STS National Database™

Trusted. Transformed. Real-Time.

The Society of Thoracic Surgeons

Congenital Heart Surgery Database

June 16, 2026

Agenda

- Welcome and Introduction
- STS Update
- STS Data Manager Education Q&A

STS Updates

- June Training Manual Posted
- 2026 Harvest Dates
- S26 Analysis Reports
  - Results released to Participants

2026 Harvest

Term	Harvest Submission Window Close	Opt-Out Date	Includes Procedures Performed Through:	Report Posting	Comments
S ing 026	March 27	March 31	December 31, 2025	Summer 2026	
Fall 2026	October 9	October 13	June 30, 2026	Winter 2026	
Analysis for each harvest is based on a 48-month window.					

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

AQO 2026 – New Orleans

- **September 30 - October 2, 2026**
- CHSD & GTSD Sessions will be held Sept 30th (full day) and October 1st (half day)
- Intermacs & Pedimacs-Live Virtual Forum- September 24th
- ACSD Sessions will be held October 1st (full day) and October 2nd (half day)
- Half day sessions will include breakout discussions for the on-site databases
- Abstract Submissions closed on 6/12

Education Discussion Topics

Updated **OPTIONAL** limited data collection

- Any questions?

Review of recent FAQs

- Index operation identification
- Neurological Deficit

Updated **OPTIONAL** limited dataset, patients <6575 days

Beginning July 1, 2026, sites can opt to collect a LIMITED dataset (~25 fields) on any **non-cardiac** cases with:

- OpTypes: 3, 4, 6*, 7*, 9, or 777
- ECMO, Thoracic, VAD operations with or without CPB (*excluding VAD insertions), CPB Non-Cardiovascular, Other

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- OpTypes: 3, 4, 6*, 7*, 9, or 777
- ECMO, Thoracic, VAD operations with or without CPB (*excluding VAD insertions), CPB Non-Cardiovascular, Other

FULL dataset on all cases with:

- OpTypes: 1 or 2
- CPB Cardiovascular, No CPB Cardiovascular
- And all VAD insertions
  (procedure code: (2380) VAD, implant)

Recent FAQ review

Topic Review

- Index Operation
  - Determination
  - Application of exclusion criteria
- Neurological Deficits
  - Preop Factor
  - Postop Event

REVIEW ONLY!

There are no updates/changes to definitions

Index Operations

Definition: the first operation of the episode of care (EOC) of operation type 1 or 2, CPB Cardiovascular or No CPB Cardiovascular.

1. Define the Episode of Care (if ongoing or missing data, there is no EOC)

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Index Operations – Example 1

Newborn with hydrops goes to the OR and receives temporary pacing wires via thoracotomy without the use of bypass on DOL 1.

Is this the patient's index operation?

- ☐ Yes
- ☐ No

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Is this the patient's index operation?

☑ Yes

☐ No

Pacemaker procedures are "cardiac" operations. Since bypass was not used, this is No CPB, Cardiovascular. This is the first CPB, Cardiovascular or No CPB, Cardiovascular operation of the Episode of Care

Index Operations – Example 1

Newborn with hydrops goes to the OR and receives temporary pacing wires via thoracotomy without the use of bypass on DOL 1.

Does THIS operation get analyzed?

- ☐ Yes
- ☐ No

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Important Notes Regarding Implementation of Mortality Determination

Patients weighing less than or equal to 2,500 grams (2.5 kg) at the time of surgery (v.3.41 WeightKg (Seq. 810); v.6.23.2 WeightKg (Seq. 590)) undergoing PDA ligation as their primary procedure are not included in the mortality calculations.

Patients less than or equal to 30 days of age at the time of surgery undergoing one of the following procedures as primary procedure of the index operation, will be excluded from mortality calculations:

- (1460) Pacemaker procedure
- (1450) Pacemaker implantation, permanent
- (2350) Explantation of pacing system
- (1470) ICD (AICD) implantation
- (1480) ICD (AICD) ([automatic] implantable cardioverter defibrillator) procedure

Index Operations – Example 2

Newborn with hydrops goes to the OR and receives temporary pacing wires via thoracotomy without the use of bypass on DOL 1. Unfortunately, the patient's condition declines and they are listed for transplant. Months later, the patient receives a heart transplant, is unable to separate from bypass, and is placed on ECMO before returning to the CVICU.

