

# The Society of Thoracic Surgeons

## Adult Cardiac Surgery Database Audit

2026



# Purpose of the Audit

- To assure that the data collected at facilities are valid, therefore attesting to the integrity of the STS Adult Cardiac 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
- 100 ACSD sites selected in 2026
- 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 or focused audits may be scheduled if requested by a participant or deemed appropriate by STS



# Who Will Perform the Audit?

- Healthcare Management Solutions, LLC (HMS) will perform an independent, external audit of the STS Adult Cardiac Surgery Database
- HMS is HIPAA compliant and will conduct audits adhering to strict security policies in accordance with our Business Associate Agreement (BAA) and Sub-Business Agreement with STS
- HMS is covered as an affiliate under the BAA you entered 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 HMS



# Adult Cardiac Audit

- Fill out the [STS ACSD Data Collection Questionnaire](#)
- Healthcare Management Solutions, LLC (HMS) will perform the audit on 15 isolated coronary artery bypass graft (CABG), isolated Valve or Valve + CABG cases performed between January 1, 2025 – December 31, 2025, submitted using Version 4.20
  - For each case we will look at 125 variables
- 5 aorta cases performed between January 1, 2025 – December 31, 2025, submitted using Version 4.20
  - For each aorta case we will look at 138 variables (13 related to the aorta section)
- HMS will review the site's OR-generated case log with the cases submitted to IQVIA.
  - This will be for a randomly selected 3-month period



# 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.
- Please make sure that your submitted files are complete and accurate. Verification of 30-day mortality status is required to be submitted to the audit company.
  - This includes any tracking logs or EHR documentation used to code the 30-day status, readmission, and surgical site infection within 30 days fields (Mt30Stat (seq 7001), Readmit (seq 7140), and SurSInf (seq 6690)).



# STS National Database Audit Policy

- **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.
- **Section accuracy (agreement)** will be measured for each section (i.e., demographics, risk factors, complications, 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.



# Audit Policy – Overall Variables

Demographics	
65	DOB
70	Age
75	Gender
151	RaceMulti
185	Ethnicity
Hospitalization	
291	PayorPrim
298	PayorSecond
305	AdmitDt
310	SurgDt

Previous Cardiac Interventions	
670	PrCAB
675	PrValve
775	POCPCI
780	POCPCIWhen
800	POCPCIIn
805	POC

Risk Factors	
330	HeightCm
335	WeightKg
355	FHCAD
360	Diabetes
365	DiabCtrl
375	Dialysis
380	Hypertn
385	InfEndo
390	InfEndTy
400	TobaccoUse
405	ChrLungD
450	HmO2
460	SlpApn
465	Pneumonia
470	IVDrugAb
480	Alcohol
485	LiverDis
492	ImmSupp
495	MediastRad
500	Cancer
505	PVD
512	UnrespStat
515	Syncope
525	CVD
530	CVA
535	CVAWhen
540	CVDTIA
550	CVDStenRt
555	CVDStenLft
560	CVDPCarSurg
565	WBC
575	Hct
580	Platelets
605	CreatLst



# Audit Policy – Overall Variables

Preoperative Cardiac Status	
890	MIWhen
895	CardSympTimeOfAdm
912	HeartFailTmg
915	ClassNYH
930	CarShock
935	Resusc
955	ArrhythSSS
960	ArrhythAFlutter
961	ArrhythAtrFib
965	ArrhythSecond
970	ArrhythThird
971	ArrhythAFib
Preoperative Medications	
1020	MedACEI48
1030	MedBeta
1060	MedADP5Days
1065	MedADPIDis
1073	MedGP
1130	MedInotr
1143	MedSter

Hemodynamics/Cath/Echo	
1170	NumDisV
1174	StenLeftMain
1178	LADDistSten
1545	HDEF (+/-5% for audit only)
1590	VDInsufA
1600	VDStenA
1646	VDAoPrimEt
1680	VDInsufM
1690	VDStenM
1711	VDMitDis
1775	VDInsufT
1776	VDStenT
1811	VDTrPrimEt
Operative	
1975	Status
2245	OREntryDT
2250	ORExitDT
2290	AbxDisc
Coronary Bypass	
2626	IMAUUsed
2629	NoIMARsn



