The Society of Thoracic Surgeons

Adult Cardiac Surgery Database

Monthly Webinar

May 6, 2026

STS National Database™
Trusted. Transformed. Real-Time.

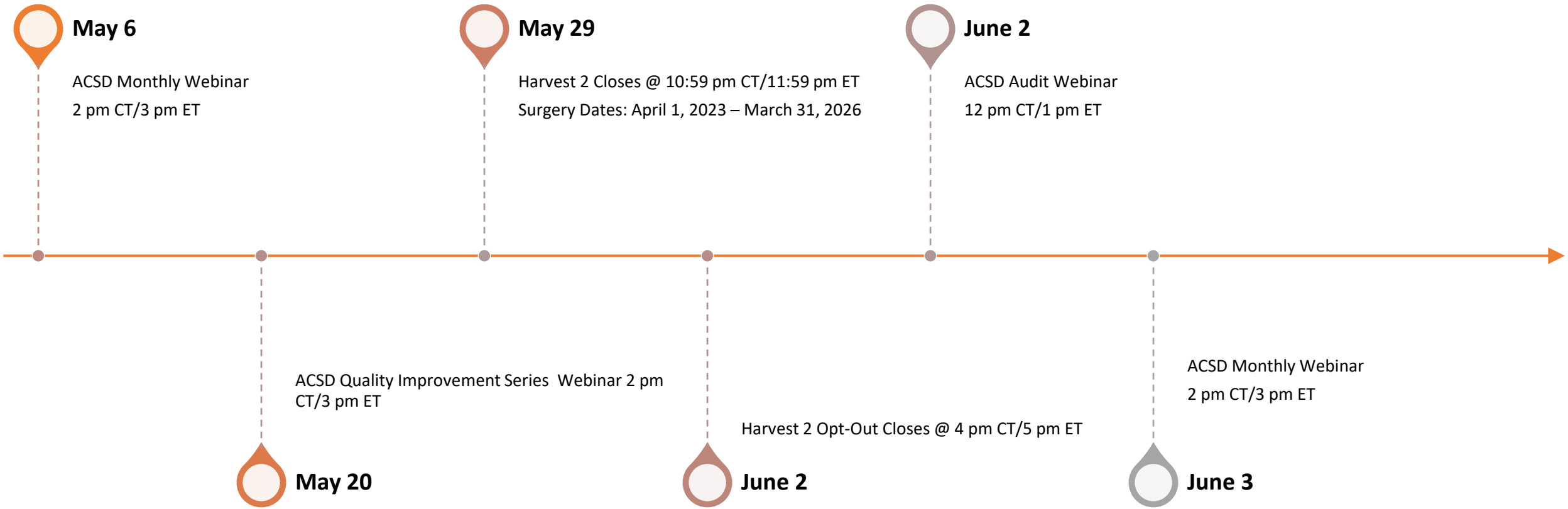
Happy Nurses Day

May 6, 2026

Agenda

- Welcome and Introductions
- STS Updates
- ACSD Report Enhancements
- Q&A

Important Dates-Timeline



Important Dates-2026 Harvest

2026 Harvest

Term	Harvest Submission Window Close	Opt-Out Date	Includes Procedures Performed Through:	Report Posting	Comments
Harvest 1	February 20	February 24	December 31, 2025	Spring 2026	Star Rating
Harvest 2	May 29	June 2	March 31, 2026	Summer 2026	
Harvest 3	August 28	September 1	June 30, 2026	Fall 2026	Star Rating
Harvest 4	November 20	November 24	September 30, 2026	Winter 2026/2027	
Analysis for each harvest is based on a 36-month window.					

Data Submission Open is continuous for all harvest terms. Submission Close occurs at 11:59 p.m. Eastern on the date listed.

Harvest Opt-Out closes at 5:00 p.m. Eastern on the date listed.

Data Clean Up

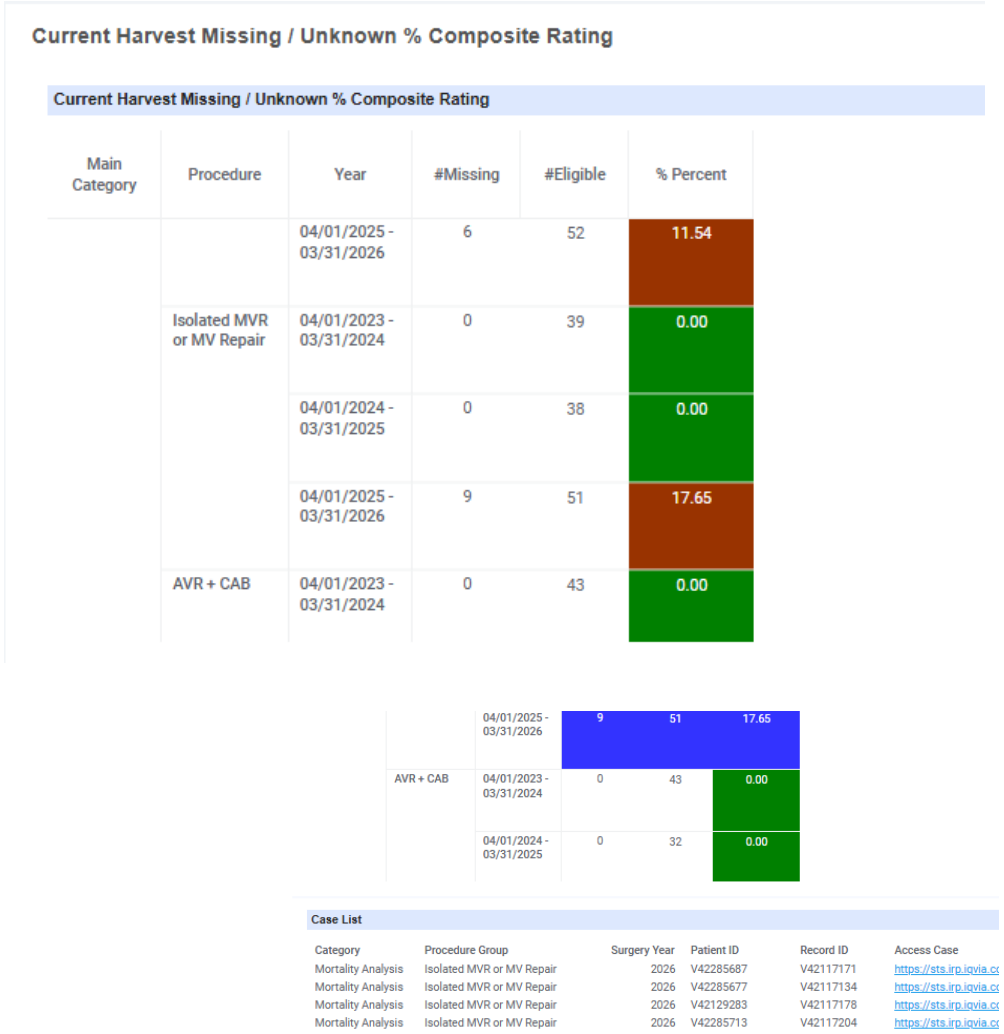
- Risk adjusted results and star ratings are not calculated for your site there is >/= 2% missingness for mortality variables or volume thresholds are not met.
- Please make sure that you are checking for missing data that impacts operative mortality on the **Community Page** and the **Missing Variable Report**.

