



STS Congenital Heart Surgery Data Summary  
All Patients



STS Period Ending 12/31/2018

**Table 1: All Patients number submitted, in analysis, and operative mortality**

	STS	
	Last 1 Year Jan 2018 - Dec 2018	Last Four Years Jan 2015 - Dec 2018
<b>Number of Operations/Patients</b>		
Operations Submitted	39,768	158,887
Operations in Analysis <sup>1</sup>	30,736	123,431
Patients in Analysis <sup>2</sup>	25,295	102,203
<b>Operative Mortality<sup>3</sup></b>		
Number of Mortalities	606	2,756
Number Eligible	24,151	96,808
Mortality Percent	2.5	2.8
Mortality (95% CI)	(2.3 , 2.7)	(2.7 , 3.0)

<sup>1</sup>Analysis includes only operations classified as "CPB" or "No CPB, Cardiovascular"

<sup>2</sup>Patient Numbers represent distinct patient admissions

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



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 **Duke Clinical Research Institute**

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

Primary Diagnosis	STS	
	N	% of All
VSD, Type 2 (Perimembranous) (Paramembranous) (Conoventricular)	7,694	6.2%
Open sternum with open skin (includes membrane placed to close skin)	7,514	6.1%
Hypoplastic left heart syndrome (HLHS)	7,142	5.8%
Patent ductus arteriosus	4,952	4.0%
ASD, Secundum	4,913	4.0%
TOF, Pulmonary stenosis	4,812	3.9%
Coarctation of aorta	4,353	3.5%
AVC (AVSD), Complete (CAVSD)	4,174	3.4%
Pulmonary insufficiency	2,818	2.3%
Cardiac, Other	2,677	2.2%
Aortic stenosis, Subvalvar	2,387	1.9%
Single ventricle, Tricuspid atresia	2,090	1.7%
TGA, IVS	2,042	1.7%
Vascular ring	2,014	1.6%
Conduit failure	1,942	1.6%
Miscellaneous, Other	1,822	1.5%
Pulmonary atresia, VSD (Including TOF, PA)	1,684	1.4%
Mitral regurgitation	1,590	1.3%
Single ventricle, DILV	1,573	1.3%
Aortic insufficiency	1,514	1.2%
ASD, Sinus venosus	1,430	1.2%
Pulmonary atresia, IVS	1,418	1.1%
Aortic arch hypoplasia	1,388	1.1%
TGA, VSD	1,385	1.1%
Cardiomyopathy (including dilated, restrictive, and hypertrophic)	1,341	1.1%
AVC (AVSD), Partial (incomplete) (PAVSD) (ASD, primum)	1,262	1.0%
Arrhythmia, Pacemaker, Indication for replacement	1,205	1.0%
Aortic stenosis, Valvar	1,182	1.0%
Single ventricle, Heterotaxia syndrome	1,180	1.0%
TOF	1,069	0.9%
DORV, TGA type	1,054	0.9%
Pulmonary atresia, VSD-MAPCA	976	0.8%
Coronary artery anomaly, Anomalous aortic origin of coronary artery (AAOCA)	963	0.8%
Arrhythmia, Heart block	939	0.8%
Truncus arteriosus	938	0.8%



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

Primary Procedure	STS		
	N	% of All	% Mort.
Delayed sternal closure	9,767	8.3%	0.2%
VSD repair, Patch	7,453	6.4%	0.5%
Mediastinal exploration	4,164	3.5%	0.5%
ASD repair, Patch	3,775	3.2%	0.2%
AVC (AVSD) repair, Complete (CAVSD)	3,309	2.8%	2.0%
Norwood procedure	2,911	2.5%	13.1%
Pacemaker implantation, Permanent	2,712	2.3%	0.9%
Bidirectional cavopulmonary anastomosis (BDCPA) (bidirectional Glenn)	2,643	2.3%	1.7%
Coarctation repair, End to end, Extended	2,605	2.2%	1.1%
PA banding (PAB)	2,498	2.1%	7.2%
RVOT procedure	2,436	2.1%	1.0%
TOF repair, Ventriculotomy, Transanular patch	2,385	2.0%	1.8%
Aortic arch repair	2,326	2.0%	2.7%
PA, reconstruction (plasty), Branch, Central (within the hilar bifurcation)	2,258	1.9%	1.2%
Shunt, Systemic to pulmonary, Modified Blalock-Taussig Shunt (MBTS)	2,004	1.7%	7.4%
Transplant, Heart	1,943	1.7%	3.8%
Valvuloplasty, Mitral	1,878	1.6%	1.1%
Arterial switch operation (ASO)	1,876	1.6%	2.0%
Fontan, TCPC, External conduit, Fenestrated	1,858	1.6%	1.3%
Vascular ring repair	1,795	1.5%	0.2%
Pacemaker procedure	1,773	1.5%	0.3%
Valve replacement, Pulmonic (PVR)	1,652	1.4%	0.4%
Conduit placement, RV to PA	1,604	1.4%	1.7%
TAPVC repair	1,573	1.3%	6.5%
Aortic stenosis, Subvalvar, Repair	1,378	1.2%	0.1%
Fontan, TCPC, External conduit, Nonfenestrated	1,368	1.2%	0.4%
TOF repair, Ventriculotomy, Nontransanular patch	1,366	1.2%	0.7%
Superior Cavopulmonary anastomosis(es) + PA reconstruction	1,347	1.1%	1.9%
Valvuloplasty, Tricuspid	1,327	1.1%	1.6%
Valve replacement, Mitral (MVR)	1,223	1.0%	2.9%
PDA closure, Surgical	1,207	1.0%	4.4%
TOF repair, No ventriculotomy	1,106	0.9%	0.5%
Conduit reoperation	1,040	0.9%	0.3%
Shunt, Systemic to pulmonary, Central (shunt from aorta)	1,011	0.9%	7.9%
ASD repair, Primary closure	947	0.8%	0.3%