

New Data Managers Session 1

- *Melinda Offer, RN, MSN*



Learning Objectives:

Upon completion of this session, participant will be able to:

- Identify STS Educational Resources
- Understand how to read the Data and Software Specifications



Who is the STS Data Manager

- *Self Motivated*
- *Compulsive Attention to Detail*
- *Committed to the STS Objectives*
- *Flexible*
- *Computer Skills*



Why Are You Important?

***As the data manager YOU are the key to
data quality and integrity***



LET THE GAMES BEGIN



Data Manager Resources

STS Website

Webinars

Mentorship Program

Advances in Quality Outcomes Conference (AQO)

Database News newsletter

ACSD– Regional groups





STS National Database

[Adult Cardiac Surgery Database](#)

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The STS National Database was established in 1989 as an initiative for quality improvement and patient safety among cardiothoracic surgeons. The Database has four components, each focusing on a different area of cardiothoracic surgery

[View maps with the locations of STS National Database participants.](#)

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Live Webinars

You are invited to participate in a series of live, monthly webinars to get an update on the exciting changes under way to the STS National Database. Registration is not required for the webinars, but you will need to sign in with your name and email address to participate.

The webinars will be recorded and available online within 48 hours from the [STS National Database Webinars](#) page.

[Access FAQs](#)

[View Webinars](#)



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Important Resources

[STS IQVIA Go-Live Checklist](#)

[Database Transition Resource](#)

[Data Manager Education](#)

[Harvest Schedule and Information](#)

[Database Forms](#)

[Merit-Based Incentive Payment System Reporting](#)

[Database Software and Vendors](#)

[Advances in Quality & Outcomes: A Data Managers Meeting](#)

[STS National Database News](#)

[Regional Database Activities](#)

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[Audits](#)

[Contact Information](#)

Data Manager Education

ACSD Dashboard Overview

Data Manager Mentorship Program

2019 Data Manager Survey Results

List of Mortality Status Fields

Tips for Collecting 30-Day Follow-Up Data

STS/IQVIA Uploader Instructions

How-To Videos

IQVIA Registry Dashboard - General Navigation Training



IQVIA Uploader and DQR Review



▼ Anatomical Diagrams

Coronary Anatomy

Valve Anatomy

Valve Repairs

Aortic Aneurysm

Aortic Dissection

STS National Database

Adult Cardiac Surgery Database

General Thoracic Surgery Database

Congenital Heart Surgery Database

Intermacs Database

STS Public Reporting

STS/ACC TVT Registry

STS Research Center

STS National Database Mentorship Program

The Society has launched an STS National Database mentorship program that will pair experienced data managers with those who are seeking advice related to data abstraction. After filling out a questionnaire, potential mentors and mentees will be matched based on Database type, experience in specific areas, and other factors. STS will share contact information with mentors and mentees to facilitate an ongoing mentorship relationship.



To apply as either a mentor or mentee, please fill out the appropriate form linked below. You will be notified once you have been matched.

If you have questions about the program or any feedback on the sign-up forms, contact [Emily Conrad](#).

Note: The opinions and advice provided through this mentorship program are those of its individual participants and do not necessarily reflect the views of The Society of Thoracic Surgeons.

[Apply to be a Mentor](#)[Apply to be a Mentee](#)

Advances in Quality & Outcomes: A Data Managers Meeting



ADVANCES IN QUALITY & OUTCOMES:
A Data Managers Meeting
September 29 - October 2, 2020 ■ VIRTUAL



- Annual educational meeting for Data Managers of the STS National Database.
- Objective to improve data abstraction and coding skills.

Advances in
Quality &
Outcomes:
A Data
Manager
Meeting
(AQO)



Database News Newsletter

- The Database News newsletter is a newsletter dedicated to the STS National Database.
- Contains information on public reporting, data submission deadlines, meetings, and audits.
- The STS newsletter is available on the STS Data Manager Education page



Regional Benefits

Networking

Support

Quality Care

Fun

Data Manager Education

Sharing

Best Practice

Inter-rater Reliability

STS Role Orientation

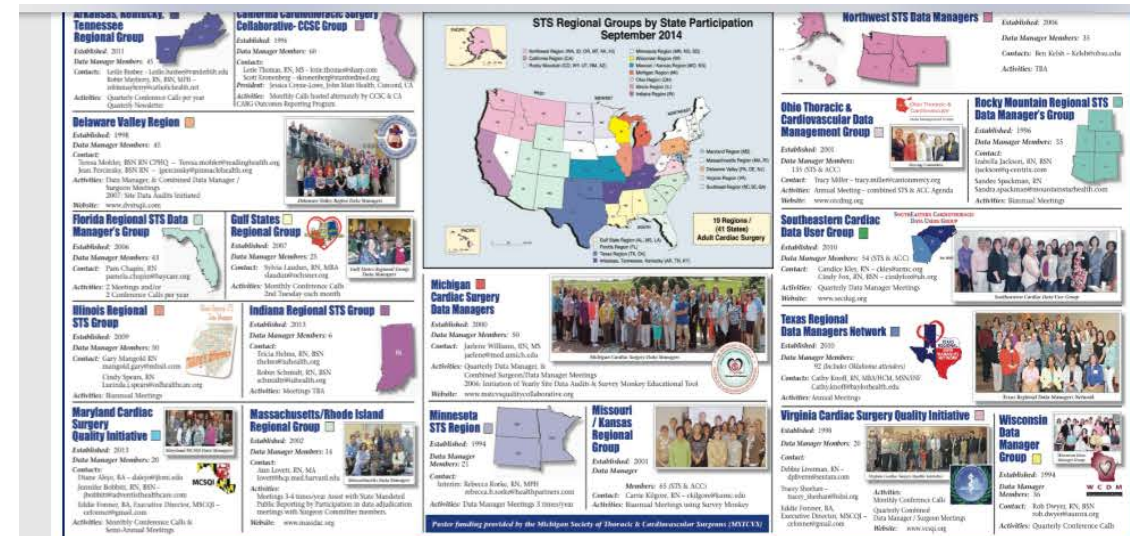
Data Integrity

Mentoring

Data Audits

Problem Solve

Q.I.



Regional Groups

Frequently Asked Questions - FAQ



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[View maps with the locations of STS National Database participants.](#)

Clinical Question Request Form

Are you struggling with a clinical question regarding data abstraction? Fill out the Clinical Question Request Form and get a response within 30 days.

