



**STS Congenital Heart Surgery Data Summary
All Patients**

Duke Clinical Research Institute

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
Number of Operations/Patients		
Operations Submitted	40,154	159,301
Operations in Analysis ¹	31,102	123,777
Patients in Analysis ²	25,608	102,545
Operative Mortality³		
Number of Mortalities	622	2,788
Number Eligible	24,617	98,049
Mortality Percent	2.5	2.8
Mortality (95% CI)	(2.3 , 2.7)	(2.7 , 2.9)

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 All Patients, Last 4 Years (Jan 2015 - Dec 2018)

Primary Diagnosis	STS	
	N	% of All
VSD, Type 2 (Perimembranous) (Paramembranous) (Conoventricular)	7,724	6.2%
Open sternum with open skin (includes membrane placed to close skin)	7,503	6.1%
Hypoplastic left heart syndrome (HLHS)	7,144	5.8%
Patent ductus arteriosus	4,972	4.0%
ASD, Secundum	4,942	4.0%
TOF, Pulmonary stenosis	4,827	3.9%
Coarctation of aorta	4,354	3.5%
AVC (AVSD), Complete (CAVSD)	4,180	3.4%
Pulmonary insufficiency	2,823	2.3%
Cardiac, Other	2,632	2.1%
Aortic stenosis, Subvalvar	2,364	1.9%
Single ventricle, Tricuspid atresia	2,095	1.7%
TGA, IVS	2,042	1.6%
Vascular ring	2,015	1.6%
Conduit failure	1,942	1.6%
Miscellaneous, Other	1,815	1.5%
Pulmonary atresia, VSD (Including TOF, PA)	1,682	1.4%
Mitral regurgitation	1,581	1.3%
Single ventricle, DILV	1,573	1.3%
Aortic insufficiency	1,505	1.2%
ASD, Sinus venosus	1,434	1.2%
Pulmonary atresia, IVS	1,420	1.1%
TGA, VSD	1,390	1.1%
Aortic arch hypoplasia	1,383	1.1%
Cardiomyopathy (including dilated, restrictive, and hypertrophic)	1,343	1.1%
AVC (AVSD), Partial (incomplete) (PAVSD) (ASD, primum)	1,262	1.0%
Arrhythmia, Pacemaker, Indication for replacement	1,203	1.0%
Single ventricle, Heterotaxia syndrome	1,183	1.0%
Aortic stenosis, Valvar	1,182	1.0%
TOF	1,088	0.9%
DORV, TGA type	1,056	0.9%
Pulmonary atresia, VSD-MAPCA	979	0.8%
Coronary artery anomaly, Anomalous aortic origin of coronary artery (AAOCA)	961	0.8%
Truncus arteriosus	940	0.8%
Arrhythmia, Heart block	940	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	9,869	8.3%	0.2%
VSD repair, Patch	7,577	6.4%	0.5%
Mediastinal exploration	4,177	3.5%	0.5%
ASD repair, Patch	3,814	3.2%	0.2%
AVC (AVSD) repair, Complete (CAVSD)	3,348	2.8%	2.0%
Norwood procedure	2,949	2.5%	13.2%
Pacemaker implantation, Permanent	2,747	2.3%	0.9%
Bidirectional cavopulmonary anastomosis (BDCPA) (bidirectional Glenn)	2,683	2.3%	1.7%
Coarctation repair, End to end, Extended	2,635	2.2%	1.1%
PA banding (PAB)	2,522	2.1%	7.1%
RVOT procedure	2,489	2.1%	1.0%
TOF repair, Ventriculotomy, Transanular patch	2,423	2.0%	1.7%
Aortic arch repair	2,349	2.0%	2.8%
PA, reconstruction (plasty), Branch, Central (within the hilar bifurcation)	2,280	1.9%	1.2%
Shunt, Systemic to pulmonary, Modified Blalock-Taussig Shunt (MBTS)	2,036	1.7%	7.4%
Transplant, Heart	1,978	1.7%	3.8%
Arterial switch operation (ASO)	1,892	1.6%	2.1%
Valvuloplasty, Mitral	1,887	1.6%	1.1%
Fontan, TCPC, External conduit, Fenestrated	1,860	1.6%	1.3%
Pacemaker procedure	1,801	1.5%	0.3%
Vascular ring repair	1,795	1.5%	0.2%
Valve replacement, Pulmonic (PVR)	1,682	1.4%	0.4%
TAPVC repair	1,608	1.4%	6.6%
Conduit placement, RV to PA	1,601	1.3%	1.9%
Aortic stenosis, Subvalvar, Repair	1,395	1.2%	0.1%
TOF repair, Ventriculotomy, Nontransanular patch	1,389	1.2%	0.6%
Fontan, TCPC, External conduit, Nonfenestrated	1,385	1.2%	0.5%
Superior Cavopulmonary anastomosis(es) + PA reconstruction	1,357	1.1%	1.8%
Valvuloplasty, Tricuspid	1,340	1.1%	1.6%
Valve replacement, Mitral (MVR)	1,250	1.1%	2.8%
PDA closure, Surgical	1,227	1.0%	4.2%
TOF repair, No ventriculotomy	1,130	1.0%	0.5%
Conduit reoperation	1,047	0.9%	0.3%
Shunt, Systemic to pulmonary, Central (shunt from aorta)	1,035	0.9%	8.1%
ASD repair, Primary closure	979	0.8%	0.3%