

The Society of Thoracic Surgeons

Congenital Heart Surgery Database Audit

2025



Purpose of the Audit

- To assure that the data collected at facilities are valid, therefore attesting to the integrity of the STS Congenital Heart Surgery Database
- To examine the accuracy, consistency, and completeness of data
- To provide education to the sites
- Affords an opportunity to identify variability in data collection so STS can share best practices, improve data definitions, and enhance training manuals and other educational offerings
- Audit results drive education for our webinars and content provided at AQO



Site Selection for Audit

- 10% of participating sites are selected for audit
- 11 CHSD sites were selected in 2025
- Primary Data and File Contact and Surgeon Representative receive the audit notification via email from STS
 - These two contacts will also receive the results at the end of the audit season
- Participating sites are removed from the audit selection pool for 3 years after completing an audit that meets expectations according to the STS National Database Audit Policy
 - STS reserves the right to utilize various methodologies, including random and targeted selection.
 - Targeted audits may be scheduled if requested by a participant or deemed appropriate by STS.



Who Will Perform the Audit?

- Cardiac Registry Support (CRS) will perform an independent, external audit of the STS Congenital Heart Surgery Database
- CRS is HIPAA compliant and will conduct audits adhering to strict security policies in accordance with the Business Associate Agreement (BAA) and Sub-Business Agreement with STS
- CRS is covered as an affiliate under the BAA you entered into with STS as part of your participation in the Database, so a separate BAA is not needed
- All data files received are stored on an encrypted secure server at CRS
- If you need to see your contract between your site and STS, contact STSDb@sts.org



Congenital Heart Audit

- Cardiac Registry Support (CRS) will perform the audit on 20 congenital heart surgery records performed between January 1, 2024 – December 31, 2024, and submitted using Version 6.23.2
- CRS will perform the audit on mortalities that occurred within the audit period (January 1, 2024 – December 31, 2024) if the most recent surgery happened within the last 5 years.
- CRS will review the site's OR-generated case log against the cases submitted to IQVIA.



STS National Database Audit Policy

- A final Summary Report will be emailed by STS to each site. The rate of agreement and data completeness will be considered when evaluating each site and identifying sites that do not meet the STS expectations.
- Your report will show variable accuracy, section accuracy, and overall accuracy.
- **Variable accuracy (agreement)** will be measured for each audited variable. The denominator will equal the total number of records audited. The numerator will show the number of records where that variable was a mismatch. This will be reported back as a percentage to sites.



STS National Database Audit Policy

- **Section accuracy (agreement)** will be measured for each section (i.e., demographics, risk factors, discharge, mortality, etc.).
- **Overall site accuracy (agreement)** will be measured for each site as an overall agreement rate. The denominator will equal the total number of records audited. The numerator will show the number of records where that variable was a mismatch. This will be reported back as a percentage to sites.



STS National Database Audit Policy

- For **Overall Variables:**
- 98.0% or greater is defined as a site that exceeds expectations
- 90.0% to 97.9% is defined as a site that meets expectations
- A site achieving less than 89.9% is defined as a site that does not meet expectations and will require a re-audit within two years



Audit Policy – Overall Variables

Birth Information Known	300	BirthInfoKnown
Premature Birth	315	Premature
Gestational Age At Birth Known	320	GestAgeKnown
Gestational Age (if < 1 year)	325	GestAgeWeeks
Noncardiac Congenital Anatomic Abnormality	420	NCAAMulti
Chromosomal Abnormality	455	ChromAbMulti
Syndromes	490	SyndromeMulti
Date of Admission	570	AdmitDt
Date of Surgery	580	SurgDt
Height	585	HeightCm
Weight	590	WeightKg
Derived DOB	NA	DerivedDOB



Audit Policy – Overall Variables

Preop Factor: Mechanical circulatory support	220 (harvest code)	PreopFactorMulti_220
Preop Factor: Shock, persistent at time of surgery	230 (harvest code)	PreopFactorMulti_230
Preop Factor: Shock, resolved at time of surgery	240 (harvest code)	PreopFactorMulti_240
Preop Factor: Hepatic dysfunction	310 (harvest code)	PreopFactorMulti_310
Preop Factor: Necrotizing entero-colitis, Treated medically	320 (harvest code)	PreopFactorMulti_320
Preop Factor: Necrotizing entero-colitis, Treated surgically	330 (harvest code)	PreopFactorMulti_330
Preop Factor: Coagulation disorder, Hypocoagulable state secondary to medication	360 (harvest code)	PreopFactorMulti_360
Preop Factor: Sepsis	380 (harvest code)	PreopFactorMulti_380
Preop Factor: Preoperative neurological deficit	400 (harvest code)	PreopFactorMulti_400
Preop Factor: Stroke within 48hrs	440 (harvest code)	PreopFactorMulti_440
Preop Factor: Renal dysfunction	450 (harvest code)	PreopFactorMulti_450
Preop Factor: Renal failure requiring dialysis	460 (harvest code)	PreopFactorMulti_460
Preop Factor: Mechanical ventilation to treat cardiorespiratory failure	470 (harvest code)	PreopFactorMulti_470