[Ask a Question](#)



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Ask a Question

Full Name *

Email *

Phone *

Participant ID #

Database Version *

State/Province *

Sequence #: *

Short Field Name:

IMPORTANT: FOR HIPAA COMPLIANCE PURPOSES, PLEASE NOTE THAT ANY PATIENT IDENTIFYING INFORMATION¹ SHOULD BE REDACTED FROM THIS SUBMISSION.

Question: *





STS National Database

[Adult Cardiac Surgery Database](#)[General Thoracic Surgery Database](#)[Congenital Heart Surgery Database](#)[Intermacs Database](#)[STS Public Reporting](#)[STS/ACC TVT Registry](#)

STS National Database

[Adult Cardiac](#)[General Thoracic](#)[Congenital Heart](#)[Intermacs](#)

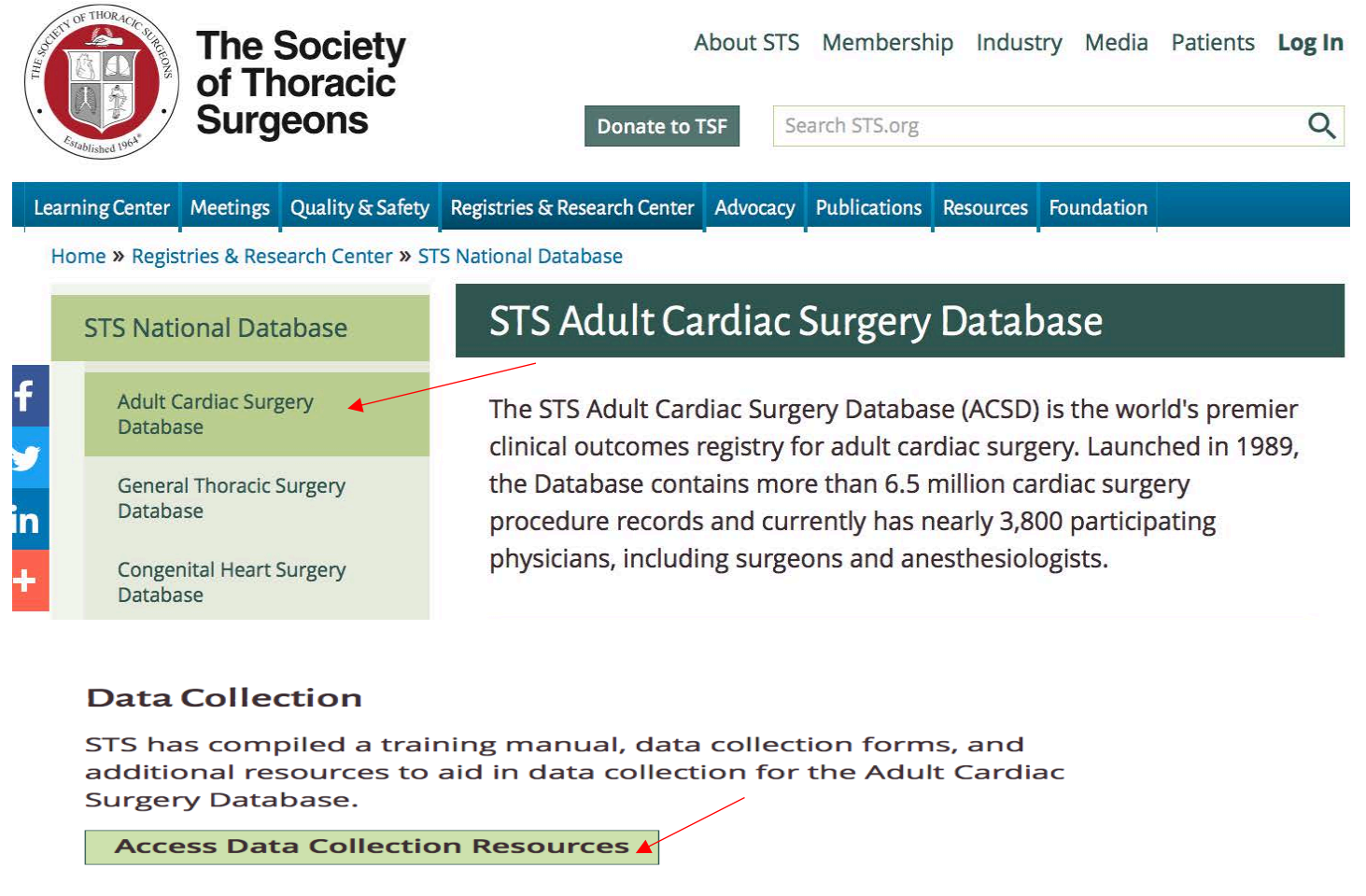
The STS National Database was established in 1989 as an initiative for quality improvement and patient safety among cardiothoracic surgeons. The Database has four components, each focusing on a different area of cardiothoracic surgery

[View maps with the locations of STS National Database participants.](#)

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Additional Resources on STS Website

- Data Collection Forms
- Training Manual
- Ask a Clinical Question
 - FAQ Updates



The screenshot displays the STS website header with the logo and navigation links: About STS, Membership, Industry, Media, Patients, and Log In. Below the header is a search bar and a "Donate to TSF" button. The main navigation bar includes links for Learning Center, Meetings, Quality & Safety, Registries & Research Center, Advocacy, Publications, Resources, and Foundation. The breadcrumb trail shows the path: Home » Registries & Research Center » STS National Database. The STS National Database section lists four databases: Adult Cardiac Surgery Database, General Thoracic Surgery Database, and Congenital Heart Surgery Database. A red arrow points from the "Adult Cardiac Surgery Database" link to a detailed description box on the right. The description box, titled "STS Adult Cardiac Surgery Database", states: "The STS Adult Cardiac Surgery Database (ACSD) is the world's premier clinical outcomes registry for adult cardiac surgery. Launched in 1989, the Database contains more than 6.5 million cardiac surgery procedure records and currently has nearly 3,800 participating physicians, including surgeons and anesthesiologists." Below this, the "Data Collection" section explains that STS has compiled a training manual, data collection forms, and additional resources to aid in data collection for the Adult Cardiac Surgery Database. A red arrow points from the "Access Data Collection Resources" link to the same detailed description box.

The Society of Thoracic Surgeons

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STS National Database

Adult Cardiac Surgery Database

General Thoracic Surgery Database

Congenital Heart Surgery Database

STS Adult Cardiac Surgery Database

The STS Adult Cardiac Surgery Database (ACSD) is the world's premier clinical outcomes registry for adult cardiac surgery. Launched in 1989, the Database contains more than 6.5 million cardiac surgery procedure records and currently has nearly 3,800 participating physicians, including surgeons and anesthesiologists.


