



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

**STS Period Ending 12/31/2016**



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

	<b>STS</b>	
	Last 1 Year Jan 2016 - Dec 2016	Last Four Years Jan 2013 - Dec 2016
<b>Number of Operations/Patients</b>		
Operations Submitted	39,035	157,357
Operations in Analysis <sup>1</sup>	30,552	122,193
Patients in Analysis <sup>2</sup>	25,199	101,659
<b>Operative Mortality<sup>3</sup></b>		
Number of Mortalities	670	2,904
Number Eligible	23,933	96,255
Mortality Percent	2.8	3.0
Mortality (95% CI)	(2.6 , 3.0)	(2.9 , 3.1)

<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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**Table 2: Primary diagnosis, 35 Most Frequent for All Patients, Last 4 Years (Jan 2013 - Dec 2016)**

Primary Diagnosis	STS	
	N	% of All
VSD, Type 2 (Perimembranous) (Paramembranous) (Conoventricular)	7,604	6.2%
Hypoplastic left heart syndrome (HLHS)	7,371	6.0%
Patent ductus arteriosus	5,861	4.8%
Open sternum with open skin (includes membrane placed to close skin)	5,048	4.1%
ASD, Secundum	4,858	4.0%
TOF, Pulmonary stenosis	4,489	3.7%
Coarctation of aorta	4,389	3.6%
AVC (AVSD), Complete (CAVSD)	4,115	3.4%
Cardiac, Other	4,035	3.3%
Pulmonary insufficiency	2,965	2.4%
Aortic stenosis, Subvalvar	2,241	1.8%
Single ventricle, Tricuspid atresia	2,144	1.8%
TGA, IVS	2,089	1.7%
Miscellaneous, Other	1,914	1.6%
Conduit failure	1,887	1.5%
Pulmonary atresia, VSD (Including TOF, PA)	1,821	1.5%
Vascular ring	1,733	1.4%
Single ventricle, DILV	1,578	1.3%
Aortic insufficiency	1,549	1.3%
Pulmonary atresia, IVS	1,534	1.3%
TOF	1,529	1.3%
Mitral regurgitation	1,480	1.2%
Cardiomyopathy (including dilated, restrictive, and hypertrophic)	1,393	1.1%
ASD, Sinus venosus	1,372	1.1%
TGA, VSD	1,368	1.1%
Arrhythmia, Pacemaker, Indication for replacement	1,280	1.0%
AVC (AVSD), Partial (incomplete) (PAVSD) (ASD, primum)	1,219	1.0%
Aortic arch hypoplasia	1,210	1.0%
Single ventricle, Heterotaxia syndrome	1,163	1.0%
Aortic stenosis, Valvar	1,118	0.9%
DORV, TGA type	1,040	0.9%
Pulmonary atresia, VSD-MAPCA	1,018	0.8%
Truncus arteriosus	999	0.8%
Ebstein's anomaly	970	0.8%
Coronary artery anomaly, Anomalous aortic origin of coronary artery (AAOCA)	926	0.8%



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**Table 3: Primary procedure, 35 Most Frequent for All Patients, Last 4 Years (Jan 2013 - Dec 2016)**

Primary Procedure	STS		
	N	% of All	% Mort.
Delayed sternal closure	9,350	8.0%	0.2%
VSD repair, Patch	7,386	6.3%	0.6%
Mediastinal exploration	4,196	3.6%	0.5%
ASD repair, Patch	3,759	3.2%	0.2%
AVC (AVSD) repair, Complete (CAVSD)	3,271	2.8%	2.6%
Norwood procedure	2,964	2.5%	14.7%
Bidirectional cavopulmonary anastomosis (BDCPA) (bidirectional Glenn)	2,865	2.5%	2.1%
Coarctation repair, End to end, Extended	2,582	2.2%	1.2%
Pacemaker implantation, Permanent	2,540	2.2%	0.9%
RVOT procedure	2,535	2.2%	1.1%
PA banding (PAB)	2,442	2.1%	8.0%
Shunt, Systemic to pulmonary, Modified Blalock-Taussig Shunt (MBTS)	2,376	2.0%	6.1%
TOF repair, Ventriculotomy, Transanular patch	2,359	2.0%	1.5%
Aortic arch repair	2,051	1.8%	3.0%
Pacemaker procedure	2,022	1.7%	0.2%
Fontan, TCPC, External conduit, Fenestrated	1,969	1.7%	1.2%
PA, reconstruction (plasty), Branch, Central (within the hilar bifurcation)	1,951	1.7%	1.5%
Transplant, Heart	1,900	1.6%	4.0%
Arterial switch operation (ASO)	1,885	1.6%	2.2%
Valvuloplasty, Mitral	1,834	1.6%	1.4%
Valve replacement, Pulmonic (PVR)	1,793	1.5%	0.1%
Conduit placement, RV to PA	1,709	1.5%	1.8%
TAPVC repair	1,617	1.4%	6.5%
Vascular ring repair	1,563	1.3%	0.3%
Fontan, TCPC, External conduit, Nonfenestrated	1,403	1.2%	1.1%
PDA closure, Surgical	1,376	1.2%	3.6%
Aortic stenosis, Subvalvar, Repair	1,306	1.1%	0.2%
TOF repair, Ventriculotomy, Nontransanular patch	1,282	1.1%	1.1%
Valvuloplasty, Tricuspid	1,231	1.1%	1.5%
Superior Cavopulmonary anastomosis(es) + PA reconstruction	1,208	1.0%	1.7%
Valve replacement, Mitral (MVR)	1,163	1.0%	3.2%
TOF repair, No ventriculotomy	1,093	0.9%	0.4%
Shunt, Systemic to pulmonary, Central (shunt from aorta)	1,053	0.9%	8.5%
ASD repair, Primary closure	1,023	0.9%	0.3%
Conduit reoperation	948	0.8%	0.3%