Since the pacemaker is excluded, is the transplant the patient's index operation?

☐ Yes

☐ No

Index Operations – Example 2

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Since the pacemaker is excluded, is the transplant the patient's index operation?

☐ Yes

☑ No

The transplant is NOT the first CPB, Cardiovascular or No CPB, Cardiovascular operation of the Episode of Care

Index Operations – Example 3

Newborn with hydrops goes to the OR and receives temporary pacing wires via thoracotomy without the use of bypass on DOL 1. After the patient stabilizes a bit, they are transferred to a hospital closer to home. Later, the patient's condition worsens, they are transferred back to the surgical center, listed for a transplant, and receive a heart a month later.

Now, is the transplant the patient's index operation?

- ☐ Yes
- ☐ No

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Now, is the transplant the patient's index operation?

☐ Yes

☑ No

Episode of Care is identified by common Database Discharge dates, then an index for the EOC is identified. Like the last example, the transplant is NOT the first CPB, Cardiovascular or No CPB, Cardiovascular operation of the Episode of Care

Index Operations – Example 4

A patient undergoing an interventional cath procedure suffers a ventricular tear. CT surgery is called to emergently cannulate the patient to ECMO and address the cardiac injury while the patient is receiving compressions. The surgeon cannulates the patient to ECMO and repairs the tear in the ventricle.

Is this an index operation?

☐ Yes

☐ No

Index Operations – Example 4

A patient undergoing an interventional cath procedure suffers a ventricular tear. CT surgery is called to emergently cannulate the patient to ECMO and address the cardiac injury while the patient is receiving compressions. The surgeon cannulates the patient to ECMO and repairs the tear in the ventricle.

Is this an index operation?

☑ Yes

☐ No

Index Operations – Example 4

A patient undergoing an interventional cath procedure suffers a ventricular tear. CT surgery is called to emergently cannulate the patient to ECMO and address the cardiac injury while the patient is receiving compressions. The surgeon cannulates the patient to ECMO and repairs the tear in the ventricle.

Is this an index operation?

☑ Yes

☐ No

The case is a "cardiac" case because an operation was done to the heart, great vessels, or branches of the great vessels

Index Operations – Example 4

The data manager enters this case as:

Status: Salvage
OpType: CPB Cardiovascular
Procedures: Cardiac procedure, Other; ECMO cannulation

Cardiac procedure, Other does not have a STAT score. Is this still considered an index operation?

☐ Yes

☐ No

Index Operations – Example 4

The data manager enters this case as:

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OpType: CPB Cardiovascular
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Cardiac procedure, Other does not have a STAT score. Is this still considered an index operation?

☑ Yes

☐ No

Index Operations – Example 4

The data manager enters this case as:

Status: Salvage
OpType: CPB Cardiovascular
Procedures: Cardiac procedure, Other; ECMO cannulation

Cardiac procedure, Other does not have a STAT score. Is this still considered an index operation?

