

PROCEDURES FOR CONGENITAL HEART DISEASE

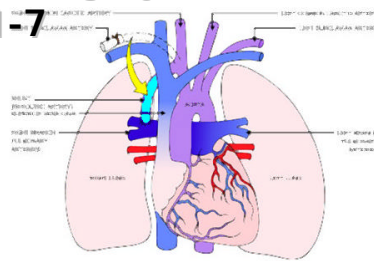
Interim Report 2000/2001 – 3rd Draft

January 31, 2001

Contents

Cardiac Surgery

Pages 1-7



Summary and Participating Hospitals

Page 1

SCTS Benchmarks

Page 2

Valve Operations (Aortic and Mitral)

Page 3

Valve Operations (Pulmonary and Tricuspid)

Page 4

Non-bypass (Closed) Operations

Page 5

Bypass (Open) Operations – part 1

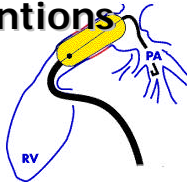
Page 6

Bypass (Open) Operations – part 2

Page 7

Catheter Interventions

Pages 8-9



Catheter Procedures – part 1

Page 8

Catheter Procedures – part 2

Page 9

Data Quality



Overall

Page 10

Individual Hospitals – Cardiac Surgery

Page 11

Individual Hospitals – Cardiac Surgery

Page 12

Length of stay

pp 13-15

PROCEDURES FOR CONGENITAL HEART DISEASE

Interim Report

Society of Cardiothoracic Surgeons
of Great Britain and Ireland



Data collated and reported by the Central Cardiac Audit Database

Data: www.ccad.org.uk/paed.nsf
Reference: www.coronarycare.net/ccad
e-mail: adc@bio.gla.ac.uk

British Paediatric
Cardiac Association

1. Summary - Cardiac Surgery

Range shown in brackets is 95% confidence interval for mortality. Sum of age categories may not equal "All ages" total due to occasional missing ages.

	All Ages			Under 1 year			1-15 years			16 years and over		
	Ops	Deaths	%	Ops	Deaths	%	Ops	Deaths	%	Ops	Deaths	%
All Surgery	2326	118	5.1%	1236	77	6.2%	989	40	5.1%	89	1	1.1%
			4.3% - 6%			5% - 7.7%			3% - 5.5%			0.2% - 7.5%
Bypass	1525	82	5.4%	702	52	7.4%	742	29	3.9%	73	1	1.4%
			4.4% - 6.6%			5.7% - 9.6%			2.7% - 5.6%			0.2% - 9.1%
Non-bypass	797	36	4.5%	534	25	4.7%	245	11	4.5%	15	0	0.0%
			3.3% - 6.2%			3.2% - 6.8%			2.5% - 7.9%			

Report coverage: **All contributing UK hospitals**
Period covered: **1/4/2000** to **31/01/2001**

Hospital	Most recent data submitted:	CATHETER	SURGERY
ACH	Alder Hey Hospital, Liverpool		30/08/2000
BCH	Birmingham Childrens Hospital	07/12/2000	14/12/2000
BRC	Bristol Children's Hospital	28/09/2000	28/09/2000
FRE	Freeman Hospital, Newcastle		07/09/2000
GOS	Hospital for Sick Children, Great Ormond Street		30/09/2000
GRL	Glenfield Hospital, Leicester		29/09/2000
GUY	Guy's & St Thomas' Hospitals, London	13/10/2000	09/10/2000
LGI	Leeds General Infirmary	27/11/2000	21/11/2000
NHB	Royal Brompton & Harefield Hospitals	31/10/2000	30/10/2000
RAD	John Radcliffe Hospital, Oxford		11/12/2000
RHS	Royal Hospital for Sick Children, Glasgow	26/10/2000	16/10/2000
RVB	Royal Victoria Hospital Belfast	18/01/2001	17/04/2000
SGH	Wessex Cardiothoracic Centre, Southampton	19/01/2001	18/01/2001
THH	The Heart Hospital, London		17/01/2001

MORTALITY TRACKING

Of the 105 patients who died within 30 days, 81 were reported as "Died in hospital" and 24 were reported as "Alive at discharge" but then subsequently died before 30 days.

