

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

**Participant 99999  
STS Period Ending 12/31/2016**

**Table 1: Number submitted and in analysis, operative mortality, and complexity information**

Beginning Ending	Participant 99999					STS				
	Yearly				Last Four	Yearly				Last Four
	Jan 2013 Dec 2013	Jan 2014 Dec 2014	Jan 2015 Dec 2015	Jan 2016 Dec 2016	Jan 2013 Jan 2014 Jan 2015 Dec 2016	Jan 2013 Dec 2013	Jan 2014 Dec 2014	Jan 2015 Dec 2015	Jan 2016 Dec 2016	Jan 2013 Jan 2014 Jan 2015 Dec 2016
<b>Number of Operations/Patients</b>										
Operations Submitted										
Operations in Analysis <sup>1</sup>										
Patients in Analysis <sup>2</sup>										
<b>Operative Mortality<sup>3</sup></b>										
Number of Mortalities										
Number Eligible										
Mortality Percent										
Mortality (95% CI)										
<b>STAT Mortality<sup>4</sup></b>										
<b>Category 1</b>										
Number of Mortalities										
Number Eligible										
Mortality Percent										
Mortality (95% CI)										
<b>Category 2</b>										
Number of Mortalities										
Number Eligible										
Mortality Percent										
Mortality (95% CI)										
<b>Category 3</b>										
Number of Mortalities										
Number Eligible										
Mortality Percent										
Mortality (95% CI)										
<b>Category 4</b>										
Number of Mortalities										
Number Eligible										
Mortality Percent										
Mortality (95% CI)										
<b>Category 5</b>										
Number of Mortalities										
Number Eligible										
Mortality Percent										
Mortality (95% CI)										

<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

<sup>4</sup>Excludes procedures for which a STAT Mortality Category is not available

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**Table 1: Number submitted and in analysis, operative mortality, and complexity information - cont.**

Beginning Ending	Participant 99999					STS				
	Yearly				Last Four	Yearly				Last Four
	Jan 2013 Dec 2013	Jan 2014 Dec 2014	Jan 2015 Dec 2015	Jan 2016 Dec 2016	Jan 2013 Jan 2014 Jan 2015 Jan 2016 Dec 2016	Jan 2013 Dec 2013	Jan 2014 Dec 2014	Jan 2015 Dec 2015	Jan 2016 Dec 2016	Jan 2013 Jan 2014 Jan 2015 Jan 2016 Dec 2016
<b>RACHS1 Category<sup>1</sup></b>										
<b>Category 1</b>										
Number of Mortalities										
Number Eligible										
Mortality Percent										
Mortality (95% CI)										
<b>Category 2</b>										
Number of Mortalities										
Number Eligible										
Mortality Percent										
Mortality (95% CI)										
<b>Category 3</b>										
Number of Mortalities										
Number Eligible										
Mortality Percent										
Mortality (95% CI)										
<b>Category 4</b>										
Number of Mortalities										
Number Eligible										
Mortality Percent										
Mortality (95% CI)										
<b>Category 5-6</b>										
Number of Mortalities										
Number Eligible										
Mortality Percent										
Mortality (95% CI)										

<sup>1</sup>Excludes procedures for which a RACHS-1 Category is not available

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**Table 1: Number submitted and in analysis, operative mortality, and complexity information - cont.**

Beginning Ending	Participant 99999					STS				
	Yearly				Last Four	Yearly				Last Four
	Jan 2013 Dec 2013	Jan 2014 Dec 2014	Jan 2015 Dec 2015	Jan 2016 Dec 2016	Jan 2013 Jan 2014 Jan 2015 Jan 2016 Dec 2016	Jan 2013 Dec 2013	Jan 2014 Dec 2014	Jan 2015 Dec 2015	Jan 2016 Dec 2016	Jan 2013 Jan 2014 Jan 2015 Jan 2016 Dec 2016
<b>Aristotle Basic Complexity Level<sup>1</sup></b>										
<b>Level 1</b>										
Number of Mortalities										
Number Eligible										
Mortality Percent										
Mortality (95% CI)										
<b>Level 2</b>										
Number of Mortalities										
Number Eligible										
Mortality Percent										
Mortality (95% CI)										
<b>Level 3</b>										
Number of Mortalities										
Number Eligible										
Mortality Percent										
Mortality (95% CI)										
<b>Level 4</b>										
Number of Mortalities										
Number Eligible										
Mortality Percent										
Mortality (95% CI)										

<sup>1</sup>Excludes procedures for which an Aristotle Basic Complexity Level is not available

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**Table 2: Annual volume, and operative mortality, by Participant, Last 4 Years ( Jan 2013 - Dec 2016 )**

Participant	Congenital Annual Volume	Operative Mortality % of Patients (95% CI)	% Missing
STS		-	
116			
115			
114			
113			
112			
111			
110			
109			
108			
107			
106			
105			
104			
103			
102			
101			
100			
99			
98			
97			
96			
95			
94			
93			
92			
91			
90			
89			
88			
87			
86			
85			
84			
83			
82			
81			
80			

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**Table 2: Annual volume, and operative mortality, by Participant, Last 4 Years ( Jan 2013 - Dec 2016 ) - cont.**

Participant	Congenital Annual Volume	Operative Mortality % of Patients (95% CI)	% Missing
79			
78			
77			
76			
75			
74			
73			
72			
71			
70			
69			
68			
67			
66			
65			
64			
63			
62			
61			
60			
59			
58			
57			
56			
55			
54			
53			
52			
51			
50			
49			
48			
47			
46			
45			
44			
43			
42			

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**Table 2: Annual volume, and operative mortality, by Participant, Last 4 Years ( Jan 2013 - Dec 2016 ) - cont.**

Participant	Congenital Annual Volume	Operative Mortality % of Patients (95% CI)	% Missing
41			
40			
39			
38			
37			
36			
35			
34			
33			
32			
31			
30			
29			
28			
27			
26			
25			
24			
23			
22			
21			
20			
19			
18			
17			
16			
15			
14			
13			
12			
11			
10			
9			
8			
7			
6			
5			
4			

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**Table 2: Annual volume, and operative mortality, by Participant, Last 4 Years ( Jan 2013 - Dec 2016 ) - cont.**

Participant	Congenital Annual Volume	Operative Mortality % of Patients (95% CI)	% Missing
3			
2			
1			

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**Figure 1: All Patients, Operative Mortality, Last 4 years (Jan 2013 - Dec 2016)**



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**Table 3: Operative Mortality, by STAT Mortality Category, by Participant, Last 4 Years (Jan 2013 - Dec 2016)**

Participant	Congenital Annual Volume	Operative Mortality STAT Mortality Category				
		Category 1 % of Patients (95% CI)	Category 2 % of Patients (95% CI)	Category 3 % of Patients (95% CI)	Category 4 % of Patients (95% CI)	Category 5 % of Patients (95% CI)
STS		-	-	-	-	-
116	Low	-	-	-	-	-
115	Low	-	-	-	-	-
114	Low	-	-	-	-	-
113	Low	-	-	-	-	-
112	Low	-	-	-	-	-
111	Low	-	-	-	-	-
110	Low	-	-	-	-	-
109	Low	-	-	-	-	-
108	Low	-	-	-	-	-
107	Low	-	-	-	-	-
106	Low	-	-	-	-	-
105	Low	-	-	-	-	-
104	Low	-	-	-	-	-
103	Low	-	-	-	-	-
102	Low	-	-	-	-	-
101	Low	-	-	-	-	-
100	Low	-	-	-	-	-
99	Low	-	-	-	-	-
98	Low	-	-	-	-	-
97	Low	-	-	-	-	-
96	Low	-	-	-	-	-
95	Low	-	-	-	-	-
94	Low	-	-	-	-	-
93	Low	-	-	-	-	-
92	Low	-	-	-	-	-
91	Low	-	-	-	-	-
90	Low	-	-	-	-	-
89	Low	-	-	-	-	-
88	Low	-	-	-	-	-
87	Low	-	-	-	-	-
86	Low	-	-	-	-	-
85	Low	-	-	-	-	-
84	Low	-	-	-	-	-
83	Low	-	-	-	-	-
82	Low	-	-	-	-	-

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**Table 3: Operative Mortality, by STAT Mortality Category, by Participant, Last 4 Years (Jan 2013 - Dec 2016) - cont.**

Participant	Congenital Annual Volume	Operative Mortality STAT Mortality Category				
		Category 1 % of Patients (95% CI)	Category 2 % of Patients (95% CI)	Category 3 % of Patients (95% CI)	Category 4 % of Patients (95% CI)	Category 5 % of Patients (95% CI)
81	Low	-	-	-	-	-
80	Medium	-	-	-	-	-
79	Medium	-	-	-	-	-
78	Medium	-	-	-	-	-
77	Medium	-	-	-	-	-
76	Medium	-	-	-	-	-
75	Medium	-	-	-	-	-
74	Medium	-	-	-	-	-
73	Medium	-	-	-	-	-
72	Medium	-	-	-	-	-
71	Medium	-	-	-	-	-
70	Medium	-	-	-	-	-
69	Medium	-	-	-	-	-
68	Medium	-	-	-	-	-
67	Medium	-	-	-	-	-
66	Medium	-	-	-	-	-
65	Medium	-	-	-	-	-
64	Medium	-	-	-	-	-
63	Medium	-	-	-	-	-
62	Medium	-	-	-	-	-
61	Medium	-	-	-	-	-
60	Medium	-	-	-	-	-
59	Medium	-	-	-	-	-
58	Medium	-	-	-	-	-
57	Medium	-	-	-	-	-
56	Medium	-	-	-	-	-
55	Medium	-	-	-	-	-
54	Medium	-	-	-	-	-
53	Medium	-	-	-	-	-
52	Medium	-	-	-	-	-
51	Medium	-	-	-	-	-
50	Medium	-	-	-	-	-
49	Medium	-	-	-	-	-
48	Medium	-	-	-	-	-
47	Medium	-	-	-	-	-
46	Medium	-	-	-	-	-

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**Table 3: Operative Mortality, by STAT Mortality Category, by Participant, Last 4 Years (Jan 2013 - Dec 2016) - cont.**

Participant	Congenital Annual Volume	Operative Mortality STAT Mortality Category				
		Category 1 % of Patients (95% CI)	Category 2 % of Patients (95% CI)	Category 3 % of Patients (95% CI)	Category 4 % of Patients (95% CI)	Category 5 % of Patients (95% CI)
45	Medium	-	-	-	-	-
44	Medium	-	-	-	-	-
43	Medium	-	-	-	-	-
42	Medium	-	-	-	-	-
41	High	-	-	-	-	-
40	High	-	-	-	-	-
39	High	-	-	-	-	-
38	High	-	-	-	-	-
37	High	-	-	-	-	-
36	High	-	-	-	-	-
35	High	-	-	-	-	-
34	High	-	-	-	-	-
33	High	-	-	-	-	-
32	High	-	-	-	-	-
31	High	-	-	-	-	-
30	High	-	-	-	-	-
29	High	-	-	-	-	-
28	High	-	-	-	-	-
27	High	-	-	-	-	-
26	High	-	-	-	-	-
25	High	-	-	-	-	-
24	High	-	-	-	-	-
23	High	-	-	-	-	-
22	High	-	-	-	-	-
21	High	-	-	-	-	-
20	High	-	-	-	-	-
19	High	-	-	-	-	-
18	High	-	-	-	-	-
17	High	-	-	-	-	-
16	High	-	-	-	-	-
15	High	-	-	-	-	-
14	High	-	-	-	-	-
13	High	-	-	-	-	-
12	High	-	-	-	-	-
11	High	-	-	-	-	-
10	High	-	-	-	-	-

