

# The Society of Thoracic Surgeons

## General Thoracic 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 General Thoracic 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
- 29 GTSD sites 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 General Thoracic Surgery Database
- CRS 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
- 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](mailto:STSDb@sts.org)



# General Thoracic Audit

- Cardiac Registry Support (CRS) will perform the audit on a total of 20 lung cancer cases or esophageal cancer cases performed between January 1, 2024 – December 31, 2024, submitted using Version 5.21.
- CRS will review the site's OR-generated case log against the cases submitted to IQVIA.
  - The OR Log review will be on lung cancer cases or esophageal cancer cases only
  - CRS will provide a list of procedures in the instructions



# 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, 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.



# 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

| Sequence Number | Long Name  | Short Name   |
|-----------------|--|--|
| 10              | Operations Table Record Identifier   | RecordID   |
| 90              | Operation Table Patient Identifier   | PatID  |
| 270             | Race - Multi-Select  | RaceMulti  |
| 360             | Admission Date   | AdmitDt  |
| 370             | Primary Payor  | PayorPrim  |
| 420             | Secondary (Supplemental) Payor   | PayorSecond  |
| 500             | Hospital Name  | HospName   |
| 540             | Height In Centimeters  | HeightCm   |
| 550             | Weight In Kilograms  | WeightKg   |
| 580             | Prior Surgical History in Planned Operative Field                                    | Reop   |
| 590             | History of Cardiopulmonary Disease - Hypertension                                    | HistCarPulDis (Hypertn) <i>Harvest code = 2</i>                    |
| 590             | History of Cardiopulmonary Disease - Coronary Artery Disease                         | HistCarPulDis (CAD) <i>Harvest code = 3</i>                        |
| 590             | History of Cardiopulmonary Disease - Congestive Heart Failure                        | HistCarPulDis (CHF) <i>Harvest code = 6</i>                        |
| 590             | History of Cardiopulmonary Disease - Interstitial Fibrosis/Interstitial Lung Disease | HistCarPulDis (Interstitial Lung Disease) <i>Harvest code = 12</i> |



# Audit Policy – Overall Variables

|     |   |   |
|-----|---|---|
| 610 | History of Vascular Disease - Major Aortic or Peripheral Vascular Disease         | HistVasDis (MVD) <i>Harvest code = 2</i>              |
| 610 | History of Vascular Disease - Transient Ischemic Attack                           | HistVasDis (TIA) <i>Harvest code = 4</i>              |
| 610 | History of Vascular Disease - Cerebrovascular Accident                            | HistVasDis (CVA) <i>Harvest code = 5</i>              |
| 630 | History of Endocrine GI Renal Disease - Liver Dysfunction                         | HistEndoGiRenDis (Dialysis) <i>Harvest code = 4</i>   |
| 650 | History of Cancer - Preoperative Chemotherapy/Immunotherapy                       | HistCancer (PreopChemoCur) <i>Harvest code = 3</i>    |
| 650 | History of Cancer - Preoperative Thoracic Radiation Therapy                       | HistCancer (PreopXRT) <i>Harvest code = 4</i>         |
| 675 | Preoperative Chemo - Current Malignancy - Multi-Select                            | PreopChemoCurWhenMulti                                |
| 685 | Preoperative Thoracic Radiation Therapy - Disease and When Treated - Multi-Select | PreopXRTDisWhenMulti                                  |
| 690 | Preoperative Medication History - Chronic Immunosuppressive Therapy               | HisPreopMeds (PreopImmunoThx) <i>Harvest code = 2</i> |