- Mortality Analysis includes the following variables: Status at Hospital Discharge, Status at 30 days After Surgery, Operative Mortality
- Outcomes and Process Measures Analysis includes the following variables: Internal Artery Mammary Used, Preoperative Beta Blocker, Discharge Anti-platelet, Discharge Beta Blocker, Discharge Anti-lipid

- In addition to meeting required data completeness thresholds, sites must meet the below case count requirements for the 36-month analytical window to be included into analysis.
CABG - 50 cases; AVR - 10 cases; AVR+CAB - 10 cases; MVRR - 36 cases; MVRR+CAB - 25 cases; Multiprocedural - 100 cases

- Color Code Legend
Red - Does not meet requirement for inclusion into composite ratings
Yellow - At risk of not meeting requirement for inclusion in composite ratings
Green - Meets requirement for inclusion into composite ratings

Current Harvest Missing / Unknown % Composite Rating



Current Harvest Missing / Unknown % Composite Rating

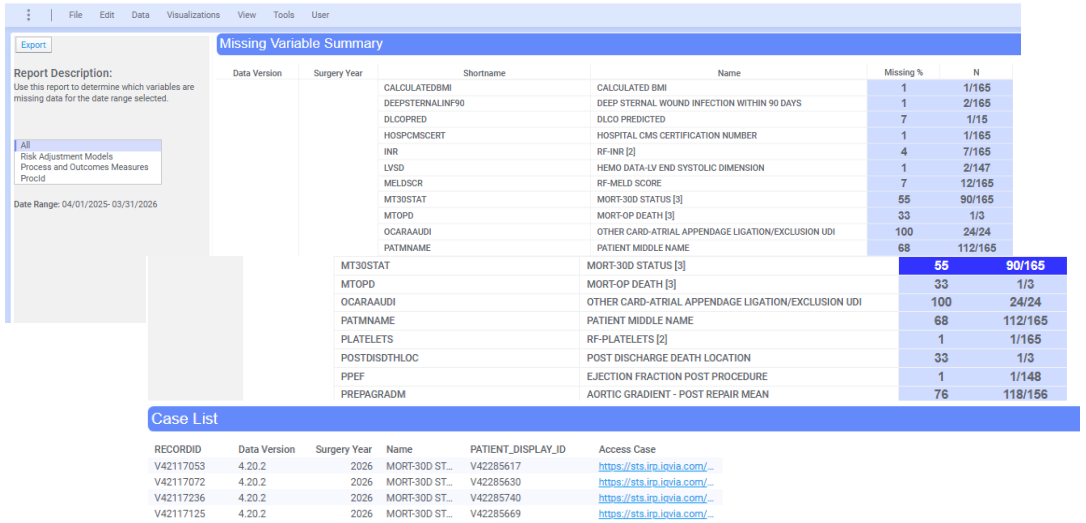
Main Category	Procedure	Year	#Missing	#Eligible	% Percent
		04/01/2025 - 03/31/2026	6	52	11.54
	Isolated MVR or MV Repair	04/01/2023 - 03/31/2024	0	39	0.00
		04/01/2024 - 03/31/2025	0	38	0.00
		04/01/2025 - 03/31/2026	9	51	17.65
	AVR + CAB	04/01/2023 - 03/31/2024	0	43	0.00
		04/01/2024 - 03/31/2025	0	32	0.00
		04/01/2025 - 03/31/2026	9	51	17.65
AVR + CAB		04/01/2023 - 03/31/2024	0	43	0.00

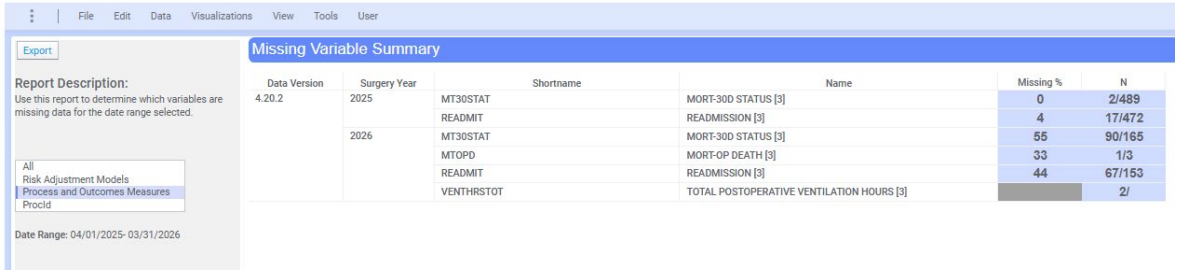
Case List

Category	Procedure Group	Surgery Year	Patient ID	Record ID	Access Case
Mortality Analysis	Isolated MVR or MV Repair	2026	V42285687	V42117171	https://sts.irp.iqvia.cc
Mortality Analysis	Isolated MVR or MV Repair	2026	V42285677	V42117134	https://sts.irp.iqvia.cc
Mortality Analysis	Isolated MVR or MV Repair	2026	V42129283	V42117178	https://sts.irp.iqvia.cc
Mortality Analysis	Isolated MVR or MV Repair	2026	V42285713	V42117204	https://sts.irp.iqvia.cc

Data Clean Up

- The **Missing Variable Report** is invaluable for checking for additional variables that impact the calculation of operative mortality such as **discharge date**.
- Other variables may impact operative mortality downstream if missing such as **“Patient expired in OR (6546)”** and **“Is the patient still in the Acute Care Hospital Setting (7005)”.**
- Pay special attention to all variables in **Section Q. Discharge/Mortality**.





Q. Discharge / Mortality

Status at 30 days After Surgery (either discharged or in-hospital): ++ ☐ Alive ☐ Dead ☐ Unknown
Mt30Stat (7001)

Did the patient transfer to another acute care hospital after this procedure during same stay: ☐ Yes ☐ No (If Yes →) Date Transferred: ___/____/_____
DischMtPtTrnfAcuteHosp (7003) DischMtPtTrnfAcuteHospDt (7004)

Is the patient still in the Acute Care Hospital Setting: ☐ Yes ☐ No (If No ↓)
DischMtPtAcuteHospStill (7005)

Hospital Discharge Date __ __/__ __/__ __ __ __ (mm/dd/yyyy)
DischDt (7006)

Status at Hospital Discharge++
DischMortStat (7007)

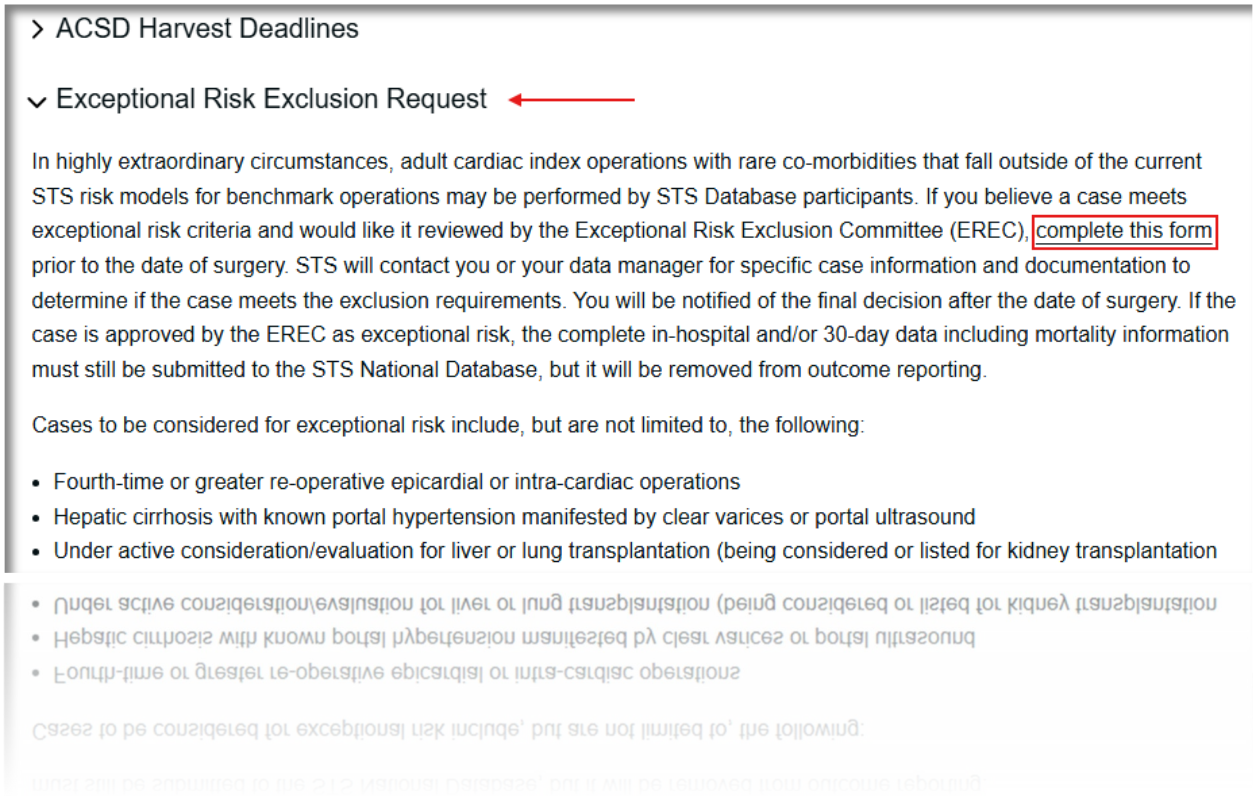
☐ Discharged Alive, last known status alive (other than Hospice)
☐ Discharged Alive, died after discharge
☐ Discharged to Hospice
☐ Died in hospital

AQO 2026 – New Orleans

- September 30-October 2, 2026
- Intermacs & Pedimacs-Live Virtual Forum-September 24
- CHSD & GTSD Sessions-September 30-October 1
- ACSD Sessions-October 1-October 2 (half day-breakout discussions)
- AQO 2026 Abstract Submission Form | STS
- Deadline: Friday, June 12.