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**Table 3: Operative Mortality, by STAT Mortality Category, by Participant, Last 4 Years (Jan 2013 - Dec 2016) - cont.**

Participant	Congenital Annual Volume	Operative Mortality STAT Mortality Category				
		Category 1 % of Patients (95% CI)	Category 2 % of Patients (95% CI)	Category 3 % of Patients (95% CI)	Category 4 % of Patients (95% CI)	Category 5 % of Patients (95% CI)
9	High	-	-	-	-	-
8	High	-	-	-	-	-
7	High	-	-	-	-	-
6	High	-	-	-	-	-
5	High	-	-	-	-	-
4	High	-	-	-	-	-
3	High	-	-	-	-	-
2	High	-	-	-	-	-
1	High	-	-	-	-	-

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**Figure 2: Operative Mortality, by STAT Mortality Category 1, by Participant, Last 4 Years, (Jan 2013 - Dec 2016)**

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**Figure 3: Operative Mortality, by STAT Mortality Category 2, by Participant, Last 4 Years, (Jan 2013 - Dec 2016)**

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**Figure 4: Operative Mortality, by STAT Mortality Category 3, by Participant, Last 4 Years, (Jan 2013 - Dec 2016)**

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**Figure 5: Operative Mortality, by STAT Mortality Category 4, by Participant, Last 4 Years, (Jan 2013 - Dec 2016)**



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**Figure 6: Operative Mortality, by STAT Mortality Category 5, by Participant, Last 4 Years, (Jan 2013 - Dec 2016)**

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**Figure 7 - All Patients, Operative Mortality, by STAT Mortality, Last 4 Years(Jan 2013 - Dec 2016)<sup>1</sup>**

<sup>1</sup>Excludes procedures for which the STAT Mortality Category is Not Categorized

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**Table 4: Primary diagnosis by anomaly, Last 4 Years(Jan 2013 - Dec 2016)**

Primary Diagnosis	Participant		STS	
	N	% of All	N	% of All
<b>SEPTAL DEFECTS</b>				
PFO				
ASD, Secundum				
ASD, Sinus venosus				
ASD, Coronary sinus				
ASD, Common atrium (single atrium)				
ASD, Postoperative interatrial communication				
VSD, Type 1 (Subarterial) (Supracristal) (Conal septal defect) (Infundibular)				
VSD, Type 2 (Perimembranous) (Paramembranous) (Conoventricular)				
VSD, Type 3 (Inlet) (AV canal type)				
VSD, Type 4 (Muscular)				
VSD, Type: Gerbode type (LV-RA communication)				
VSD, Multiple				
AVC (AVSD), Complete (CAVSD)				
AVC (AVSD), Intermediate (transitional)				
AVC (AVSD), Partial (incomplete) (PAVSD) (ASD, primum)				
AP window (aortopulmonary window)				
Pulmonary artery origin from ascending aorta (hemitruncus)				
Truncus arteriosus				
Truncal valve insufficiency				
Truncal valve stenosis (v3.3)				
Truncus arteriosus + Interrupted aortic arch				
<b>PULMONARY VENOUS ANOMALIES</b>				
Partial anomalous pulmonary venous connection (PAPVC)				
Partial anomalous pulmonary venous connection (PAPVC), scimitar				
Total anomalous pulmonary venous connection (TAPVC), Type 1 (supracardiac)				
Total anomalous pulmonary venous connection (TAPVC), Type 2 (cardiac)				
Total anomalous pulmonary venous connection (TAPVC), Type 3 (infracardiac)				
Total anomalous pulmonary venous connection (TAPVC), Type 4 (mixed)				
<b>COR TRIATIATUM</b>				
Cor triatriatum				
<b>PULMONARY VENOUS STENOSIS</b>				
Pulmonary venous stenosis				

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**Table 4: Primary diagnosis by anomaly, Last 4 Years(Jan 2013 - Dec 2016) - cont.**

Primary Diagnosis	Participant		STS	
	N	% of All	N	% of All
<b>SYSTEMIC VENOUS ANOMALIES</b>				
Systemic venous anomaly				
Systemic venous obstruction				
<b>RIGHT HEART LESIONS</b>				
TOF				
TOF, Pulmonary stenosis				
TOF, AVC (AVSD)				
TOF, Absent pulmonary valve				
Pulmonary atresia				
Pulmonary atresia, IVS				
Pulmonary atresia, VSD (Including TOF, PA)				
Pulmonary atresia, VSD-MAPCA (pseudotruncus)				
MAPCA(s) (major aortopulmonary collaterals) (without PA-VSD)				
"Ebsteins anomaly"				
"Tricuspid regurgitation, non-Ebsteins related"				
Tricuspid stenosis				
Tricuspid regurgitation and tricuspid stenosis				
Tricuspid valve, Other				
Pulmonary stenosis, Valvar				
Pulmonary artery stenosis (hypoplasia), Main (trunk)				
Pulmonary artery stenosis, Branch, Central (within the hilar bifurcation)				
Pulmonary artery stenosis, Branch, Peripheral (at or beyond the hilar bifurcation)				
Pulmonary artery, Discontinuous				
Pulmonary stenosis, Subvalvar				
DCRV				
Pulmonary valve, Other				
Pulmonary insufficiency				
Pulmonary insufficiency and pulmonary stenosis				
<b>SHUNT FAILURE</b>				
Shunt failure				
<b>CONDUIT FAILURE</b>				
Conduit failure				

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**Table 4: Primary diagnosis by anomaly, Last 4 Years(Jan 2013 - Dec 2016) - cont.**

Primary Diagnosis	Participant		STS	
	N	% of All	N	% of All
<b>LEFT HEART LESIONS</b>				
Aortic stenosis, Subvalvar				
Aortic stenosis, Valvar				
Aortic stenosis, Supravalvar				
Aortic valve atresia				
Aortic insufficiency				
Aortic insufficiency and aortic stenosis				
Aortic valve, Other				
Sinus of Valsalva aneurysm				
LV to aorta tunnel				
Mitral stenosis, Supravalvar mitral ring				
Mitral stenosis, Valvar				
Mitral stenosis, Subvalvar				
Mitral stenosis, Subvalvar, Parachute				
Mitral stenosis				
Mitral regurgitation and mitral stenosis				
Mitral regurgitation				
Mitral valve, Other				
Hypoplastic left heart syndrome (HLHS)				
Shone's syndrome				
<b>CARDIOMYOPATHY</b>				
Cardiomyopathy (including dilated, restrictive, and hypertrophic)				
Cardiomyopathy, End-stage congenital heart disease				
<b>PERICARDIAL DISEASE</b>				
Pericardial effusion				
Pericarditis				
Pericardial disease, Other				
<b>SINGLE VENTRICLE</b>				
Single ventricle, DILV				
Single ventricle, DIRV				
Single ventricle, Mitral atresia				
Single ventricle, Tricuspid atresia				
Single ventricle, Unbalanced AV canal				
Single ventricle, Heterotaxia syndrome				

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**Table 4: Primary diagnosis by anomaly, Last 4 Years(Jan 2013 - Dec 2016) - cont.**

Primary Diagnosis	Participant		STS	
	N	% of All	N	% of All
Single ventricle, Other Single Ventricle + Total anomalous pulmonary venous connection (TAPVC)				
<b>TRANSPOSITION OF THE GREAT ARTERIES</b>				
Congenitally corrected TGA				
Congenitally corrected TGA, IVS				
Congenitally corrected TGA, IVS-LVOTO				
Congenitally corrected TGA, VSD				
Congenitally corrected TGA, VSD-LVOTO				
TGA, IVS				
TGA, IVS-LVOTO				
TGA, VSD				
TGA, VSD-LVOTO				
<b>DORV</b>				
DORV, VSD type				
DORV, TOF type				
DORV, TGA type				
DORV, Remote VSD (uncommitted VSD)				
DORV + AVSD (AV Canal)				
DORV, IVS				
<b>DOLV</b>				
DOLV				
<b>THORACIC ARTERIES AND VEINS</b>				
Coarctation of aorta				
Aortic arch hypoplasia				
VSD + Aortic arch hypoplasia				
VSD + Coarctation of aorta				
Coronary artery anomaly, Anomalous aortic origin of coronary artery from aorta (AAOCA)				
Coronary artery anomaly, Anomalous pulmonary origin (includes ALCAPA)				
Coronary artery anomaly, Fistula				
Coronary artery anomaly, Aneurysm				
Coronary artery anomaly, Ostial atresia (v3.3)				
Coronary artery anomaly, Other				
Interrupted aortic arch				

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**Table 4: Primary diagnosis by anomaly, Last 4 Years(Jan 2013 - Dec 2016) - cont.**

Primary Diagnosis	Participant		STS	
	N	% of All	N	% of All
Interrupted aortic arch + VSD				
Interrupted aortic arch + AP window (aortopulmonary window)				
Patent ductus arteriosus				
Vascular ring				
Pulmonary artery sling				
Aortic aneurysm (including pseudoaneurysm)				
Aortic dissection				
<b>THORACIC AND MEDIASTINAL DISEASE</b>				
Lung disease, Benign				
Lung disease, Malignant				
Pectus				
Tracheal stenosis				
Tracheomalacia (v3.3)				
Airway disease				
Pleural disease, Benign				
Pleural disease, Malignant				
Pneumothorax				
Pleural effusion				
Chylothorax				
Empyema				
Esophageal disease, Benign				
Esophageal disease, Malignant				
Mediastinal disease				
Mediastinal disease, Benign				
Mediastinal disease, Malignant				
Diaphragm paralysis				
Diaphragm disease, Other				
Rib tumor, Benign				
Rib tumor, Malignant				
Rib tumor, Metastatic				
Sternal tumor, Benign				
Sternal tumor, Malignant				
Sternal tumor, Metastatic				
Pectus carinatum				
Pectus excavatum				
Thoracic outlet syndrome				

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**Table 4: Primary diagnosis by anomaly, Last 4 Years(Jan 2013 - Dec 2016) - cont.**