PAEDIATRIC CARDIAC PROCEDURES

Interim Report

Data collated and reported by the
Central Cardiac Audit Database

Data: www.ccad.org.uk/paed.nsf
Reference: www.coronarycare.net/ccad
e-mail: adc@bio.gla.ac.uk

Society of Cardiothoracic Surgeons
of Great Britain and Ireland



British Paediatric
Cardiac Association



Period covered: **1/4/2000** to **31/01/2001**

Report coverage: **All contributing UK hospitals**

2. SCTS Benchmarks

Reference: <http://www.scts.org/doc/3424>

Range shown in brackets is 95% confidence interval for mortality. Sum of age categories may not equal "All ages" total due to occasional missing ages.

	All Ages			Under 1 year			1-15 years			16 years and over		
	Ops	Deaths	%	Ops	Deaths	%	Ops	Deaths	%	Ops	Deaths	%
Closure of isolated ASD	119	0	0.0%	10	0	0.0%	109	0	0.0%	18	0	0.0%
Repair of isolated, simple coarctation	131	1	0.8%	91	1	1.1%	34	0	0.0%	6	0	0.0%
		0.1% - 5.2%			0.2% - 7.4%							
Closure of isolated VSD	170	2	1.2%	133	1	0.8%	36	1	2.8%	1	0	0.0%
		0.3% - 4.6%			0.1% - 5.1%			0.4% - 17.3%				
Repair of isolated, complete AVSD	61	1	1.6%	51	1	2.0%	10	0	0.0%	0	0	
		0.2% - 10.7%			0.3% - 12.6%							
Repair of isolated Fallot's tetralogy	128	5	3.9%	65	5	7.7%	63	0	0.0%	0	0	
		1.6% - 9%			3.2% - 17.2%							
Arterial switch for TGA	64	1	1.6%	61	1	1.6%	3	0	0.0%	0	0	
		0.2% - 10.3%			0.2% - 10.7%							
Repair of isolated truncus arteriosus	15	1	6.7%	15	1	6.7%	0	0		0	0	
		0.9% - 35.2%			0.9% - 35.2%							

PAEDIATRIC CARDIAC PROCEDURES

Interim Report

Period covered: 1/4/2000 to 31/01/2001 Report coverage: All contributing UK hospitals

3a. Valve Operations (Aortic and Mitral)

Range shown in brackets is 95% confidence interval for mortality. Sum of age categories may not equal "All ages" total due to occasional missing ages.

	All Ages			Under 1 year			1-15 years			16 years and over		
	Ops	Deaths	%	Ops	Deaths	%	Ops	Deaths	%	Ops	Deaths	%
AORTIC VALVE												
Aortic valvotomy	15	3	20.0% 6.6% - 47%	15	3	20.0% 6.6% - 47%	0	0		0	0	
Aortic valve repair	8	0	0.0%	2	0	0.0%	6	0	0.0%	0	0	
Subvalvar aortic stenosis repair	43	0	0.0%	4	0	0.0%	38	0	0.0%	1	0	0.0%
Supravalvar aortic stenosis repair	8	0	0.0%	3	0	0.0%	5	0	0.0%	0	0	
Ross operation	20	1	5.0% 0.7% - 28.2%	0	0		15	1	6.7% 0.9% - 35.2%	5	0	0.0%
Aortic valve replacement	20	0	0.0%	0	0		14	0	0.0%	6	0	0.0%
MITRAL VALVE												
Mitral valvotomy	0	0		0	0		0	0		0	0	
Mitral valve repair	17	3	17.6% 5.8% - 42.7%	4	2	50.0% 12.3% - 87.7%	10	1	10.0% 1.4% - 46.7%	3	0	0.0%
Mitral valve replacement	16	1	6.3% 0.9% - 33.5%	3	0	0.0%	11	1	9.1% 1.3% - 43.9%	2	0	0.0%

PAEDIATRIC CARDIAC PROCEDURES

Interim Report

Period covered: 1/4/2000

to 31/01/2001

Report coverage: All contributing UK hospitals

3b. Valve Operations (Pulmonary and Tricuspid)

Range shown in brackets is 95% confidence interval for mortality. Sum of age categories may not equal "All ages" total due to occasional missing ages.