Audit Policy – Overall Variables

Diagnosis	1065	DiagnosisMulti
Primary Diagnosis	1070	PrimaryDiagnosis
Fundamental Diagnosis	1075	FundDiagnosis
Procedure	1350	ProcedureMulti
Primary Procedure	1355	PrimaryProcedure
Operation Type	1755	OpType
Number of Cardiothoracic operations	2000	PrvCtOpN



Audit Policy – Overall Variables

Major Postoperative Event: Unplanned cardiac reoperation	22 (harvest code)	PostopEventMulti_22
Major Postoperative Event: Unplanned interventional cardiovascular catheterization procedure	24 (harvest code)	PostopEventMulti_24
Major Postoperative Event: Non-cardiac reoperation	26 (harvest code)	PostopEventMulti_26
Major Postoperative Event: Renal failure	570 (harvest codes)	PostopEventsMulti_570
Major Postoperative Event: Postoperative/Postprocedural mechanical circulatory support	40 (harvest code)	PostopEventsMulti_40
Major Postoperative Event: Arrhythmia necessitating pacemaker, Permanent pacemaker	74 (harvest code)	PostopEventsMulti_74
Major Postoperative Event: Paralyzed Diaphragm	300 (harvest code)	PostopEventsMulti_300
Major Postoperative Event: Unexpected Cardiac Arrest	30 (harvest code)	PostopEventsMulti_30
Postoperative Events - Neurological Deficit Present At Discharge	4802	POENeuroDefPAtDis



Audit Policy – Overall Variables

Date of Hospital Discharge	4875	HospDischDt
Mortality Status at Hospital Discharge	4880	MtHospDisStat
Discharge Location	4885	DisLoctn
Date of Database Discharge	4935	DBDischDt
Mortality Status at Database Discharge	4940	MtDBDisStat
Mortality-30-day Status	4945	Mt30Stat



STS National Database Audit Policy

- For the **Post Operative Events (Appendix B) and Mortality (Appendix C) sections:**
- 98.0% or greater is defined as a site that meets expectations
- 90% to 97.9% is defined as a site that does not meet expectations and requires further education
- A site achieving 89.9% or less on the Post Operative Events or Mortality section will require a re-audit within two years



Audit Policy – Post Operative Event Section Variables

Major Postoperative Event: Unplanned cardiac reoperation	PostopEventMulti_22	22 (harvest code)
Major Postoperative Event: Unplanned interventional cardiovascular catheterization procedure	PostopEventMulti_24	24 (harvest code)
Major Postoperative Event: Non-cardiac reoperation	PostopEventMulti_26	26 (harvest code)
Major Postoperative Event: Renal failure	PostopEventsMulti_570	570 (harvest codes)
Major Postoperative Event: Postoperative/Postprocedural mechanical circulatory support	PostopEventsMulti_40	40 (harvest code)
Major Postoperative Event: Arrhythmia necessitating pacemaker, Permanent pacemaker	PostopEventsMulti_74	74 (harvest code)
Major Postoperative Event: Paralyzed Diaphragm	PostopEventsMulti_300	300 (harvest code)
Major Postoperative Event: Unexpected Cardiac Arrest	PostopEventsMulti_30	30 (harvest code)
Postoperative Events - Neurological Deficit Present At Discharge	POENeuroDefPAtDis	4802



Audit Policy – Mortality Section Variables

Date of Admission	AdmitDt	570
Date of Surgery	SurgDt	580
Operation Type	OpType	1755
Date of Hospital Discharge	HospDischDt	4875
Mortality Status at Hospital Discharge	MtHospDisStat	4880
Date of Database Discharge	DBDischDt	4935
Mortality Status at Database Discharge	MtDBDisStat	4940
Mortality 30-Day Status	Mt30Stat	4945
Mortality Date	MtDate	5005



STS National Database Audit Policy

- **Verification of post-procedure status** for 30-day mortality is required to be submitted to the audit company. This includes any tracking logs, electronic health records, or other documentation to support coding of those variables listed in Appendix D.
- 100.0% accuracy is defined as meeting expectations
- 99.9% or less for accuracy will require re-audit within two years



Audit Policy – Verification of Post-Procedure Status

Mortality Status at Database Discharge	MtDBDisStat	4940
Mortality 30-Day Status	Mt30Stat	4945

STS National Database Audit Policy

- If your site meets expectations for the post operative events section, mortality section, post-procedure verification and overall data variables then your site will receive an audit completion certificate and the site will be removed from the audit pool for the next 3 years
- If your site does not meet expectations and requires re-audit within 2 years, your site will be selected for audit in 2 years and STS will provide further information at that time
- If you have any questions, please contact Emily Conrad at econrad@sts.org



First Steps

- A link to the [STS CHSD Data Collection Questionnaire](#) is in the audit notification letter that was sent to the Primary Data and File Contact and Surgeon Representative for your site.
- Fill out this questionnaire and provide the lead contact for the audit
- CRS staff will take over from there...



Cardiac Registry Support (CRS)

- Lead congenital auditors:
 - Angela Ebel, RN, MSN, Beth Sherfy, RN, MSN, and Diane Hersey, RN, BSN
 - angelae@cardiacregistrysupport.com
 - beths@cardiacregistrysupport.com
 - dianeh@cardiacregistrysupport.com
 - Include your STS Participant ID in all communication with CRS