Primary Diagnosis	Participant		STS	
	N	% of All	N	% of All
<b>ELECTROPHYSIOLOGICAL</b>				
Arrhythmia				
Arrhythmia, Atrial (v3.0, v3.22)				
Arrhythmia, Atrial, Atrial fibrillation (v3.3)				
Arrhythmia, Atrial, Atrial flutter (v3.3)				
Arrhythmia, Atrial, Other (v3.3)				
Arrhythmia, Junctional				
Arrhythmia, Ventricular				
Arrhythmia, Heart block				
Arrhythmia, Heart block, Acquired				
Arrhythmia, Heart block, Congenital				
Arrhythmia, Pacemaker, Indication for replacement				
<b>MISCELLANEOUS, OTHER</b>				
Atrial Isomerism, Left				
Atrial Isomerism, Right				
Aneurysm, Ventricular, Right (including pseudoaneurysm)				
Aneurysm, Ventricular, Left (including pseudoaneurysm)				
Aneurysm, Pulmonary artery				
Aneurysm, Other				
Hypoplastic RV				
Hypoplastic LV				
Postoperative bleeding				
Mediastinitis				
Endocarditis				
Rheumatic heart disease				
Prosthetic valve failure				
Myocardial infarction				
Cardiac tumor				
Pulmonary AV fistula				
Pulmonary embolism				
Pulmonary vascular obstructive disease				
Pulmonary vascular obstructive disease (Eisenmenger.s)				
Primary pulmonary hypertension				
Persistent fetal circulation				
Meconium aspiration				
Kawasaki Disease				



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**Table 4: Primary diagnosis by anomaly, Last 4 Years(Jan 2013 - Dec 2016) - cont.**

Primary Diagnosis	Participant		STS	
	N	% of All	N	% of All
Cardiac, Other				
Thoracic and/or mediastinal, Other				
Peripheral vascular, Other				
Trauma, Blunt				
Trauma, Penetrating				
Normal heart				
Miscellaneous, Other				
<b>MISSING DATA</b> [Missing Diagnosis]				

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**Table 5: Primary procedure by anomaly, Last 4 Years (Jan 2013 - Dec 2016)**

Primary Procedure	Participant				STS		
	Overall N	% of All	Mortality N	%	N	% of All	% Mort.
<b>SEPTAL DEFECTS</b>							
PFO, Primary closure							
ASD repair, Primary closure							
ASD repair, Patch							
ASD repair, Device							
ASD repair, Patch + PAPVC repair							
ASD, Common atrium (single atrium), Septation							
ASD creation/enlargement							
ASD partial closure							
Atrial septal fenestration							
Atrial fenestration closure							
VSD repair, Primary closure							
VSD repair, Patch							
VSD repair, Device							
VSD, Multiple, Repair							
VSD creation/enlargement							
Ventricular septal fenestration							
AVC (AVSD) repair, Complete (CAVSD)							
AVC (AVSD) repair, Intermediate (Transitional)							
AVC (AVSD) repair, Partial (Incomplete) (PAVSD)							
Valvuloplasty, Common atrioventricular valve							
Valvuloplasty converted to valve replacement in the same operation, Common atrioventricular valve							
Valve replacement, Common atrioventricular valve							
AP window repair							
Pulmonary artery origin from ascending aorta (hemitruncus) repair							
Truncus arteriosus repair							
Valvuloplasty, Truncal valve							
Valvuloplasty converted to valve replacement in the same operation, Truncal valve							
Valve replacement, Truncal valve							
Truncus + Interrupted aortic arch repair (IAA) repair							
<b>PULMONARY VENOUS ANOMALIES</b>							
PAPVC repair							
PAPVC, Scimitar, Repair							
PAPVC repair, Baffle redirection to left atrium with systemic vein translocation (Warden) (SVC sewn to right atrial appendage)							

**STS Congenital Heart Surgery Data Summary  
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Participant 99999  
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**Table 5: Primary procedure by anomaly, Last 4 Years (Jan 2013 - Dec 2016) - cont.**

Primary Procedure	Participant				STS		
	Overall N	% of All	Mortality N	%	N	% of All	% Mort.
TAPVC repair TAPVC repair + Shunt - systemic-to-pulmonary							
<b>COR TRIARIATUM</b> Cor triatriatum repair							
<b>PULMONARY VENOUS STENOSIS</b> Pulmonary venous stenosis repair							
<b>SYSTEMIC VENOUS ANOMALIES</b> Atrial baffle procedure (non-Mustard, non-Senning) Anomalous systemic venous connection repair Systemic venous stenosis repair							
<b>RIGHT HEART LESIONS</b> TOF repair, No ventriculotomy TOF repair, Ventriculotomy, Nontransannular patch TOF repair, Ventriculotomy, Transannular patch TOF repair, RV-PA conduit TOF - AVC (AVSD) repair TOF - Absent pulmonary valve repair Pulmonary atresia - VSD (including TOF, PA) repair Pulmonary atresia - VSD – MAPCA repair, Complete single stage repair (1 stage that includes bilateral pulmonary unifocalization + VSD closure + RV to PA connection [with or without conduit]) Pulmonary atresia - VSD – MAPCA repair, Status post prior complete unifocalization (includes VSD closure + RV to PA connection [with or without conduit]) Pulmonary atresia - VSD – MAPCA repair, Status post prior incomplete unifocalization (includes completion of pulmonary unifocalization + VSD closure + RV to PA connection [with or without conduit]) Unifocalization MAPCA(s), Bilateral pulmonary unifocalization, Complete unifocalization (all usable MAPCA[s] are incorporated) Unifocalization MAPCA(s), Bilateral pulmonary unifocalization, Incomplete unifocalization (not all usable MAPCA[s] are incorporated) Unifocalization MAPCA(s), Unilateral pulmonary unifocalization Pulmonary atresia - VSD - MAPCA (pseudotruncus) repair Unifocalization MAPCA(s) Occlusion MAPCA(s)							

**STS Congenital Heart Surgery Data Summary  
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**Participant 99999  
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**Table 5: Primary procedure by anomaly, Last 4 Years (Jan 2013 - Dec 2016) - cont.**

Primary Procedure	Participant				STS		
	Overall N	% of All	Mortality N	%	N	% of All	% Mort.
Valvuloplasty, Tricuspid							
Valvuloplasty converted to valve replacement in the same operation, Tricuspid							
"Ebsteins repair"							
Valve replacement, Tricuspid (TVR)							
Valve closure, Tricuspid (exclusion, univentricular approach)							
Valve excision, Tricuspid (without replacement)							
Valve surgery, Other, Tricuspid							
RVOT procedure							
1 1/2 ventricular repair							
PA, reconstruction (plasty), Main (trunk)							
PA, reconstruction (plasty), Branch, Central (within the hilar bifurcation)							
PA, reconstruction (plasty), Branch, Peripheral (at or beyond the hilar bifurcation)							
DCRV repair							
Valvuloplasty, Pulmonic							
Valvuloplasty converted to valve replacement in the same operation, Pulmonic							
Valve replacement, Pulmonic (PVR)							
Valve excision, Pulmonary (without replacement)							
Valve closure, Semilunar							
Valve surgery, Other, Pulmonic							
<b>CONDUIT OPERATIONS</b>							
Conduit placement, RV to PA							
Conduit placement, LV to PA							
Conduit placement, Ventricle to aorta							
Conduit placement, Other							
Conduit reoperation							
<b>LEFT HEART LESIONS</b>							
Valvuloplasty, Aortic							
Valvuloplasty converted to valve replacement in the same operation, Aortic							
Valvuloplasty converted to valve replacement in the same operation, Aortic . with Ross procedure							
Valvuloplasty converted to valve replacement in the same operation, Aortic . With Ross-Konno procedure							
Valve replacement, Aortic (AVR)							
Valve replacement, Aortic (AVR), Mechanical							
Valve replacement, Aortic (AVR), Bioprosthetic							
Valve replacement, Aortic (AVR), Homograft							

**STS Congenital Heart Surgery Data Summary  
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Participant 99999  
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**Table 5: Primary procedure by anomaly, Last 4 Years (Jan 2013 - Dec 2016) - cont.**

Primary Procedure	Participant				STS		
	Overall N	% of All	Mortality N	%	N	% of All	% Mort.
Aortic root replacement, Bioprosthetic							
Aortic root replacement, Mechanical							
Aortic root replacement, Homograft							
Aortic root replacement, Valve sparing							
Ross procedure							
Konno procedure							
Ross-Konno procedure							
Other annular enlargement procedure							
Aortic stenosis, Subvalvar, Repair							
Aortic stenosis, Subvalvar, Repair, With myectomy for IHSS							
Aortic stenosis, Supravalvar, Repair							
Valve surgery, Other, Aortic							
Sinus of Valsalva, Aneurysm repair							
LV to aorta tunnel repair							
Valvuloplasty, Mitral							
Valvuloplasty converted to valve replacement in the same operation, Mitral							
Mitral stenosis, Supravalvar mitral ring repair							
Valve replacement, Mitral (MVR)							
Valve surgery, Other, Mitral							
Norwood procedure							
HLHS biventricular repair							
Conduit insertion right ventricle to pulmonary artery + Intraventricular tunnel left ventricle to neoaorta + arch reconstruction (Rastelli and Norwood type arch reconstruction) (Yasui)							
<b>Hybrid</b>							
Hybrid Approach "Stage 1", Application of RPA & LPA bands							
Hybrid Approach "Stage 1", Stent placement in arterial duct (PDA)							
Hybrid Approach "Stage 1", Stent placement in arterial duct (PDA) + application of RPA & LPA bands							
Hybrid approach "Stage 2", Aortopulmonary amalgamation + Superior Cavopulmonary anastomosis(es) + PA Debanding + Aortic arch repair (Norwood Stage 1] + Superior Cavopulmonary anastomosis(es) + PA Debanding)							
Hybrid approach "Stage 2", Aortopulmonary amalgamation + Superior Cavopulmonary anastomosis(es) + PA Debanding + Without aortic arch repair							
Hybrid Approach, Transcatheter balloon dilatation							
Hybrid Approach, Transcatheter transcatheter device placement							

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Participant 99999  
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**Table 5: Primary procedure by anomaly, Last 4 Years (Jan 2013 - Dec 2016) - cont.**

Primary Procedure	Participant				STS		
	Overall N	% of All	Mortality N	%	N	% of All	% Mort.
<b>CARDIOMYOPATHY</b>							
Transplant, Heart							
Transplant, Heart and lung							
Partial left ventriculectomy (LV volume reduction surgery) (Batista)							
<b>PERICARDIAL DISEASE</b>							
Pericardial drainage procedure							
Pericardiectomy							
Pericardial procedure, Other							
<b>SINGLE VENTRICLE</b>							
Fontan, Atrio-pulmonary connection							
Fontan, Atrio-ventricular connection							
Fontan, TCPC, Lateral tunnel, Fenestrated							
Fontan, TCPC, Lateral tunnel, Nonfenestrated							
Fontan, TCPC, External conduit, Fenestrated							
Fontan, TCPC, External conduit, Nonfenestrated							
Fontan, TCPC, Intra/extracardiac conduit, Fenestrated							
Fontan, TCPC, Intra/extracardiac conduit, Nonfenestrated							
Fontan, TCPC, External conduit, hepatic veins to pulmonary artery, Fenestrated							
Fontan, TCPC, External conduit, hepatic veins to pulmonary artery, Nonfenestrated							
Fontan revision or conversion (Re-do Fontan)							
Fontan, Other							
Fontan + Atrioventricular valvuloplasty							
Ventricular septation							
<b>TRANSPOSITION OF THE GREAT ARTERIES</b>							
Congenitally corrected TGA repair, Atrial switch and ASO (double switch)							
Congenitally corrected TGA repair, Atrial switch and Rastelli							
Congenitally corrected TGA repair, VSD closure							
Congenitally corrected TGA repair, VSD closure and LV to PA conduit							
Congenitally corrected TGA repair, Other							
Arterial switch operation (ASO)							
Arterial switch operation (ASO) and VSD repair							
Arterial switch procedure + Aortic arch repair							
Arterial switch procedure and VSD repair + Aortic arch repair							
Senning							