Exceptional Risk Exclusion

- The Exceptional Risk Exclusion applies to analyzed cases only.
- Request for exclusion must be made prior to surgery.
- Please send your records as an attachment as a reply to the encrypted request for documentation that you receive from the STS.
- PDF format is preferred.
- IMPORTANT! Your documentation MUST be free from all PHI, hospital identifiers, patient identifiers and provider identifiers.
    - Hospital name, address, phone number
    - Transferring hospital name, address, phone number
    - Patient name, medical record number (you may include DOB)
    - ALL provider identifiers-this includes all surgeons, cardiologists, anesthesiologists, APPs, radiologists, nurses, OR staff, etc.



ACSD Reporting Enhancements

- Case Mix Report
- Failure to Rescue
- Surgical Treatment of Afib Process Measure

Adult Cardiac Surgery Database

Case Mix Report

ACSD - 2025 Harvest 4

Oct 2022-Sep 2025

Participant ID:ZZZZZ

Created on: MAR/20/2026

Case Mix Report

The STS ACSD Case Mix Report is a new supplemental report provided to participants to provide insights about the surgical case mix at their own site compared to the corresponding STS ACSD rates and frequencies.

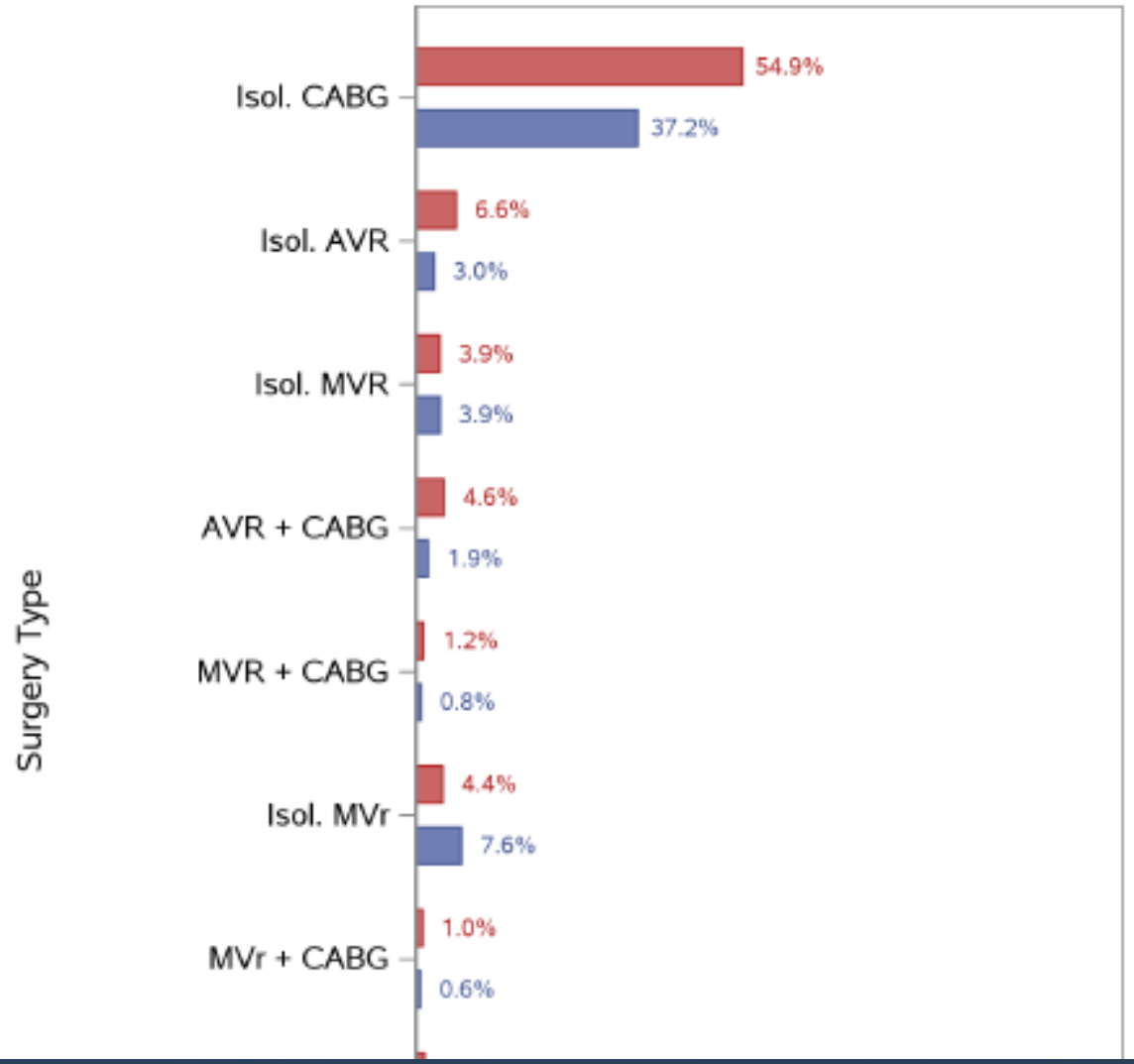
The data in the will be based on the 3-year harvest analysis window.

The report will also provide the predicted risk of operative mortality (PROM) based on the STS risk models both overall and for each of the 9 analyzed cardiac surgery procedure types (Proc IDs 1-5 and 7-10)

PROM distributions and averages are also compared to STS-wide corresponding PROM data over the same time period.

Case Mix: ACSD 2025 H4
PID: ZZZZZ

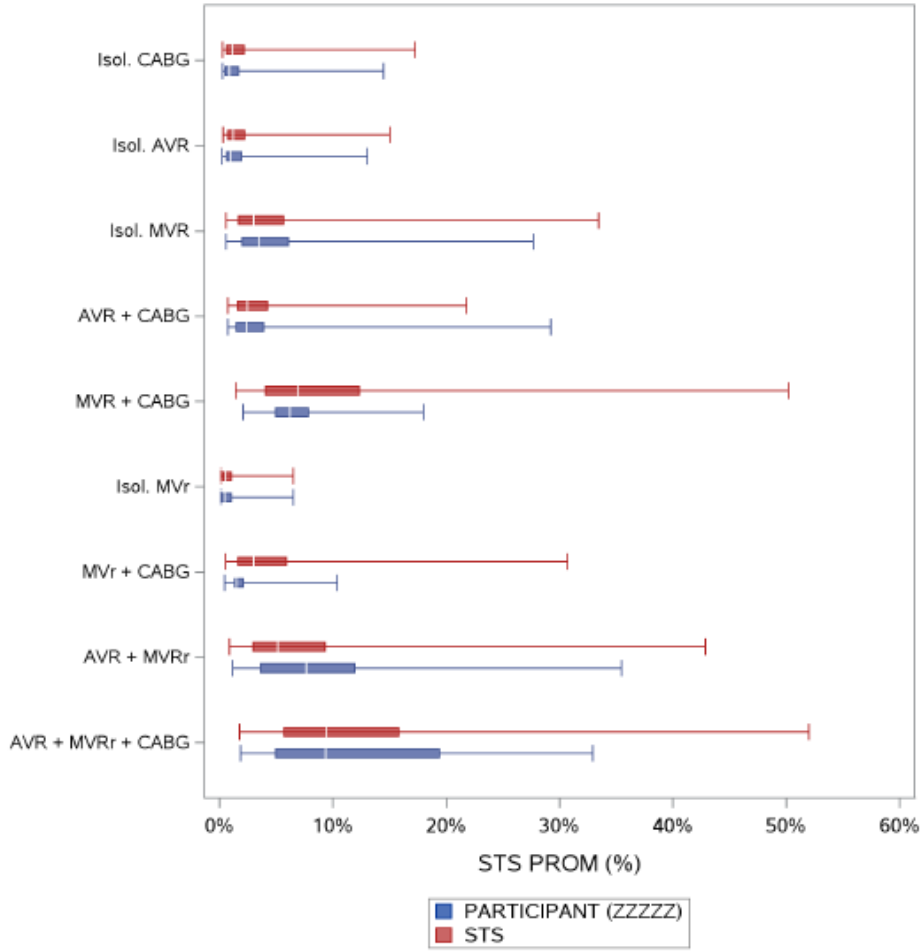
Case Frequency by Surgery Type



ProcID	Surgery Type	Frequency	Percent
1	Isol. CABG	1,551	37.24%
2	Isol. AVR	123	2.95%
3	Isol. MVR	164	3.94%
4	AVR + CABG	80	1.92%
5	MVR + CABG	32	0.77%
7	Isol. MVr	315	7.56%
8	MVr + CABG	25	0.60%
9	AVR + MVRr	54	1.30%