	All Ages			Under 1 year			1-15 years			16 years and over		
	Ops	Deaths	%	Ops	Deaths	%	Ops	Deaths	%	Ops	Deaths	%
PULMONARY VALVE												
Pulmonary valvotomy	8	1	12.5% 1.7% - 53.7%	5	1	20.0% 2.7% - 69.1%	2	0	0.0%	1	0	0.0%
Pulmonary stenosis infundibular repair	15	1	6.7% 0.9% - 35.2%	2	0	0.0%	13	1	7.7% 1.1% - 39.1%	0	0	
RVOT patch	22	2	9.1% 2.3% - 30%	11	1	9.1% 1.3% - 43.9%	11	1	9.1% 1.3% - 43.9%	0	0	
PA homograft	25	3	12.0% 3.9% - 31.3%	2	1	50.0% 5.9% - 94.1%	19	2	10.5% 2.6% - 33.7%	4	0	0.0%
Other pulmonary valve replacement	9	0	0.0%	0	0		7	0	0.0%	2	0	0.0%
TRICUSPID VALVE												
Tricuspid valvotomy	0	0		0	0		0	0		0	0	
Ebstein repair	1	0	0.0%	0	0		1	0	0.0%	0	0	
Tricuspid valve repair	8	2	25.0% 6.3% - 62.3%	3	1	33.3% 4.3% - 84.6%	3	1	33.3% 4.3% - 84.6%	2	0	0.0%
Tricuspid valve replacement	4	0	0.0%	1	0	0.0%	1	0	0.0%	2	0	0.0%

PAEDIATRIC CARDIAC PROCEDURES

Interim Report

Period covered: 1/4/2000

to 31/01/2001

Report coverage: All contributing UK hospitals

4. Non-bypass (closed)

Range shown in brackets is 95% confidence interval for mortality. Sum of age categories may not equal "All ages" total due to occasional missing ages.

	All Ages			Under 1 year			1-15 years			16 years and over		
	Ops	Deaths	%	Ops	Deaths	%	Ops	Deaths	%	Ops	Deaths	%
PDA closure	102	8	7.8% 4% - 14.9%	94	8	8.5% 4.3% - 16.1%	8	0	0.0%	0	0	
Coarct repair (simple)	131	1	0.8% 0.1% - 5.2%	91	1	1.1% 0.2% - 7.4%	34	0	0.0%	6	0	0.0%
Coarct repair (complex)	30	2	6.7% 1.7% - 23.1%	30	2	6.7% 1.7% - 23.1%	0	0		0	0	
Blalock Taussig shunt	118	5	4.2% 1.8% - 9.8%	101	3	3.0% 1% - 8.8%	16	2	12.5% 3.1% - 38.6%	1	0	0.0%
PA banding	66	3	4.5% 1.5% - 13.2%	59	3	5.1% 1.6% - 14.6%	7	0	0.0%	0	0	
ECMO	17	3	17.6% 5.8% - 42.7%	15	1	6.7% 0.9% - 35.2%	2	2	100.0%	0	0	
Pacemaker	24	3	12.5% 4.1% - 32.4%	7	2	28.6% 7.2% - 67.3%	16	1	6.3% 0.9% - 33.5%	1	0	0.0%

PAEDIATRIC CARDIAC PROCEDURES

Interim Report

Period covered: 1/4/2000 to 31/01/2001 Report coverage: All contributing UK hospitals

5a. Bypass (open) - part 1

Range shown in brackets is 95% confidence interval for mortality. Sum of age categories may not equal "All ages" total due to occasional missing ages.

	All Ages			Under 1 year			1-15 years			16 years and over		
	Ops	Deaths	%	Ops	Deaths	%	Ops	Deaths	%	Ops	Deaths	%
ASD closure	158	4	2.5% 1% - 6.5%	21	1	4.8% 0.7% - 27.1%	120	3	2.5% 0.8% - 7.5%	17	0	0.0%
AVSD (partial) repair	54	1	1.9% 0.3% - 12%	12	1	8.3% 1.2% - 41.3%	34	0	0.0%	8	0	0.0%
AVSD (complete) repair	74	1	1.4% 0.2% - 9%	59	1	1.7% 0.2% - 11.1%	15	0	0.0%	0	0	
VSD closure	220	4	1.8% 0.7% - 4.7%	160	3	1.9% 0.6% - 5.7%	58	1	1.7% 0.2% - 11.2%	2	0	0.0%
VSD (multiple) closure	9	1	11.1% 1.5% - 50%	4	1	25.0% 3.4% - 76.2%	4	0	0.0%	1	0	0.0%
DORV repair	13	1	7.7% 1.1% - 39.1%	5	1	20.0% 2.7% - 69.1%	8	0	0.0%	0	0	
Truncus repair	14	1	7.1% 1% - 37%	14	1	7.1% 1% - 37%	0	0		0	0	
Arterial switch for TGA - isolated (can include ASD/PDA closure)	64	1	1.6% 0.2% - 10.3%	61	1	1.6% 0.2% - 10.7%	3	0	0.0%	0	0	
Arterial switch for TGA + VSD closure	10	0	0.0%	10	0	0.0%	0	0	0.0%	0	0	
Arterial switch for TGA + other procedure	8	0	0.0%	7	0	0.0%	1	0	0.0%	0	0	
Other operations for TGA	12	2	16.7% 4.2% - 47.7%	6	1	16.7% 2.3% - 63.1%	6	1	16.7% 2.3% - 63.1%	0	0	