**STS Congenital Heart Surgery Data Summary  
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Participant 99999  
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**Table 5: Primary procedure by anomaly, Last 4 Years (Jan 2013 - Dec 2016) - cont.**

Primary Procedure	Participant				STS		
	Overall N	% of All	Mortality N	%	N	% of All	% Mort.
<b>Mustard</b> Atrial baffle procedure, Mustard or Senning revision <b>Rastelli</b> REV Aortic root translocation over left ventricle (Including Nikaidoh procedure) TGA, Other procedures (Kawashima, LV-PA conduit, other)							
<b>DORV</b> DORV, Intraventricular tunnel repair							
<b>DOLV</b> DOLV repair							
<b>THORACIC ARTERIES AND VEINS</b> Coarctation repair, End to end Coarctation repair, End to end, Extended Coarctation repair, Subclavian flap Coarctation repair, Patch aortoplasty Coarctation repair, Interposition graft Coarctation repair, Other Coarctation repair + VSD repair Aortic arch repair Aortic arch repair + VSD repair Coronary artery fistula ligation Anomalous origin of coronary artery from pulmonary artery repair Coronary artery bypass Anomalous aortic origin of coronary artery from aorta (AAOCA) repair Coronary artery procedure, Other Interrupted aortic arch repair PDA closure, Surgical PDA closure, Device Vascular ring repair Aortopexy Pulmonary artery sling repair Aortic aneurysm repair Aortic dissection repair							

**STS Congenital Heart Surgery Data Summary  
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Participant 99999  
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**Table 5: Primary procedure by anomaly, Last 4 Years (Jan 2013 - Dec 2016) - cont.**

Primary Procedure	Participant				STS		
	Overall N	% of All	Mortality N	%	N	% of All	% Mort.
<b>THORACIC AND MEDIASTINAL DISEASE</b>							
Lung biopsy							
Transplant, lung(s)							
Lung procedure, Other							
Pectus repair							
Tracheal procedure							
Muscle flap, Trunk (i.e. intercostal, pectus, or serratus muscle)							
Muscle flap, Trunk (i.e. latissimus dorsi)							
Removal, Sternal wire							
Rib excision, Complete							
Rib excision, Partial							
Sternal fracture, Open treatment							
Sternal resection, Radical resection of the sternum							
Sternal resection, Radical resection of the sternum with mediastinal lymphadenectomy							
Tumor of chest wall, Excision including ribs							
Tumor of chest wall, Excision including ribs, With reconstruction							
Tumor of soft tissue of thorax, Excision of deep subfascial or intramuscular tumor							
Tumor of soft tissue of thorax, Excision of subcutaneous tumor							
Tumor of soft tissue of thorax, Radical resection							
Hyoid myotomy and suspension							
Muscle flap, Neck							
Procedure on neck							
Tumor of soft tissue of neck, Excision of deep subfascial or intramuscular tumor							
Tumor of soft tissue of neck, Excision of subcutaneous tumor							
Tumor of soft tissue of neck, Radical resection							
Pectus bar removal							
Pectus bar repositioning							
Pectus repair, Minimally invasive repair (Nuss), With thoracoscopy							
Pectus repair, Minimally invasive repair (Nuss), Without thoracoscopy							
Pectus repair, Open repair							
Division of scalenus anticus, With resection of a cervical rib							
Division of scalenus anticus, Without resection of a cervical rib							
Rib excision, Excision of a cervical rib							
Rib excision, Excision of a cervical rib, With sympathectomy							
Rib excision, Excision of first rib							
Rib excision, Excision of first rib, With sympathectomy							
Procedure on thorax							



**STS Congenital Heart Surgery Data Summary  
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Participant 99999  
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**Table 5: Primary procedure by anomaly, Last 4 Years (Jan 2013 - Dec 2016) - cont.**

Primary Procedure	Participant				STS		
	Overall N	% of All	Mortality N	%	N	% of All	% Mort.
<b>PALLIATIVE PROCEDURES</b>							
<b>ELECTROPHYSIOLOGICAL</b>							
Pacemaker implantation, Permanent							
Pacemaker procedure							
Explantation of pacing system							
ICD (AICD) implantation							
ICD (AICD) ( automatic] implantable cardioverter defibrillator) procedure							
Arrhythmia surgery - atrial, Surgical Ablation							
Arrhythmia surgery - ventricular, Surgical Ablation							
<b>INTERVENTIONAL CARDIOLOGY PROCEDURES</b>							
Cardiovascular catheterization procedure, Diagnostic							
Cardiovascular catheterization procedure, Diagnostic, Angiographic data obtained							
Cardiovascular catheterization procedure, Diagnostic, Electrophysiology alteration							
Cardiovascular catheterization procedure, Diagnostic, Hemodynamic alteration							
Cardiovascular catheterization procedure, Diagnostic, Hemodynamic data obtained							
Cardiovascular catheterization procedure, Diagnostic, Transluminal test occlusion							
Cardiovascular catheterization procedure, Therapeutic							
Cardiovascular catheterization procedure, Therapeutic, Adjunctive therapy							
ASD creation, Balloon septostomy (BAS) (Rashkind)							
ASD creation, Blade septostomy							
Cardiovascular catheterization procedure, Therapeutic, Balloon dilation							
Cardiovascular catheterization procedure, Therapeutic, Balloon valvotomy							
Cardiovascular catheterization procedure, Therapeutic, Coil implantation							
Cardiovascular catheterization procedure, Therapeutic, Device implantation							
Cardiovascular catheterization procedure, Therapeutic, Device implantation attempted							
Cardiovascular electrophysiological catheterization procedure, Therapeutic ablation							
Cardiovascular catheterization procedure, Therapeutic, Intravascular foreign body removal							
Cardiovascular catheterization procedure, Therapeutic, Perforation (establishing interchamber and/or intervessel communication)							
Cardiovascular catheterization procedure, Therapeutic, Septostomy							
Cardiovascular catheterization procedure, Therapeutic, Stent insertion							
Cardiovascular catheterization procedure, Therapeutic, Stent re-dilation							
Cardiovascular catheterization procedure, Therapeutic, Transcatheter Fontan completion							
Cardiovascular catheterization procedure, Therapeutic, Transcatheter implantation of valve							
Cardiovascular electrophysiological catheterization procedure							

**STS Congenital Heart Surgery Data Summary  
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**Table 5: Primary procedure by anomaly, Last 4 Years (Jan 2013 - Dec 2016) - cont.**

Primary Procedure	Participant				STS		
	Overall N	% of All	Mortality N	%	N	% of All	% Mort.
Shunt, Systemic to pulmonary, Modified Blalock-Taussig Shunt (MBTS) Shunt, Systemic to pulmonary, Central (from aorta or to main pulmonary artery) Shunt, Systemic to pulmonary, Central (from aorta to main pulmonary artery) Central shunt with an end-to-side connection between the transected main pulmonary artery and the side of the ascending aorta (i.e. Mee shunt) Shunt, Systemic to pulmonary, Other Shunt, Ligation and takedown Shunt, Reoperation PA banding (PAB) PA debanding PA band adjustment (v3.3) Damus-Kaye-Stansel procedure (DKS) (creation of AP anastomosis without arch reconstruction) Bidirectional cavopulmonary anastomosis (BDCPA) (bidirectional Glenn) Glenn (unidirectional cavopulmonary anastomosis) (unidirectional Glenn) Bilateral bidirectional cavopulmonary anastomosis (BBDCPA) (bilateral bidirectional Glenn) HemiFontan Superior cavopulmonary anastomosis(es) (Glenn or HemiFontan) + Atrioventricular valvuloplasty Superior Cavopulmonary anastomosis(es) + PA reconstruction Takedown of superior cavopulmonary anastomosis (v3.3) Hepatic vein to azygous vein connection, Direct Hepatic vein to azygous vein connection, Interposition graft Kawashima operation (superior cavopulmonary connection in setting of interrupted IVC with azygous continuation) Palliation, Other  <b>MECHANICAL SUPPORT</b> ECMO cannulation ECMO decannulation ECMO procedure Intraaortic balloon pump (IABP) insertion Right/left heart assist device procedure VAD explantation VAD implantation VAD change out							

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**Table 5: Primary procedure by anomaly, Last 4 Years (Jan 2013 - Dec 2016) - cont.**

Primary Procedure	Participant				STS		
	Overall N	% of All	Mortality N	%	N	% of All	% Mort.
<b>ANESTHETIC PROCEDURES</b>							
Echocardiography procedure, Sedated transesophageal echocardiogram							
Echocardiography procedure, Sedated transthoracic echocardiogram							
Non-cardiovascular, Non-thoracic procedure on cardiac patient with cardiac anesthesia							
Radiology procedure on cardiac patient, Cardiac Computerized Axial Tomography (CT Scan)							
Radiology procedure on cardiac patient, Cardiac Magnetic Resonance Imaging (MRI)							
Radiology procedure on cardiac patient, Diagnostic radiology							
Radiology procedure on cardiac patient, Non-Cardiac Computerized Tomography (CT) on cardiac patient							
Radiology procedure on cardiac patient, Non-cardiac Magnetic Resonance Imaging (MRI) on cardiac patient							
Interventional radiology procedure on cardiac patient							
<b>MISCELLANEOUS PROCEDURES</b>							
Aneurysm, Ventricular, Right, Repair							
Aneurysm, Ventricular, Left, Repair							
Aneurysm, Pulmonary artery, Repair							
Cardiac tumor resection							
Pulmonary AV fistula repair/occlusion							
Ligation, Pulmonary artery							
Pulmonary embolectomy							
Pulmonary embolectomy, Acute pulmonary embolus							
Pulmonary embolectomy, Chronic pulmonary embolus							
Pleural drainage procedure							
Pleural procedure, Other							
Ligation, Thoracic duct							
Decortication							
Esophageal procedure							
Mediastinal procedure							
Bronchoscopy							
Diaphragm plication							
Diaphragm procedure, Other							
VATS (video-assisted thoracoscopic surgery)							
Minimally invasive procedure							
Bypass for noncardiac lesion							
Delayed sternal closure							
Mediastinal exploration							

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**Table 5: Primary procedure by anomaly, Last 4 Years (Jan 2013 - Dec 2016) - cont.**

