Society of Thoracic Surgeons

General Thoracic Surgery Database
New Data Manager Webinar

September 29, 2021

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

Agenda

- Welcome and Introductions
- Introduction to STS and the Databases
- Role of the Data Manager
- How to read the Data Collection Form (DCF)
- Required fields
- Intro to Data Specs
- Intro to Training Manual
- Submitting a question
- Keys to abstracting data
- Building a relationship with your surgeon
- Ensuring Clean Data
- Data Submission Deadlines
- Additional STS Resources

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Introduction to STS and the Databases

- Society founded in 1964

"To enhance the ability of cardiothoracic surgeons to provide the highest quality care through education, research, and advocacy"

- Today has more than 7500 members in 99 countries
- More than 65 employees in Chicago and D.C.
- The first database was started in 1989
  - Response to HHS/HCFA (now CMS)
  - Malpractice lawsuits related to a misperception of the risk associated with surgery
  - JCAHO's requirement of all healthsystems to have a QA program used for surgeon recredentialing
  - Threats to reimbursement

Introduction to STS and the Databases

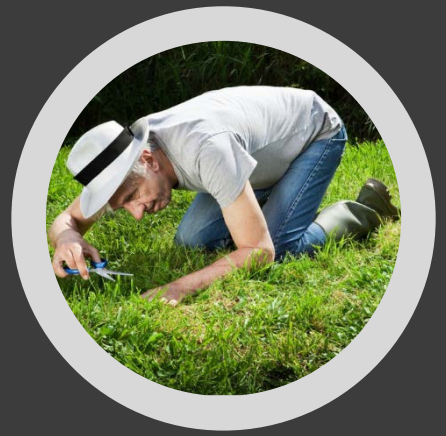
- Accomplishments of the databases
  - Improved Patient Outcomes/Patient Safety
  - Developed Clinical Practice Guidelines
    - Blood Conservation
    - Antibiotic Usage
  - Voluntary Public Reporting
    - Sites who publicly report have better outcomes
  - Multiple risk models
  - Multiple NQF measures
  - Governmental support (PAC)
    - Research Utilization (RUC)
    - Surgeon Reimbursement
  - Consensus Statements
  - Database driven research which has led to the advancement of care, technology, and improvement of outcomes

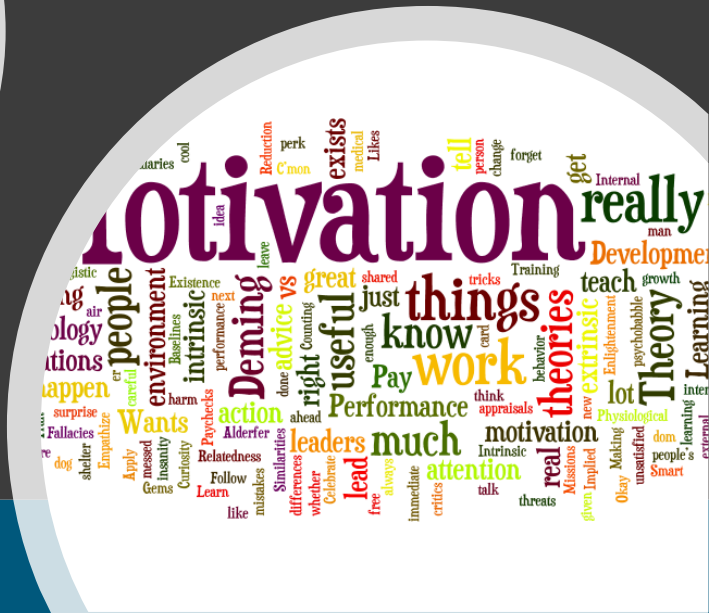
Introduction to STS and the Databases

- General Thoracic Surgery Database (GTSD) started in 2003
- Today has more than 880 surgeons at 275 national and international sites
  - International sites: UAE and Singapore
- Contains more than 719,000 records for more than 612,000 patients

The Data Abstractor/Data Manager

- You Are
  - Smart
  - Creative
  - Meticulous
  - Organized
  - Passionate (in a good way)
  - Most of you are nurses
  - Some of you are health management specialists or hold other roles
  - All of you are making a difference!