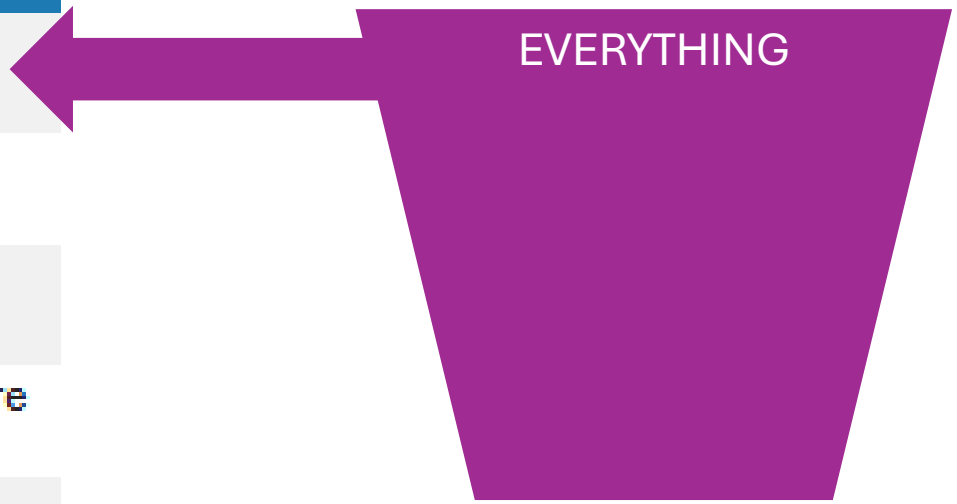
☑ Yes

☐ No

The index operation is the first cardiac case of the Episode of Care. STAT score is not a factor in determining the index operation. (It is a factor in determining the primary procedure of the index operation.)

Index Operations - Summary

	Calculation
Number of Operations /Patients	Operations Submitted
	CPB Cardiovascular + No CPB Cardiovascular Operations Submitted
	Identified Index Operations
	Operations with a STAT Mortality Score Eligible for Analysis
	Current Analysis Exclusions



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	CPB Cardiovascular + No CPB Cardiovascular Operations Submitted
	Identified Index Operations
	Operations with a STAT Mortality Score Eligible for Analysis
	Current Analysis Exclusions

Index Operations - Summary

Remember

- **Index operations are identified *BEFORE* exclusion criteria are applied**
- **STAT score is not a factor in determining index**
- **Only the index operation moves forward for analysis (table inclusion, mortality, intra/postop events, etc.)**

Neurological Deficit

Preop Factor: Preoperative Neurological Deficit

Training Manual:

Defined: A neurological deficit is defined as abnormal neurological functioning caused by injuries to or conditions impacting the brain, spinal cord, muscles, or nerves.

Timeframe: during the hospitalization (at or after the surgical hospital admission date) prior to OR entry date/time.

Code this factor: if the patient has any deficit of neurologic function identified by the care team.

- Includes: sensorineural hearing loss & hypoxic ischemic encephalopathy
- Excludes:
  - vocal cord / diaphragm paralysis
  - ADD / ADHD
  - autism, impaired judgement, psychiatric delusions
  - conductive hearing loss
  - developmental delays
  - hypotonia in the absence of a well-defined condition/neurologic disorder

Preop Factor: Preoperative Neurological Deficit

What are you looking for?

- Manifestations of a diagnosed condition:
  - cerebral palsy, muscular dystrophy
- Neurological symptoms from disease or injury
  - infection, tumor, stroke, head trauma…
  - motor deficits, visual impairment, speech pathology, sensory deficits

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  - cerebral palsy, muscular dystrophy
- Neurological symptoms from disease or injury
  - infection, tumor, stroke, head trauma…
  - motor deficits, visual impairment, speech pathology, sensory deficits

Note: you are looking for symptoms/manifestations of neurologic defects

do not automatically code preop neurologic deficit because a patient had previous injury/event – identify what the deficit is before coding

Preop Neurological Deficit – Example

A patient returns for replacement of their RV to PA conduit. The preoperative consult notes state the patient experienced a stroke following their previous repair for which they received extensive inpatient and outpatient therapies. The mother reports the patient is meeting all developmental milestones and started playing soccer in the spring.

Should preop factor (400) Preoperative neurological deficit get coded?

- ☐ Yes, the patient experienced a previous stroke
- ☐ No, there is no known deficit from the previous stroke

Preop Neurological Deficit – Example

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- ☑ No, there is no known deficit from the previous stroke

Preop Neurological Deficit – Example Explanation

While the patient did experience a stroke prior to this operation, there is no residual neurological dysfunction reported or documented

Do not code preoperative factor (400) Preoperative neurological deficit

You can code the previous stroke during lifetime (preop factor 430)

PostOp Event: Neurological Deficit

Training Manual:

Defined: Newly recognized and/or newly acquired deficit of neurologic function (abnormal neurological functioning caused by injuries to or conditions impacting the brain, spinal cord, muscles, or nerves) leading to inpatient referral, therapy, or intervention not otherwise practiced for a similar unaffected inpatient.