PAEDIATRIC CARDIAC PROCEDURES

Interim Report

Period covered: 1/4/2000

to 31/01/2001

Report coverage: All contributing UK hospitals

5b. Bypass (open) - part 2

Range shown in brackets is 95% confidence interval for mortality. Sum of age categories may not equal "All ages" total due to occasional missing ages.

	All Ages			Under 1 year			1-15 years			16 years and over		
	Ops	Deaths	%	Ops	Deaths	%	Ops	Deaths	%	Ops	Deaths	%
TCPC	39	0	0.0%	1	0	0.0%	36	0	0.0%	2	0	0.0%
Other Fontan-type operation	25	1	4.0%	3	0	0.0%	22	1	4.5%	0	0	
			0.6% - 23.5%						0.6% - 26.1%			
Venous shunt	93	3	3.2%	39	0	0.0%	53	3	5.7%	1	0	0.0%
			1% - 9.5%						1.8% - 16.1%			
Tetralogy of Fallot repair	143	5	3.5%	71	5	7.0%	72	0	0.0%	0	0	
			1.5% - 8.1%			3% - 15.8%						
Pulm stenosis VSD repair	42	2	4.8%	27	0	0.0%	15	2	13.3%	0	0	
			1.2% - 17.1%						3.4% - 40.5%			
Pulm atresia VSD repair	22	2	9.1%	7	1	14.3%	14	1	7.1%	1	0	0.0%
			2.3% - 30%			2% - 58.1%			1% - 37%			
TAPVD repair	36	7	19.4%	30	6	20.0%	6	1	16.7%	0	0	
			9.6% - 35.5%			9.3% - 37.9%			2.3% - 63.1%			
PA reconstruction	18	3	16.7%	3	1	33.3%	14	2	14.3%	1	0	0.0%
			5.5% - 40.9%			4.3% - 84.6%			3.6% - 42.7%			
Norwood stage 1	35	8	22.9%	35	8	22.9%	0	0		0	0	
			11.9% - 39.5%			11.9% - 39.5%						

PAEDIATRIC CARDIAC PROCEDURES

Interim Report

Period covered: 1/4/2000 to 31/01/2001 Report coverage: All contributing UK hospitals

6a. Catheter procedures - part 1

Range shown in brackets is 95% confidence interval for mortality. Sum of age categories may not equal "All ages" total due to occasional missing ages.

	All Ages			Under 1 year			1-15 years			16 years and over		
	Ops	Deaths	%	Ops	Deaths	%	Ops	Deaths	%	Ops	Deaths	%
ASD closure (catheter)	109	0	0.0%	1	0	0.0%	71	0	0.0%	37	0	0.0%
PDA closure (catheter)	16	0	0.0%	3	0	0.0%	13	0	0.0%	0	0	
Duct coil occlusion	89	0	0.0%	2	0	0.0%	87	0	0.0%	0	0	
Duct occlusion Amplatz	34	0	0.0%	2	0	0.0%	26	0	0.0%	6	0	0.0%
Duct occlusion other	10	0	0.0%	0	0		9	0	0.0%	1	0	0.0%
Embolisation-coil	14	0	0.0%	1	0	0.0%	13	0	0.0%	0	0	
Embolisation-other	0	0		0	0		0	0		0	0	
RF ablation	27	0	0.0%	0	0		23	0	0.0%	4	0	0.0%
Pacemaker (all procedures)	33	1	3.0%	7	0	0.0%	23	1	4.3%	3	0	0.0%
			0.4% - 18.6%						0.6% - 25.2%			

PAEDIATRIC CARDIAC PROCEDURES

Interim Report

Period covered: 1/4/2000 to 31/01/2001 Report coverage: All contributing UK hospitals

6b. Catheter procedures - part 2

Range shown in brackets is 95% confidence interval for mortality. Sum of age categories may not equal "All ages" total due to occasional missing ages.