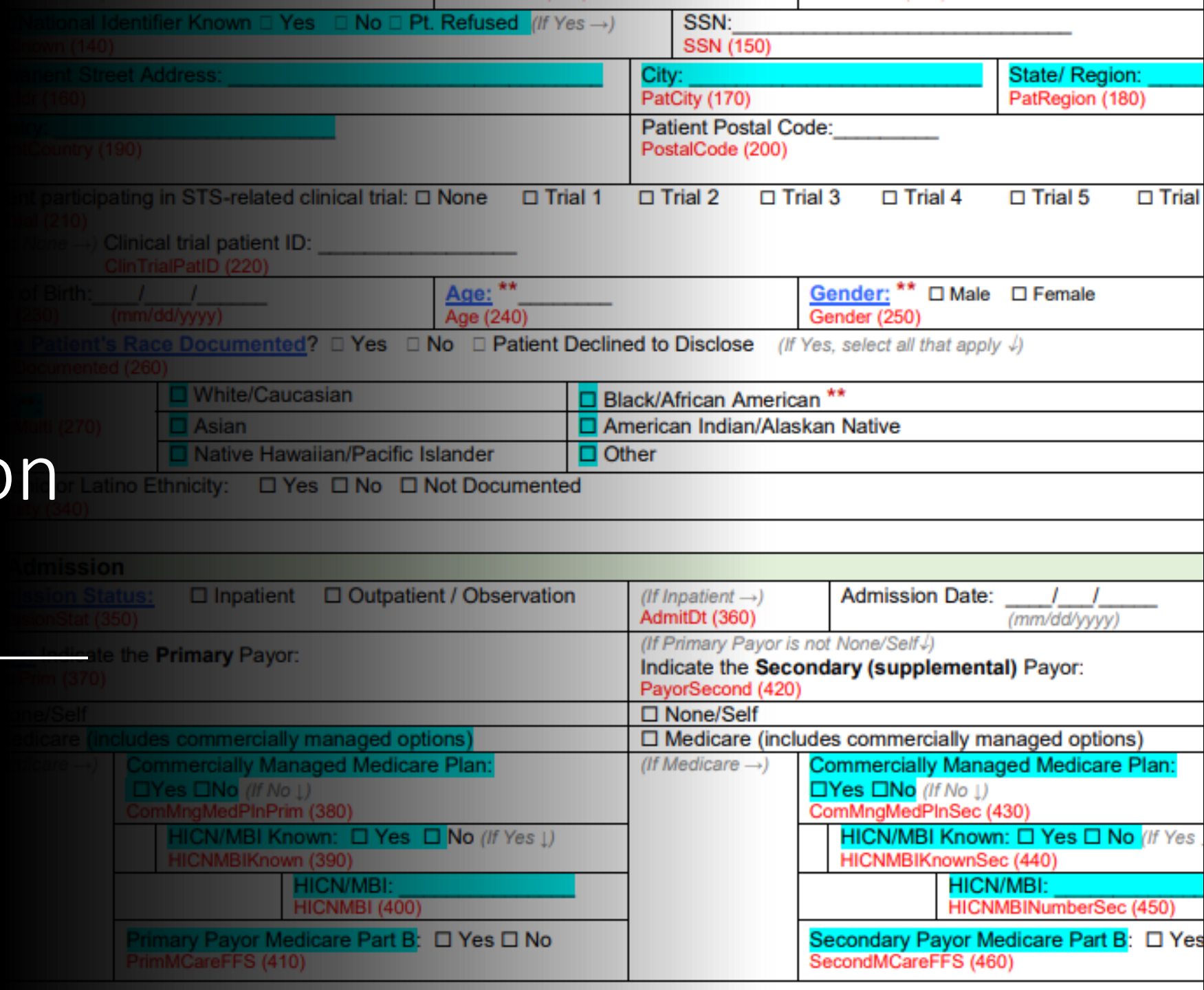




The Data Abstractor/Data Manager Role

- Your Role
  - Abstract Data
  - Submit Data
  - Clean Data
  - Quality Improvement Projects
  - Charting
  - Best Practices
  - Improve Workflow on Units
  - Improve Team Work
  - Quality Assurance Meetings with Surgeons and Supporting Departments
  - Administration Reporting on Star Ratings

Reading the Data Collection Form (DCF)

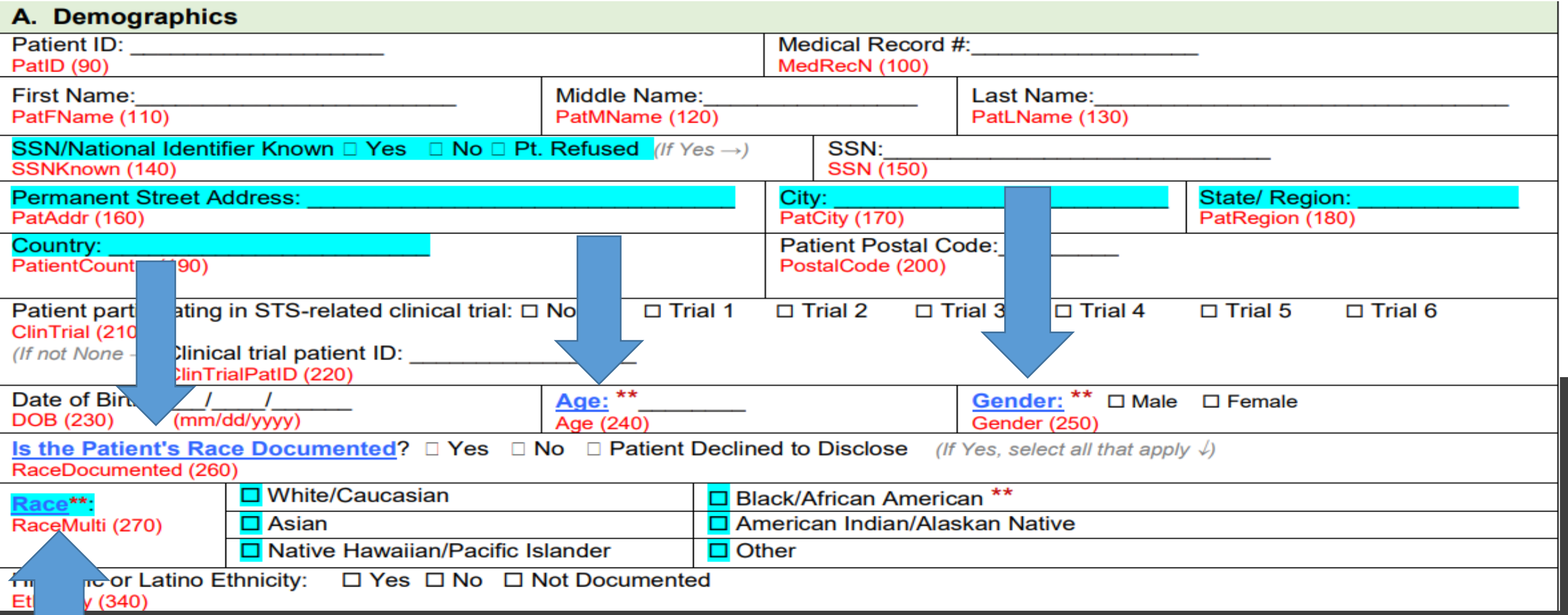


Which Variables are Required?

- Per STS: ALL variables are important
  - Parent/child relationships help reduce the number of missing data in the feedback reports
- Do not omit the fields included in the analysis report:

  - Mortality Variables
  - Risk Model Variables
  - 'Required' Variables

- Complete all fields consistently so they are meaningful internally and over time



A. Demographics

Patient ID: _____
PatID (90)

Medical Record #:_____
MedRecN (100)

First Name:_____
PatFName (110)

Middle Name:_____
PatMName (120)

Last Name:_____
PatLName (130)

SSN/National Identifier Known ☐ Yes ☐ No ☐ Pt. Refused *(If Yes →)*
SSNKnown (140)

SSN:_____
SSN (150)

Permanent Street Address: _____
PatAddr (160)

City: _____
PatCity (170)

State/ Region: _____
PatRegion (180)

Country: _____
PatientCount 90)

Patient Postal Code:_____
PostalCode (200)

Patient part ating in STS-related clinical trial: ☐ No ☐ Trial 1 ☐ Trial 2 ☐ Trial 3 ☐ Trial 4 ☐ Trial 5 ☐ Trial 6
ClinTrial (210
(If not None Clinical trial patient ID: _____
ClinTrialPatID (220)

Date of Birt ___/___/_____
DOB (230) (mm/dd/yyyy)

Age: ** _____
Age (240)

Gender: ** ☐ Male ☐ Female
Gender (250)

Is the Patient's Race Documented? ☐ Yes ☐ No ☐ Patient Declined to Disclose *(If Yes, select all that apply ↓)*
RaceDocumented (260)

Race**:
RaceMulti (270)

☐ White/Caucasian	☐ Black/African American **
☐ Asian	☐ American Indian/Alaskan Native
☐ Native Hawaiian/Pacific Islander	☐ Other

ic or Latino Ethnicity: ☐ Yes ☐ No ☐ Not Documented
Et y (340)