Case Mix: ACSD 2025 H4
PID: ZZZZZ

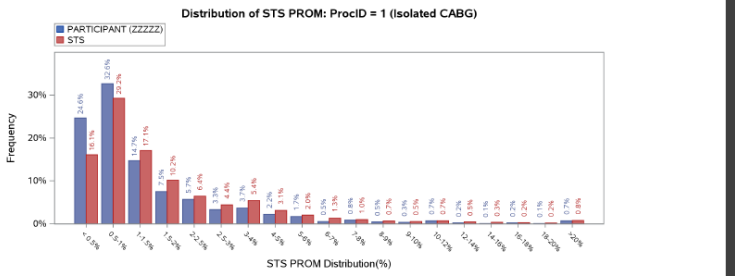
STS PROM (%) by Surgery Type



Mean PROM by Surgery Type	Participant (%)	STS (%)
Isol. CABG	1.70%	2.14%
Isol. AVR	2.01%	2.09%
Isol. MVR	5.21%	4.96%
AVR + CABG	3.60%	3.74%
MVR + CABG	7.10%	10.00%
Isol. MVr	1.00%	0.96%
MVr + CABG	2.39%	4.94%
AVR + MVRr	9.56%	7.72%
AVR + MVRr + CABG	12.92%	12.53%

Whiskers: 1st and 99th Percentiles
Box edges: 25th and 75th Percentiles
White line (in Box): median PROM

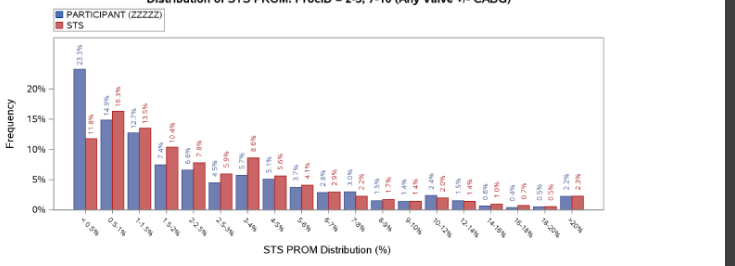
Case Mix: ACSD 2025 H4
PID: ZZZZZ



ProcID = 1 (Isolated CABG)

Statistic	Participant	STS
Mean	1.70%	2.14%
SD	3.13%	3.87%
Min	0.15%	0.10%
5th %ile	0.27%	0.33%
25th %ile	0.50%	0.63%
Median	0.86%	1.11%
75th %ile	1.68%	2.17%
95th %ile	5.38%	6.83%

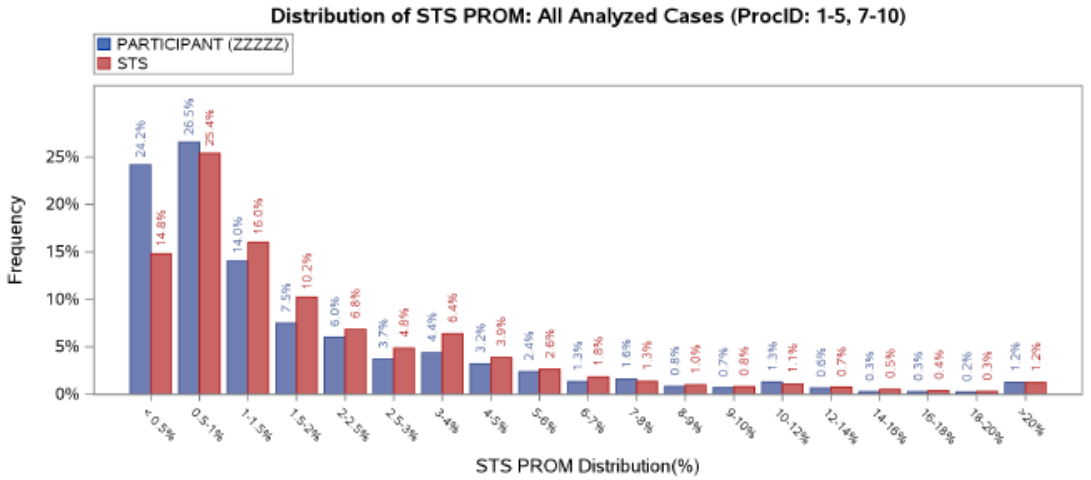
Case Mix: ACSD 2025 H4
PID: ZZZZZ



ProcID = 2-5, 7-10 (Any Valve +/- CABG)

Statistic	Participant	STS
Mean	3.34%	3.73%
SD	4.97%	5.77%
Min	0.06%	0.00%
5th %ile	0.19%	0.29%
25th %ile	0.55%	0.90%
Median	1.47%	1.89%
75th %ile	3.98%	4.12%
95th %ile	12.35%	13.12%

