Society of Thoracic Surgeons

General Thoracic Surgery Database
New Data Manager Webinar

July 30, 2020

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

Agenda

- Welcome and Introductions
- Introduction to STS and the Databases
- Identify STS Educational Resources
- Intro to Data and Software Specs
- How to read the Data Collection Form (DCF)
- What cases get submitted
- What variables are required for case inclusion into analysis
- Intro to the Training Manual
- Keys to abstracting data
- Building a relationship with your surgeon
- Submitting a clinical question
- Ensuring Clean Data
- Data Submission Deadlines
- Additional STS Resources

This Photo by Unknown Author is licensed under CC BY

Donna McDonald,
Director of Quality

Jane Han
Associate Director, Quality

Carole Krohn
Sr. Clinical Manager,
STS National Databases

Kathryn Hollifield
National DB Manager,
Intermacs

Leigh Ann Jones
National DB Manager,
General Thoracic & Congenital

Derek Steck
Contracts Manager
STS National Databases

Emily Conrad
Sr. Coordinator,
STS National Databases

Adie Dolan
STS National Database
Coordinator

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 health systems to have a QA program used for surgeon recredentialing
  - Threats to reimbursement

Introduction to STS and the Databases

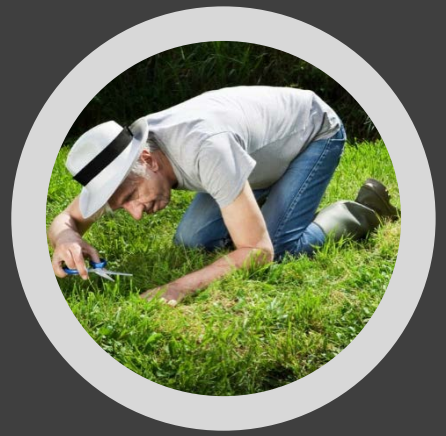
- Accomplishments of the databases
  - Improved Patient Outcomes/Patient Safety
  - Developed Clinical Practice Guidelines
    - Blood Conservation
    - Antibiotic Usage
  - Voluntary Public Reporting
    - Sites who publicly report have better outcomes

Introduction to STS and the Databases

- General Thoracic Surgery Database (GTSD) started in 2002
- Today has more than 860 surgeons at 274 national and international sites
- Contains more than 600,000 records for more than 527,000 patients

The Data Abstractor/Data Manager
(Polling Question)

- 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!