# Audit Policy – Overall Variables

|      |  |                  |
|------|--|------------------|
| 710  | Last Creatinine Level                      | CreatLst         |
| 740  | Pulmonary Function Tests Performed         | PFT              |
| 750  | FEV1 Predicted                             | FEVPred          |
| 781  | DLCO Lowest Predicted                      | DLCOPredLow      |
| 800  | Cigarette Smoking History                  | CigSmoking       |
| 870  | ECOG Score                                 | ECOGScore        |
| 1250 | Category of Disease - Primary              | CategoryPrim     |
| 1310 | Date of Surgery                            | SurgDt           |
| 1360 | Procedure Start Time                       | ProcStartT       |
| 1370 | Procedure End Time                         | ProcEndT         |
| 1390 | Status of Operation                        | Status           |
| 1410 | Unanticipated Surgical Approach Conversion | UnanticConv      |
| 1460 | ASA Classification                         | ASA              |
| NA   | NA   | PrimaryProcedure |
| 1510 | Primary Lung Cancer Resection Performed    | LungCancer       |
| 1530 | Esophageal Cancer Resection Performed      | EsophCancer      |



# Audit Policy – Overall Variables

|      |   |   |
|------|---|---|
| 1620 | Clinical Staging Methods - PET/CT                                     | ClinStagMeth (PET/CT) <i>Harvest code = 1</i>     |
| 1800 | Clinical Staging Lung Cancer Tumor Size In cm                         | LungCaTumSz                                       |
| 1810 | Lung Cancer T Stage   | ClinStageLungTumor                                |
| 1820 | Lung Cancer Nodes - N   | ClinStageLungN                                    |
| 1830 | Lung Cancer Metastasis - M  | ClinStageLungM                                    |
| 1850 | Pathological Staging - Lung Cancer - T                                | PathStageLungT                                    |
| 2020 | Number of Malignant Nodes   | NumMalignNodes                                    |
| 2030 | Lung Cancer - Number of Nodes   | LungCANodes                                       |
| 2040 | Pathological Staging - Lung Cancer - N                                | PathStageLungN                                    |
| 2060 | Lung CA Metastases  | PathStageLungM                                    |
| 2100 | Lung Cancer - Pathology Margins                                       | LungCAPathMarg                                    |
| 2135 | Clinical Staging Performed For Esophageal Cancer - Multi-Select - EUS | ClinStageEsophMulti (EUS) <i>Harvest Code = 5</i> |
| 2220 | Esophageal Cancer Tumor - T   | ClinStageEsophT                                   |
| 2230 | Clinical Diagnosis of Nodal Involvement                               | ClinStageEsophNode                                |
| 2240 | Esophageal Cancer Metastasis - M                                      | ClinStageEsophM                                   |



# Audit Policy – Overall Variables

|      |  |                 |
|------|--|-----------------|
| 2410 | Pathological Staging - Esophageal Cancer - T       | PathStageEsophT |
| 2420 | Pathological Staging - Esophageal Cancer - N       | PathStageEsophN |
| 2430 | Pathological Staging - Esophageal Cancer - M       | PathStageEsophM |
| 2440 | Pathological Staging - Esophageal Cancer - H       | PathStageEsophH |
| 2460 | Esophageal Cancer - Number of Nodes                | EsophCANodes    |
| 2470 | Esophageal Cancer - Pathology Margins              | EsophCAPathMarg |
| 3660 | Postoperative Events Occurred                      | POEvents        |
| 3670 | Post Op Procedure Through New or Existing Incision | PostOpProc      |
| 3720 | Pneumonia  | Pneumonia       |
| 3740 | Acute Respiratory Distress Syndrome                | ARDS            |
| 3760 | Respiratory Failure                                | RespFail        |



