



**STS Congenital Heart Surgery Data Summary
Neonates**

STS Period Ending 12/31/2018

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

	STS	
	Last 1 Year Jan 2018 - Dec 2018	Last Four Years Jan 2015 - Dec 2018
Number of Operations/Patients		
Operations in Analysis ¹	6,967	29,028
Patients in Analysis ²	4,664	19,774
Operative Mortality³		
Number of Mortalities	289	1,393
Number Eligible	4146,	17,156
Mortality Percent	7.0%	8.1%
Mortality (95% CI)	(6.2 , 7.8)	(7.7 , 8.5)

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



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Table 2: Primary diagnosis, 35 Most Frequent for Neonates, Last 4 Years (Jan 2015 - Dec 2018)

Primary Diagnosis	N	STS
		% of All
Open sternum with open skin (includes membrane placed to close skin)	4,432	15.3%
Hypoplastic left heart syndrome (HLHS)	3,203	11.0%
Patent ductus arteriosus	2,206	7.6%
Coarctation of aorta	2,149	7.4%
TGA, IVS	1,916	6.6%
TGA, VSD	1,050	3.6%
Aortic arch hypoplasia	864	3.0%
Miscellaneous, Other	659	2.3%
Pulmonary atresia, VSD (Including TOF, PA)	644	2.2%
VSD + Coarctation of aorta	635	2.2%
Truncus arteriosus	622	2.1%
Total anomalous pulmonary venous connection (TAPVC), Type 1 (supracardiac)	586	2.0%
VSD + Aortic arch hypoplasia	579	2.0%
Cardiac, Other	483	1.7%
Pulmonary atresia, IVS	470	1.6%
Total anomalous pulmonary venous connection (TAPVC), Type 3 (infracardiac)	443	1.5%
DORV, TGA type	432	1.5%
Single ventricle, Tricuspid atresia	427	1.5%
Interrupted aortic arch + VSD	413	1.4%
TOF, Pulmonary stenosis	392	1.4%
Single ventricle, DILV	371	1.3%
Open sternum with closed skin	323	1.1%
Single ventricle, Heterotaxia syndrome	319	1.1%
Interrupted aortic arch	259	0.9%
AVC (AVSD), Complete (CAVSD)	250	0.9%
Single ventricle, Unbalanced AV canal	226	0.8%
Postoperative bleeding	222	0.8%
Single ventricle, Mitral atresia	218	0.8%
Arrhythmia, Heart block, Congenital	182	0.6%
Aortic stenosis, Valvar	173	0.6%
Pericardial effusion	172	0.6%
Total anomalous pulmonary venous connection (TAPVC), Type 2 (cardiac)	152	0.5%
Pulmonary atresia, VSD-MAPCA	138	0.5%
Ebstein's anomaly	138	0.5%
DORV, TOF type	130	0.4%



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Duke Clinical Research Institute

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Table 3: Primary procedure, 35 Most Frequent for Neonates, Last 4 Years (Jan 2015 - Dec 2018)

Primary Procedure	STS		
	N	% of All	% Mort.
Delayed sternal closure	5,673	21.8%	0.1%
Norwood procedure	2,658	10.2%	13.7%
Arterial switch operation (ASO)	1,809	7.0%	1.9%
Mediastinal exploration	1,638	6.3%	0.3%
Coarctation repair, End to end, Extended	1,453	5.6%	1.5%
Shunt, Systemic to pulmonary, Modified Blalock-Taussig Shunt (MBTS)	1,377	5.3%	7.5%
PA banding (PAB)	1,310	5.0%	8.7%
TAPVC repair	1,162	4.5%	7.7%
Aortic arch repair	1,111	4.3%	3.2%
Aortic arch repair + VSD repair	695	2.7%	2.6%
Arterial switch operation (ASO) and VSD repair	695	2.7%	5.3%
Shunt, Systemic to pulmonary, Central (shunt from aorta)	545	2.1%	8.6%
Truncus arteriosus repair	488	1.9%	8.4%
Interrupted aortic arch repair	459	1.8%	3.1%
Coarctation repair, End to end	306	1.2%	2.9%
Hybrid Approach Stage 1, Stent placement in arterial duct (PDA) + application of RPA & LPA bands	295	1.1%	15.9%
Arterial switch procedure and VSD repair + Aortic arch repair	289	1.1%	14.2%
Hybrid Approach Stage 1, Application of RPA & LPA bands	264	1.0%	32.6%
TOF repair, Ventriculotomy, Transanular patch	235	0.9%	3.8%
PDA closure, Surgical	190	0.7%	4.7%
Sternotomy wound drainage	117	0.4%	0.0%
PA, reconstruction (plasty), Branch, Central (within the hilar bifurcation)	114	0.4%	2.6%
Shunt, Reoperation	113	0.4%	0.0%
Pulmonary atresia - VSD (including TOF, PA) repair	110	0.4%	2.7%
Mediastinal procedure	109	0.4%	1.8%
Pericardial drainage procedure	105	0.4%	2.9%
VSD repair, Patch	105	0.4%	0.0%
Conduit placement, RV to PA	100	0.4%	8.0%
Coarctation repair + VSD repair	99	0.4%	3.0%
Vascular ring repair	98	0.4%	1.0%
TAPVC repair + Shunt - systemic-to-pulmonary	92	0.4%	41.3%
Coarctation repair, Patch aortoplasty	84	0.3%	2.4%
RVOT procedure	83	0.3%	10.8%
Damus-Kaye-Stansel procedure (DKS) (creation of AP anastomosis without arch reconstruction)	82	0.3%	22.0%
Ebstein's repair	81	0.3%	21.0%