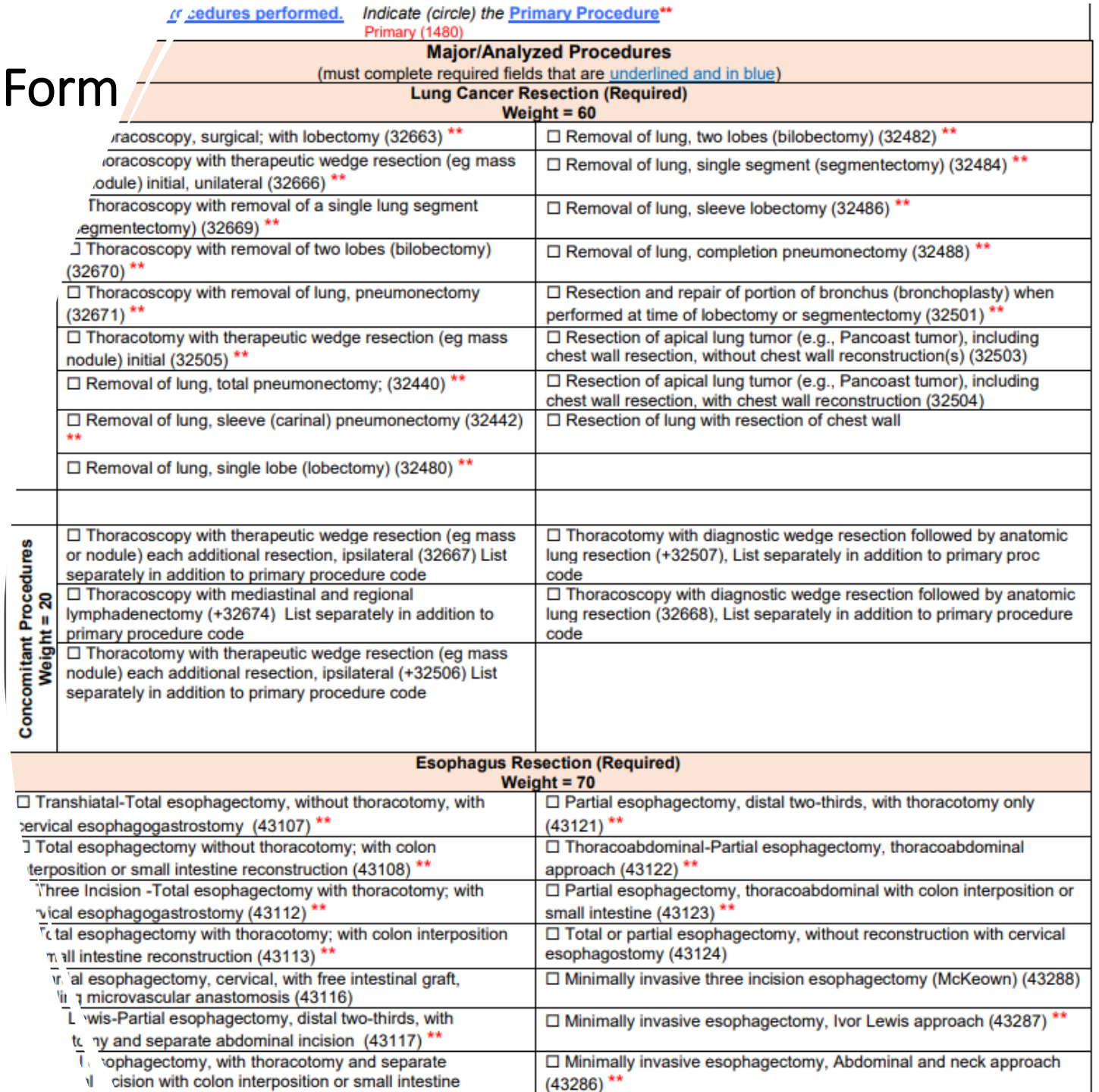
Required Variables for Case Inclusion

The variables underlined in blue must be included for your case to be included in analysis

Understanding the Data Collection Form

What do these "weights" mean?

- Lung Cancer Resection
  - Weight = 60
- Esophagus Resection
  - Weight = 70
- Hiatal Hernia/Gerd
  - Weight = 30
- Trachea Resection
  - Weight = 40
- Thymus/Mediastinal Mass
  - Weight = 50
- Concomitant Procedures
  - Weight = 20
- Minor Procedures
  - Weight = 10



...cedures performed. Indicate (circle) the Primary Procedure**
Primary (1480)

Major/Analyzed Procedures
(must complete required fields that are underlined and in blue)

Lung Cancer Resection (Required)
Weight = 60

	...racoscopy, surgical; with lobectomy (32663) **	☐ Removal of lung, two lobes (bilobectomy) (32482) **
	...oracoscopy with therapeutic wedge resection (eg mass ...odule) initial, unilateral (32666) **	☐ Removal of lung, single segment (segmentectomy) (32484) **
	Thoracoscopy with removal of a single lung segment ...egmentectomy) (32669) **	☐ Removal of lung, sleeve lobectomy (32486) **
	☐ Thoracoscopy with removal of two lobes (bilobectomy) (32670) **	☐ Removal of lung, completion pneumonectomy (32488) **
	☐ Thoracoscopy with removal of lung, pneumonectomy (32671) **	☐ Resection and repair of portion of bronchus (bronchoplasty) when performed at time of lobectomy or segmentectomy (32501) **
	☐ Thoracotomy with therapeutic wedge resection (eg mass nodule) initial (32505) **	☐ Resection of apical lung tumor (e.g., Pancoast tumor), including chest wall resection, without chest wall reconstruction(s) (32503)
	☐ Removal of lung, total pneumonectomy; (32440) **	☐ Resection of apical lung tumor (e.g., Pancoast tumor), including chest wall resection, with chest wall reconstruction (32504)
	☐ Removal of lung, sleeve (carinal) pneumonectomy (32442) **	☐ Resection of lung with resection of chest wall
	☐ Removal of lung, single lobe (lobectomy) (32480) **	
Concomitant Procedures Weight = 20	☐ Thoracoscopy with therapeutic wedge resection (eg mass or nodule) each additional resection, ipsilateral (32667) List separately in addition to primary procedure code	☐ Thoracotomy with diagnostic wedge resection followed by anatomic lung resection (+32507), List separately in addition to primary proc code
	☐ Thoracoscopy with mediastinal and regional lymphadenectomy (+32674) List separately in addition to primary procedure code	☐ Thoracoscopy with diagnostic wedge resection followed by anatomic lung resection (32668), List separately in addition to primary procedure code
	☐ Thoracotomy with therapeutic wedge resection (eg mass nodule) each additional resection, ipsilateral (+32506) List separately in addition to primary procedure code	