	All Ages			Under 1 year			1-15 years			16 years and over		
	Ops	Deaths	%	Ops	Deaths	%	Ops	Deaths	%	Ops	Deaths	%
Balloon - aortic valve	22	1	4.5%	8	1	12.5%	12	0	0.0%	2	0	0.0%
			0.6% - 26.1%			1.7% - 53.7%						
Balloon septostomy	33	0	0.0%	33	0	0.0%	0	0	0.0%	0	0	0.0%
Balloon - pulmonary valve	71	0	0.0%	37	0	0.0%	32	0	0.0%	2	0	0.0%
Balloon - pulmonary artery	41	1	2.4%	8	1	12.5%	32	0	0.0%	1	0	0.0%
			0.3% - 15.4%			1.7% - 53.7%						
Stent - pulmonary artery	21	0	0.0%	3	0	0.0%	14	0	0.0%	4	0	0.0%
Stent redilatation	10	0	0.0%	2	0	0.0%	3	0	0.0%	5	0	0.0%
Pulmonary valve laser	0	0	0.0%	0	0	0.0%	0	0	0.0%	0	0	0.0%
Pulmonary valve RF	4	0	0.0%	4	0	0.0%	0	0	0.0%	0	0	0.0%
Pericardiocentesis	8	0	0.0%	2	0	0.0%	5	0	0.0%	1	0	0.0%

PAEDIATRIC CARDIAC PROCEDURES

Interim Report

Period covered: 1/4/2000 to 31/01/2001 Report coverage: All contributing UK hospitals

7. Data Quality - Overall

Data Item	% complete	Surgery	Catheter	Notes
NHSNumber:	62.5%	61.0%	68.1%	<i>31% provided by centres; remainder from O.N.S. tracking. SCOTTISH and IRISH DATA is NOT included in the figures for NHS Number.</i>
Sex:	99.9%	100.0%	99.8%	
Weight:	72.2%	70.2%	79.8%	<i>A number of registered weights (~5%) exceeded normal limits by more than 3 SD. These have been flagged for confirmation by the centres. They have been excluded from this analysis.</i>
DOB:	99.9%	100.0%	99.7%	
Postcode:	76.7%	72.0%	94.0%	
Procedure date:	100.0%	100.0%	100.0%	
Diagnosis:	88.6%	86.9%	94.8%	
Procedure:	99.7%	99.8%	99.2%	
Consultant:	91.8%	91.3%	93.7%	
Operator:	99.2%	99.1%	99.7%	
Operator grade:	98.0%	99.5%	92.7%	
Bypass/Non-Bypass/Catheter:	100.0%	100.0%	100.0%	<i>91% provided by centres; remainder derived from procedure and operator</i>
Operation sequence:	99.8%	99.9%	99.7%	<i>94% provided by centres; remainder derived from procedure dates</i>
Date of discharge:	74.8%	71.5%	87.0%	<i>not important as long as accurate life status is known</i>
Status at discharge:	100.0%	100.0%	100.0%	<i>86% provided by centres; remainder derived from mortality tracking data</i>

OVERALL: 92.9% 92.1% 95.7%

PAEDIATRIC CARDIAC PROCEDURES

Interim Report

Period covered: 1/4/2000 to 31/01/2001 Report coverage: All contributing UK hospitals

* NHS numbers are not relevant in Scotland and Ireland. They are used in England for mortality tracking but are not included in the overall % data completeness.