Data Collection


STS has compiled a training manual, data collection forms, and additional resources to aid in data collection for the Adult Cardiac Surgery Database.

Access Data Collection Resources



Data Collection Forms (DCF's)

The Society of Thoracic Surgeons Adult Cardiac Surgery Database Data Collection Form Version 4.20.2		
STS National Database™ Trusted. Transformed. Real-Time.		
**Risk Variable ++NQF		
A. Administrative		
Participant ID:	Record ID: (software generated)	
Patient ID: (software generated)		
Patient participating in STS-related clinical trial: <input type="checkbox"/> None <input type="checkbox"/> Trial 1 <input type="checkbox"/> Trial 2 <input type="checkbox"/> Trial 3 <input type="checkbox"/> Trial 4 <input type="checkbox"/> Trial 5 <input type="checkbox"/> Trial 6 (If not None →)		
B. Demographics		
Patient Last Name:	Patient First Name:	Patient Middle Name:
Date of Birth: / / (mm/dd/yyyy)	Patient Age: **	Sex: **
National Identification (Social Security) Number Known: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Refused (If Yes →)		National ID Number:
Medical Record Number:		
Permanent Street Address:	City:	Country:
Region:	ZIP Code:	
Race Documented: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Pt. Declined to Disclose		
Race: (If Yes, select all that apply →)		
<input type="checkbox"/> White:	<input type="checkbox"/> Am Indian/Alaskan:	
<input type="checkbox"/> Black/African American: **	<input type="checkbox"/> Hawaiian/Pacific Islander:	
<input type="checkbox"/> Asian: **	<input type="checkbox"/> Other:	
Hispanic, Latino or Spanish Ethnicity: ** <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Documented		
C. Hospitalization		
Hospital Name: (If Not Missing →)	Hospital ZIP Code:	
Hospital National Provider Identifier:	Hospital CMS Certification Number:	
Primary Payer: ** (Choose one)	(If Primary Payer ≠ None/Self ↓)	
<input type="checkbox"/> None/Self	<input type="checkbox"/> None/Self	

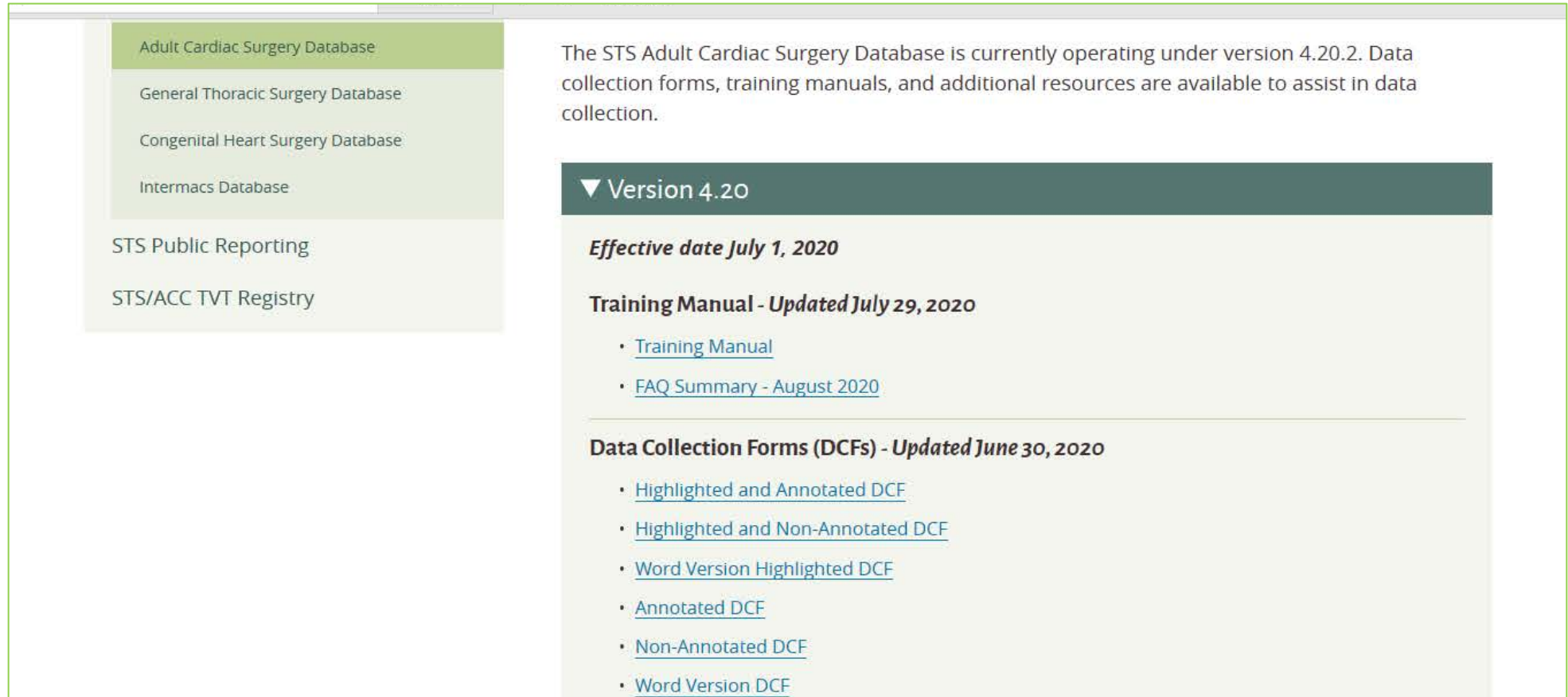
The Society of Thoracic Surgeons Adult Cardiac Surgery Database Data Collection Form Version 4.20.2		
STS National Database™ Trusted. Transformed. Real-Time.		
Add/Change to Field **Risk Variable ++NQF Updates 06292020		
A. Administrative		
Participant ID:	Record ID: (software generated)	
ParticiD (25)	RecordID (30)	
Patient ID: (software generated)		
PatID (40)		
Patient participating in STS-related clinical trial: ClinTrial (45) <input type="checkbox"/> None <input type="checkbox"/> Trial 1 <input type="checkbox"/> Trial 2 <input type="checkbox"/> Trial 3 <input type="checkbox"/> Trial 4 <input type="checkbox"/> Trial 5 <input type="checkbox"/> Trial 6 (If not None →)		Clinical Trial Patient ID: _____ ClinTrialPatID (46)
B. Demographics		
Patient Last Name:	Patient First Name:	Patient Middle Name:
PatLName (50)	PatFName (55)	PatMName (60)
Date of Birth: / / (mm/dd/yyyy)	Patient Age: **	Sex: ** <input type="checkbox"/> Male <input type="checkbox"/> Female
DOB (65)	Age (70)	Gender (75)
National Identification (Social Security) Number Known: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Refused (If Yes →)		National ID Number: _____
SSNKnown (76)		SSN (80)
Medical Record Number:		
MedRecN (85)		
Permanent Street Address:	City:	
PatAddr (90)	PatCity (95)	
Region:	ZIP Code:	Country:
PatRegion (100)	PatZIP (105)	PatientCountry (115)
Race Documented: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Pt. Declined to Disclose		
RaceDocumented (150)		
Race: (If Yes, select all that apply →)		
<input type="checkbox"/> White:	<input type="checkbox"/> Am Indian/Alaskan:	
<input type="checkbox"/> Black/African American: **	<input type="checkbox"/> Hawaiian/Pacific Islander:	
<input type="checkbox"/> Asian: **	<input type="checkbox"/> Other:	
Hispanic, Latino or Spanish Ethnicity: ** <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Documented		
Ethnicity (185)		