Esophagus Resection (Required)
Weight = 70

☐ Transhiatal-Total esophagectomy, without thoracotomy, with ...ervical esophagogastrostomy (43107) **	☐ Partial esophagectomy, distal two-thirds, with thoracotomy only (43121) **
☐ Total esophagectomy without thoracotomy; with colon ...terposition or small intestine reconstruction (43108) **	☐ Thoracoabdominal-Partial esophagectomy, thoracoabdominal approach (43122) **
...hree Incision -Total esophagectomy with thoracotomy; with ...vical esophagogastrostomy (43112) **	☐ Partial esophagectomy, thoracoabdominal with colon interposition or small intestine (43123) **
...tal esophagectomy with thoracotomy; with colon interposition ...all intestine reconstruction (43113) **	☐ Total or partial esophagectomy, without reconstruction with cervical esophagostomy (43124)
...al esophagectomy, cervical, with free intestinal graft, ...g microvascular anastomosis (43116)	☐ Minimally invasive three incision esophagectomy (McKeown) (43288)
L...wis-Partial esophagectomy, distal two-thirds, with ...y and separate abdominal incision (43117) **	☐ Minimally invasive esophagectomy, Ivor Lewis approach (43287) **
...ophagectomy, with thoracotomy and separate ...cision with colon interposition or small intestine	☐ Minimally invasive esophagectomy, Abdominal and neck approach (43286) **

Procedure Inclusion – The STS General Thoracic Registry version 5.21.1 requires submission of all lung resections for primary lung cancer and all esophageal resections for primary esophageal cancer. Lung and esophageal resections for primary cancer are analyzed including national outcomes for benchmarking, risk adjusted outcomes, and star rating. Participants in the General Thoracic Registry may choose to submit Thymus/Mediastinal Mass

Resection, Tracheal Resection, and Hiatal Hernia/GERD cases. These case types are optional modules for submission to the registry and benchmark data will be available in the national report if submitted. All other case types are not required for collection or submission. They will not be available in the national report if submitted.

Submitting Cases

Major/Analyzed (Required)

- Confirmed Lung Cancer Resections
- Confirmed Esophageal Cancer Resections
- Risk Adjusted

Major/ Analyzed Procedures (Not Required)

- Optional Procedures
  - Thymus/Mediastinal Mass/Myasthenia Gravis
  - Tracheal Resection
  - Hiatal Hernia/GERD
- Benchmark data provided

Minor/Non-Analyzed Procedures

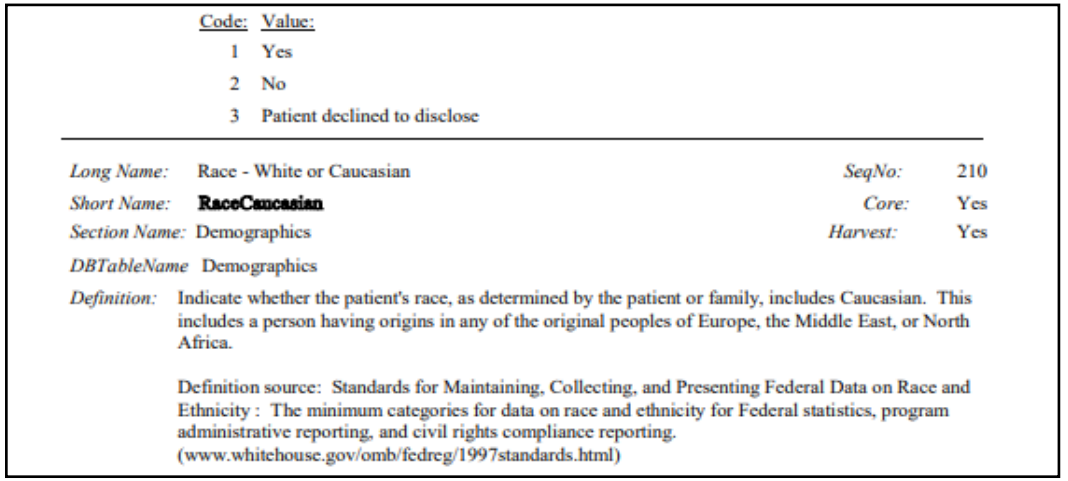
- Accepted into the database if you choose to collect
- Required fields "On Save" checks will be applied to these records

Concomitant Procedures

- If a procedure considered 'minor' or 'optional' is done at the same time as an 'analyzed' procedure, then it needs to be included on the same DCF

Data and Software Specifications

- The database is updated every 3 years
- The data and software specifications are key tools in this process
- It is important to understand how to read them
  - Definitions
  - Allowable values
  - Field type
  - Parent/Child Relationships
  - Specify vendor requirements



Code:	Value:
1	Yes
2	No
3	Patient declined to disclose

Long Name: Race - White or Caucasian *SeqNo:* 210

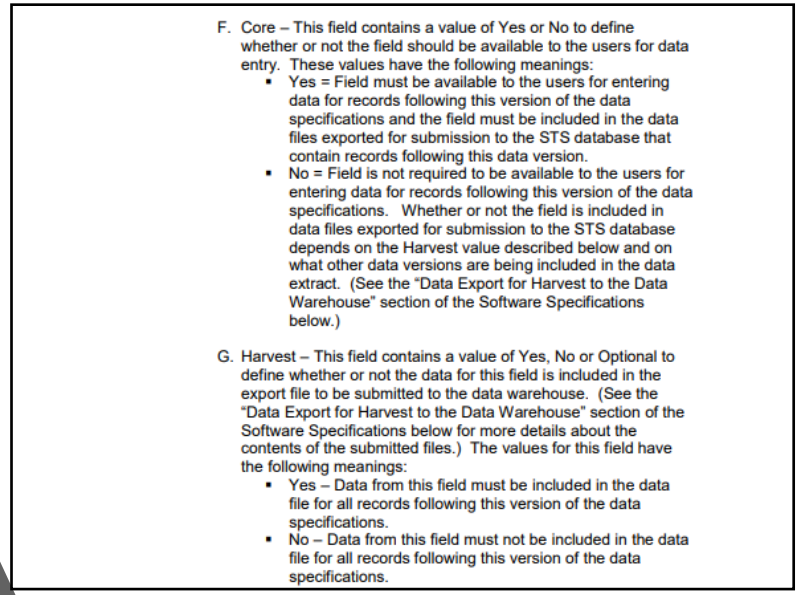
Short Name: **RaceCaucasian** *Core:* Yes

Section Name: Demographics *Harvest:* Yes

DBTableName Demographics

Definition: Indicate whether the patient's race, as determined by the patient or family, includes Caucasian. This includes a person having origins in any of the original peoples of Europe, the Middle East, or North Africa.