Primary Procedure	Participant				STS		
	Overall N	% of All	Mortality N	%	N	% of All	% Mort.
Sternotomy wound drainage							
Intravascular stent removal							
Removal of transcatheter delivered device from heart (v3.3)							
Removal of transcatheter delivered device from blood vessel (v3.3)							
Thoracotomy, Other							
Cardiotomy, Other							
Cardiac procedure, Other							
Thoracic and/or mediastinal procedure, Other							
Peripheral vascular procedure, Other							
Miscellaneous procedure, Other							
Organ procurement							
Other procedure							
<b>Operation Canceled or Aborted</b>							
Operation canceled before skin incision							
Operation aborted after skin incision							
<b>MISSING DATA</b>							
[Missing procedure]							

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**Table 6: Primary procedure by anomaly, Last 1 Year (Jan 2016 - Dec 2016)**

Primary Procedure	Participant				STS		
	Overall N	% of All	Mortality N	%	N	% of All	% Mort.
<b>SEPTAL DEFECTS</b>							
PFO, Primary closure							
ASD repair, Primary closure							
ASD repair, Patch							
ASD repair, Device							
ASD repair, Patch + PAPVC repair							
ASD, Common atrium (single atrium), Septation							
ASD creation/enlargement							
ASD partial closure							
Atrial septal fenestration							
Atrial fenestration closure							
VSD repair, Primary closure							
VSD repair, Patch							
VSD repair, Device							
VSD, Multiple, Repair							
VSD creation/enlargement							
Ventricular septal fenestration							
AVC (AVSD) repair, Complete (CAVSD)							
AVC (AVSD) repair, Intermediate (Transitional)							
AVC (AVSD) repair, Partial (Incomplete) (PAVSD)							
Valvuloplasty, Common atrioventricular valve							
Valvuloplasty converted to valve replacement in the same operation, Common atrioventricular valve							
Valve replacement, Common atrioventricular valve							
AP window repair							
Pulmonary artery origin from ascending aorta (hemitruncus) repair							
Truncus arteriosus repair							
Valvuloplasty, Truncal valve							
Valvuloplasty converted to valve replacement in the same operation, Truncal valve							
Valve replacement, Truncal valve							
Truncus + Interrupted aortic arch repair (IAA) repair							
<b>PULMONARY VENOUS ANOMALIES</b>							
PAPVC repair							
PAPVC, Scimitar, Repair							
PAPVC repair, Baffle redirection to left atrium with systemic vein translocation (Warden) (SVC sewn to right atrial appendage)							

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**Table 6: Primary procedure by anomaly, Last 1 Year (Jan 2016 - Dec 2016) - cont.**

Primary Procedure	Participant				STS		
	Overall N	% of All	Mortality N	%	N	% of All	% Mort.
TAPVC repair TAPVC repair + Shunt - systemic-to-pulmonary							
<b>COR TRIARIATUM</b> Cor triatriatum repair							
<b>PULMONARY VENOUS STENOSIS</b> Pulmonary venous stenosis repair							
<b>SYSTEMIC VENOUS ANOMALIES</b> Atrial baffle procedure (non-Mustard, non-Senning) Anomalous systemic venous connection repair Systemic venous stenosis repair							
<b>RIGHT HEART LESIONS</b> TOF repair, No ventriculotomy TOF repair, Ventriculotomy, Nontransanular patch TOF repair, Ventriculotomy, Transanular patch TOF repair, RV-PA conduit TOF - AVC (AVSD) repair TOF - Absent pulmonary valve repair Pulmonary atresia - VSD (including TOF, PA) repair Pulmonary atresia - VSD – MAPCA repair, Complete single stage repair (1 stage that includes bilateral pulmonary unifocalization + VSD closure + RV to PA connection [with or without conduit]) Pulmonary atresia - VSD – MAPCA repair, Status post prior complete unifocalization (includes VSD closure + RV to PA connection [with or without conduit]) Pulmonary atresia - VSD – MAPCA repair, Status post prior incomplete unifocalization (includes completion of pulmonary unifocalization + VSD closure + RV to PA connection [with or without conduit]) Unifocalization MAPCA(s), Bilateral pulmonary unifocalization, Complete unifocalization (all usable MAPCA[s] are incorporated) Unifocalization MAPCA(s), Bilateral pulmonary unifocalization, Incomplete unifocalization (not all usable MAPCA[s] are incorporated) Unifocalization MAPCA(s), Unilateral pulmonary unifocalization Pulmonary atresia - VSD - MAPCA (pseudotruncus) repair Unifocalization MAPCA(s) Occlusion MAPCA(s)							

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**Table 6: Primary procedure by anomaly, Last 1 Year (Jan 2016 - Dec 2016) - cont.**

Primary Procedure	Participant				STS		
	Overall N	% of All	Mortality N	%	N	% of All	% Mort.
Valvuloplasty, Tricuspid							
Valvuloplasty converted to valve replacement in the same operation, Tricuspid							
"Ebsteins repair"							
Valve replacement, Tricuspid (TVR)							
Valve closure, Tricuspid (exclusion, univentricular approach)							
Valve excision, Tricuspid (without replacement)							
Valve surgery, Other, Tricuspid							
RVOT procedure							
1 1/2 ventricular repair							
PA, reconstruction (plasty), Main (trunk)							
PA, reconstruction (plasty), Branch, Central (within the hilar bifurcation)							
PA, reconstruction (plasty), Branch, Peripheral (at or beyond the hilar bifurcation)							
DCRV repair							
Valvuloplasty, Pulmonic							
Valvuloplasty converted to valve replacement in the same operation, Pulmonic							
Valve replacement, Pulmonic (PVR)							
Valve excision, Pulmonary (without replacement)							
Valve closure, Semilunar							
Valve surgery, Other, Pulmonic							
<b>CONDUIT OPERATIONS</b>							
Conduit placement, RV to PA							
Conduit placement, LV to PA							
Conduit placement, Ventricle to aorta							
Conduit placement, Other							
Conduit reoperation							
<b>LEFT HEART LESIONS</b>							
Valvuloplasty, Aortic							
Valvuloplasty converted to valve replacement in the same operation, Aortic							
Valvuloplasty converted to valve replacement in the same operation, Aortic . with Ross procedure							
Valvuloplasty converted to valve replacement in the same operation, Aortic . With Ross-Konno procedure							
Valve replacement, Aortic (AVR)							
Valve replacement, Aortic (AVR), Mechanical							
Valve replacement, Aortic (AVR), Bioprosthetic							
Valve replacement, Aortic (AVR), Homograft							

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**Table 6: Primary procedure by anomaly, Last 1 Year (Jan 2016 - Dec 2016) - cont.**

Primary Procedure	Participant				STS		
	Overall N	% of All	Mortality N	%	N	% of All	% Mort.
Aortic root replacement, Bioprosthetic							
Aortic root replacement, Mechanical							
Aortic root replacement, Homograft							
Aortic root replacement, Valve sparing							
Ross procedure							
Konno procedure							
Ross-Konno procedure							
Other annular enlargement procedure							
Aortic stenosis, Subvalvar, Repair							
Aortic stenosis, Subvalvar, Repair, With myectomy for IHSS							
Aortic stenosis, Supravalvar, Repair							
Valve surgery, Other, Aortic							
Sinus of Valsalva, Aneurysm repair							
LV to aorta tunnel repair							
Valvuloplasty, Mitral							
Valvuloplasty converted to valve replacement in the same operation, Mitral							
Mitral stenosis, Supravalvar mitral ring repair							
Valve replacement, Mitral (MVR)							
Valve surgery, Other, Mitral							
Norwood procedure							
HLHS biventricular repair							
Conduit insertion right ventricle to pulmonary artery + Intraventricular tunnel left ventricle to neoaorta + arch reconstruction (Rastelli and Norwood type arch reconstruction) (Yasui)							
<b>Hybrid</b>							
Hybrid Approach "Stage 1", Application of RPA & LPA bands							
Hybrid Approach "Stage 1", Stent placement in arterial duct (PDA)							
Hybrid Approach "Stage 1", Stent placement in arterial duct (PDA) + application of RPA & LPA bands							
Hybrid approach "Stage 2", Aortopulmonary amalgamation + Superior Cavopulmonary anastomosis(es) + PA Debanding + Aortic arch repair (Norwood Stage 1] + Superior Cavopulmonary anastomosis(es) + PA Debanding)							
Hybrid approach "Stage 2", Aortopulmonary amalgamation + Superior Cavopulmonary anastomosis(es) + PA Debanding + Without aortic arch repair							
Hybrid Approach, Transcatheter balloon dilatation							
Hybrid Approach, Transcatheter transcatheter device placement							



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

Participant 99999  
STS Period Ending 12/31/2016

**Table 6: Primary procedure by anomaly, Last 1 Year (Jan 2016 - Dec 2016) - cont.**

Primary Procedure	Participant				STS		
	Overall N	% of All	Mortality N	%	N	% of All	% Mort.
<b>CARDIOMYOPATHY</b>							
Transplant, Heart							
Transplant, Heart and lung							
Partial left ventriculectomy (LV volume reduction surgery) (Batista)							
<b>PERICARDIAL DISEASE</b>							
Pericardial drainage procedure							
Pericardiectomy							
Pericardial procedure, Other							
<b>SINGLE VENTRICLE</b>							
Fontan, Atrio-pulmonary connection							
Fontan, Atrio-ventricular connection							
Fontan, TCPC, Lateral tunnel, Fenestrated							
Fontan, TCPC, Lateral tunnel, Nonfenestrated							
Fontan, TCPC, External conduit, Fenestrated							
Fontan, TCPC, External conduit, Nonfenestrated							
Fontan, TCPC, Intra/extracardiac conduit, Fenestrated							
Fontan, TCPC, Intra/extracardiac conduit, Nonfenestrated							
Fontan, TCPC, External conduit, hepatic veins to pulmonary artery, Fenestrated							
Fontan, TCPC, External conduit, hepatic veins to pulmonary artery, Nonfenestrated							
Fontan revision or conversion (Re-do Fontan)							
Fontan, Other							
Fontan + Atrioventricular valvuloplasty							
Ventricular septation							
<b>TRANSPOSITION OF THE GREAT ARTERIES</b>							
Congenitally corrected TGA repair, Atrial switch and ASO (double switch)							
Congenitally corrected TGA repair, Atrial switch and Rastelli							
Congenitally corrected TGA repair, VSD closure							
Congenitally corrected TGA repair, VSD closure and LV to PA conduit							
Congenitally corrected TGA repair, Other							
Arterial switch operation (ASO)							
Arterial switch operation (ASO) and VSD repair							
Arterial switch procedure + Aortic arch repair							
Arterial switch procedure and VSD repair + Aortic arch repair							
Senning							