Timeframe: Major event timeframe

See General Information Postoperative Event Timeframe for additional information.

Code this Event: if the patient experiences a newly recognized or newly acquired deficit of neurologic function.

- Seizures/seizure activity/status epilepticus are not neurological deficits in the CHSD
- Excludes:
  - vocal cord / diaphragm paralysis
  - ADD / ADHD
  - autism, impaired judgement, psychiatric delusions
  - conductive hearing loss
  - developmental delays

PostOp Event: Neurological Deficit

The CHSD is not capturing every intracranial bleed or brain injury;

the CHSD is capturing any findings that cause a deficit in neurological functioning

PostOp Event: Neurological Deficit

Steps for identifying a neurological deficit:

1. What is the dysfunction being discussed or documented? *(what led to the imaging or consult?)*
2. If there is dysfunction, what are the results of the imaging or diagnoses documented?

PostOp Event: Neurological Deficit – Example #1

A patient returns to the CVICU paralyzed and sedated following cardiac repair. Due to prolonged CPB time and questionable bleeding on head ultrasound, a head CT is completed. The neurologist is consulted as a small subdural bleed is noted on the HCT.

Should POE (590) Neurological deficit get coded?

- ☐ Yes
- ☐ No

PostOp Event: Neurological Deficit – Example #1

A patient returns to the CVICU paralyzed and sedated following cardiac repair. Due to prolonged CPB time and questionable bleeding on head ultrasound, a head CT is completed. The neurologist is consulted as a small subdural bleed is noted on the HCT.

Should POE (590) Neurological deficit get coded?

- ☐ Yes
- ☑ No

PostOp Event: Neurological Deficit – Example #1 Explanation

Steps for identifying a neurological deficit:

1. What is the dysfunction being discussed or documented? *(what led to the imaging or consult?*

   There is no deficit noted – indication: prolonged CPB time

2. If there is dysfunction, what are the results of the imaging or diagnoses documented?

   The findings are not captured in the CHSD without a noted deficit in neurological dysfunction

PostOp Event: Neurological Deficit – Example #2

A patient returns to the CVICU paralyzed and sedated following cardiac repair. Due to prolonged CPB time and questionable bleeding on head ultrasound, a head CT is completed. The neurologist is consulted as a small subdural bleed is noted on the HCT. The following day, the patient experiences prolonged seizure activity.

Should POE (590) Neurological deficit get coded?

- ☐ Yes
- ☐ No

PostOp Event: Neurological Deficit – Example #2

A patient returns to the CVICU paralyzed and sedated following cardiac repair. Due to prolonged CPB time and questionable bleeding on head ultrasound, a head CT is completed. The neurologist is consulted as a small subdural bleed is noted on the HCT. The following day, the patient experiences prolonged seizure activity.

Should POE (590) Neurological deficit get coded?

- ☐ Yes
- ☑ No

PostOp Event: Neurological Deficit – Example #2 Explanation

Steps for identifying a neurological deficit:

1. What is the dysfunction being discussed or documented? *(what led to the imaging or consult?*

   Seizures are not a neurologcal deficit in the CHSD

2. If there is dysfunction, what are the results of the imaging or diagnoses documented?

   The findings are not captured in the CHSD without a noted deficit in neurological dysfunction

PostOp Event: Neurological Deficit – Example #3

A patient returns to the CVICU paralyzed and sedated following cardiac repair. Due to prolonged CPB time and questionable bleeding on head ultrasound, a head CT is completed. The neurologist is consulted as a small subdural bleed is noted on the HCT. The following day, the patient experiences prolonged seizure activity. Upon lifting the sedation, the patient's neurological exam remains normal through discharge at POD 35.

Should POE (590) Neurological deficit get coded?