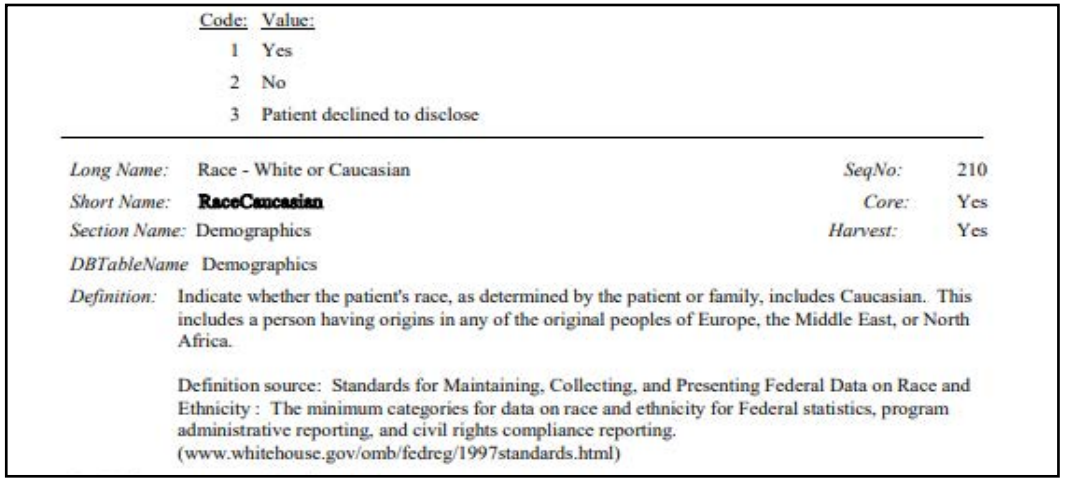


The Data Abstractor/Data Manager Role

- 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

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

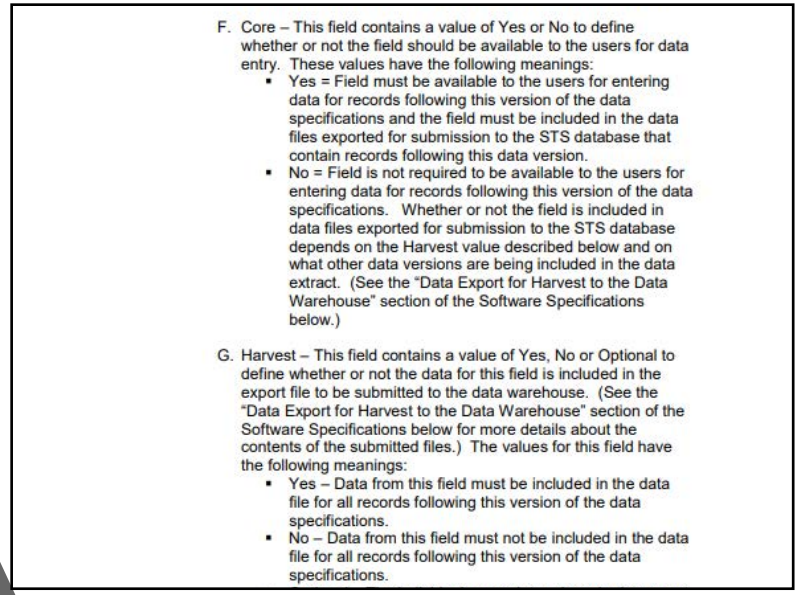
Short Name: **RaceCaucasian** *Core:* Yes

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.

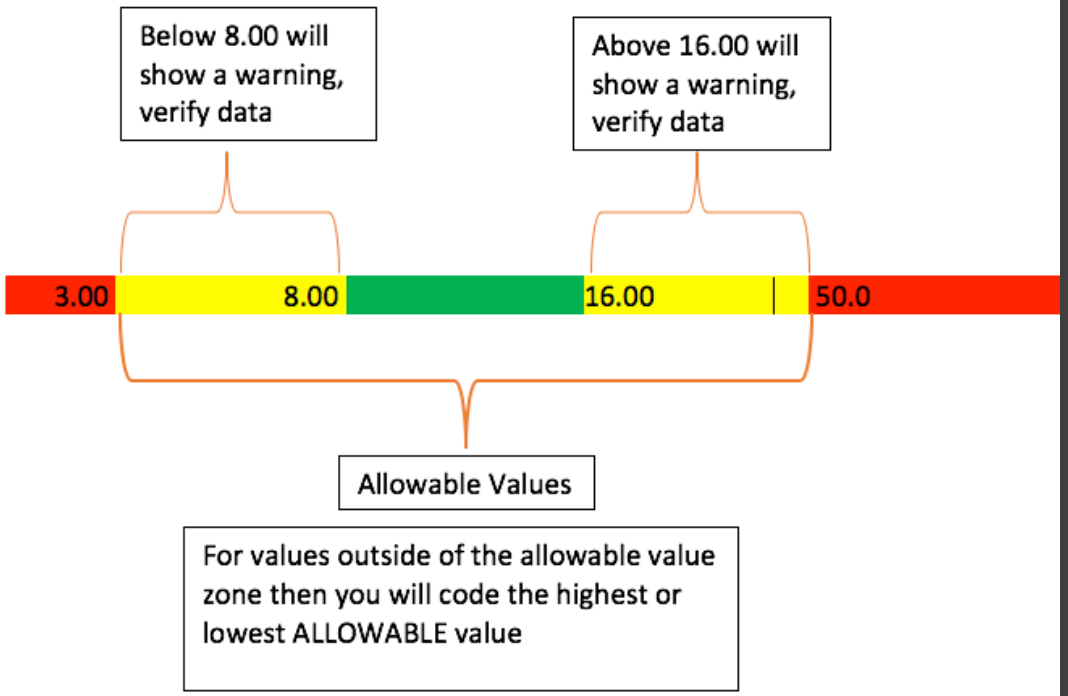
Definition source: Standards for Maintaining, Collecting, and Presenting Federal Data on Race and Ethnicity : The minimum categories for data on race and ethnicity for Federal statistics, program administrative reporting, and civil rights compliance reporting. (www.whitehouse.gov/omb/fedreg/1997standards.html)