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

**Participant 99999  
STS Period Ending 12/31/2016**

**Table 6: Primary procedure by anomaly, Last 1 Year (Jan 2016 - Dec 2016) - cont.**

Primary Procedure	Participant				STS		
	Overall N	% of All	Mortality N	%	N	% of All	% Mort.
<b>Mustard</b> Atrial baffle procedure, Mustard or Senning revision <b>Rastelli</b> REV Aortic root translocation over left ventricle (Including Nikaidoh procedure) TGA, Other procedures (Kawashima, LV-PA conduit, other)							
<b>DORV</b> DORV, Intraventricular tunnel repair							
<b>DOLV</b> DOLV repair							
<b>THORACIC ARTERIES AND VEINS</b> Coarctation repair, End to end Coarctation repair, End to end, Extended Coarctation repair, Subclavian flap Coarctation repair, Patch aortoplasty Coarctation repair, Interposition graft Coarctation repair, Other Coarctation repair + VSD repair Aortic arch repair Aortic arch repair + VSD repair Coronary artery fistula ligation Anomalous origin of coronary artery from pulmonary artery repair Coronary artery bypass Anomalous aortic origin of coronary artery from aorta (AAOCA) repair Coronary artery procedure, Other Interrupted aortic arch repair PDA closure, Surgical PDA closure, Device Vascular ring repair Aortopexy Pulmonary artery sling repair Aortic aneurysm repair Aortic dissection repair							

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

**Participant 99999  
STS Period Ending 12/31/2016**

**Table 6: Primary procedure by anomaly, Last 1 Year (Jan 2016 - Dec 2016) - cont.**

Primary Procedure	Participant				STS		
	Overall N	% of All	Mortality N	%	N	% of All	% Mort.
<b>THORACIC AND MEDIASTINAL DISEASE</b>							
Lung biopsy							
Transplant, lung(s)							
Lung procedure, Other							
Pectus repair							
Tracheal procedure							
Muscle flap, Trunk (i.e. intercostal, pectus, or serratus muscle)							
Muscle flap, Trunk (i.e. latissimus dorsi)							
Removal, Sternal wire							
Rib excision, Complete							
Rib excision, Partial							
Sternal fracture, Open treatment							
Sternal resection, Radical resection of the sternum							
Sternal resection, Radical resection of the sternum with mediastinal lymphadenectomy							
Tumor of chest wall, Excision including ribs							
Tumor of chest wall, Excision including ribs, With reconstruction							
Tumor of soft tissue of thorax, Excision of deep subfascial or intramuscular tumor							
Tumor of soft tissue of thorax, Excision of subcutaneous tumor							
Tumor of soft tissue of thorax, Radical resection							
Hyoid myotomy and suspension							
Muscle flap, Neck							
Procedure on neck							
Tumor of soft tissue of neck, Excision of deep subfascial or intramuscular tumor							
Tumor of soft tissue of neck, Excision of subcutaneous tumor							
Tumor of soft tissue of neck, Radical resection							
Pectus bar removal							
Pectus bar repositioning							
Pectus repair, Minimally invasive repair (Nuss), With thoracoscopy							
Pectus repair, Minimally invasive repair (Nuss), Without thoracoscopy							
Pectus repair, Open repair							
Division of scalenus anticus, With resection of a cervical rib							
Division of scalenus anticus, Without resection of a cervical rib							
Rib excision, Excision of a cervical rib							
Rib excision, Excision of a cervical rib, With sympathectomy							
Rib excision, Excision of first rib							
Rib excision, Excision of first rib, With sympathectomy							
Procedure on thorax							

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

**Participant 99999  
STS Period Ending 12/31/2016**

**Table 6: Primary procedure by anomaly, Last 1 Year (Jan 2016 - Dec 2016) - cont.**

Primary Procedure	Participant				STS		
	Overall N	% of All	Mortality N	%	N	% of All	% Mort.
<b>PALLIATIVE PROCEDURES</b>							
<b>ELECTROPHYSIOLOGICAL</b>							
Pacemaker implantation, Permanent							
Pacemaker procedure							
Explantation of pacing system							
ICD (AICD) implantation							
ICD (AICD) ( automatic] implantable cardioverter defibrillator) procedure							
Arrhythmia surgery - atrial, Surgical Ablation							
Arrhythmia surgery - ventricular, Surgical Ablation							
<b>INTERVENTIONAL CARDIOLOGY PROCEDURES</b>							
Cardiovascular catheterization procedure, Diagnostic							
Cardiovascular catheterization procedure, Diagnostic, Angiographic data obtained							
Cardiovascular catheterization procedure, Diagnostic, Electrophysiology alteration							
Cardiovascular catheterization procedure, Diagnostic, Hemodynamic alteration							
Cardiovascular catheterization procedure, Diagnostic, Hemodynamic data obtained							
Cardiovascular catheterization procedure, Diagnostic, Transluminal test occlusion							
Cardiovascular catheterization procedure, Therapeutic							
Cardiovascular catheterization procedure, Therapeutic, Adjunctive therapy							
ASD creation, Balloon septostomy (BAS) (Rashkind)							
ASD creation, Blade septostomy							
Cardiovascular catheterization procedure, Therapeutic, Balloon dilation							
Cardiovascular catheterization procedure, Therapeutic, Balloon valvotomy							
Cardiovascular catheterization procedure, Therapeutic, Coil implantation							
Cardiovascular catheterization procedure, Therapeutic, Device implantation							
Cardiovascular catheterization procedure, Therapeutic, Device implantation attempted							
Cardiovascular electrophysiological catheterization procedure, Therapeutic ablation							
Cardiovascular catheterization procedure, Therapeutic, Intravascular foreign body removal							
Cardiovascular catheterization procedure, Therapeutic, Perforation (establishing interchamber and/or intervessel communication)							
Cardiovascular catheterization procedure, Therapeutic, Septostomy							
Cardiovascular catheterization procedure, Therapeutic, Stent insertion							
Cardiovascular catheterization procedure, Therapeutic, Stent re-dilation							
Cardiovascular catheterization procedure, Therapeutic, Transcatheter Fontan completion							
Cardiovascular catheterization procedure, Therapeutic, Transcatheter implantation of valve							
Cardiovascular electrophysiological catheterization procedure							

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

**Participant 99999  
STS Period Ending 12/31/2016**

**Table 6: Primary procedure by anomaly, Last 1 Year (Jan 2016 - Dec 2016) - cont.**

Primary Procedure	Participant				STS		
	Overall N	% of All	Mortality N	%	N	% of All	% Mort.
Shunt, Systemic to pulmonary, Modified Blalock-Taussig Shunt (MBTS) Shunt, Systemic to pulmonary, Central (from aorta or to main pulmonary artery) Shunt, Systemic to pulmonary, Central (from aorta to main pulmonary artery) Central shunt with an end-to-side connection between the transected main pulmonary artery and the side of the ascending aorta (i.e. Mee shunt) Shunt, Systemic to pulmonary, Other Shunt, Ligation and takedown Shunt, Reoperation PA banding (PAB) PA debanding PA band adjustment (v3.3) Damus-Kaye-Stansel procedure (DKS) (creation of AP anastomosis without arch reconstruction) Bidirectional cavopulmonary anastomosis (BDCPA) (bidirectional Glenn) Glenn (unidirectional cavopulmonary anastomosis) (unidirectional Glenn) Bilateral bidirectional cavopulmonary anastomosis (BBDCPA) (bilateral bidirectional Glenn) HemiFontan Superior cavopulmonary anastomosis(es) (Glenn or HemiFontan) + Atrioventricular valvuloplasty Superior Cavopulmonary anastomosis(es) + PA reconstruction Takedown of superior cavopulmonary anastomosis (v3.3) Hepatic vein to azygous vein connection, Direct Hepatic vein to azygous vein connection, Interposition graft Kawashima operation (superior cavopulmonary connection in setting of interrupted IVC with azygous continuation) Palliation, Other  <b>MECHANICAL SUPPORT</b> ECMO cannulation ECMO decannulation ECMO procedure Intraaortic balloon pump (IABP) insertion Right/left heart assist device procedure VAD explantation VAD implantation VAD change out							

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

**Participant 99999  
STS Period Ending 12/31/2016**

**Table 6: Primary procedure by anomaly, Last 1 Year (Jan 2016 - Dec 2016) - cont.**

Primary Procedure	Participant				STS		
	Overall N	% of All	Mortality N	%	N	% of All	% Mort.
<b>ANESTHETIC PROCEDURES</b>							
Echocardiography procedure, Sedated transesophageal echocardiogram							
Echocardiography procedure, Sedated transthoracic echocardiogram							
Non-cardiovascular, Non-thoracic procedure on cardiac patient with cardiac anesthesia							
Radiology procedure on cardiac patient, Cardiac Computerized Axial Tomography (CT Scan)							
Radiology procedure on cardiac patient, Cardiac Magnetic Resonance Imaging (MRI)							
Radiology procedure on cardiac patient, Diagnostic radiology							
Radiology procedure on cardiac patient, Non-Cardiac Computerized Tomography (CT) on cardiac patient							
Radiology procedure on cardiac patient, Non-cardiac Magnetic Resonance Imaging (MRI) on cardiac patient							
Interventional radiology procedure on cardiac patient							
<b>MISCELLANEOUS PROCEDURES</b>							
Aneurysm, Ventricular, Right, Repair							
Aneurysm, Ventricular, Left, Repair							
Aneurysm, Pulmonary artery, Repair							
Cardiac tumor resection							
Pulmonary AV fistula repair/occlusion							
Ligation, Pulmonary artery							
Pulmonary embolectomy							
Pulmonary embolectomy, Acute pulmonary embolus							
Pulmonary embolectomy, Chronic pulmonary embolus							
Pleural drainage procedure							
Pleural procedure, Other							
Ligation, Thoracic duct							
Decortication							
Esophageal procedure							
Mediastinal procedure							
Bronchoscopy							
Diaphragm plication							
Diaphragm procedure, Other							
VATS (video-assisted thoracoscopic surgery)							
Minimally invasive procedure							
Bypass for noncardiac lesion							
Delayed sternal closure							
Mediastinal exploration							

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

**Participant 99999  
STS Period Ending 12/31/2016**

**Table 6: Primary procedure by anomaly, Last 1 Year (Jan 2016 - Dec 2016) - cont.**

Primary Procedure	Participant				STS		
	Overall N	% of All	Mortality N	%	N	% of All	% Mort.
Sternotomy wound drainage							
Intravascular stent removal							
Removal of transcatheter delivered device from heart (v3.3)							
Removal of transcatheter delivered device from blood vessel (v3.3)							
Thoracotomy, Other							
Cardiotomy, Other							
Cardiac procedure, Other							
Thoracic and/or mediastinal procedure, Other							
Peripheral vascular procedure, Other							
Miscellaneous procedure, Other							
Organ procurement							
Other procedure							
<b>Operation Canceled or Aborted</b>							
Operation canceled before skin incision							
Operation aborted after skin incision							
<b>MISSING DATA</b>							
[Missing procedure]							