Non-
Annotated
DCF

Annotated
DCF



Navigating the STS Website:



The screenshot shows the STS website interface. On the left is a navigation menu with the following items: Adult Cardiac Surgery Database (highlighted), General Thoracic Surgery Database, Congenital Heart Surgery Database, Intermacs Database, STS Public Reporting, and STS/ACC TVT Registry. The main content area on the right features a dark green header for 'Version 4.20'. Below this, it states 'Effective date July 1, 2020'. The 'Training Manual - Updated July 29, 2020' section includes links for 'Training Manual' and 'FAQ Summary - August 2020'. The 'Data Collection Forms (DCFs) - Updated June 30, 2020' section includes links for 'Highlighted and Annotated DCF', 'Highlighted and Non-Annotated DCF', 'Word Version Highlighted DCF', 'Annotated DCF', 'Non-Annotated DCF', and 'Word Version DCF'.

Adult Cardiac Surgery Database

General Thoracic Surgery Database

Congenital Heart Surgery Database

Intermacs Database

STS Public Reporting

STS/ACC TVT Registry

The STS Adult Cardiac Surgery Database is currently operating under version 4.20.2. Data collection forms, training manuals, and additional resources are available to assist in data collection.

▼ Version 4.20

Effective date July 1, 2020

Training Manual - Updated July 29, 2020

- [Training Manual](#)
- [FAQ Summary - August 2020](#)

Data Collection Forms (DCFs) - Updated June 30, 2020

- [Highlighted and Annotated DCF](#)
- [Highlighted and Non-Annotated DCF](#)
- [Word Version Highlighted DCF](#)
- [Annotated DCF](#)
- [Non-Annotated DCF](#)
- [Word Version DCF](#)



STS Training Manuals

C. Hospitalization			
Hospital Name: _____ (If Not Missing →)		Hospital ZIP Code: _____	Hospital Region: _____
HospName (205)		HospZIP (210)	HospStat (215)
Hospital National Provider Identifier: _____		HospNPI (220)	
Payor – (Select all that apply!)			
Government Health Insurance: PayorGov (225) <input type="checkbox"/> Yes <input type="checkbox"/> No (If Yes, select all that apply!)			
Medicare: <input type="checkbox"/> Yes <input type="checkbox"/> No (If Yes →)		Medicare Fee For Service: <input type="checkbox"/> Yes <input type="checkbox"/> No	
PayorGovMcare (230)		PayorGovMcareFFS (240)	
Medicaid: <input type="checkbox"/> Yes <input type="checkbox"/> No		Military Health Care: <input type="checkbox"/> Yes <input type="checkbox"/> No	
PayorGovMcaid (245)		PayorGovMil (250)	
Indian Health Service: <input type="checkbox"/> Yes <input type="checkbox"/> No		Correctional Facility: <input type="checkbox"/> Yes <input type="checkbox"/> No	
PayorGovIHS (260)		PayorGovCor (265)	
Commercial Health Insurance: <input type="checkbox"/> Yes <input type="checkbox"/> No		Health Maintenance Organization: <input type="checkbox"/> Yes <input type="checkbox"/> No	
PayorCom (275)		PayorHMO (280)	
Non-U.S. Insurance: <input type="checkbox"/> Yes <input type="checkbox"/> No		None / Self: <input type="checkbox"/> Yes <input type="checkbox"/> No	
PayorNonUS (285)		PayorNS (290)	
<p>SEQ. #: 205</p> <p>Long Name: Hospital Name</p> <p>Short Name: HospName</p> <p>Definition: Indicate the full name of the facility where the procedure was performed. Values should be full, official hospital name as it appears on the contract with the STS, with no abbreviations or variations in spelling for a single hospital. Values should also be in mixed-case.</p>			



Navigating the STS Website

Additional Resources - *Updated June 30, 2020*

- [Data Specifications v4.20.2](#)
- [Software Specifications v4.20.2](#)
- [Itemized Changes from v4.20.1 to v4.20.2](#)
- [Change Summary v4.20.2](#)
- [Itemized Changes v4.20.2](#)
- [Procedure Identification Chart \(ProcID\)](#)
- [Risk Model Variable Chart](#)
- [Risk Model Endpoint Chart](#)
- [Congenital Diagnoses and Procedure List](#)
- [Case Inclusion Guide](#)
- [Aorta Device List](#)

Data Specifications

Long Name: RF-Renal Fail-Dialysis

Short Name: Dialysis

Section Name: Risk Factors

DBTableName: Adultdata2

Definition: Indicate whether the patient is currently (prior to surgery) undergoing dialysis.