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

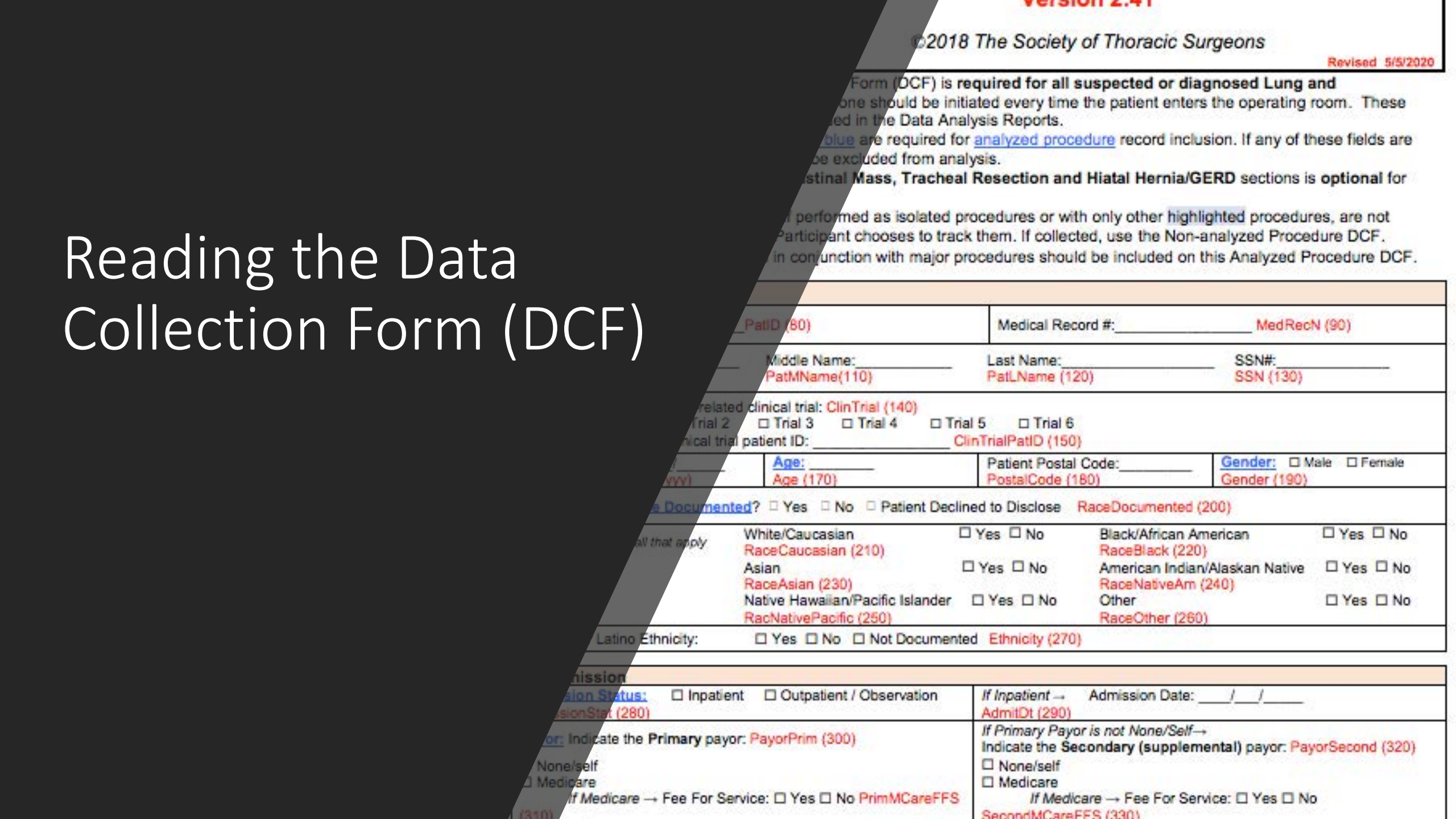
Parent Long Name: Hemoglobin Level Measured

ParentShortName: HemoglobinMeasured

ParentValue: = "Yes"

ParentHarvestCodes: 1

Reading the Data Collection Form (DCF)


Version 2.41

©2018 The Society of Thoracic Surgeons

Revised 5/5/2020

Form (DCF) is **required for all suspected or diagnosed Lung and**
one should be initiated every time the patient enters the operating room. These
ed in the Data Analysis Reports.
blue are required for analyzed procedure record inclusion. If any of these fields are
e excluded from analysis.
stinal **Mass, Tracheal Resection and Hiatal Hernia/GERD** sections is **optional** for

performed as isolated procedures or with only other highlighted procedures, are not
Participant chooses to track them. If collected, use the Non-analyzed Procedure DCF.
in conjunction with major procedures should be included on this Analyzed Procedure DCF.