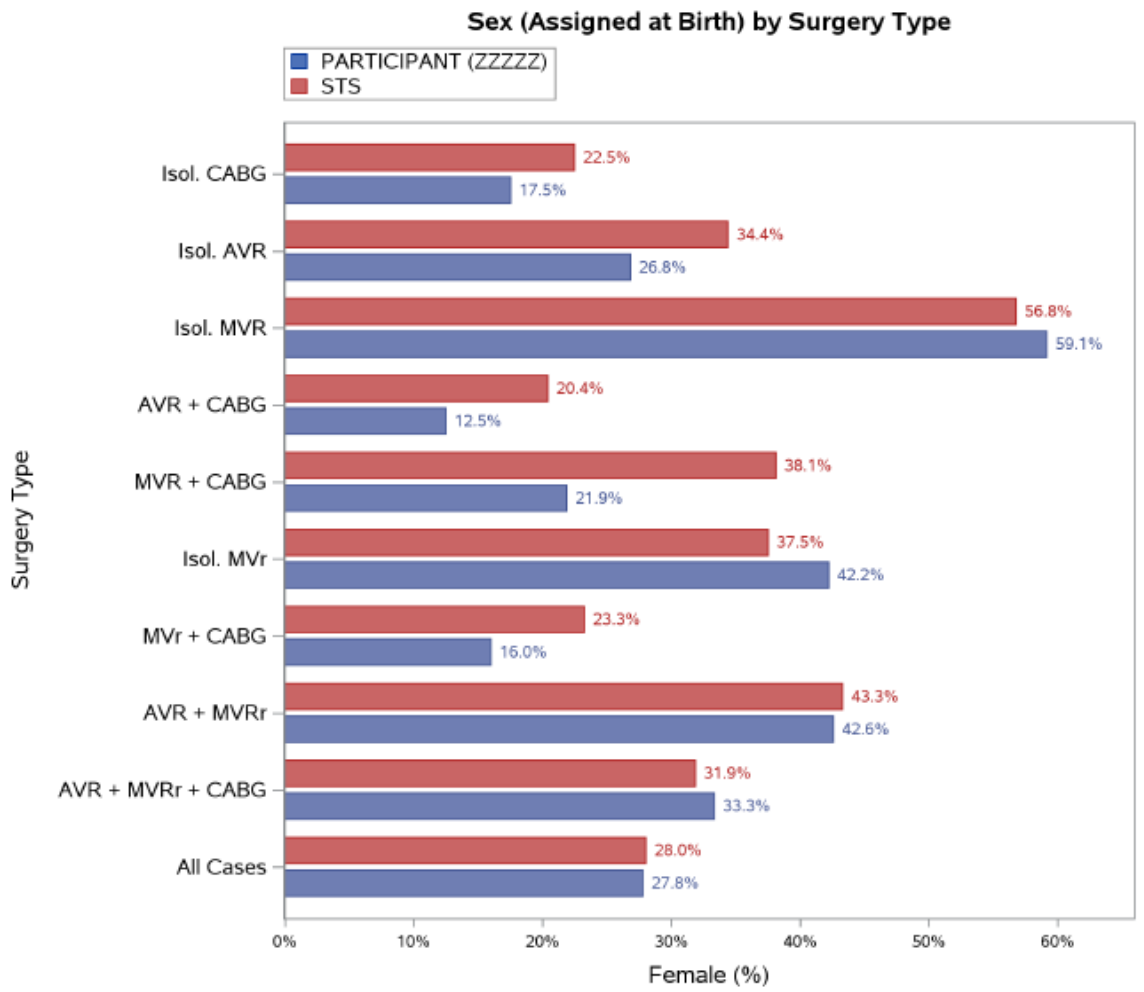
Case Mix: ACSD 2025 H4
PID: ZZZZZ



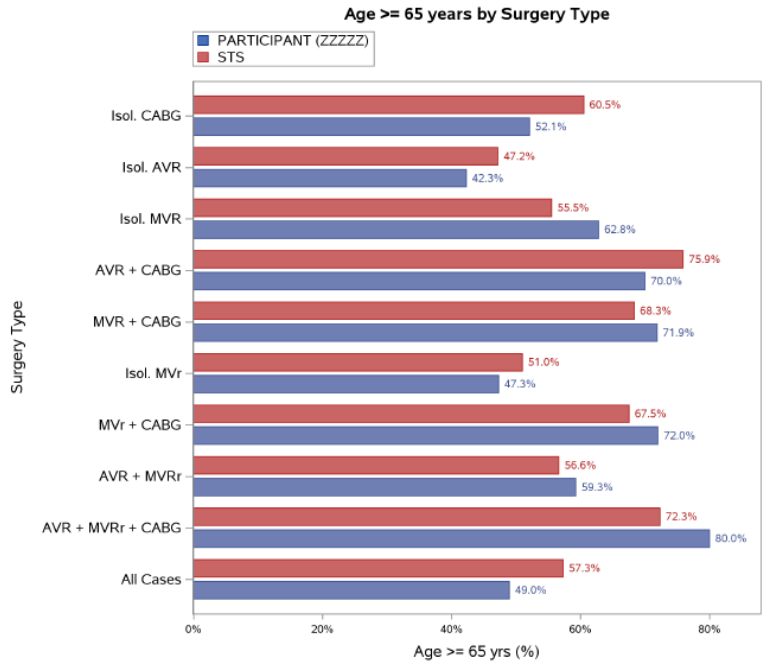
All Analyzed Cases (ProcID: 1-5, 7-10)

Statistic	Participant	STS
Mean	2.26%	2.61%
SD	3.94%	4.58%
Min	0.06%	0.00%
5th %ile	0.25%	0.32%
25th %ile	0.51%	0.68%
Median	0.98%	1.28%
75th %ile	2.22%	2.67%
95th %ile	8.35%	8.96%
Max	48.64%	99.50%

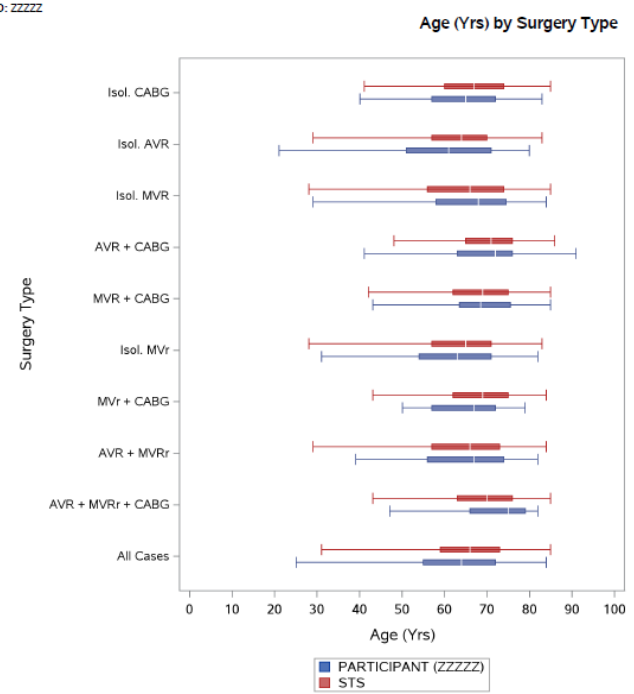
Case Mix: ACSD 2025 H4
PID: ZZZZZ



Case Mix: ACSD 2025 H4
PID: ZZZZZ



Case Mix: ACSD 2025 H4
PID: ZZZZZ

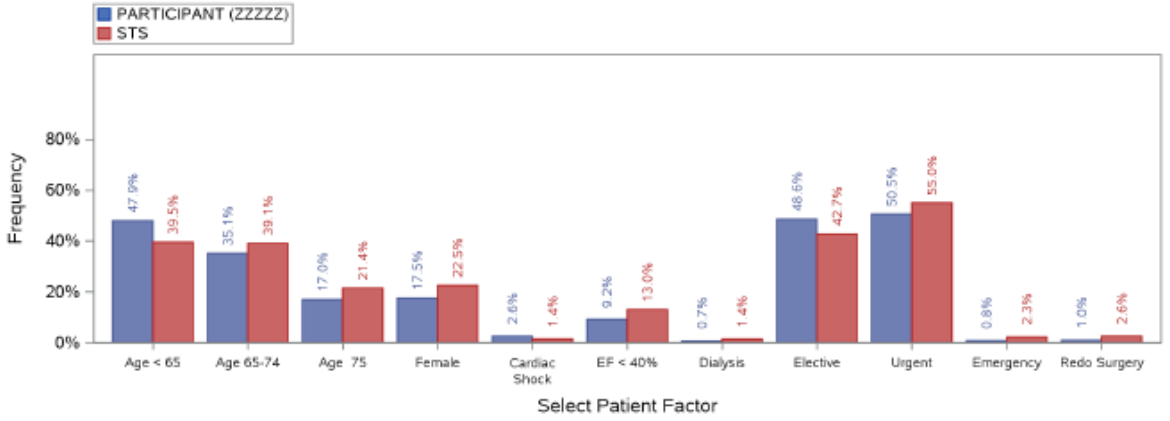


Whiskers: 1st and 99th Percentiles
Box edges: 25th and 75th Percentiles
White line (in Box): median age

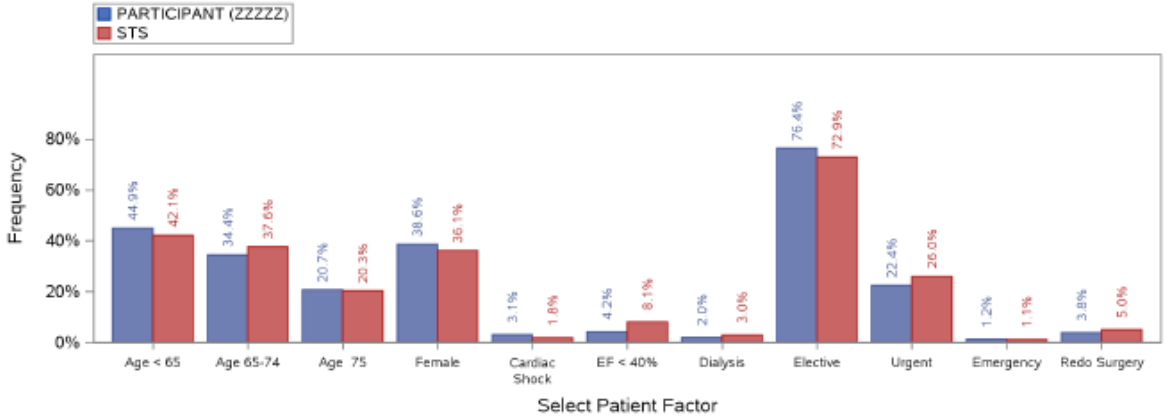
Mean Age by Surgery Type	Participant (Years)	STS (Years)
Isol. CABG	64.4	66.3
Isol. AVR	59.2	62.4
Isol. MVR	64.5	63.9
AVR + CABG	69.1	70.0
MVR + CABG	68.8	68.2
Isol. MVr	61.7	63.0
MVr + CABG	65.7	67.8
AVR + MVRr	65.9	64.3
AVR + MVRr + CABG	70.1	69.0
All Cases	62.4	65.0

Case Mix: ACSD 2025 H4
PID: ZZZZZ

ProcID = 1 (Isolated CABG)



ProcID = 2-5, 7-10 (Any Valve +/- CABG)



Case Mix Report

The Case Mix Report will be published as a site-specific PDF document that will be available on the IQVIA platform under the Library tab.