8. Data Quality - by Individual Hospital

CARDIAC SURGERY DATA

Hospital	N	% data completeness															OVERALL
		NHS Number	Sex:	Weight	DOB	Post Code	Procedure Date	Diagnosis	Procedure	Consultant	Operator	Grade	Closed/Open/Cath	Sequence	Discharge Date	Status at discharge	
Alder Hey Hospital, Liverpool	169	84%	100%	34%	100%	100%	100%	99%	100%	33%	99%	100%	100%	100%	78%	100%	89%
Birmingham Childrens Hospital	221	16%	100%	98%	100%	68%	100%	99%	100%	100%	100%	100%	100%	100%	94%	100%	97%
Bristol Children's Hospital	140	90%	100%	36%	100%	99%	100%	99%	100%	100%	100%	100%	100%	100%	79%	100%	94%
Freeman Hospital, Newcastle	82	79%	100%	99%	100%	89%	100%	100%	100%	100%	100%	100%	100%	100%	91%	100%	99%
Hospital for Sick Children, Great Ormond Street	455	57%	100%	45%	100%	40%	100%	100%	100%	99%	99%	99%	100%	100%	65%	100%	89%
Glenfield Hospital, Leicester	101	92%	100%	59%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	96%	100%	97%
Guy's & St Thomas' Hospitals, London	148	72%	100%	100%	100%	100%	100%	99%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Leeds General Infirmary	146	96%	100%	93%	100%	97%	100%	98%	100%	100%	100%	100%	100%	100%	94%	100%	99%
Royal Brompton & Harefield Hospitals	249	76%	100%	52%	100%	70%	100%	80%	100%	66%	96%	98%	100%	100%	36%	100%	85%
John Radcliffe Hospital, Oxford	89	97%	100%	71%	100%	99%	100%	100%	99%	100%	100%	100%	100%	100%	99%	100%	98%
Royal Hospital for Sick Children, Glasgow	103	*	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Royal Victoria Hospital Belfast	4	*	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Wessex Cardiothoracic Centre, Southampton	174	87%	100%	84%	99%	100%	100%	98%	100%	99%	99%	99%	100%	99%	98%	100%	98%
The Heart Hospital, London	238	7%	100%	95%	100%	10%	100%	0%	100%	100%	98%	100%	100%	100%	0%	100%	79%

PAEDIATRIC CARDIAC PROCEDURES

Interim Report

Period covered: 1/4/2000 to 31/01/2001 Report coverage: All contributing UK hospitals

* NHS numbers are not relevant in Scotland and Ireland. They are used in England for mortality tracking but are not included in the overall % data completeness.

9. Data Quality - by Individual Hospital

INTERVENTIONAL DATA

Hospital	N	% data completeness															OVERALL
		NHS Number	Sex:	Weight	DOB	Post Code	Procedure Date	Diagnosis	Procedure	Consultant	Operator	Grade	Closed/Open/Cath	Sequence	Discharge Date	Status at discharge	
Birmingham Childrens Hospital	88	80%	100%	75%	98%	97%	100%	98%	100%	100%	100%	100%	100%	100%	93%	100%	97%
Bristol Children's Hospital	86	86%	99%	84%	100%	99%	100%	92%	100%	100%	100%	100%	100%	100%	66%	100%	96%
Guy's & St Thomas' Hospitals, London	93	85%	100%	99%	100%	99%	100%	98%	100%	100%	100%	100%	100%	100%	98%	100%	100%
Leeds General Infirmary	84	85%	100%	95%	100%	94%	100%	96%	99%	100%	100%	100%	100%	100%	99%	100%	99%
Royal Brompton & Harefield Hospitals	92	87%	100%	40%	100%	71%	100%	80%	96%	57%	98%	98%	100%	98%	52%	100%	85%
Royal Hospital for Sick Children, Glasgow	86	*	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Royal Victoria Hospital Belfast	52	*	100%	88%	100%	98%	100%	98%	100%	100%	100%	100%	100%	100%	100%	100%	99%
Wessex Cardiothoracic Centre, Southampton	49	92%	100%	49%	100%	100%	100%	100%	100%	100%	100%	10%	100%	100%	100%	100%	90%