# Audit Policy – Overall Variables

|      |  |                |
|------|--|----------------|
| 3770 | Bronchopleural Fistula   | Bronchopleural |
| 3780 | Pulmonary Embolus  | PE             |
| 3810 | Initial Vent Support >48 Hours                                     | Vent           |
| 3820 | Tracheostomy   | Trach          |
| 3830 | Atrial Arrhythmia Requiring Treatment                              | AtrialArryth   |
| 3870 | Myocardial Infarct   | MI             |
| 3910 | Delayed conduit emptying requiring intervention                    | DelayCondEmp   |
| 3920 | Esophagogastric leak from anastomosis following esophageal surgery | PostopProcAL   |
| 4080 | Recurrent laryngeal nerve paresis - new onset                      | LaryngealNerve |
| 4210 | Hospital Discharge Date  | DischDt        |
| 4220 | Hospital Discharge Status  | MtDCStat       |
| 4230 | Discharge Location   | DisLoctn       |
| 4235 | Discharged with Chest Tube   | CTubeDis       |
| 4270 | Readmission within 30 days of Discharge                            | Readm30Dis     |
| 4290 | Substance Use Screening and Counseling                             | DCSubUseScre   |
| 4310 | Status 30 Days After Surgery                                       | Mt30Stat       |



# STS National Database Audit Policy

- For the **Complications (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 - Complications Section Variables

| Long Name  | Short Name     | Sequence Number |
|--|----------------|-----------------|
| Postoperative Events Occurred                                      | POEvents       | 3660            |
| Post Op Procedure Through New or Existing Incision                 | PostOpProc     | 3670            |
| Pneumonia  | Pneumonia      | 3720            |
| Acute Respiratory Distress Syndrome                                | ARDS           | 3740            |
| Respiratory Failure  | RespFail       | 3760            |
| Bronchopleural Fistula   | Bronchopleural | 3770            |
| Pulmonary Embolus  | PE             | 3780            |
| Initial Vent Support >48 Hours                                     | Vent           | 3810            |
| Tracheostomy   | Trach          | 3820            |
| Atrial Arrhythmia Requiring Treatment                              | AtrialArryth   | 3830            |
| Myocardial Infarct   | MI             | 3870            |
| Delayed conduit emptying requiring intervention                    | DelayCondEmp   | 3910            |
| Esophagogastric leak from anastomosis following esophageal surgery | PostopProcAL   | 3920            |
| Recurrent laryngeal nerve paresis - new onset                      | LaryngealNerve | 4080            |





# Audit Policy - Complications Section Variables

| Complications - Mismatch Due to Missing Parent Field or Inaccurate Child Field |       |                   |                 |                      |
|--|-------|-------------------|-----------------|----------------------|
| Data Element   | SeqNo | Cases             | MisMatches      | Agreement            |
| POEvents   | 3660  | 20                | 3               | 85.0%                |
| PostOpProc   | 3670  | 20                | 3               | 85.0%                |
| Pneumonia  | 3720  | 20                | 3               | 85.0%                |
| ARDS   | 3740  | 20                | 3               | 85.0%                |
| RespFail   | 3760  | 20                | 3               | 85.0%                |
| Bronchopleural   | 3770  | 20                | 3               | 85.0%                |
| PE   | 3780  | 20                | 3               | 85.0%                |
| Vent   | 3810  | 20                | 3               | 85.0%                |
| Trach  | 3820  | 20                | 3               | 85.0%                |
| AtrialArryth   | 3830  | 20                | 3               | 85.0%                |
| MI   | 3870  | 20                | 3               | 85.0%                |
| PostopProcAL   | 3920  | 20                | 3               | 85.0%                |
| DelayCondEmp   | 3910  | 20                | 3               | 85.0%                |
| LaryngealNerve   | 4080  | 20                | 3               | 85.0%                |
| <b>Total</b>   |       | <b>260</b>        | <b>39</b>       | <b>85.0%</b>         |
| Complications - Mismatch Due to Inaccurate Child Field                         |       |                   |                 |                      |
| Data Element   | SeqNo | # of Random Cases | # of MisMatches | Agreement Percentage |
| POEvents   | 3660  | 20                | 0               | 100.0%               |
| PostOpProc   | 3670  | 20                | 0               | 100.0%               |
| Pneumonia  | 3720  | 20                | 1               | 95.0%                |
| ARDS   | 3740  | 20                | 0               | 100.0%               |
| RespFail   | 3760  | 20                | 0               | 100.0%               |
| Bronchopleural   | 3770  | 20                | 0               | 100.0%               |
| PE   | 3780  | 20                | 1               | 95.0%                |
| Vent   | 3810  | 20                | 0               | 100.0%               |
| Trach  | 3820  | 20                | 0               | 100.0%               |
| AtrialArryth   | 3830  | 20                | 0               | 100.0%               |
| MI   | 3870  | 20                | 0               | 100.0%               |
| PostopProcAL   | 3920  | 20                | 0               | 100.0%               |
| DelayCondEmp   | 3910  | 20                | 0               | 100.0%               |
| LaryngealNerve   | 4080  | 20                | 1               | 95.0%                |
| <b>Total</b>   |       | <b>260</b>        | <b>3</b>        | <b>98.8%</b>         |