The report will be posted to the IQVIA Library May 25, 2026.

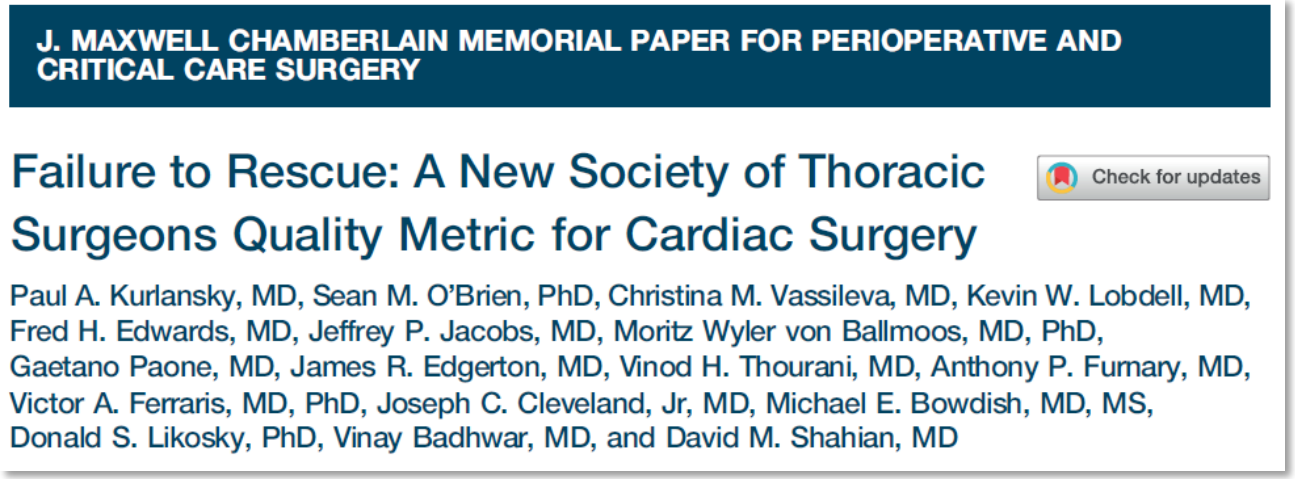
The first report will use Harvest 1, 2026 data.

May eventually increase distribution to Harvest 3, as well.

It is possible this report may become available as an electronic report on the IQVIA platform in the future.

Failure to Rescue: A New Society of Thoracic Surgeons Quality Metric for Cardiac Surgery

Failure to rescue is defined as an operative mortality in any patient who experiences any one or more of the following four major morbidities: prolonged ventilation, stroke, reoperation for cardiac reasons, and renal failure (deep sternal wound infection is not included due to low prevalence).



J. MAXWELL CHAMBERLAIN MEMORIAL PAPER FOR PERIOPERATIVE AND CRITICAL CARE SURGERY

Failure to Rescue: A New Society of Thoracic Surgeons Quality Metric for Cardiac Surgery

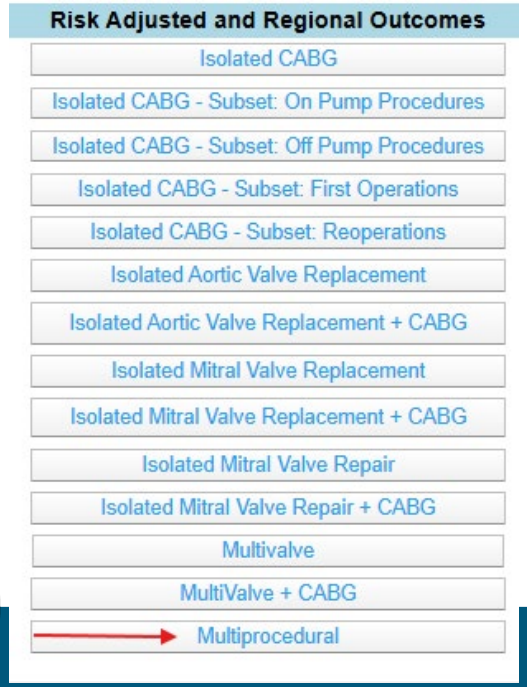
Check for updates

Paul A. Kurlansky, MD, Sean M. O'Brien, PhD, Christina M. Vassileva, MD, Kevin W. Lobdell, MD, Fred H. Edwards, MD, Jeffrey P. Jacobs, MD, Moritz Wyler von Ballmoos, MD, PhD, Gaetano Paone, MD, James R. Edgerton, MD, Vinod H. Thourani, MD, Anthony P. Furnary, MD, Victor A. Ferraris, MD, PhD, Joseph C. Cleveland, Jr, MD, Michael E. Bowdish, MD, MS, Donald S. Likosky, PhD, Vinay Badhwar, MD, and David M. Shahian, MD

Kurlansky et al., Ann Thorac Surg. 2022; 113:1935-42.

Failure to Rescue

- **Failure to rescue** will be reported in the **Risk Adjusted and Regional Outcomes** under the **Multiprocedural** category and includes all analyzed procedures (ProcIDs 1-5, 7-10).
- The metric will be added as a new outcome under the **Risk-Adjusted Data Summary**, beginning with Harvest 2, 2026 reports.
- ORs, O/Es, risk-adjusted rates and observed rates will be provided for each harvest year for participants, like groups, regions, and STS, similar to the in-hospital and operative mortality for all procedure cohorts, seen below:



The Society of Thoracic Surgeons

Multiprocedural Risk-Adjusted Data Summary
Participant [redacted]
STS Period Ending Dec 2025

Mortality Risk-Adjustment

Outcome		My Site 2023	My Site 2024	My Site 2025	Like Group 2025	Region 2025	STS 2025
In-hospital Mortality	OR (95% CI)	0.59 (0.32-1.09)	0.49 (0.24-0.98)	0.68 (0.35-1.33)	1.16 (1.04-1.29)	0.76 (0.60-0.97)	1.00
	O/E (95% CI)	0.48 (0.18-1.06)	0.24 (0.04-0.82)	0.55 (0.18-1.35)	1.03 (0.97-1.08)	0.82 (0.71-0.95)	1.00
	Risk-adjusted Rate	0.98%	0.47%	1.07%	2.00%	1.60%	1.94%
Operative Mortality	OR (95% CI)	0.53 (0.30-0.94)	0.44 (0.23-0.83)	0.65 (0.36-1.18)	1.16 (1.05-1.27)	0.74 (0.60-0.91)	1.00
	O/E (95% CI)	0.38 (0.14-0.85)	0.18 (0.03-0.63)	0.52 (0.19-1.17)	1.03 (0.98-1.08)	0.79 (0.69-0.90)	1.00
	Risk-adjusted Rate	1.01%	0.46%	1.32%	2.60%	1.99%	2.53%

OR = Odds Ratio; O/E = Observed-to-Expected Ratio; CI = Confidence interval;

Failure to Rescue

- D=patients with one or more of the 4 major morbidities
- N=patients with one or more of the 4 major morbidities who experience an operative mortality
- Patients who expire in the operating room are excluded from this metric.
- Major morbidities include:
  - Prolonged ventilation
  - Stroke
  - Reoperation for cardiac reasons
  - Renal failure