PatID (80)

Medical Record #:_____ MedRecN (90)

Middle Name:_____ PatMName(110)

Last Name:_____ PatLName (120)

SSN#:_____ SSN (130)

related clinical trial: ClinTrial (140)
Trial 2 ☐ Trial 3 ☐ Trial 4 ☐ Trial 5 ☐ Trial 6
cal trial patient ID: _____ ClinTrialPatID (150)

Age: _____ Age (170)

Patient Postal Code:_____ PostalCode (180)

Gender: ☐ Male ☐ Female Gender (190)

Documented? ☐ Yes ☐ No ☐ Patient Declined to Disclose RaceDocumented (200)

all that apply

White/Caucasian ☐ Yes ☐ No RaceCaucasian (210)

Black/African American ☐ Yes ☐ No RaceBlack (220)

Asian ☐ Yes ☐ No RaceAsian (230)

American Indian/Alaskan Native ☐ Yes ☐ No RaceNativeAm (240)

Native Hawaiian/Pacific Islander ☐ Yes ☐ No RacNativePacific (250)

Other ☐ Yes ☐ No RaceOther (260)

Latino Ethnicity: ☐ Yes ☐ No ☐ Not Documented Ethnicity (270)

mission

ion Status: ☐ Inpatient ☐ Outpatient / Observation
sionStat (280)

If Inpatient → Admission Date: ____/___/_____
AdmitDt (290)

or: Indicate the **Primary** payor: PayorPrim (300)

None/self
Medicare
If Medicare → Fee For Service: ☐ Yes ☐ No PrimMCareFFS

If Primary Payor is not None/Self→
Indicate the **Secondary (supplemental)** payor: PayorSecond (320)
☐ None/self
☐ Medicare
If Medicare → Fee For Service: ☐ Yes ☐ No
SecondMCareFFS (330)

- An Analyzed Procedure Data Collection Form (DCF) is **required for all** [redacted] **diagnosed Lung and Esophageal Cancer Resections** and one should be initiated every time the patient enters the operating room. These cases are risk adjusted and are included in the Data Analysis Reports.
- Fields that appear underlined and in blue are required for analyzed procedure record inclusion. If any of these fields are missing data, the entire record will be excluded from analysis.
- Completion of the **Thymus/Mediastinal Mass, Tracheal Resection and Hiatal Hernia/GERD** sections is **optional** for analyzed procedures.
- Procedures highlighted below, if performed as isolated procedures or with only other highlighted procedures, are not collected unless the Surgeon Participant chooses to track them. If collected, use the Non-analyzed Procedure DCF.
- Highlighted procedures done in conjunction with major procedures should be included on this Analyzed Procedure DCF.