# Audit Policy – Mortality Section Variables

| Long Name                    | Short Name | Sequence Number |
|------------------------------|------------|-----------------|
| Hospital Discharge Status    | MtDCStat   | 4220            |
| Status 30 Days After Surgery | Mt30Stat   | 4310            |



# 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 is defined as not meeting expectations and will require re-audit within two years



# Audit Policy – Verification of Post-Procedure Status

| Long Name                    | Short Name | Sequence Number |
|------------------------------|------------|-----------------|
| Status 30 Days After Surgery | Mt30Stat   | 4310            |



# STS National Database Audit Policy

- If your site meets expectations for the complications 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](mailto:econrad@sts.org)



# First Steps

- A link to the [STS GTSD 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...



# Next Steps

- Shortly after this webinar the Audit contacts will receive an email from CRS regarding further steps in the audit process.
- The email will contain:
  - 2025 General Thoracic Audit Instructions
  - The list of cases selected for audit
  - PDF sample of the required documentation to be provided along with suggestions for bookmarking
- The audit contacts will also receive an invitation to access the BOX Healthcare file share.



# Audit Instructions Overview

- Select the option for providing Medical Records
  - Option 1 - Direct remote (VPN) access to your facility's EMR
    - Work with your IT Department to facilitate access
    - Important to start this process early as it may require forms to be filled out
    - Please notify CRS if this is the option you are choosing
  - Option 2 – Upload of PDF files that contain the required medical records for the audit
    - Validate with your IT Department that the use of BOX Healthcare is allowed at your facility. CRS will work with you if an alternative method is needed.
    - Work with your HIM or Medical Records Department to help facilitate the gathering of these required documents





# Additional Instructions for Remote Access

- You will be required to provide CRS with a Crosswalk between your EMR Medical Record number and the STS Record ID. This information can be sent via Secure Email or uploaded to BOX
- You will be required to provide CRS with the OR Case Log in Excel format. This information can be sent via Secure Email or uploaded to BOX



# Additional Instructions for PDF Upload

- Make sure you have provided documentation to cover all the data elements listed in Appendix A
- The sample PDF provided is for reference only and is not meant to be all inclusive
- Bookmarking of the PDF is important. This allows the auditors to easily move through the document to identify the documentation needed
- Some EMRs will provide bookmarks automatically when the file is created. Additional bookmarks are not required. Work with your Medical Records or HIM Department to ensure the bookmarks are added
- Other alternatives to adding bookmarks are to use the “Comments” or “Sticky Notes” in Adobe to mark sections



# OR Case Log Tips

- Detailed information will be provided in the instructions for the procedures that are required for the case log
- Try to utilize the same resource your Facility uses to generate your monthly case lists for abstraction
  - IT Department reports
  - OR Department reports
- Excel format is required for the OR Case Log



# Contact Information

- Contact CRS at [Genthoracic@cardiacregistrysupport.com](mailto:Genthoracic@cardiacregistrysupport.com) with questions regarding the audit process.
- Promptly report any changes in the main contact for the audit



# Q&A

- Feel free to utilize the Q&A function and we will address your questions