Surgical Treatment of A-Fib Process Measure

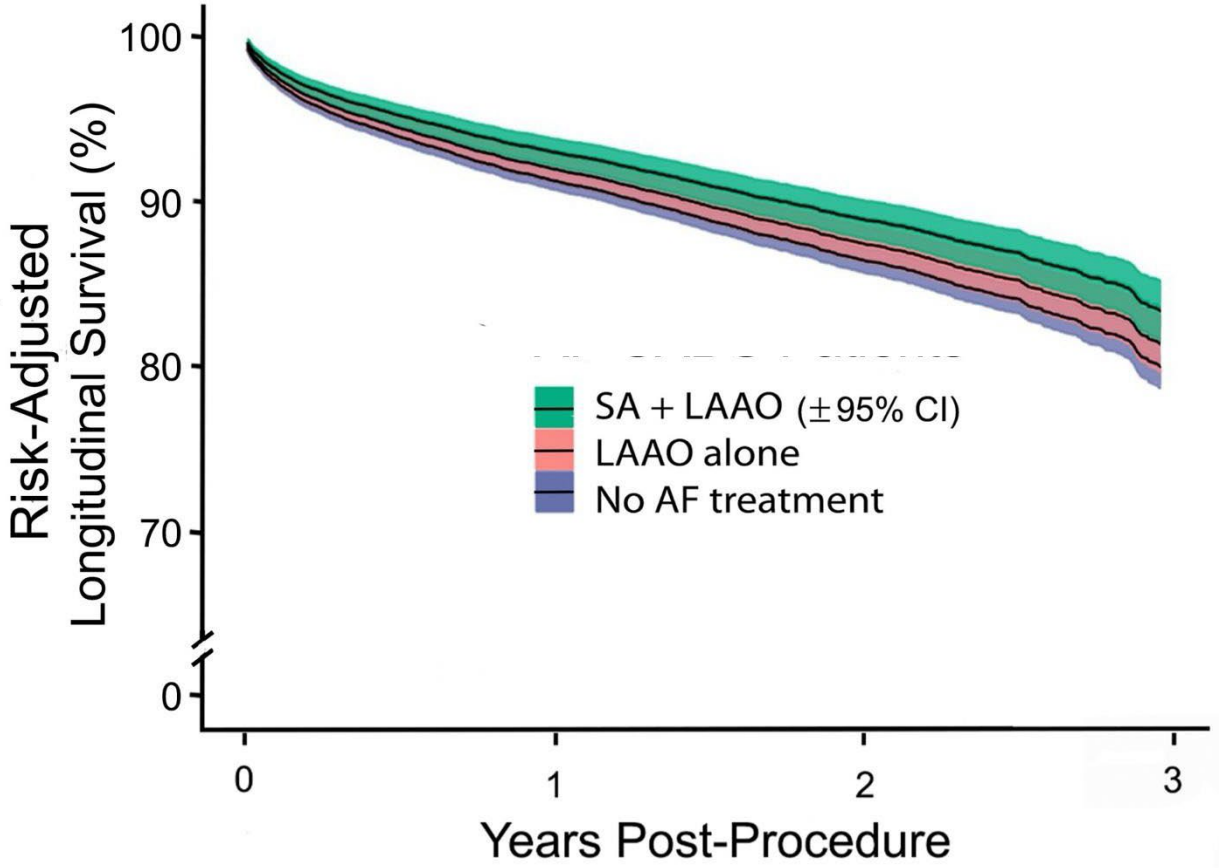
There is strong evidence to support a long-term survival and stroke risk benefit for the treatment of atrial fibrillation at the time of first-time cardiac surgery

However, the consistent application of
these techniques is highly variable

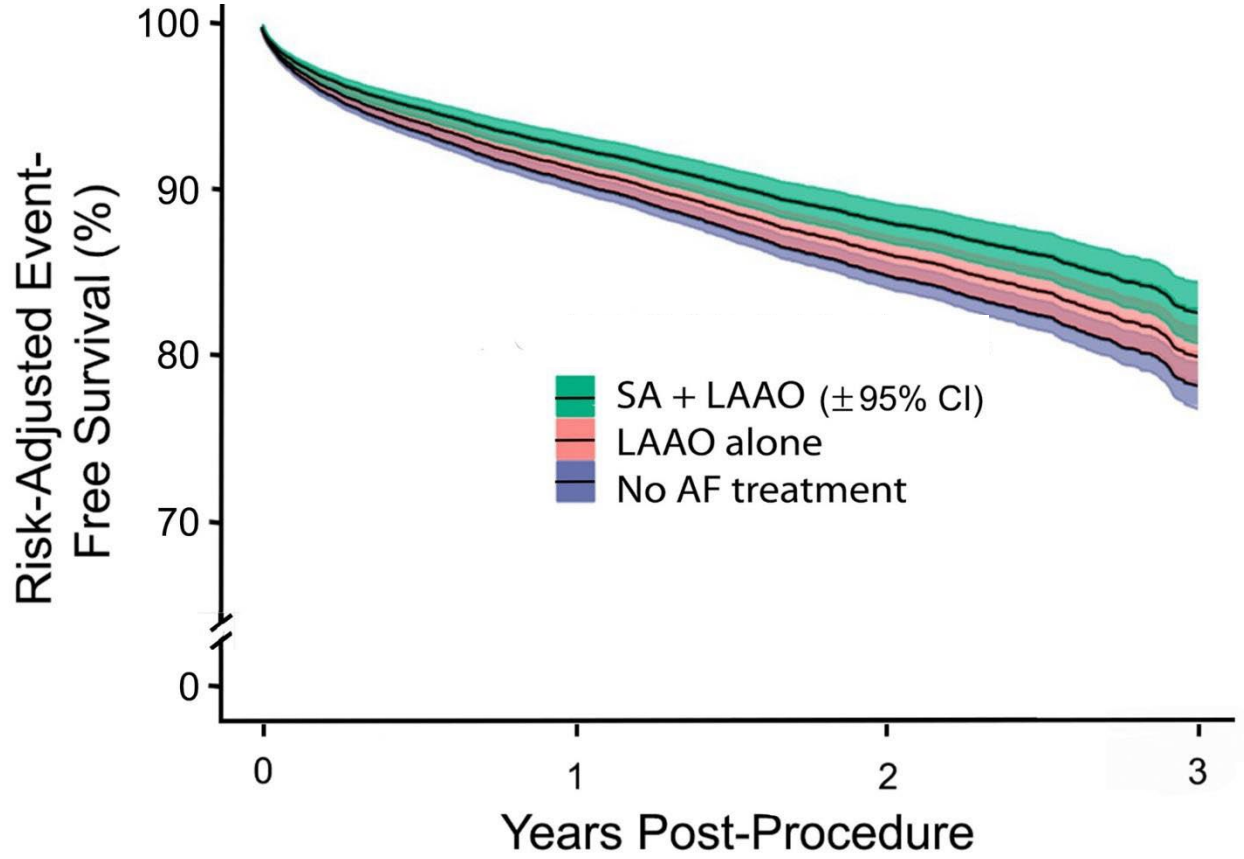
CMS Study – CABG Only (2018 – 2020)

N=19,524
58.9% No Treatment

Survival



Stroke or Death



Superior Survival and Stroke Free Survival with SA + LAAO

STS Guidelines for Treatment of Preoperative Atrial Fibrillation

CLINICAL PRACTICE GUIDELINE

The Society of Thoracic Surgeons 2023 Clinical Practice Guidelines for the Surgical Treatment of Atrial Fibrillation

Check for updates

Moritz C. Wyler von Ballmoos, MD, PhD,[1] Dawn S. Hui, MD,[2] J. Hunter Mehaffey, MD, MSc,[3] S. Chris Malaisrie, MD,[4] Panos N. Vardas, MD,[5] A. Marc Gillinov, MD,[6] Thoralf M. Sundt, MD,[7] and Vinay Badhwar, MD[3]

First-time non-emergent operations with Afib:

Mitral surgery--Surgical ablation

Nonmitral surgery--Surgical ablation

LAA obliteration, with or without surgical ablation

STS 2023 Clinical Practice Guidelines	COR	LOE
Surgical ablation for atrial fibrillation is recommended for first-time nonemergent concomitant *mitral operations* to restore sinus rhythm and improve long-term outcomes.	I	A
Surgical ablation for atrial fibrillation is recommended for any first-time nonemergent concomitant *nonmitral operation* to restore sinus rhythm and improve long-term outcomes.	I	B-NR
Left atrial appendage obliteration for atrial fibrillation is recommended for all first-time nonemergent cardiac surgery procedures, with or without concomitant surgical ablation, to reduce morbidity from thromboembolic complications.	I	A

Wyler von Ballmoos et al., Ann Thorac Surg. 2024; 118:291-311.

