29 %	Null	10	0.31 %
0.014	1	0.07 %	1.00	12	0.37 %
5	24	1.77 %	1.10	23	0.71 %
6	1091	80.34 %	1.20	1	0.03 %
6.5	11	0.81 %	1.25	31	0.96 %
7	186	13.70 %	1.50	79	2.43 %
7.5	3	0.22 %	2.00	436	13.43 %
8	38	2.80 %	2.25	56	1.73 %
	1358	100%	2.50	943	29.05 %
			2.75	148	4.56 %
			3.00	598	18.42 %
			3.25	168	5.18 %
			3.50	393	12.11 %
			3.75	95	2.93 %
			4.00	164	5.05 %
			4.50	64	1.97 %
			5.00	21	0.65 %
			5.50	3	0.09 %
			6.00	1	0.03 %
				3246	100%

Technical Data and Lesion Characteristics

Stent Width	Number	%	Stent Length	Number	%
2.00	4	0.29 %	8	37	2.67 %
2.25	113	8.16 %	9	12	0.87 %
2.50	311	22.45 %	11	6	0.43 %
2.75	122	8.81 %	12	108	7.80 %
2.80	2	0.14 %	13	3	0.22 %
3.00	417	30.11 %	14	11	0.79 %
3.25	7	0.51 %	15	176	12.71 %
3.50	296	21.37 %	16	63	4.55 %
4.00	105	7.58 %	18	249	17.98 %
4.50	4	0.29 %	19	1	0.07 %
5.00	4	0.29 %	20	75	5.42 %
	1385	100%	22	26	1.88 %
			23	124	8.95 %
			24	80	5.78 %
			26	24	1.73 %
			28	146	10.54 %
			30	22	1.59 %
			32	29	2.09 %
			33	71	5.13 %
			34	6	0.43 %
			36	4	0.29 %
			38	104	7.51 %
			48	8	0.58 %
				1385	100%

30 Day Outcomes

Quality of Life	Number	%
Better	1018	93.05 %
No Improvement	52	4.75 %
Worse	24	2.19 %
	1094	100%

Cardiac Rehab Attended	Number	%
Attended	428	44.40 %
Not Attended	536	55.60 %
	964	100%

Exercise Compliance	Number	%
No	200	19.88 %
Yes	806	80.12 %
	1006	100%

Angina	Number	%
Class I (Strenuous Activity)	72	6.41 %
Class II (Ordinary Activity)	54	4.80 %
Class III (Marked Limitations)	13	1.16 %
Class IV (At Rest)	64	5.69 %
No Pain	917	81.58 %
Unknown	4	0.36 %
	1124	100%

Access Site	Number	%
Active Bleeding	1	5.26 %
Bruising	10	52.63 %
Haematoma	1	5.26 %
Persistent Pain	7	36.84 %
	19	100%

Smoking	Number	%
Recommended Smoking at One Month Post Procedure	46	88.46 %
Referred to Quit Programme	6	11.54 %
	52	100%

Medication Compliance	Number	%
No	3	0.32 %
Yes	948	99.68 %
	951	100%

Adverse Events	Number	%
CVA	3	37.50 %
MI	5	62.50 %
	8	100%