Data Source: User

SeqNo: 375

Core: Yes

Harvest: Yes

Format: Text (categorical values specified by STS)

Harvest Codes:

<u>Code:</u>	<u>Value:</u>
--------------	---------------

1	Yes
---	-----

2	No
---	----

3	Unknown
---	---------



Data Specifications - Parent Child Relationship

Diabetes: ☐ Yes ☐ No ☐ Unknown (If Yes →) Diabetes-Control: ☐ None ☐ Diet only ☐ Oral ☐ Insulin ☐ Other SubQ ☐ Other ☐ Unknown
Diabetes (360) *DiabCtrl (365)*

Long Name: RF-Diabetes-Control

SeqNo: 365

Short Name: DiabCtrl

Core: Yes

ParentShortName: Diabetes

ParentLongName: RF-Diabetes

ParentHarvestCodes: 1

ParentValues: = "Yes"



Data Specification

<i>Long Name:</i>	Height (cm)	<i>SeqNo:</i>	330
<i>Short Name:</i>	HeightCm	<i>Core:</i>	Yes
<i>Section Name:</i>	Risk Factors	<i>Harvest:</i>	Yes
<i>DBTableName</i>	Adultdata1		
<i>Definition:</i>	Indicate the height of the patient in centimeters.		
<i>Data Source:</i>	User	<i>Format:</i>	Real

Low Value:	20.0	High Value:	251.0	UsualRangeLow:	122.0	UsualRangeHigh:	213.0
------------	------	-------------	-------	----------------	-------	-----------------	-------



Software Specifications – page 4

- Important Resource to be familiar with
- Dates of Versions

Surgery date	Data Specifications
Any dates up to December 31, 1999	Data converted to 2.35 format
January 1, 2000 through December 31, 2001	2.35
January 1, 2002 through June 30, 2002	2.35 or 2.41
July 1, 2002 through December 31, 2003	2.41
January 1, 2004 through December 31, 2004	2.41 or 2.52.1
July 1, 2004 through June 31, 2007	2.52.1
July 1, 2007 through December 31, 2007	2.52.1 or 2.61
January 1, 2008 through June 30, 2011	2.61
July 1, 2011 through June 30, 2014	2.73
July 1, 2014 through June 30, 2017	2.81
July 1, 2017 through June 30, 2020	2.9
July 1, 2020 through current date	4.20.2



H. Format – The format in which the values for the field should be collected.
The options for this field are:

- Date - mm/dd/yyyy: Date values only with the month specified as a 2-digit numeric value, day specified as a 2-digit numeric value, and year specified as a 4-digit numeric value.
- Time - hh:mm (24-hour clock): Time values only with the hours specified as a 2-digit numeric value (in 24-hour format), and the minutes specified as a 2-digit numeric value.
- Date/Time - mm/dd/yyyy hh:mm : Date and time values in one field with the month specified as a 2-digit numeric value, day specified as a 2-digit numeric value, and year specified as a 4-digit numeric value, followed by a single space and then the hours specified as a 2-digit numeric value (in 24-hour format), and the minutes specified as a 2-digit numeric value.
- Integer: Numeric values with no decimal points.
- Real: Numeric values with at least one decimal point.
- Text: Value can contain any alphanumeric characters.
- Text (categorical values specified by STS): Values displayed to the user are the text descriptions defined in the data specifications table. The values submitted to the Data Warehouse are the Harvest Codes defined in the data specifications.
- Text (categorical values specified by user): Values displayed to the user and submitted to the Data Warehouse come from a list maintained by the user (see item “e” under the “3. Data Entry” section of the “Software Specification” below).

I. DataSource – This field defines how the data is entered into the field. The options for this field are as follows (note, in some cases, there is more than one option for data source, such as “User or Calculated”):

- User – The user enters the value, otherwise it is left missing (null).
- Automatic – The software automatically inserts a value for every record. This is usually assigned to administrative fields that must contain a value, such as the DataVrsn field.

Software Specifications

– page 6

Describes how to read Data Specs



Data Specification

<i>Long Name:</i>	Height (cm)	<i>SeqNo:</i>	330
<i>Short Name:</i>	HeightCm	<i>Core:</i>	Yes
<i>Section Name:</i>	Risk Factors	<i>Harvest:</i>	Yes
<i>DBTableName</i>	Adultdata1		
<i>Definition:</i>	Indicate the height of the patient in centimeters.		
<i>Data Source:</i>	User	<i>Format:</i>	Real
<i>Low Value:</i>	20.0	<i>High Value:</i>	251.0
		<i>UsualRangeLow:</i>	122.0
		<i>UsualRangeHigh:</i>	213.0



Software Specs – page 11

- Record ID - unique numeric value that identifies the record in the database.
- Generated Software site by the STS. The codes will be in a format similar to “V01”.
- For example - V01000001

b. Record identification number (RecordID): The RecordID field contains a unique numeric value that identifies the record in the database. This is an arbitrary number and must not be a value that could identify the patient, such as Social Security Number, Medical Record Number, etc. Once attached to a specific record, the value can never be changed, nor can it be reused if the record is deleted. The data warehouse uses the RecordID field to communicate record-specific data quality issues to the participants. Because of this, users must be able to select cases from their database for review using this field and the field must be labeled “RecordID” on the data entry screen. See also the special considerations necessary for this field when importing data from another database in the “Data Import” section, below.

Beginning with version 2.73 of the data specifications, the values generated by the software for the RecordID field must be a combination of a vendor specific code followed by an alphanumeric value that makes the identifier unique. The vendor-specific code will consist of three characters and will be assigned to each vendor and Participant Generated Software site by the STS. The codes will be in a format similar to “V01”. For example, the software will generate a RecordID value of V01000001 for the first record and V01000002 for the second record. The purpose of this feature is to allow sites to move their data from one version of a software package to another, or from one vendor package to another, and maintain the referential integrity of their data records.

Together, the ParticID and the RecordID will affect a composite key, which is unique to each record throughout the national STS database.



Software Specs – page 14

- Points out what data can be imported into Vendor Data Form
- ADT Tool
- Reason we can't import more data is because of the importance of the data managers eyes on the data, the limitations of informatics on writing the correct code, especially when there are changes in definitions and between EMR versions and vendors

4. Importing data from other data sources

Although the data many participants are entering into their STS certified software may be gathered from another electronic data system at their site (such as an EMR), it is strictly against STS policy for vendors to provide the users with the means to import this data automatically. It is not practical for the STS to certify the mapping of data from each site's EMR to the STS data specifications, which would be required to ensure the integrity of the overall STS database.