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

**Participant 99999  
STS Period Ending 12/31/2016**

**Table 7: Number submitted and in analysis, operative mortality by age group, Last 4 Years (Jan 2013 - Dec 2016)**

	Participant				STS			
	Jan 2016 - Dec 2016		Jan 2013 - Dec 2016		Jan 2016 - Dec 2016		Jan 2013 - Dec 2016	
	Neonates	Infants	Neonates	Infants	Neonates	Infants	Neonates	Infants
<b>Number of Operations/Patients</b>								
Operations in Analysis <sup>1</sup>								
Patients in Analysis <sup>2</sup>								
<b>Operative Mortality<sup>3</sup></b>								
Number of Mortalities								
Number Eligible								
Mortality Percent								
Mortality 95% CI								
<b>STAT Mortality Category<sup>4</sup></b>								
Category 1								
Number of Mortalities								
Number Eligible								
Mortality Percent								
Mortality 95% CI								
Category 2								
Number of Mortalities								
Number Eligible								
Mortality Percent								
Mortality 95% CI								
Category 3								
Number of Mortalities								
Number Eligible								
Mortality Percent								
Mortality 95% CI								
Category 4								
Number of Mortalities								
Number Eligible								
Mortality Percent								
Mortality 95% CI								
Category 5								
Number of Mortalities								
Number Eligible								
Mortality Percent								
Mortality 95% CI								

<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

<sup>4</sup>Excludes procedures for which a STAT Mortality Category is not available



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

**Participant 99999  
STS Period Ending 12/31/2016**

**Table 7: Number submitted and in analysis, operative mortality by age group, Last 4 Years (Jan 2013 - Dec 2016)**

	Participant				STS			
	Jan 2016 - Dec 2016		Jan 2013 - Dec 2016		Jan 2016 - Dec 2016		Jan 2013 - Dec 2016	
	Children	Adults	Children	Adults	Children	Adults	Children	Adults
<b>Number of Operations/Patients</b>								
Operations in Analysis <sup>1</sup>								
Patients in Analysis <sup>2</sup>								
<b>Operative Mortality<sup>3</sup></b>								
Number of Mortalities								
Number Eligible								
Mortality Percent								
Mortality 95% CI								
<b>STAT Mortality Category<sup>4</sup></b>								
Category 1								
Number of Mortalities								
Number Eligible								
Mortality Percent								
Mortality 95% CI								
Category 2								
Number of Mortalities								
Number Eligible								
Mortality Percent								
Mortality 95% CI								
Category 3								
Number of Mortalities								
Number Eligible								
Mortality Percent								
Mortality 95% CI								
Category 4								
Number of Mortalities								
Number Eligible								
Mortality Percent								
Mortality 95% CI								
Category 5								
Number of Mortalities								
Number Eligible								
Mortality Percent								
Mortality 95% CI								

<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

<sup>4</sup>Excludes procedures for which a STAT Mortality Category is not available

**STS Congenital Heart Surgery Data Summary  
Neonates**

**Participant 99999  
STS Period Ending 12/31/2016**

**Table 8: Primary diagnosis, 35 Most Frequent for Neonates, Last 4 Years (Jan 2013 - Dec 2016)**

Primary Diagnosis	Participant		STS	
	N	% of All	N	% of All
		%		%
		%		%
		%		%
		%		%
		%		%
		%		%
		%		%
		%		%
		%		%
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		%		%
		%		%
		%		%
		%		%

**STS Congenital Heart Surgery Data Summary  
Neonates**

**Participant 99999  
STS Period Ending 12/31/2016**

**Table 9: Primary procedure, 35 Most Frequent for Neonates, Last 4 Years (Jan 2013 - Dec 2016)**

Primary Procedure	Participant				STS		
	Overall N	% of All	Mortality N	%	N	% of All	% Mort.

**STS Congenital Heart Surgery Data Summary  
Infants**

Participant 99999  
STS Period Ending 12/31/2016

**Table 10: Primary diagnosis, 35 Most Frequent for Infants, Last 4 Years (Jan 2013 - Dec 2016)**

Primary Diagnosis	Participant		STS	
	N	% of All	N	% of All
		%		%
		%		%
		%		%
		%		%
		%		%
		%		%
		%		%
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**STS Congenital Heart Surgery Data Summary  
Infants**

**Participant 99999  
STS Period Ending 12/31/2016**

**Table 11: Primary procedure, 35 Most Frequent for Infants, Last 4 Years (Jan 2013 - Dec 2016)**

Primary Procedure	Participant				STS		
	Overall N	% of All	Mortality N	%	N	% of All	% Mort.

**STS Congenital Heart Surgery Data Summary  
Children**

**Participant 99999**  
**STS Period Ending 12/31/2016**

**Table 12: Primary diagnosis, 35 Most Frequent for Children, Last 4 Years (Jan 2013 - Dec 2016)**

Primary Diagnosis	Participant		STS	
	N	% of All	N	% of All
		%		%
		%		%
		%		%
		%		%
		%		%
		%		%
		%		%
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STS Congenital Heart Surgery Data Summary  
Children

Participant 99999  
STS Period Ending 12/31/2016

**Table 13: Primary procedure, 35 Most Frequent for Children, Last 4 Years (Jan 2013 - Dec 2016)**

Primary Procedure	Participant				STS		
	Overall N	% of All	Mortality N	%	N	% of All	% Mort.

**STS Congenital Heart Surgery Data Summary**  
**Adults**  
 Participant 99999  
 STS Period Ending 12/31/2016

**Table 14: Primary diagnosis, 35 Most Frequent for Adults, Last 4 Years (Jan 2013 - Dec 2016)**

Primary Diagnosis	Participant		STS	
	N	% of All	N	% of All
		%		%
		%		%
		%		%
		%		%
		%		%
		%		%
		%		%
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**STS Congenital Heart Surgery Data Summary  
Adults**

Participant 99999  
STS Period Ending 12/31/2016

**Table 15: Primary procedure, 35 Most Frequent for Adults, Last 4 Years (Jan 2013 - Dec 2016)**

Primary Procedure	Participant				STS		
	Overall N	% of All	Mortality N	%	N	% of All	% Mort.

**STS Congenital Heart Surgery Data Summary  
Risk-Adjusted Mortality and Star Rating**

Participant 99999  
STS Period Ending 12/31/2016

**Table 16: Model 1 - Participant Operative Mortality, Adjusted Operative Mortality and Star Rating, Last 4 Years (Jan 2013 - Dec 2016)<sup>1</sup>**

	# / Eligible	Observed	Expected	Observed/Expected (95% CI)	AMR (95% CI) <sup>2</sup>	STS
<b>Neonates</b>						
All STAT Mortality Categories	- / -	-	-	-		-
STAT Mortality Category 1	- / -	-	-	-		-
STAT Mortality Category 2	- / -	-	-	-		-
STAT Mortality Category 3	- / -	-	-	-		-
STAT Mortality Category 4	- / -	-	-	-		-
STAT Mortality Category 5	- / -	-	-	-		-
<b>Neonates+Infants</b>						
All STAT Mortality Categories	- / -	-	-	-		-
STAT Mortality Category 1	- / -	-	-	-		-
STAT Mortality Category 2	- / -	-	-	-		-
STAT Mortality Category 3	- / -	-	-	-		-
STAT Mortality Category 4	- / -	-	-	-		-
STAT Mortality Category 5	- / -	-	-	-		-
<b>Neonates+Infants+Children</b>						
All STAT Mortality Categories	- / -	-	-	-		-
STAT Mortality Category 1	- / -	-	-	-		-
STAT Mortality Category 2	- / -	-	-	-		-
STAT Mortality Category 3	- / -	-	-	-		-
STAT Mortality Category 4	- / -	-	-	-		-
STAT Mortality Category 5	- / -	-	-	-		-
<b>Neonates+Infants+Children+Adults</b>						
All STAT Mortality Categories	- / -	-	-	-		-
STAT Mortality Category 1	- / -	-	-	-		-
STAT Mortality Category 2	- / -	-	-	-		-
STAT Mortality Category 3	- / -	-	-	-		-
STAT Mortality Category 4	- / -	-	-	-		-
STAT Mortality Category 5	- / -	-	-	-		-

Overall Star Rating <sup>3</sup>

<sup>1</sup>Includes only patients eligible for adjustment. See report interpretation guide for information on adjustment methodology

<sup>2</sup>Adjusted Mortality Rate (AMR)

<sup>3</sup>The star rating is based on the overall observed-to-expected ratio for operative mortality. Population includes all eligible patients as described in the report interpretation guide.

**STS Congenital Heart Surgery Data Summary  
Risk-Adjusted Mortality**

**Participant 99999  
STS Period Ending 12/31/2016**

**Table 17: Model 2 - Neonates, Infants, and Children, Operative Mortality O/E Ratios by Participant, Stratified by RACHS1 Category, Last 4 Years (Jan 2013 - Dec 2016)**

Participant	Congenital Annual Volume	Operative Mortality - Observed/Expected Ratios by RACHS-1 Category <sup>1</sup>					Overall O/E Ratio (95% CI)
		Category 1 O/E Ratio (95% CI)	Category 2 O/E Ratio (95% CI)	Category 3 O/E Ratio (95% CI)	Category 4 O/E Ratio (95% CI)	Category 5-6 O/E Ratio (95% CI)	
116	Low	-	-	-	-	-	-
115	Low	-	-	-	-	-	-
114	Low	-	-	-	-	-	-
113	Low	-	-	-	-	-	-
112	Low	-	-	-	-	-	-
111	Low	-	-	-	-	-	-
110	Low	-	-	-	-	-	-
109	Low	-	-	-	-	-	-
108	Low	-	-	-	-	-	-
107	Low	-	-	-	-	-	-
106	Low	-	-	-	-	-	-
105	Low	-	-	-	-	-	-
104	Low	-	-	-	-	-	-
103	Low	-	-	-	-	-	-
102	Low	-	-	-	-	-	-
101	Low	-	-	-	-	-	-
100	Low	-	-	-	-	-	-
99	Low	-	-	-	-	-	-
98	Low	-	-	-	-	-	-
97	Low	-	-	-	-	-	-
96	Low	-	-	-	-	-	-
95	Low	-	-	-	-	-	-
94	Low	-	-	-	-	-	-
93	Low	-	-	-	-	-	-
92	Low	-	-	-	-	-	-
91	Low	-	-	-	-	-	-
90	Low	-	-	-	-	-	-
89	Low	-	-	-	-	-	-
88	Low	-	-	-	-	-	-
87	Low	-	-	-	-	-	-
86	Low	-	-	-	-	-	-
85	Low	-	-	-	-	-	-
84	Low	-	-	-	-	-	-
83	Low	-	-	-	-	-	-

<sup>1</sup>Analysis excludes procedures for which the RACHS-1 Category is "Not Categorized" or "Not Eligible". Analysis also excludes Participants with > 15% missing for Premature Birth. The modified full RACHS-1 methodology is described in detail in the report interpretation guide

**STS Congenital Heart Surgery Data Summary  
Risk-Adjusted Mortality**

**Participant 99999  
STS Period Ending 12/31/2016**

**Table 17: Model 2 - Neonates, Infants, and Children, Operative Mortality O/E Ratios by Participant, Stratified by RACHS1 Category, Last 4 Years (Jan 2013 - Dec 2016) - cont.**