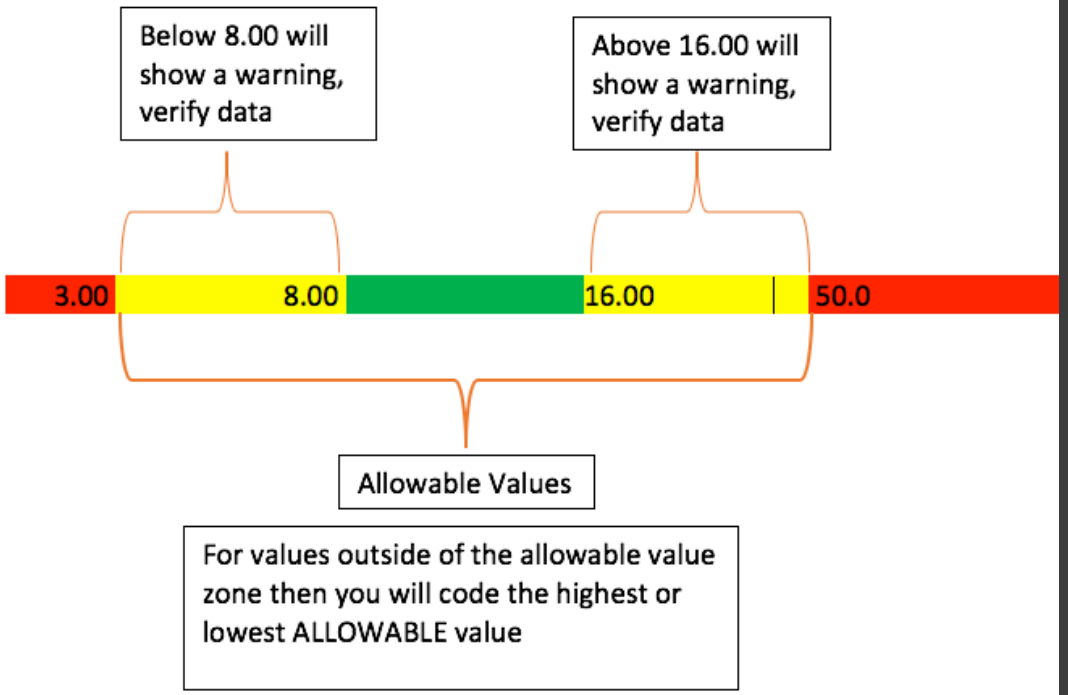
Definition source: Standards for Maintaining, Collecting, and Presenting Federal Data on Race and Ethnicity : The minimum categories for data on race and ethnicity for Federal statistics, program administrative reporting, and civil rights compliance reporting. (www.whitehouse.gov/omb/fedreg/1997standards.html)



F. Core – This field contains a value of Yes or No to define whether or not the field should be available to the users for data entry. These values have the following meanings:
- Yes = Field must be available to the users for entering data for records following this version of the data specifications and the field must be included in the data files exported for submission to the STS database that contain records following this data version.
- No = Field is not required to be available to the users for entering data for records following this version of the data specifications. Whether or not the field is included in data files exported for submission to the STS database depends on the Harvest value described below and on what other data versions are being included in the data extract. (See the "Data Export for Harvest to the Data Warehouse" section of the Software Specifications below.)

G. Harvest – This field contains a value of Yes, No or Optional to define whether or not the data for this field is included in the export file to be submitted to the data warehouse. (See the "Data Export for Harvest to the Data Warehouse" section of the Software Specifications below for more details about the contents of the submitted files.) The values for this field have the following meanings:
- Yes – Data from this field must be included in the data file for all records following this version of the data specifications.
- No – Data from this field must not be included in the data file for all records following this version of the data specifications.

Allowable Values



Long Name: Last Hemoglobin Level

Short Name: **HemoglobinLst**

Section Name: Pre-Operative Evaluation

DBTableName Operations

Definition: Indicate the hemoglobin level closest
management (induction area or operat

LowValue: 3.00 *UsualRangeLow:* 8.00

HighValue: 50.00 *UsualRangeHigh:* 16.00

Parent Long Name: Hemoglobin Level Measured

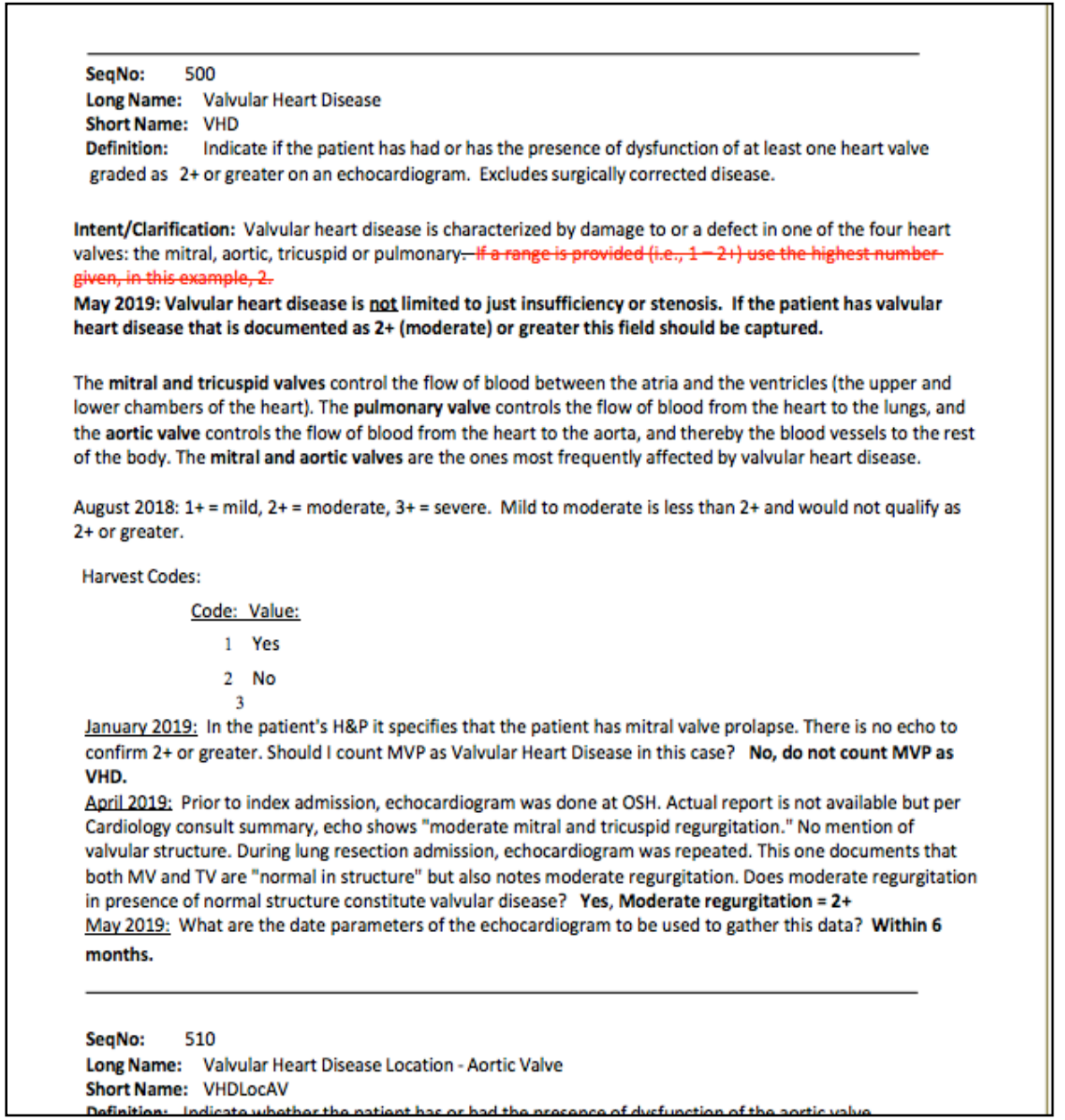
ParentShortName: HemoglobinMeasured

ParentValue: = "Yes"

ParentHarvestCodes: 1

The Training Manual

- Guidance on abstracting variables
- Intent/Clarification provided to further explain definitions
- Update monthly with new FAQ's
- Refer to this to ensure you are abstracting correctly
- Check here first!