There are only two exceptions to this policy:

- Unique Device Identification (UDI) numbers can be imported from devices such as barcode readers. This applies to the following fields:
 - Valve Explant Unique Device Identifier (UDI) [ValExpUDI]
 - Second Valve Explant Device Unique Device Identifier (UDI) [ValExpDevUDI]
 - VS-Aortic Proc-Imp - Unique Device Identifier (UDI) [VSAolmUDI]
 - VS-Mitral Proc-Imp-Unique Device Identifier (UDI) [VSMilmUDI]
 - VS-Tricuspid Proc-Imp-Unique Device Identifier (UDI) [VSTrlmUDI]
 - Previous VAD Unique Device Identifier (UDI) [PrevVADUDI]
 - VAD-Implant Unique Device Identifier (UDI) [VImpUDI]
 - VAD-Implant Unique Device Identifier (UDI) #2 [VImpUDI2]
 - VAD-Implant Unique Device Identifier (UDI) #3 [VImpUDI3]
 - Other Card-Atrial Appendage Ligation/Exclusion UDI [OCarAAUDI]
- The following demographic data fields can be imported from an Admission/Discharge/Transfer (ADT) system:

LongName	ShortName
Patient Last Name	PatLName
Patient First Name	PatFName
Patient Middle Name	PatMName
Date of Birth	DOB
Patient Age	Age



Software Specs – page 16

- Parent Child Relationships

5. Field dependencies

Field dependencies exist where one field (the “parent” field) controls whether or not one or more other fields (the “child” fields) can contain data. Child fields are indicated in the specifications by having their immediate parent field named in the “Parent Field” section of their specification. For example, “Cerebrovascular Disease” is a parent field to its child “Prior CVA”. The following guidelines must be followed to handle dependent fields:

- If the data value of a parent field indicates that no data should be in its dependent fields, then those dependent fields should be unavailable on the data entry screen. In the example above, only if “Cerebrovascular Disease”= “Yes” should “Prior CVA” be available for data entry.
- If a parent field indicates that no data should be in its dependent field, vendors must set all child fields to Null. **Note that in prior versions of the Software Specifications, vendors had the option of setting child field values to “No” provided those fields were set to Null during data extract. This has caused parent/child issues to appear in site data, so this practice is no longer acceptable.**
- If a parent field is originally set to “Yes”, then values can be entered into its child fields. If the record is subsequently edited by the user and the parent value is changed to “No”, **the values in the child fields must be automatically changed to Null.**
- Reporting on missing data values needs to be handled differently in dependent (child) fields, since its meaning depends upon the data value of the parent field. See “Data quality and completeness checks” below for a full description of how this should be handled.



Software Specs – page 26

- Meld Score Calculation – system calculation must have INR, Total Bili, and Creatinine to calculate

Appendix A: Calculation of MELD scores:

Starting with version 2.73, software must be able to calculate the MELD score for each patient. The results from this calculation are entered by the software into the field RF-MELD Score (MELDScr). The value of this score is calculated using the values entered by the user into the three fields "RF-Total Bilirubin" (TotBilrtn), "RF-INR" (INR), and "RF-Last Creat Level" (CreatLst). The patient's dialysis status (RF-Renal Fail-Dialysis) is also considered in the calculation.

The calculation can be made by creating a "factor" for each of the three variables involved in the score. The value of the variable is used to determine the value of the factor. The factors are then used in a formula to determine the MELD score. The algorithm for determining the value of each factor is as follows:

If RF-Total Bilirubin is >0 and ≤ 1 then bilirubin_factor = 1
otherwise, if RF-Total Bilirubin is >1 , then bilirubin_factor = the specified RF-Total Bilirubin value.

If RF-INR is >0 and ≤ 1 then inr_factor = 1
otherwise, if RF-INR is > 1 , then inr_factor = the specified RF-INR value.

if RF-Renal Fail-Dialysis=Yes, then creatinine_factor = 4
otherwise, if RF-Last Creat Level is >0 and ≤ 1 then creatinine_factor = 1
 otherwise, if RF-Last Creat Level is >1 and ≤ 4 , then creatinine_factor = the RF-Last Creat Level value
 otherwise, if RF-Last Creat Level is >4 , then creatinine_factor = 4

After determining the three factors, the calculation is done using the formula:

$$\text{MELDScr} = (3.8 \times \text{Ln}(\text{bilirubin_factor})) + (11.2 \times \text{Ln}(\text{inr_factor})) + (9.6 \times \text{Ln}(\text{creatinine_factor})) + 6.4$$

Note that "Ln" refers to the mathematical "natural log" function.

No score should be calculated if any of the following conditions are true:

- RF-Total Bilirubin is missing



Appendix C: Calculation of Total Postoperative Initial Ventilation Hours

Starting with v4.20.2, software must be able to calculate the Total Postoperative Initial Ventilation Hours. The results of this calculation are entered by the software into the field “Total Postoperative Initial Ventilation Hour” (TotalPOInitVentHr). The value of this field is calculated by finding the number of **hours between “OR Exit Date and Time” (ORExitDT) and “Initial Extubation Date And Time” (ExtubateDT)**. ~~Value should be stored in decimal format with at least two decimal places. This value is zero for patients extubated in OR or not intubated for procedure (ExtubOR = Yes or N/A (not intubated)).~~

- ❑ If either ORExitDT or ExtubateDT are missing, TotalPOInitVentHr is left missing.
- ❑ The difference between ORExitDT and ExtubateDT must not be rounded.
- ❑ If ExtubOR=“Yes” or “N/A”, TotalPOInitVentHr must be set to zero.
- ❑ Final calculation should include at least two decimal places.

Appendix F: Field ShortName and SeqNo by DataVrsn.

The following table lists all fields that have been collected in the STS Adult CV Database since 1999. The sequence number (SeqNo) of each field for a given version of the specifications is specified under the version number. If no sequence number is specified, the field was not a Core field for that version of the specifications.

ShortName	2.35	2.41	2.52.1	2.61	2.73	2.81	2.9	4.20.2
AbxDisc				1347	2730	2290	2290	2290
AbxSelect				1345	2710	2280	2280	2280
AbxTiming				1346	2720	2285	2285	2285
AddIntraopPAnti						2295	2295	
ADevDelMeth01							5455	5455
ADevDelMeth02							5480	5480
ADevDelMeth03							5505	5505
ADevDelMeth04							5530	5530
ADevDelMeth05							5555	5555
ADevDelMeth06							5580	5580
ADevDelMeth07							5605	5605
ADevDelMeth08							5630	5630
ADevDelMeth09							5655	5655
ADevDelMeth10							5680	5680
ADevDelMeth11							5705	5705
ADevDelMeth12							5730	5730
ADevDelMeth13							5755	5755

Appendix F: Field Short Name and Seq Number by Data Version

Additional Resources – Case Inclusion Guide



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

STS Adult Cardiac Database Inclusion Document

General information – This document is provided to sites to assist in procedure inclusion. **It is not an all-inclusive list.** If your procedure can not be found on the list, [please send in a FAQ](#) to determine if the procedure should be included in the Database.

Required Cases in- conjunction with other CV surgery or stand-alone procedure.