# Audit Policy – Overall Variables

Valve Surgery Explant	
3395	VSAVpr
3403	VSAVSurgType
3500	VSMVPr
3502	VSMVRepAppSurg
3620	MitralImplantTy
Mechanical Cardiac Assist Devices	
3730	IABPWhen
3780	ECMOWhen
3789	CathBasAssistWhen
Other Cardiac Procedures (M.1. Atrial Fibrillation Procedures)	
4191	OCarAFibLesLoc
Other Cardiac Procedures (M.2. Aorta and Aortic Root Procedures)	
4500	FamHistAorta
4505	PatGenHist
4710	Presentation
4712	PrimIndic
4720	AnEtiology
4745	DisTiming
4881	ArchAnom
4889	ArchPatIMA
4952	VSAVPRAo
4963	VSAVRoot
4965	VSAVRootOReimpType
4975	ArchProc
4976	ArchProxLoc

Post-Operative	
6591	PostopIntub
6595	VentHrsA
6615	ICUReadm
Postoperative Events	
6690	SurSInf
6700	DeepSternInf
6755	COpreBld
6765	COpreVlv
6771	CRentMI
6774	CAortReint
6778	COpreOth
6780	COpreNon
6810	CNStrokP
6835	CPVntLng
6840	CPPneum
6870	CRenFail
6945	COtAFib



# Audit Policy – Overall Variables

Discharge/Mortality	
7001	Mt30Stat
7006	DischDt
7007	DischMortStat
7060	DCASA
7070	DCADP
7075	DCOthAntiplat
7105	DCBeta
7115	DCLipLowStat
7121	MtDate
7124	MtOpD
Readmission	
7140	Readmit
7145	ReadmitDt
7160	ReadmRsn



# 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



# 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 Complications or Mortality section will require a re-audit within two years



# Audit Policy – Post Operative Events Section Variables

Variable	Short Name	Sequence Number
Surgical Site Complications during postoperative period up to 30 days or during initial hospitalization	SurSInf	6690
Deep Sternal	DeepSternInf	6700
ReOp for Bleeding/Tamponade	COpReBld	6755
ReOp for Valvular Dysfunction	COpReVlv	6765
Unplanned Coronary Artery Intervention	CReintMI	6771
Aortic Reintervention	CAortReint	6774
ReOp for Other Cardiac Reasons	COpReOth	6778
Returned to the OR for Other Non-Cardiac Reasons	COpReNon	6780
Postoperative Stroke	CNStrokP	6810
Prolonged Ventilation	CPVntLng	6835
Renal Failure	CRenFail	6870
Atrial Fibrillation	COTAFib	6945
Operative Mortality	MtOpD	7124
Readmit	Readmit	7140



# Audit Policy – Mortality Section Variables

Variable	Short Name	Sequence Number
Status at 30 days After Surgery	Mt30Stat	7001
Hospital Discharge Date	DischDt	7006
Status at Hospital Discharge	DischMortStat	7007
Aspirin	DCASA	7060
ADP Inhibitor	DCADP	7070
Beta Blocker	DCBeta	7105
Lipid Lowering - Statin	DCLipLowStat	7115
Mortality - Date	MtDate	7121
Operative Mortality	MtOpD	7124



# 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, follow-up records (example office visit), 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 is defined as not meeting expectations and will require re-audit within two years



# Audit Policy – Verification of Post-Procedure Status

Variable	Short Name	Sequence Number
Status at 30 days After Surgery	Mt30Stat	7001



# 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
- Contact: Emily Conrad, STS National Database Education Manager, at [econrad@sts.org](mailto:econrad@sts.org)



# First Steps

- A link to the [STS ACSD 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
- HMS staff will take over from there...