SeqNo: 500
Long Name: Valvular Heart Disease
Short Name: VHD
Definition: Indicate if the patient has had or has the presence of dysfunction of at least one heart valve graded as 2+ or greater on an echocardiogram. Excludes surgically corrected disease.

Intent/Clarification: Valvular heart disease is characterized by damage to or a defect in one of the four heart valves: the mitral, aortic, tricuspid or pulmonary~~. If a range is provided (i.e., 1 – 2+) use the highest number given, in this example, 2.~~
May 2019: Valvular heart disease is not limited to just insufficiency or stenosis. If the patient has valvular heart disease that is documented as 2+ (moderate) or greater this field should be captured.

The **mitral and tricuspid valves** control the flow of blood between the atria and the ventricles (the upper and lower chambers of the heart). The **pulmonary valve** controls the flow of blood from the heart to the lungs, and the **aortic valve** controls the flow of blood from the heart to the aorta, and thereby the blood vessels to the rest of the body. The **mitral and aortic valves** are the ones most frequently affected by valvular heart disease.

August 2018: 1+ = mild, 2+ = moderate, 3+ = severe. Mild to moderate is less than 2+ and would not qualify as 2+ or greater.

Harvest Codes:

Code:	Value:
1	Yes
2	No
3	

January 2019: In the patient's H&P it specifies that the patient has mitral valve prolapse. There is no echo to confirm 2+ or greater. Should I count MVP as Valvular Heart Disease in this case? **No, do not count MVP as VHD.**
April 2019: Prior to index admission, echocardiogram was done at OSH. Actual report is not available but per Cardiology consult summary, echo shows "moderate mitral and tricuspid regurgitation." No mention of valvular structure. During lung resection admission, echocardiogram was repeated. This one documents that both MV and TV are "normal in structure" but also notes moderate regurgitation. Does moderate regurgitation in presence of normal structure constitute valvular disease? **Yes, Moderate regurgitation = 2+**
May 2019: What are the date parameters of the echocardiogram to be used to gather this data? **Within 6 months.**

SeqNo: 510
Long Name: Valvular Heart Disease Location - Aortic Valve
Short Name: VHDLocAV
Definition: Indicate whether the patient has or had the presence of dysfunction of the aortic valve

Training Manual

FAQ Summary Document

STS GTSD FAQ's
August 2021
Version 5.21.1

Seq. Number	Short Name	Update
580	Reop	**Aug 2021**: Only capture prior surgical procedures within the same anatomical space – not percutaneous procedures such as chest tubes, thoracentesis, paracentesis etc.
650	HistCancer	**Aug 2021**: Photodynamic therapy is not equivalent to thoracic radiation therapy and is not captured.
870	ECOGScore	**Aug 2021:** Lung and esophagus cases will NOT be rejected due to a missing ECOG score.
1250	CategoryPrim	**Aug 2021**: Metastatic lung cancer from a lung primary should be captured here, however new primary lung cancer or synchronous primary lung cancers should be captured with the appropriate lung cancer category of disease and not with C78.00.
1505	Laterality	**Aug 2021**: Lung resections have laterality, most hernia repairs and esophagectomies do not and will be coded as N/A.
1620	ClinStagMeth	**Aug 2021**: Question - How do I capture a Core Needle Biopsy of the lung mass itself preop? It is not a mediastinal lymph node biopsy? Answer – core needle biopsies of the lung mass are not captured in V5.21.
4270	Readm30Dis	**Aug 2021**: Readmission applies to IP readmissions only. If a patient returns to the hospital and is in OP/OBS status for their entire stay, please code 'no' to 4270.

Submitting a Clinical Question

If you have a question about submitting a case that is clinical in nature, then please submit it to the FAQ Mailbox.

- You will need
  - Participant Identification (PID)
    - This is a 5-digit number starting with a 4
  - Shortname and Sequence Number
    - Can be found on the annotated DCF or TM
  - As much information you can provide to help us answer your question
    - We can only answer based off the information you provide
- It can take up to 30 days for a response
  - We may have to discuss it with Surgeon Leaders
  - We may ask you for additional information
  - Please ensure the email you use is complete and correct when submitting an FAQ

Clinical Question Submission Form – Ask a Question

https://www.sts.org/sts-clinical-question-request-form

Full Name *

Email *

Phone *

Participant ID #

Database Version *

- Select -

State/Province *

- Select -

Sequence #: *

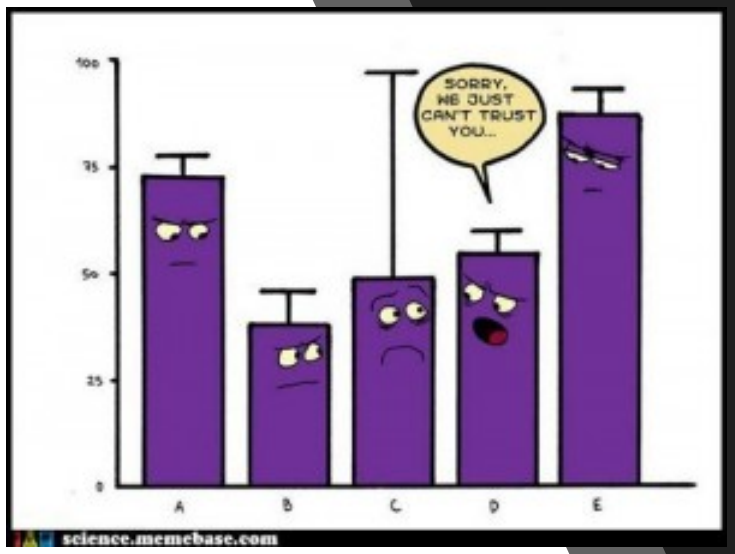
Short Field Name:

IMPORTANT: FOR HIPAA COMPLIANCE PURPOSES, PLEASE NOTE THAT ANY PATIENT IDENTIFYING INFORMATION[1] SHOULD BE REDACTED FROM THIS SUBMISSION.

Question: *

[1]The identifiers that should be removed include name, address, and geographic subdivisions below the state level, dates of birth/admission/discharge (but not age unless over 89), telephone, fax, e-mail, and Social Security numbers. Notably, you are not required to remove the nature of the condition, or the name of the hospital or physician.

