

STS Congenital Heart Surgery Database Custom Report Overview Produced for the Florida Agency for Health Care Administration

Introduction

This report was produced for the Florida Agency for Health Care Administration by the Society of Thoracic Surgeons (STS).

Report Details

The data provided in the report are described in this section.

- **Operative Mortality and Adjusted Operative Mortality**
Participant-specific adjusted mortality rates are calculated and reported by The Society of Thoracic Surgeons - European Association for Cardio-Thoracic Surgery Congenital Heart Surgery Mortality Categories (STAT Mortality Categories). Detailed information regarding STAT Mortality Categories is available on the [STS website](#).
 - All
 - STAT Mortality Category 1
 - STAT Mortality Category 2
 - STAT Mortality Category 3
 - STAT Mortality Category 4
 - STAT Mortality Category 5

Inclusion Criteria

Mortality reporting in the STS CHSD is limited to operations that meet specific inclusion/exclusion criteria. In addition, participants must meet data completeness criteria to be included in the risk model analysis.

Operation-level inclusion criteria

- Non-missing age
- Non-missing sex (male or female)
- All data (patient-level and operation-level) were collected in version 3.0 or later
- The operation includes procedure(s) with a defined STAT Mortality Category
- For neonates and infants: Weight-for-age Z-score between -7.0 and 5.0

Patients not meeting the inclusion criteria listed above for the reporting time period were excluded from the numerator and denominator when calculating adjusted mortality results.



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Interpretation of Adjusted Mortality Results

Adjusted mortality results are summarized for each participant by calculating two types of statistics: (1) the observed-to-expected (O/E) mortality ratio; and (2) the adjusted mortality rate (AMR).

Observed-to-Expected (O/E) Mortality Ratios

The O/E ratio is defined as the number of observed deaths (numerator; “O”) divided by the number of expected deaths (denominator; “E”). The number of expected deaths is determined by a statistical model and reflects the hospital’s case mix (i.e., mix of age, weight, procedure types, and other model-specific variables including prior cardiothoracic operations, non-cardiac congenital anatomic abnormalities, etc.). An O/E ratio >1.0 implies that the hospital had more deaths than would have been expected given the case mix. Conversely, an O/E ratio <1.0 implies that the number of deaths was fewer than expected. Small differences in the O/E ratio are usually not statistically significant and may reflect random statistical variation. For this reason, O/E ratios are presented along with 95% confidence intervals.

Adjusted Mortality Rates

The adjusted mortality rate (AMR) is an estimate (based on a statistical model) of what the hospital’s mortality rate would be if its observed performance was extrapolated to the overall STS case mix (specifically, the mix of age, weight, procedure types, and other model specific variables including prior cardiothoracic operations, non-cardiac congenital anatomic abnormalities, etc.). If a hospital’s AMR is significantly greater than the overall observed STS mortality rate, this implies that its mortality rate is higher (worse) than would be expected given its case mix. If the AMR for mortality is significantly less than the overall observed STS mortality rate, this implies that the hospital’s mortality rate is lower (better) than expected given its case mix.



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- Mortality and Postoperative Length of Stay

Operations are classified into the various benchmark operation groups according to the assigned primary procedure for that operation.

Postoperative length of stay is calculated using OR exit to database discharge date. Patients are excluded if their hospital discharge status is dead.

Procedure Type	Abbreviation	STS CHSD Primary Procedure Codes
VSD repair	VSD	VSD repair, Patch VSD repair, Patch + ASD repair, Primary closure
TOF repair	TOF	TOF repair, No ventriculotomy TOF repair, Ventriculotomy, Nontransannular patch TOF repair, Ventriculotomy, Transannular patch TOF repair, Ventriculotomy, Transannular patch, plus native valve reconstruction TOF repair, Ventriculotomy, Transannular patch, with monocusp or other surgically fashioned RVOT valve TOF repair, No Ventriculotomy + ASD repair, Primary closure
Complete atrioventricular canal repair	AVC	AVC (AVSD) repair, Complete (CAVSD)
Arterial switch	ASO	Arterial switch operation (ASO)
Arterial switch + VSD repair	ASO + VSD	Arterial switch operation (ASO) and VSD repair
Glenn/HemiFontan	Glenn/HemiFontan	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) + PA reconstruction
Fontan operation	Fontan	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
Truncus arteriosus repair	Truncus	Truncus arteriosus repair
Norwood procedure	Norwood	Norwood procedure



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		Norwood procedure+Valvuloplasty, Systemic Atrioventricular valve+Conduit placement, RV to PA
Off-Bypass Coarctation - only include cases with OpType = No CPB Cardiovascular	Coarctation	Coarctation repair, End to end Coarctation repair, End to end, Extended Coarctation repair, Subclavian flap Coarctation repair, Patch aortoplasty Coarctation repair, Interposition graft Aortic arch repair Coarctation repair, Descending aorta anastomosed to Ascending aorta Coarctation repair, Extra-anatomic Bypass graft