Length of Stay - All procedures

Procedure	Procedures	Median LOS (days)
ASD closure/Bypass	98	5
ASD closure/Catheter	93	1
VSD closure/Bypass	85	7
Duct coil occlusion/Catheter	78	1
PDA closure/Non-bypass	77	3
Blalock modified/Non-bypass	74	8
Tetralogy repair/Bypass	72	9
Balloon-pulm valve/Catheter	58	1
Shunt venous/Glenn/Bypass	48	7
Other operation not listed/Non-bypass	45	6
Coarct repair E-E/Non-bypass	42	6
TGA arterial switch/Bypass	40	10
AVSD (complete) repair/Bypass	40	9
AVSD (partial) repair/Bypass	34	6
PA banding/Non-bypass	33	9
TCPC/Bypass	27	17
Sub AS repair/Bypass	27	5
Duct occlusion Amplatz/Catheter	27	1
Balloon septostomy/Catheter	26	19
RF ablation/Catheter	26	1
Coarct repair S flap/Non-bypass	24	6
Balloon-PA/Catheter	21	1
Norwood 1/Bypass	18	13
Perm pacing/Catheter	18	3
TAPVD repair/Bypass	16	9
AVR/Bypass	15	8
RVOT patch/Bypass	15	8
PA homograft/Bypass	15	6
VSD closure;ASD closure/Bypass	13	10
Balloon-Ao valve/Catheter	13	1
Other operation not listed/Catheter	13	1
Embolisation-coil/Catheter	12	1
Stent-PA/Catheter	12	1
Pleural drainage/Non-bypass	11	8
Pacemaker implant (epi)/Non-bypass	11	5
MVR/Bypass	10	10

Length of Stay - Bypass

Procedure	Procedures	Median LOS (days)
ASD closure/Bypass	98	5
VSD closure/Bypass	85	7
Tetralogy repair/Bypass	72	9
Shunt venous/Glenn/Bypass	48	7
TGA arterial switch/Bypass	40	10
AVSD (complete) repair/Bypass	40	9
AVSD (partial) repair/Bypass	34	6
TCPC/Bypass	27	17
Sub AS repair/Bypass	27	5
Norwood 1/Bypass	18	13
TAPVD repair/Bypass	16	9
AVR/Bypass	15	8
RVOT patch/Bypass	15	8
PA homograft/Bypass	15	6
VSD closure;ASD closure/Bypass	13	10
MVR/Bypass	10	10
Fontan/Bypass	9	13
M valve repair/Bypass	9	10
Heart transplant/Bypass	8	21
VSD closure;PDA closure/Bypass	8	10
P atresia VSD repair/Bypass	8	8
Shunt venous/Glenn;Atrial septectomy/Bypass	8	8
Ross operation/Bypass	8	6
SV defect repair/Bypass	8	5
Truncus repair/Bypass	7	15
Ao valvotomy/Bypass	7	7
PS-infund repair/Bypass	7	6
VSD closure;PS-infund repair/Bypass	7	6
Blalock modified/Bypass	6	15
Coarct repair other/Bypass	6	9
PA reconstruction/Bypass	6	6
VSD closure;PA debanding/Bypass	6	6
DORV repair/Bypass	5	9
Shunt central/Bypass	5	9
PVR/Bypass	5	8
VSD closure;Coarct repair E-E/Bypass	5	7
PAPVD repair/Bypass	5	6

Length of Stay - Non-bypass

Procedure	Procedures	Median LOS (days)
PDA closure/Non-bypass	77	3
Blalock modified/Non-bypass	74	8
Other operation not listed/Non-bypass	45	6
Coarct repair E-E/Non-bypass	42	6
PA banding/Non-bypass	33	9
Coarct repair S flap/Non-bypass	24	6
Pacemaker implant (epi)/Non-bypass	11	5
Pleural drainage/Non-bypass	11	8
Coarct repair other/Non-bypass	9	5
Lobectomy/Non-bypass	8	5
ECMO/Non-bypass	6	21
PA banding;PDA closure/Non-bypass	6	14
PDA ligation/Non-bypass	6	0
Pericardial drainage/Non-bypass	6	4
Shunt central/Non-bypass	6	8
Generator renewal/Non-bypass	5	2
Blalock classical/Non-bypass	4	6

Length of Stay - Catheter

Procedure	Procedures	Median LOS (days)
ASD closure/Catheter	93	1
Duct coil occlusion/Catheter	78	1
Balloon-pulm valve/Catheter	58	1
Duct occlusion Amplatz/Catheter	27	1
Balloon septostomy/Catheter	26	19
RF ablation/Catheter	26	1
Balloon-PA/Catheter	21	1
Perm pacing/Catheter	18	3
Balloon-Ao valve/Catheter	13	1
Other operation not listed/Catheter	13	1
Embolisation-coil/Catheter	12	1
Stent-PA/Catheter	12	1
Duct occlusion other/Catheter	9	1
PDA closure/Catheter	9	1
Balloon-coarct/Catheter	8	1
Pericardiocentesis/Catheter	7	7
Stent redilatation/Catheter	7	1
Balloon-Venous/Catheter	6	1
Balloon-reoarct/Catheter	5	1