- ☐ Yes
- ☐ No

PostOp Event: Neurological Deficit – Example #3

A patient returns to the CVICU paralyzed and sedated following cardiac repair. Due to prolonged CPB time and questionable bleeding on head ultrasound, a head CT is completed. The neurologist is consulted as a small subdural bleed is noted on the HCT. The following day, the patient experiences prolonged seizure activity. Upon lifting the sedation, the patient's neurological exam remains normal through discharge at POD 35.

Should POE (590) Neurological deficit get coded?

- ☐ Yes
- ☑ No

PostOp Event: Neurological Deficit – Example #3 Explanation

Steps for identifying a neurological deficit:

1. What is the dysfunction being discussed or documented? *(what led to the imaging or consult?*

   There is no deficit of neurologic function

2. If there is dysfunction, what are the results of the imaging or diagnoses documented?

   The findings are not captured in the CHSD without a noted deficit in neurological dysfunction

PostOp Event: Neurological Deficit – Example #4

A patient experiences cardiac arrest and brain MRI revealed L MCA ischemic stroke. Patient remains sedated during initial neurologic consult exam.

Should POE (590) Neurological deficit get coded?

- ☐ Yes as the patient had a stroke
- ☐ No, more information is needed

PostOp Event: Neurological Deficit – Example #4

A patient experiences cardiac arrest and brain MRI revealed L MCA ischemic stroke. Patient remains sedated during initial neurologic consult exam.

Should POE (590) Neurological deficit get coded?

- ☐ Yes as the patient had a stroke
- ☑ No, more information is needed

Neurological deficits should be followed through end of database tracking or 30th postop day – whichever is longer

PostOp Event: Neurological Deficit – Example #4

A patient experiences cardiac arrest and brain MRI revealed L MCA ischemic stroke. Patient remains sedated during initial neurologic consult exam. Later, there is noted right sided hemiplegia.

Should POE (590) Neurological deficit get coded?

- ☐ Yes as the patient had a stroke
- ☐ Yes as there is a neurological deficit
- ☐ No, more information is needed

PostOp Event: Neurological Deficit – Example #4

A patient experiences cardiac arrest and brain MRI revealed L MCA ischemic stroke. Patient remains sedated during initial neurologic consult exam. Later, there is noted right sided hemiplegia.

Should POE (590) Neurological deficit get coded?

- ☐ Yes as the patient had a stroke
- ☑ Yes as there is a neurological deficit
- ☐ No, more information is needed

There is right sided hemiplegia

PostOp Event: Neurological Deficit – Example #5

Preoperatively, a patient experiences a severe ischemic brain injury due to birth trauma. Neurology notes asymmetric pupils and left sided weakness. Post cardiac surgery, the patient experiences seizures and continued left sided weakness. Imaging reveals further progression of the original brain injury sustained at birth.

Should POE (590) Neurological deficit get coded?

- ☐ Yes as the patient had a birth related brain injury
- ☐ Yes as the patient had asymmetric pupils
- ☐ No as the injury and associated symptoms were present preoperatively

PostOp Event: Neurological Deficit – Example #5

Preoperatively, a patient experiences a severe ischemic brain injury due to birth trauma. Neurology notes asymmetric pupils and left sided weakness. Post cardiac surgery, the patient experiences seizures and continued left sided weakness. Imaging reveals further progression of the original brain injury sustained at birth.

Capture new deficits of neurologic function in the postop period

Should POE (590) Neurological deficit get coded?

- ☐ Yes as the patient had a birth related brain injury
- ☐ Yes as the patient had asymmetric pupils
- ☑ No as the injury and associated symptoms were present preoperatively

Neurological Deficits

In Summary

- Refer to definitions in training manual
- Remember to first determine what the specific deficit is
- Do not capture neurologic deficit by imaging results alone
- Submit scenarios to core group / FAQ box

Open Discussion

Please use the Q&A Function.

We will answer as many questions as possible.

We encourage your feedback and want to hear from you!

Upcoming CHSD Webinars

Monthly Webinars

- 7/21/26 @ 12pmCT
- 8/18/26 @ 12pmCT

Contact Information

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STS National Database™

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THANK YOU FOR JOINING!