# Audit Process and Timeline

1. **Audit Request Email**- within 10 days of STS ACSD Data Questionnaire Response
2. **Documentation Due Date**- 30 business days from Audit Request Email  
\*\*Extensions will be limited to extreme circumstances
3. **Review Period**- 2-3 months from documentation submission
4. **Interim Mismatch Report Issued**- upon review period completion
5. **Interim Mismatch Report Response**- response due 5 business days after site receives Interim Mismatch Report
6. **Adjudication**- upon receipt of Interim Mismatch Report response
7. **Final Reporting**- sent by STS to Site Administrator and Physician Representative



# Audit Request Email

- Within 10 business days of your submission of the STS ACSD Data Collection Questionnaire, the contact(s) provided will receive a request email from the STS Mailbox ([STS@hcmsllc.com](mailto:STS@hcmsllc.com)).
- This Audit Request Email will contain information about the audit and any deadlines.
  - The email will include a link to download:
    - The case sample for your site
    - The list of variables to be audited
    - Document Submission Process Instructions



# Documentation Collection

- Documentation should be submitted in PDF format.
- One PDF file for each case.
- Bookmarks or other electronic flags must be used to identify each section of the record.
- Use the file naming conventions provided (PDF File Name for Submission column).
- All cases can be zipped into one zip file for submission.
- Additional information will be provided in your Document Submission Process instructions.



# Documents Requested

- A list of audited variables will be provided.
- Submitted documentation should correspond with the sources you used when entering data into the STS ACSD.
- Example source documentation is included with the audited variables list.
- Verification of 30-day status must be submitted.



# 30 Day Follow-up Log - Examples

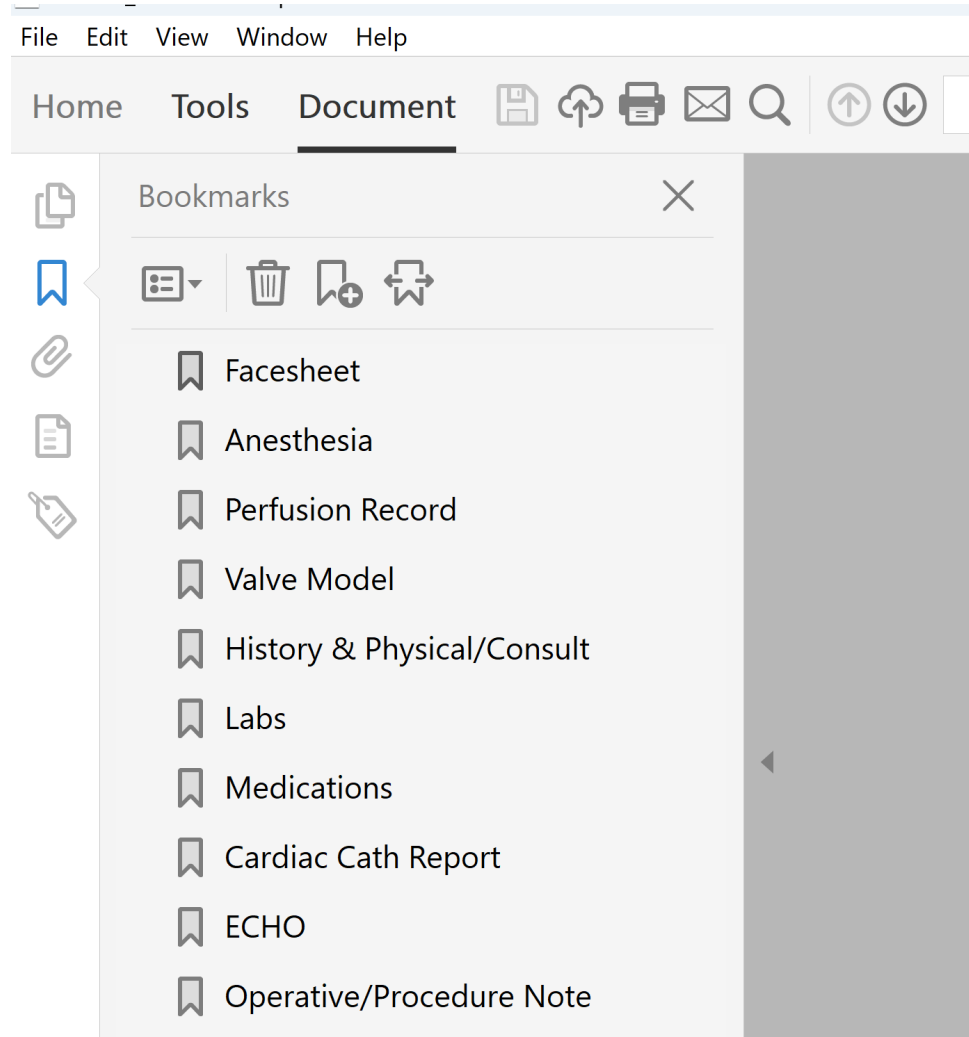
E-MRN #	Name	Date of Surgery	Surgery	STS Record ID	30 Day Mortality Status	30 Day SSI	Date of DC	30-day Readmit
		4/5/2023	CAB		Alive 5/10/23 - attended Cardiac Rehab	CTS office visit 5/6/24 - Patient reports no issues with incisions since discharge. Incisions clean and dry per CTS.	4/11/2023	Cardiology visit on 5/24/23 and NP documented no readmits or ED visits since discharge.