European Guidelines for Treatment of Preoperative Atrial Fibrillation

Recommendation Table 11 — Recommendations for surgical left atrial appendage occlusion (see also Evidence Table 11)

Recommendations	Class[a]	Level[b]
Surgical closure of the left atrial appendage is recommended as an adjunct to oral anticoagulation in patients with AF undergoing cardiac surgery to prevent ischaemic stroke and thromboembolism.[400,401,408–412]	I	B

Recommendation Table 22 — Recommendations for AF ablation during cardiac surgery (see also Evidence Table 22)

Recommendations	Class[a]	Level[b]
Concomitant surgical ablation is recommended in patients undergoing mitral valve surgery and AF suitable for a rhythm control strategy to prevent symptoms and recurrence of AF, with shared decision-making supported by an experienced team of electrophysiologists and arrhythmia surgeons.[683–685,701]	I	A
Concomitant surgical ablation should be considered in patients undergoing non-mitral valve cardiac surgery and AF suitable for a rhythm control strategy to prevent symptoms and recurrence of AF, with shared decision-making supported by an experienced team of electrophysiologists and arrhythmia surgeons.[701,703–707]	IIa	B

ESC, EACTS, and STS ✓ Very Similar Guidelines

European Heart Journal (2024) 45, 3314–3414.

Measure Rationale

Surgical treatment of atrial fibrillation during cardiac surgery is associated with improved long-term outcomes and survival compared to no atrial fibrillation treatment

Measure Denominator

- *All patients ≥18 undergoing first-time cardiac surgery with* a history of untreated paroxysmal or persistent atrial fibrillation, undergoing one of the following:

  - Isolated CABG (Proc ID 1)
  - Isolated AVR (Proc ID 2)
  - Isolated MVR (Proc ID 3)
  - Isolated AVR + CABG (Proc ID 4)
  - Isolated MVR + CABG (Proc ID 5)
  - Isolated MV Repair (Proc ID 7)
  - Isolated MV Repair + CABG (Proc ID 8)
  - Multivalve procedures (Proc ID 9)
  - Multivalve procedures + CABG (Proc ID 10)

Measure Numerator

Patients in denominator who receive at least one surgical treatment for atrial fibrillation during the procedure.

Treatment may include

Left atrial appendage occlusion/obliteration or amputation
Any epicardial or intracardiac ablation
OR
Both

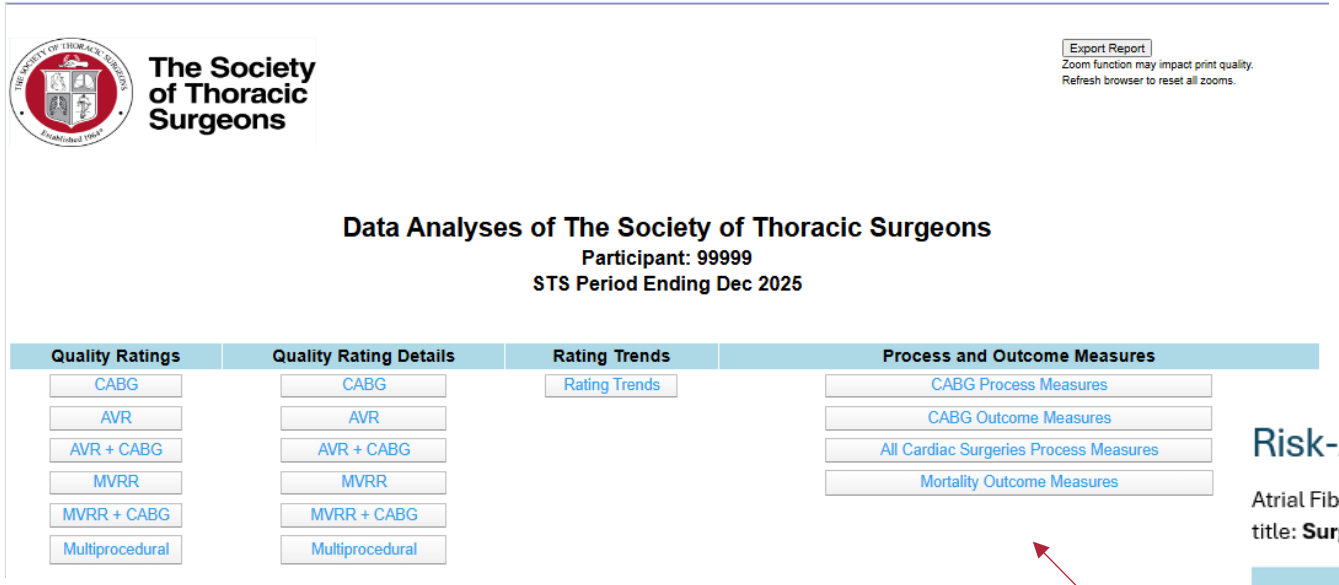
”Left Atrial Appendage Obliteration (4139)”, “Left Atrial Appendage Amputation (4142)” and “Lesion location (4191) = Epicardial, Intracardiac or Both”

Measure Exclusions

Patients will be excluded from measure reporting for any of the following:

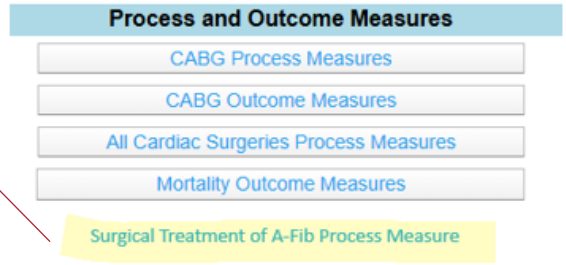
- Previous cardiac surgery via sternotomy or thoracotomy
- Previous mediastinal radiation
- Previous surgical or percutaneous treatment of atrial fibrillation or previous left atrial appendage occlusion (any approach)
- Emergent or salvage procedure
- No history of paroxysmal or persistent atrial fibrillation

Surgical Treatment of A-Fib Process Measure



Risk-Adjusted Reports

Atrial Fibrillation will be presented as a new tab under Process and Outcome Measures. New tab title: **Surgical Treatment of A-Fib Process Measure**



Surgical Treatment of A-Fib Process Measure

Atrial Fibrillation Cohort	Surgical Treatment	Participant					STS				
		Eligible	Observed	95% CI (LB)	95% CI (UB)	percentile	Mean	Min-Max	10th	50th	90th
All Cases	Any Afib Procedure*	248	81.9%	76.5%	86.4%	60.4	75.3%	40.1-100%	46.5%	78.3%	94.8%
Mitral Valve - Yes	Any Afib Procedure*	170	90.6%	85.2%	94.5%	40.9	87.0%	45.0-100%	68.0%	93.1%	100.0%
Mitral Valve - Yes	Ablation**	170	73.5%	66.2%	80.0%	62.4	63.3%	5.0-100%	20.0%	65.0%	100.0%
Mitral Valve - No	Any Afib Procedure*	78	62.8%	51.1%	73.5%	36.4	69.4%	25.1-100%	38.4%	71.8%	94.2%
Mitral Valve - No	Ablation**	78	41.0%	30.0%	52.7%	66.0	35.0%	0-100%	3.1%	31.1%	62.9%

*Any A-Fib Procedure includes: Any left atrial appendage obliteration, or left atrial appendage amputation, or any epicardial or intracardiac ablation

**Ablation includes: Any epicardial or intracardiac ablation with or without an atrial appendage obliteration or left atrial appendage amputation

Measure Reporting

- Overall participant and national average compliance will be reported in quarterly harvest reports, beginning with Harvest 2, 2026.
- There will be no threshold initially
- Once the national average reaches an acceptable rate, star ratings and public reporting will be considered.

Q&A

Open Discussion

Please use the raise-hand function.

Please use the Q&A Function.

We will answer as many questions as possible.

We encourage your feedback and want to hear from you!

We Need You!

If you have implemented a QI project at your site, we want to hear about your work!
Please reach out to
Nancy Honeycutt @ nhoneycutt@sts.org.

Thank You for Joining!

Reminder: Our next ACSD QI Series Webinar will be held on Wednesday, May 20, 2026, at 2pm CT/3pm ET.