Keys to Abstraction



- Be consistent in where you obtain information but…
- Pay attention to source documentation
  - Use data that meets the listed requirements
    - Timeframe
    - Mode of testing

- If you can’t find it, ask your surgeon
- Do not guess. No data is better than bad data.
  - If you can’t find it, ask
  - This is different than out of range high/low value

Working with your Surgeons

- Surgeons are busy, be patient but persistent
- Be clear and concise
- Know what you are going to ask before you ask it
- Do your homework and know the facts
- Get involved with Quality Meetings and Department Meetings where the data is being discussed
- Ask to observe a case
- Offer to review data with the surgeon
- Offer tips on how documentation can be improved
    - Build EHR templates
    - Use Surgeon Worksheets
- Work with Nursing and OR staff – they can help you

Clean Data

- Your vendor will allow you to run internal QA checks on your data prior to submission
- IQVIA, the data warehouse provides you with
  - Data Quality Report
  - Harvest Summary Report
  - Critical Error Report
- Version 5.21.1 has ‘on-save’ consistency checks built into your vendors software that will prevent you from exporting your data if certain errors are present

Data Submission Deadlines

- Harvest submission deadlines occur twice a year for General Thoracic
  - Spring and Fall
    - Each report will be a star-rating
  - Voluntary Public Reporting Result are based on the Spring Harvest
    - Lung Cancer and Esophageal Cancer Cases

Additional STS Resources

- Monthly ‘Didactic’ Webinar
- Monthly User Group Calls
- Quarterly New Data Manager Webinars
- Mentorship Program
- Advances in Quality and Outcomes: A Data Managers Meeting
  - October 12 – October 15
    - Wednesday, October 13 – General Thoracic Session
  - This year we will be reviewing the 5.21 upgrade
  - Virtual with live and pre-recorded content
  - CEU’s available
- Database Newsletter

STS Webinars

STS National Database Webinars

This webinar series will keep you informed about the latest STS National Database developments and help you fully utilize the technological advancements and new features that soon will be available. The webinars will be recorded and available on this page. If you would like to be notified of upcoming webinars, please provide your contact information.

General Thoracic Surgery Database

GTSD New Data Managers Webinar
September 29 at 2:00 p.m. CT

Call in: 888-475-4499 or 877-853-5257 or 312-626-6799
Webinar ID: 986 4449 7679
International Dial-in Numbers

Join Webinar

GTSD Monthly Webinar
October 13 at 1:30 p.m. CT

This event is canceled. Join us at AQO 2021.

▶ Past GTSD Webinars

GTSD Monthly Webinar
October 13 at 1:30 p.m. CT

This event is canceled. Join us at AQO 2021.

▼ Past GTSD Webinars

For earlier programs, view the GTSD Webinar YouTube Playlist

September 22, 2021

An explanation of the new analysis run with corrected missingness thresholds on the spring and fall 2020 harvest report, an update on ongoing IQVIA releases, and participant Q&A.

User Group Call PDF

September 8, 2021

Updates on Fall harvest schedules, a review of STS FAQ Inbox procedures, IQVIA issues under review, and participant feedback and Q&A.

User Group Call PDF

August 18, 2021

Updates on Fall harvest schedules, highlights of v5.21.1 and the latest version of the training manual, IQVIA issues under review, and participant Q&A.

User Group Call PDF

STS Mentorship Program

STS » Registries » STS National Database

- 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 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.

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

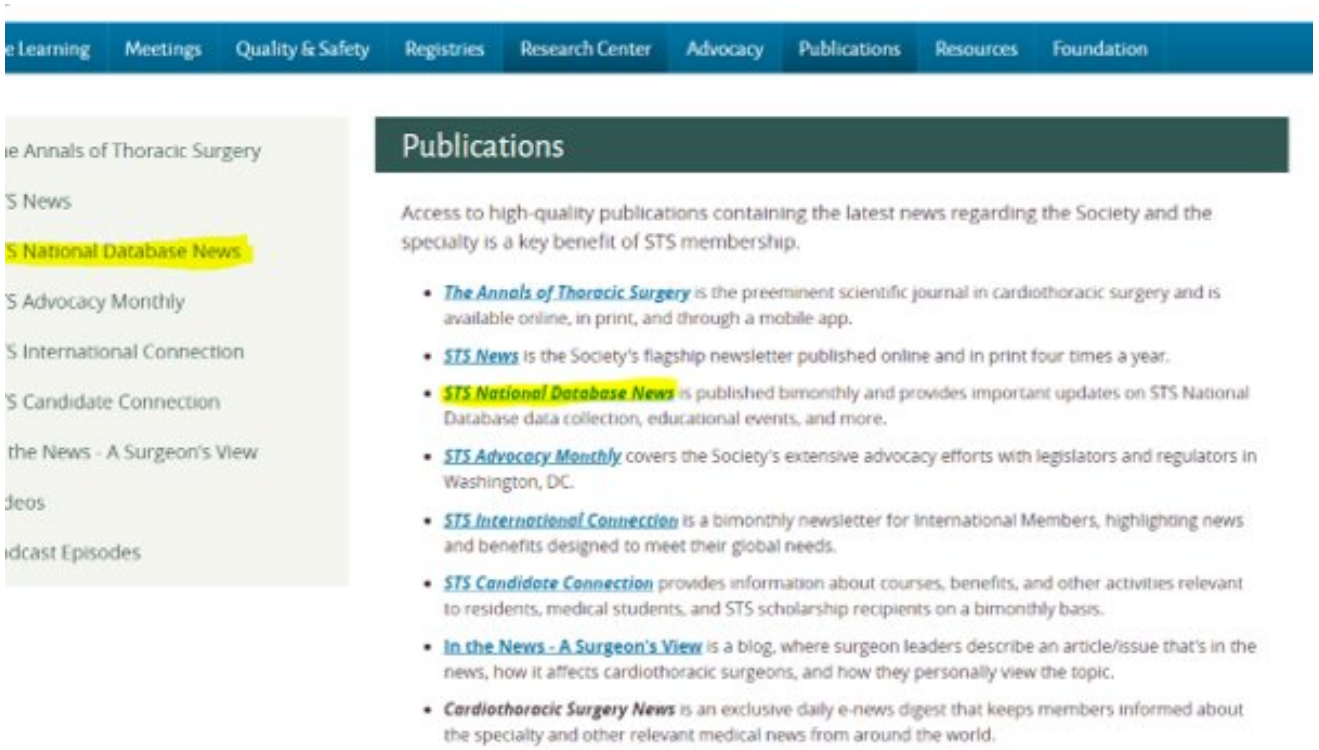
To apply as either a mentor or mentee, please fill out the appropriate form linked below. You will be notified once you have been matched.

If you have questions about the program or any feedback on the sign-up forms, contact National Database Coordinator Adelaide Dolan.