Participant	Congenital Annual Volume	Operative Mortality - Observed/Expected Ratios by RACHS-1 Category <sup>1</sup>					Overall O/E Ratio (95% CI)
		Category 1 O/E Ratio (95% CI)	Category 2 O/E Ratio (95% CI)	Category 3 O/E Ratio (95% CI)	Category 4 O/E Ratio (95% CI)	Category 5-6 O/E Ratio (95% CI)	
82	Low	-	-	-	-	-	-
81	Low	-	-	-	-	-	-
80	Medium	-	-	-	-	-	-
79	Medium	-	-	-	-	-	-
78	Medium	-	-	-	-	-	-
77	Medium	-	-	-	-	-	-
76	Medium	-	-	-	-	-	-
75	Medium	-	-	-	-	-	-
74	Medium	-	-	-	-	-	-
73	Medium	-	-	-	-	-	-
72	Medium	-	-	-	-	-	-
71	Medium	-	-	-	-	-	-
70	Medium	-	-	-	-	-	-
69	Medium	-	-	-	-	-	-
68	Medium	-	-	-	-	-	-
67	Medium	-	-	-	-	-	-
66	Medium	-	-	-	-	-	-
65	Medium	-	-	-	-	-	-
64	Medium	-	-	-	-	-	-
63	Medium	-	-	-	-	-	-
62	Medium	-	-	-	-	-	-
61	Medium	-	-	-	-	-	-
60	Medium	-	-	-	-	-	-
59	Medium	-	-	-	-	-	-
58	Medium	-	-	-	-	-	-
57	Medium	-	-	-	-	-	-
56	Medium	-	-	-	-	-	-
55	Medium	-	-	-	-	-	-
54	Medium	-	-	-	-	-	-
53	Medium	-	-	-	-	-	-
52	Medium	-	-	-	-	-	-
51	Medium	-	-	-	-	-	-
50	Medium	-	-	-	-	-	-
49	Medium	-	-	-	-	-	-

<sup>1</sup>Analysis excludes procedures for which the RACHS-1 Category is "Not Categorized" or "Not Eligible". Analysis also excludes Participants with > 15% missing for Premature Birth. The modified full RACHS-1 methodology is described in detail in the report interpretation guide

**STS Congenital Heart Surgery Data Summary  
Risk-Adjusted Mortality**

**Participant 99999  
STS Period Ending 12/31/2016**

**Table 17: Model 2 - Neonates, Infants, and Children, Operative Mortality O/E Ratios by Participant, Stratified by RACHS1 Category, Last 4 Years (Jan 2013 - Dec 2016) - cont.**

Participant	Congenital Annual Volume	Operative Mortality - Observed/Expected Ratios by RACHS-1 Category <sup>1</sup>					Overall O/E Ratio (95% CI)
		Category 1 O/E Ratio (95% CI)	Category 2 O/E Ratio (95% CI)	Category 3 O/E Ratio (95% CI)	Category 4 O/E Ratio (95% CI)	Category 5-6 O/E Ratio (95% CI)	
48	Medium	-	-	-	-	-	-
47	Medium	-	-	-	-	-	-
46	Medium	-	-	-	-	-	-
45	Medium	-	-	-	-	-	-
44	Medium	-	-	-	-	-	-
43	Medium	-	-	-	-	-	-
42	Medium	-	-	-	-	-	-
41	High	-	-	-	-	-	-
40	High	-	-	-	-	-	-
39	High	-	-	-	-	-	-
38	High	-	-	-	-	-	-
37	High	-	-	-	-	-	-
36	High	-	-	-	-	-	-
35	High	-	-	-	-	-	-
34	High	-	-	-	-	-	-
33	High	-	-	-	-	-	-
32	High	-	-	-	-	-	-
31	High	-	-	-	-	-	-
30	High	-	-	-	-	-	-
29	High	-	-	-	-	-	-
28	High	-	-	-	-	-	-
27	High	-	-	-	-	-	-
26	High	-	-	-	-	-	-
25	High	-	-	-	-	-	-
24	High	-	-	-	-	-	-
23	High	-	-	-	-	-	-
22	High	-	-	-	-	-	-
21	High	-	-	-	-	-	-
20	High	-	-	-	-	-	-
19	High	-	-	-	-	-	-
18	High	-	-	-	-	-	-
17	High	-	-	-	-	-	-
16	High	-	-	-	-	-	-
15	High	-	-	-	-	-	-

<sup>1</sup>Analysis excludes procedures for which the RACHS-1 Category is "Not Categorized" or "Not Eligible". Analysis also excludes Participants with > 15% missing for Premature Birth. The modified full RACHS-1 methodology is described in detail in the report interpretation guide

**STS Congenital Heart Surgery Data Summary  
Risk-Adjusted Mortality**

Participant 99999  
STS Period Ending 12/31/2016

**Table 17: Model 2 - Neonates, Infants, and Children, Operative Mortality O/E Ratios by Participant, Stratified by RACHS1 Category, Last 4 Years (Jan 2013 - Dec 2016) - cont.**

Participant	Congenital Annual Volume	Operative Mortality - Observed/Expected Ratios by RACHS-1 Category <sup>1</sup>					Overall O/E Ratio (95% CI)
		Category 1 O/E Ratio (95% CI)	Category 2 O/E Ratio (95% CI)	Category 3 O/E Ratio (95% CI)	Category 4 O/E Ratio (95% CI)	Category 5-6 O/E Ratio (95% CI)	
14	High	-	-	-	-	-	-
13	High	-	-	-	-	-	-
12	High	-	-	-	-	-	-
11	High	-	-	-	-	-	-
10	High	-	-	-	-	-	-
9	High	-	-	-	-	-	-
8	High	-	-	-	-	-	-
7	High	-	-	-	-	-	-
6	High	-	-	-	-	-	-
5	High	-	-	-	-	-	-
4	High	-	-	-	-	-	-
3	High	-	-	-	-	-	-
2	High	-	-	-	-	-	-
1	High	-	-	-	-	-	-

<sup>1</sup>Analysis excludes procedures for which the RACHS-1 Category is "Not Categorized" or "Not Eligible". Analysis also excludes Participants with > 15% missing for Premature Birth. The modified full RACHS-1 methodology is described in detail in the report interpretation guide

**STS Congenital Heart Surgery Data Summary  
Participant Outcomes**

Participant 99999  
STS Period Ending 12/31/2016

**Table 18: Benchmark Operations: Overall Aggregate and Participant-Specific Mortality and Postoperative Length of Stay, Last 4 Years (Jan 2013 - Dec 2016)<sup>1</sup>**

	Off Bypass Coarctation	VSD	TOF	AVC	ASO	ASO+VSD	Glenn/ HemiFontan	Fontan	Truncus	Norwood
<b>Participant</b>										
<b>Operative Mortality</b>										
Number of Mortalities										
Number Eligible										
Mortality Rate										
Mortality (95% CI)										
<b>Postoperative Length of Stay</b>										
Mean										
Median (days)										
Range (days)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
Interquartile Range (days)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
<b>STS Overall</b>										
<b>Sample Size</b>										
Number of Participants										
Number of Operations										
Average Sample Size										
Range of Sample Sizes	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
<b>Operative Mortality</b>										
Aggregate Rate (%)										
Median Rate (%)										
Range (%)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
Interquartile Range (%)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
<b>Postoperative Length of Stay</b>										
Aggregate (days)										
Median (days)										
Range (days)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
Interquartile Range (days)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)

<sup>1</sup>See the report interpretation guide for the specific inclusion/exclusion criteria

**STS Congenital Heart Surgery Data Summary  
Participant Outcomes**

**Participant 99999  
STS Period Ending 12/31/2016**

**Table 18: Benchmark Operations: Overall Aggregate and Participant-Specific Mortality and Postoperative Length of Stay, Last 4 Years (Jan 2013 - Dec 2016)<sup>1</sup> - cont.**

	Off Bypass Coarctation	VSD	TOF	AVC	ASO	ASO+VSD	Glenn/ HemiFontan	Fontan	Truncus	Norwood
<b>Among Sites with N &gt;= 10</b>										
<b>Sample Size</b>										
Number of Participants										
Number of Operations										
Average Sample Size										
Range of Sample Sizes	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
<b>Operative Mortality</b>										
Aggregate Rate (%)										
Median Rate (%)										
Range (%)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
Interquartile Range (%)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
<b>Postoperative Length of Stay</b>										
Aggregate (days)										
Median (days)										
Range (days)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
Interquartile Range (days)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)

<sup>1</sup>See the report interpretation guide for the specific inclusion/exclusion criteria



**STS Congenital Heart Surgery Data Summary  
Participant Outcomes**

**Participant 99999  
STS Period Ending 12/31/2016**

**Table 19: Risk Stratified Operations: Overall Aggregate and Participant-Specific Mortality and Postoperative Length of Stay, Last 4 Years (Jan 2013 - Dec 2016)<sup>1</sup>**

	STAT Mortality Category 1	STAT Mortality Category 2	STAT Mortality Category 3	STAT Mortality Category 4	STAT Mortality Category 5
<b>Participant</b>					
<b>Operative Mortality</b>					
Number of Mortalities					
Number Eligible					
Mortality Rate					
Mortality (95% CI)					
<b>Postoperative Length of Stay</b>					
Mean					
Median (days)					
Range (days)	(-)	(-)	(-)	(-)	(-)
Interquartile Range (days)	(-)	(-)	(-)	(-)	(-)
<b>STS Overall</b>					
<b>Sample Size</b>					
Number of Participants					
Number of Operations					
Average Sample Size					
Range of Sample Sizes	(-)	(-)	(-)	(-)	(-)
<b>Operative Mortality</b>					
Aggregate Rate (%)					
Median Rate (%)					
Range (%)	(-)	(-)	(-)	(-)	(-)
Interquartile Range (%)	(-)	(-)	(-)	(-)	(-)
<b>Postoperative Length of Stay</b>					
Aggregate (days)					
Median (days)					
Range (days)	(-)	(-)	(-)	(-)	(-)
Interquartile Range (days)	(-)	(-)	(-)	(-)	(-)

<sup>1</sup>See the report interpretation guide for the specific inclusion/exclusion criteria

**STS Congenital Heart Surgery Data Summary  
Participant Outcomes**

**Participant 99999  
STS Period Ending 12/31/2016**

**Table 19: Risk Stratified Operations: Overall Aggregate and Participant-Specific Mortality and Postoperative Length of Stay, Last 4 Years (Jan 2013 - Dec 2016)<sup>1</sup> - cont.**

	STAT Mortality Category 1	STAT Mortality Category 2	STAT Mortality Category 3	STAT Mortality Category 4	STAT Mortality Category 5
<b>Among Sites with N &gt;= 10</b>					
<b>Sample Size</b>					
Number of Participants					
Number of Operations					
Average Sample Size					
Range of Sample Sizes	(-)	(-)	(-)	(-)	(-)
<b>Operative Mortality</b>					
Aggregate Rate (%)					
Median Rate (%)					
Range (%)	(-)	(-)	(-)	(-)	(-)
Interquartile Range (%)	(-)	(-)	(-)	(-)	(-)
<b>Postoperative Length of Stay</b>					
Aggregate (days)					
Median (days)					
Range (days)	(-)	(-)	(-)	(-)	(-)
Interquartile Range (days)	(-)	(-)	(-)	(-)	(-)

<sup>1</sup>See the report interpretation guide for the specific inclusion/exclusion criteria