



**STS Congenital Heart Surgery Data Summary
Neonates**



STS Period Ending 06/30/2016

Table 1: Neonates number submitted, in analysis, and operative mortality

	STS	
	Last 1 Year Jul 2015 - Jun 2016	Last 4 Years Jul 2012 - Jun 2016
Number of Operations/Patients		
Operations in Analysis ¹	7,243	29,665
Patients in Analysis ²	4,890	20,586
Operative Mortality³		
Number of Mortalities	359	1,506
Number Eligible	4,093	17,089
Mortality Percent	8.8%	8.8%
Mortality 95% CI	(7.9 , 9.7)	(8.4 , 9.2)

¹Analysis includes only operations classified as "CPB" or "No CPB, Cardiovascular"

²Patient Numbers represent distinct patient admissions

³Mortality numbers are patient-based only for admission in the analysis population at sites with adequate mortality data

⁴Excludes procedures for which a STAT Mortality Category is not available



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Table 2: Primary diagnosis, 35 Most Frequent for Neonates, Last 4 Years (Jul 2012 - Jun 2016)

Primary Diagnosis	STS	
	N	% of All
Hypoplastic left heart syndrome (HLHS)	3,374	11.4%
Patent ductus arteriosus	3,159	10.6%
Open sternum with open skin (includes membrane placed to close skin)	2,397	8.1%
Coarctation of aorta	2,183	7.4%
TGA, IVS	1,910	6.4%
Cardiac, Other	1,776	6.0%
TGA, VSD	1,081	3.6%
Aortic arch hypoplasia	758	2.6%
Pulmonary atresia, VSD (Including TOF, PA)	692	2.3%
Truncus arteriosus	636	2.1%
Miscellaneous, Other	622	2.1%
VSD + Coarctation of aorta	614	2.1%
Total anomalous pulmonary venous connection (TAPVC), Type 1 (supracardiac)	554	1.9%
Pulmonary atresia, IVS	552	1.9%
VSD + Aortic arch hypoplasia	502	1.7%
Single ventricle, Tricuspid atresia	463	1.6%
Total anomalous pulmonary venous connection (TAPVC), Type 3 (infracardiac)	454	1.5%
TOF, Pulmonary stenosis	423	1.4%
DORV, TGA type	411	1.4%
Single ventricle, DILV	374	1.3%
Interrupted aortic arch + VSD	371	1.3%
Interrupted aortic arch	337	1.1%
Single ventricle, Heterotaxia syndrome	309	1.0%
AVC (AVSD), Complete (CAVSD)	277	0.9%
Open sternum with closed skin	265	0.9%
Postoperative bleeding	252	0.8%
Single ventricle, Unbalanced AV canal	249	0.8%
Single ventricle, Mitral atresia	195	0.7%
Arrhythmia, Heart block, Congenital	183	0.6%
Ebstein's anomaly	170	0.6%
Pericardial effusion	158	0.5%
Pulmonary atresia, VSD-MAPCA	156	0.5%
Total anomalous pulmonary venous connection (TAPVC), Type 2 (cardiac)	153	0.5%
VSD, Type 2 (Perimembranous) (Paramembranous) (Conoventricular)	147	0.5%
Aortic stenosis, Valvar	144	0.5%



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Duke Clinical Research Institute

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Table 3: Primary procedure, 35 Most Frequent for Neonates, Last 4 Years (Jul 2012 - Jun 2016)

Primary Procedure	N	STS	
		% of All	% Mort.
Delayed sternal closure	5,303	20.6%	0.0%
Norwood procedure	2,697	10.5%	15.5%
Arterial switch operation (ASO)	1,765	6.9%	2.3%
Mediastinal exploration	1,683	6.5%	0.4%
Shunt, Systemic to pulmonary, Modified Blalock-Taussig Shunt (MBTS)	1,663	6.5%	7.0%
Coarctation repair, End to end, Extended	1,475	5.7%	1.5%
PA banding (PAB)	1,247	4.8%	10.1%
TAPVC repair	1,079	4.2%	8.8%
Aortic arch repair	979	3.8%	2.7%
Arterial switch operation (ASO) and VSD repair	644	2.5%	5.0%
Shunt, Systemic to pulmonary, Central (shunt from aorta)	627	2.4%	11.2%
Aortic arch repair + VSD repair	614	2.4%	2.9%
Truncus arteriosus repair	486	1.9%	10.5%
Interrupted aortic arch repair	449	1.7%	3.3%
Coarctation repair, End to end	344	1.3%	1.7%
Hybrid Approach Stage 1, Stent placement in arterial duct (PDA) + application of RPA & LPA bands	311	1.2%	18.6%
Arterial switch procedure and VSD repair + Aortic arch repair	263	1.0%	13.7%
PDA closure, Surgical	260	1.0%	4.2%
TOF repair, Ventriculotomy, Transanular patch	219	0.9%	1.8%
Hybrid Approach Stage 1, Application of RPA & LPA bands	168	0.7%	38.7%
Sternotomy wound drainage	165	0.6%	0.0%
VSD repair, Patch	125	0.5%	1.6%
Mediastinal procedure	114	0.4%	1.8%
Conduit placement, RV to PA	111	0.4%	6.3%
Shunt, Reoperation	111	0.4%	0.0%
PA, reconstruction (plasty), Branch, Central (within the hilar bifurcation)	106	0.4%	4.7%
Coarctation repair + VSD repair	106	0.4%	4.7%
Coarctation repair, Subclavian flap	97	0.4%	2.1%
Damus-Kaye-Stansel procedure (DKS) (creation of AP anastomosis without arch reconstruction)	95	0.4%	21.1%
Pericardial drainage procedure	94	0.4%	3.2%
TAPVC repair + Shunt - systemic-to-pulmonary	91	0.4%	47.3%
RVOT procedure	88	0.3%	13.6%
Pulmonary atresia - VSD (including TOF, PA) repair	88	0.3%	6.8%
Coarctation repair, Patch aortoplasty	85	0.3%	3.5%
Vascular ring repair	82	0.3%	1.2%