1. CABG

2. Valve to include:

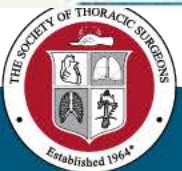
- Aortic valve repair, surgical
- Aortic valve replacement, surgical
- Mitral valve commissurotomy, surgical
- Mitral valve repair, surgical
- Mitral valve replacement, surgical
- Tricuspid valve repair, surgical
- Tricuspid valve replacement, surgical
- Tricuspid valvectomy
- Pulmonary valve repair, surgical
- Pulmonary valve replacement, surgical
- Pulmonary valvectomy
- Prosthetic valve repair

3. Aorta - starting above diaphragm, includes dissections to include:

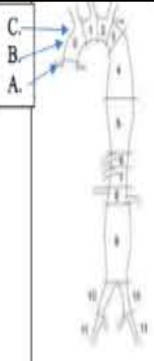
- Aortic procedure, arch
- Aortic procedure, ascending
- Aortic procedure, descending
- Aortic procedure, root
- Aortic procedure, thoracoabdominal
- Aortic Procedure, TEVAR

Surgeon Worksheets - *Updated July 17, 2020*

- [Aorta/Open Dissection Worksheet](#) [[Word version](#)]
- [Aorta/Endo Aneurysm Worksheet](#) [[Word version](#)]
- [Aorta/Endo Dissection Worksheet](#) [[Word version](#)]
- [Aorta/Endo Other Worksheet](#) [[Word version](#)]
- [Aorta/Open Aneurysm Worksheet](#) [[Word version](#)]
- [Aorta/Open Other Worksheet](#) [[Word version](#)]
- [Aortic Valve Surgeons Worksheet](#) [[Word version](#)]
- [Atrial Fibrillation Worksheet](#) [[Word version](#)]
- [CABG Worksheet](#) [[Word version](#)]
- [Intraoperative TEE Worksheet](#) [[Word version](#)]
- [Mitral Valve Worksheet](#) [[Word version](#)]
- [Tricuspid/Pulmonic Valve Worksheet](#) [[Word version](#)]



Location:



X. No additional devices inserted (only for locations 2 – 15)
 A. Below sinotubular junction
 B. Sinotubular junction to mid ascending
 C. Mid ascending to distal ascending
 D. Zone 1 (between innominate and left carotid)
 E. Zone 2 (between left carotid and left subclavian)
 F. Zone 3 (first 2 cm. distal to left subclavian)
 G. Zone 4 (end of zone 3 to mid descending aorta – T6)
 H. Zone 5 (mid descending aorta to celiac)
 I. Zone 6 (celiac to superior mesenteric)
 J. Zone 7 (superior mesenteric to renals)
 K. Zone 8 (renal to infra-renal abdominal aorta)
 L. Zone 9 (infra-renal abdominal aorta)
 M. Zone 10 (common iliac)
 N. Zone 11 (external iliacs)
 (Refer to Data Specifications for Harvest Code)

For devices other than aortic valves and aortic valve composite grafts:

Implant Method: 1=Open Surgical 2=Endovascular

Outcome: 1= Unsuccessfully implanted/maldeployed 2= Implanted/deployed and removed 3= Successfully implanted/deployed

Model Number: Enter device model number

UDI: Enter unique device identifier (not serial number)

Location (Letter)	Implant Method	Outcome	Model Number	UDI
ADevLoc01 (S490)	ADevDelMeth01 (S455)	ADevOut01 (S460)	ADevModel01 (S465)	ADevUDI01 (S470)
ADevLoc02 (S475)	ADevDelMeth02 (S480)	ADevOut02 (S485)	ADevModel02 (S490)	ADevUDI02 (S495)
ADevLoc03 (S500)	ADevDelMeth03 (S505)	ADevOut03 (S510)	ADevModel03 (S515)	ADevUDI03 (S520)
ADevLoc04 (S535)	ADevDelMeth04 (S530)	ADevOut04 (S535)	ADevModel04 (S540)	ADevUDI04 (S545)

You will have to type in the Model Number for Aorta Devices

STS Adult Cardiac Surgery Database

Version 4.20.2

Long Name: Aorta Device - Model Number #01

SeqNo: 5465

Short Name: ADevModel01

Core: Yes

Section Name: Aorta And Aortic Root Procedures

Harvest: Yes

DBTableName: Adultdata1

Definition: Indicate the model number of aortic device #01.

Data Source: User

Format: Text

ParentShortName: ADevIns

ParentLongName: Aorta Device Inserted

ParentHarvestCodes: 1

ParentValues: = "Yes"

Aorta Device Cheat Sheet

STS ACSD v4.20.2

Aorta Devices Fields

(S465, S490, S515, S540, S565, S590, S615, S640, S665, S690, S715, S740, S765, S790, S815)
 These fields allow for free text - please type in corresponding harvest code.

HarvestCode	Description
208	A010 - CryoLife Ascending Thoracic Aorta
209	A020 - CryoLife Descending Thoracic Aorta
210	A030 - CryoLife Pulmonary Artery
216	R010 - CryoLife Aortiliac Grafts
217	R020 - CryoLife Femoral Popliteal Artery
220	V010 - CryoLife Saphenous Vein
221	V060 - CryoLife Femoral Vein
267	AAL - LifeNet CardioGraft Ascend
268	AAM - LifeNet CardioGraft Ascend
269	AAS - LifeNet CardioGraft Ascend
270	DLHPA - LifeNet CardioGraft Dece
271	DRHPA - LifeNet CardioGraft Dece
278	LHPA - LifeNet CardioGraft Hemi-

776	Surgeon Fashioned Device
800	DSF### - GORE DrySeal Introducer Sheath
801	RLT### - GORE Trunk - Ipsilateral Leg Endoprosthesis
802	PCL### - GORE Contralateral Leg Endoprosthesis
803	PLA### - GORE Aortic Extender Endoprosthesis

Additional Resource

- Aorta Device List

800	DSF###-## - GORE DrySeal Introducer Sheath
801	RLT###-##-## - GORE Trunk - Ipsilateral Leg Endoprosthesis



RLT231212 will be coded as 801

Trunk - Ipsilateral Leg Endoprosthesis			
GORE® C3® Delivery System Catalogue Number	Aortic Endoprosthesis Diameter (mm)	Iliac Endoprosthesis Diameter (mm)	Endoprosthesis Le
RLT231212	23	12	12
RLT231214	23	12	14
RLT231216	23	12	16