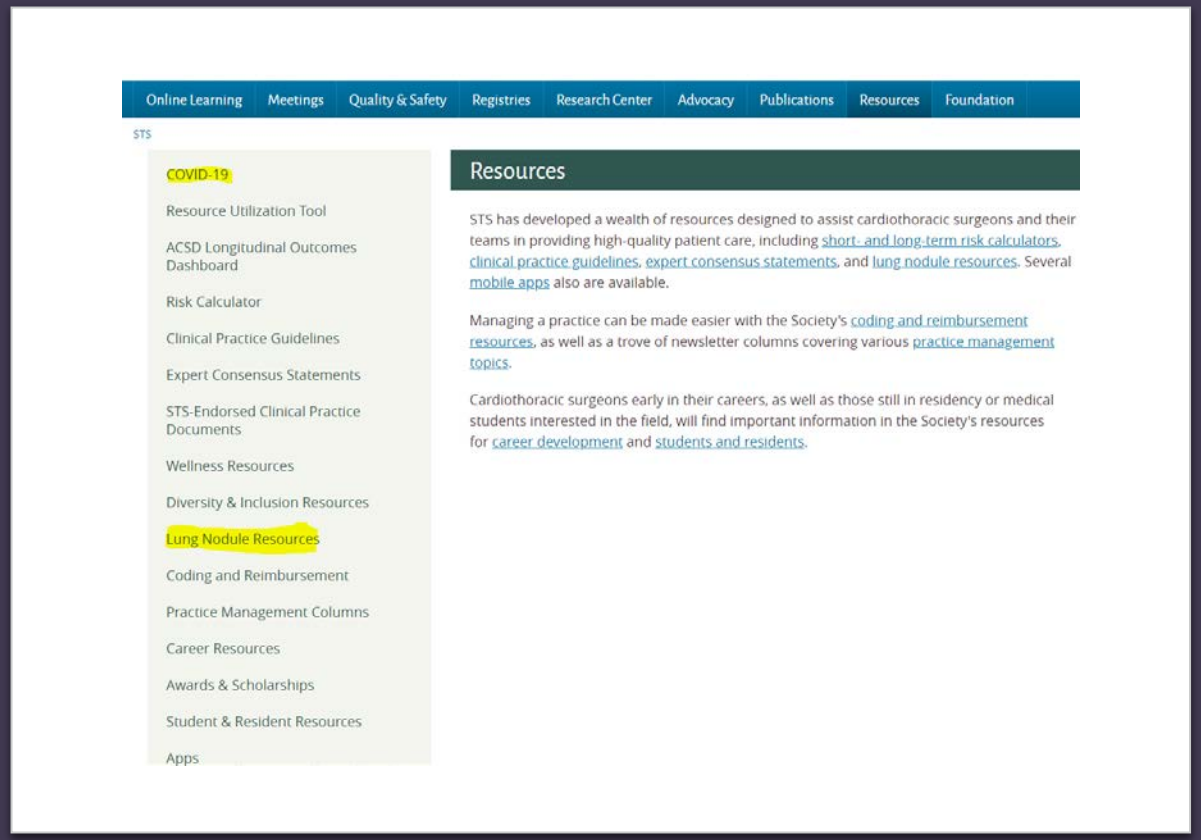
Note: The opinions and advice provided through this mentorship program are those of its individual participants and do not necessarily reflect the views of The Society of Thoracic Surgeons.

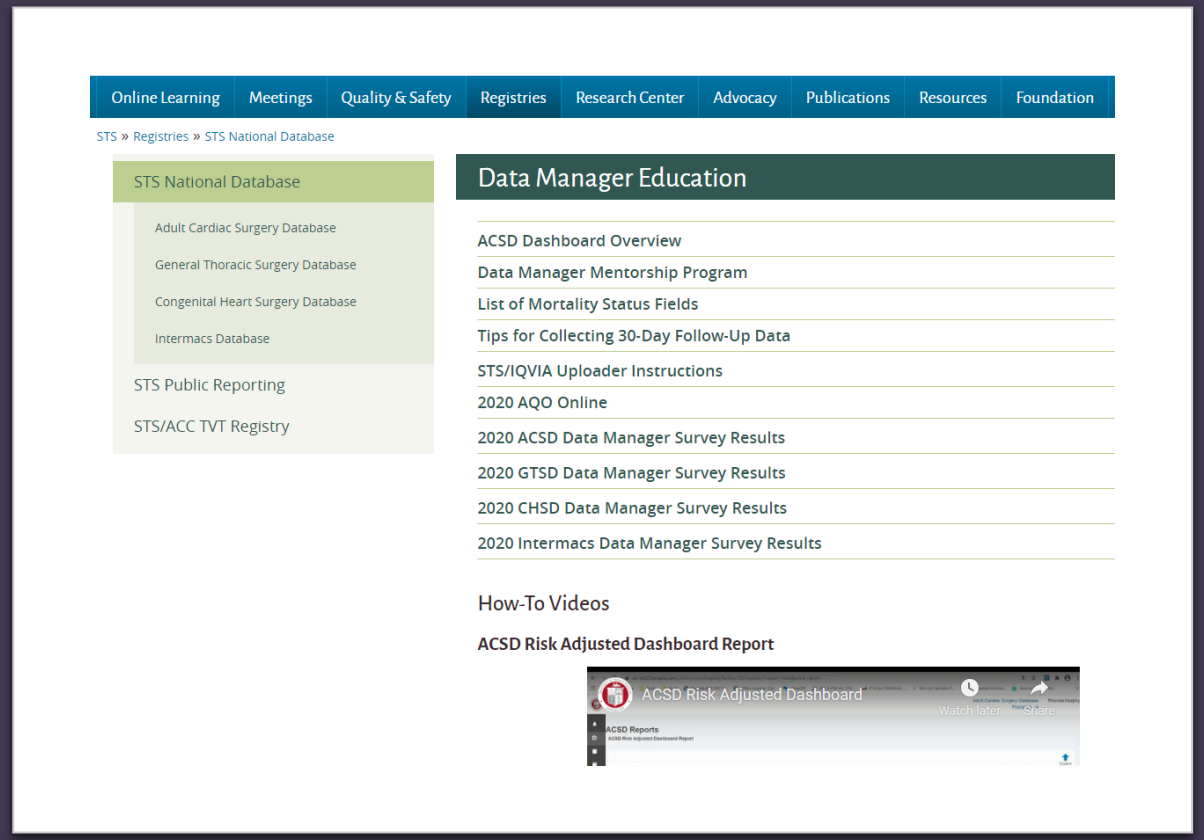
Apply to be a Mentor | Apply to be a Mentee

Database News Newsletter



- The Database News newsletter is dedicated to the STS National Database
- Contains information on data submission deadlines, meetings, webinars, audits and public reporting
- The STS Newsletter is available on the STS Publications Page (also sent out via email to Data Managers)





Data Manager Education Page

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!

Thank you for joining!

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