STS Record ID	Last Name	MRN	Surgery Date	DC Date	Evidence of life or death at 30 days DOS	Evidence of SSI at 30 days DOS	Readmit within 30 Days
			1/17/2025	1/20/2025	Alive at CTS Office visit 2/24/25	No - chart reviewed after 2/21/2025 all Epic and Care everywhere and no evidence of SSI	No - chart reviewed after 2/21/2025 all Epic and Care everywhere and no evidence of readmission





# Document Collection: Bookmarking



# Documentation Collection: Bookmarking Demo



# Documentation Tips

- Submit only documentation relevant to the specific case — do not include the entire patient record.
- Screenshots or snips are acceptable as long as they include enough surrounding detail to identify the patient and encounter.
- All submitted documentation must include patient identifiers and encounter dates, including screenshots or snips.
- Missing or irrelevant documentation may lead to mismatches during the audit.
- Submit documentation before the due date to avoid delays from unforeseen submission issues.



# Submission of Documentation

- Upload documents using the file submission link that will be provided in your Audit Request Email.
- Submission is secure and encrypted.
- Submissions will not be accepted via email.
- If you experience any issues with submission, reach out to the STS Audit Team at [STS@hcmsllc.com](mailto:STS@hcmsllc.com).



# Interim Mismatch Report

- Issued following completion of the documentation review (typically 2–3 months).
- Provides an opportunity to submit additional documentation or clarify identified discrepancies.
- Please return the Excel report with your responses, including comments in the designated final column.
- If you choose not to respond, please indicate this in your reply to the original email.



# Clinical Lead Tips



# Submission Tips

- All submissions must be reviewed by your site's data abstractor to ensure completeness and accuracy. Please include only the documentation that was used during case abstraction for submission to the STS.
- **Do not submit the entire patient record or full encounter documentation.** Only relevant, supporting materials used in abstraction should be included.
- Knowing what data was entered into the database will guide you in what records to include in submission to HMS. For example: History of HTN documented in H&P pre-op office visit. Please include the H&P in your submitted records.



# Common Documentation Issues

- The most common issue is missing documentation. Review the audited variables list and submit the records that correspond to what your site used to enter data into the STS Database.
- The second most common issue is including the entire patient record.
  - Submitting an excessive number of documents can significantly increase the likelihood of mismatched fields during the audit process. Very large records make it difficult to accurately identify and validate the correct variables.
  - The review will take much longer to complete, delaying your interim report. The interim report allows you the opportunity to respond to mismatches and submit any additional missing documents prior to the release of your final report.



# Questions & Answers



# Contacting HMS

If you experience any issues with submitting your documentation, please contact the HMS Audit Team at [STS@hcmsllc.com](mailto:STS@hcmsllc.com).

Be sure to include your 5-digit STS Participant ID (PID) number in all communications