Additional Resources - Congenital Diagnoses and Procedure List



Congenital Procedures By Category

ASD	<input type="checkbox"/> 10= PFO, Primary closure
	<input type="checkbox"/> 20= ASD repair, Primary closure
	<input type="checkbox"/> 30= ASD repair, Patch
	<input type="checkbox"/> 40= ASD repair, Device
	<input type="checkbox"/> 2110= ASD repair, Patch + PAPVC repair
	<input type="checkbox"/> 50= ASD, Common atrium (single atrium), Septation
	<input type="checkbox"/> 60= ASD creation/enlargement
	<input type="checkbox"/> 70= ASD partial closure
	<input type="checkbox"/> 80= Atrial septal fenestration
	<input type="checkbox"/> 85= Atrial fenestration closure

Congenital Diagnosis By Category

- ☐ 10=PFO
- ☐ 20= ASD, Secundum
- ☐ 30= ASD, Sinus venosus
- ☐ 40= ASD, Coronary sinus
- ☐ 50= ASD, Common atrium (single atrium)
- ☐ 2150= ASD, Postoperative interatrial commu

Additional Resources Risk Model Variable Chart

The purpose of risk adjustment is to allow STS database participants to compare their performance with other participants (e.g. overall STS, like participants, region or state). By accounting for and controlling patient risk factors that are present prior to surgery, risk adjustment “levels the playing field” as best as possible.

It is important to understand how missing data values are handled when the STS risk-adjustment models are applied to patients with incomplete data. With the exception of age, missing data values are imputed by assigning a likely substitute value. The algorithm used for missing data imputation is described below:

Required variable: Age is the only required variable for all models. If it is missing, no value for predicted risk will be calculated.

Categorical variables: Missing data are generally assumed to have the lowest risk category. For example, if diabetes was not coded, it would be assumed to be “No”; if procedure priority were not coded, the procedure would be assumed to be “Elective.” In most cases, the lowest risk category is also the most frequent. If gender is missing, Male gender (the most frequent) is imputed.

20 – OV General

Ejection Fraction (EF)	<p>If EF is missing or <10%:</p> <p><u>CABG Model</u></p> <p>If HeartFailTmg is Chronic or missing and gender is Male, set EF = 55%</p> <p>If HeartFailTmg is Chronic or missing and gender is Female, set EF = 58%</p> <p>If HeartFailTmg is Acute or Both and gender is Male, set EF = 40%</p> <p>If HeartFailTmg is Acute or Both and gender is Female, set EF = 45%</p>
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Complete Chart found in STS Harvest Report – page 20-23

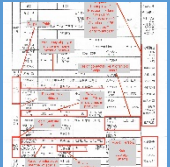


CABG	Operative Mortality	Stroke	Renal Failure	Prolonged Ventilation	Deep Stern Inf	Reop	Mortality/ Morbidity	Length of Stay>14	Length of Stay<6
B. Demographics									
Age (70)	X	X	X	X	X	X	X	X	X
Gender (75)	X	X	X	X	X	X	X	X	X
RaceBlack (160)	X	X	X	X	X	X	X	X	X
RaceAsian (165)		X	X	X	X	X	X	X	X
Ethnicity (185)		X	X	X	X	X	X	X	X
RaceNativeAm (170)			X	X	X	X	X	X	X
RacNativePacific (175)			X	X	X	X	X	X	X
C.Hospitalization									
SurgDt (310)			X	X	X	X	X	X	X
PayorPrim (291) →	X	X	X	X	X	X	X	X	X
PayorSecond (293) →	X	X	X	X	X	X	X	X	X
D. Risk Factors									
WeightKg (335)	X	X	X	X	X	X	X	X	X
HeightCm (330)	X	X	X	X	X	X	X	X	X
Diabetes (360)	X	X	X	X	X	X	X	X	X
DiabCtrl (365)	X	X	X	X	X	X	X	X	X
Hct (575)	X	X	X	X	X	X	X	X	X
WBC (565)	X	X	X	X	X	X	X	X	X
Platelets (580)	X	X	X	X	X	X	X	X	X
CreatLst (585)	X	X	X	X	X	X	X	X	X
Dialysis (375)	X	X	X	X	X	X	X	X	X
Hypertn (380)		X	X	X			X		X
InfEndTy (840)					X				

InfEndo (385)									
ChrLungD (405)	X	X	X	X	X		X	X	X
ImmSupp (490)	X		X	X	X		X	X	X
PVD (505)	X	X	X	X	X	X	X	X	X
CVD (525)	X	X	X	X			X	X	X
CVA (530)	X	X	X	X			X	X	X
CVAWhen (535)	X	X	X	X			X	X	X
CVDTIA (540)	X	X	X	X			X	X	X
CVDStenRt (550)	X	X	X	X			X	X	X
CVDStenLft (555)	X	X	X	X			X	X	X
CVDPCarSurg (560)	X	X		X					X
IVDrugAb (470)				X		X		X	X
Alcohol (480)	X	X	X	X	X	X	X	X	X
Pneumonia (465)			X	X			X	X	X
MediastRad (495)	X			X				X	X
Cancer (500)		X							
TobaccoUse (400)			X	X	X		X	X	X
FHCAD (355)		X	X	X			X	X	X
HmO2 (450)	X			X			X	X	X
SlpApn (460)		X		X			X		X
LiverDis (485)	X		X	X		X	X	X	X
UnrespStat (520)	X	X		X			X		
Syncope (515)	X			X		X	X		X
E. Previous Interventions									
PrCAB (670)	X		X	X	X	X	X	X	X
PrValve (675)			X	X	X	X	X	X	X
PrValveProc1 (695)				X		X	X	X	X

K. Valve Surgery									
VSTrRepair (3546)					X				
L. Mechanical Cardiac Assist Devices									
IABPWhen (3730) →	X		X	X	X	X	X	X	X
CathBasAssistWhen (3760) →	X		X	X		X	X	X	X
ECMOWhen (3780) →	X		X	X		X	X	X	X

Housekeeping Tips



Keep DCF and or your collection notes for at least 4 years.



Keep a log of 30-Day Mortality / 30 Day Readmission/ 30 Day DSWI & Infection in the event of an Audit.

***Thank you
Session II to be
held next week***

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!

Resources

- [STS National Database Webpage](#)
- STSTechSupport@IQVIA.com (Uploader, DQR, Missing Variable, Dashboard, Password and Login)
- Phone Support: 1-833-256-7187
- [STS National Database Feedback Form](#)
- Resource Documents
 - Contact Information
 - Webinar Information
 - FAQ Document
 - Go-Live Checklist
 - Tiered-level Support Document
 - *Training Videos*
 - *Link to IQVIA*
 - ckrohn@sts.org



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