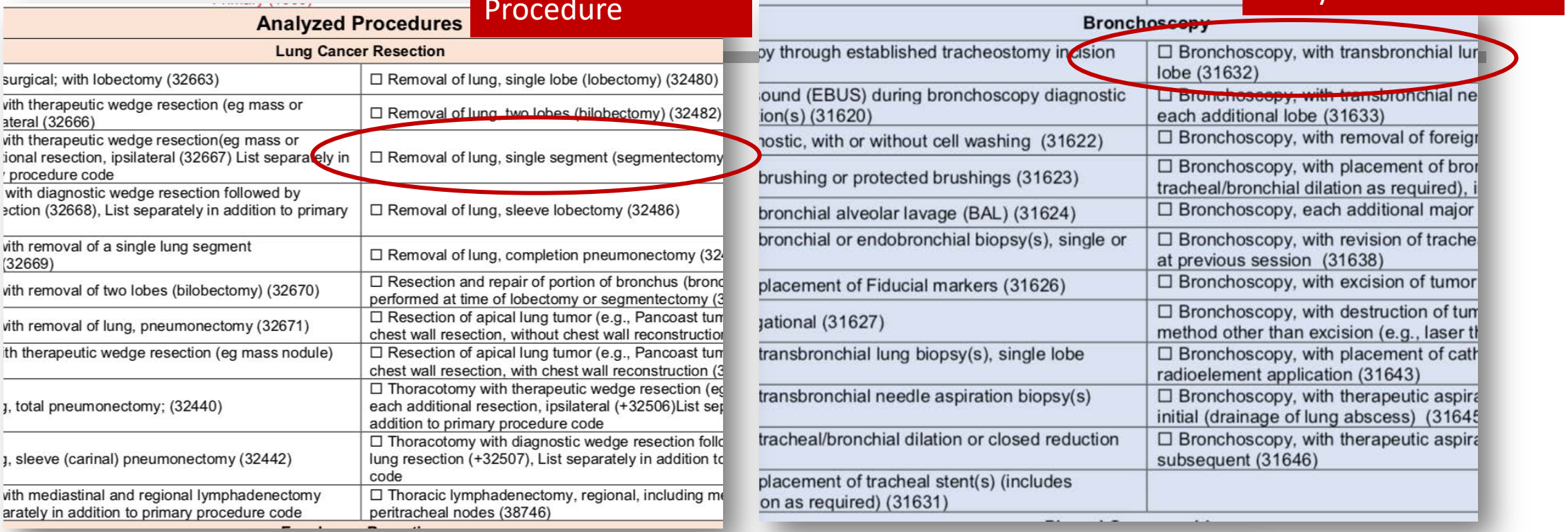
Submitting Cases

- Analyzed (Required)
  - Confirmed Lung Cancer Resections
  - Confirmed Esophageal Cancer Resections
  - Risk Adjusted
  - Not all analyzed cases are risk adjusted
    - Lung and Esophageal Cases are Risk Adjusted
    - Other Analyzed Cases are not Risk Adjusted (i.e. Hiatal Hernia, Thymectomy, Mediastinal Mass)
- Non-Analyzed Procedures (Not Required)
  - Other Lung or Esophagus Cases
  - Optional Procedures
    - Thymus/Mediastinal Mass/Myasthenia Gravis
    - Tracheal Resection
    - Hiatal Hernia/GERD
- Concomitant Procedures
  - If a procedure considered ‘non-analyzed’ or ‘optional’ is done in at the same time as an ‘analyzed’ procedure, then it needs to be included on the same DCF

Submitting Cases

Primary/Analyzed Procedure

Concomitant/Non-Analyzed Procedure



Analyzed Procedures

Lung Cancer Resection	
surgical; with lobectomy (32663)	☐ Removal of lung, single lobe (lobectomy) (32480)
with therapeutic wedge resection (eg mass or ateral (32666)	☐ Removal of lung, two lobes (bilobectomy) (32482)
with therapeutic wedge resection(eg mass or ional resection, ipsilateral (32667) List separately in procedure code	☐ Removal of lung, single segment (segmentectomy
with diagnostic wedge resection followed by ection (32668), List separately in addition to primary	☐ Removal of lung, sleeve lobectomy (32486)
with removal of a single lung segment (32669)	☐ Removal of lung, completion pneumonectomy (32
with removal of two lobes (bilobectomy) (32670)	☐ Resection and repair of portion of bronchus (bronc performed at time of lobectomy or segmentectomy (3
with removal of lung, pneumonectomy (32671)	☐ Resection of apical lung tumor (e.g., Pancoast tum chest wall resection, without chest wall reconstructio
ith therapeutic wedge resection (eg mass nodule)	☐ Resection of apical lung tumor (e.g., Pancoast tum chest wall resection, with chest wall reconstruction (3
, total pneumonectomy; (32440)	☐ Thoracotomy with therapeutic wedge resection (eg each additional resection, ipsilateral (+32506)List sep addition to primary procedure code
, sleeve (carinal) pneumonectomy (32442)	☐ Thoracotomy with diagnostic wedge resection follo lung resection (+32507), List separately in addition to code
with mediastinal and regional lymphadenectomy arately in addition to primary procedure code	☐ Thoracic lymphadenectomy, regional, including me peritracheal nodes (38746)

Bronchoscopy

by through established tracheostomy incision	☐ Bronchoscopy, with transbronchial lun lobe (31632)
ound (EBUS) during bronchoscopy diagnostic ion(s) (31620)	☐ Bronchoscopy, with transbronchial ne each additional lobe (31633)
nostic, with or without cell washing (31622)	☐ Bronchoscopy, with removal of foreig
brushing or protected brushings (31623)	☐ Bronchoscopy, with placement of bro tracheal/bronchial dilation as required), i
bronchial alveolar lavage (BAL) (31624)	☐ Bronchoscopy, each additional major
bronchial or endobronchial biopsy(s), single or	☐ Bronchoscopy, with revision of trache at previous session (31638)
placement of Fiducial markers (31626)	☐ Bronchoscopy, with excision of tumor
gational (31627)	☐ Bronchoscopy, with destruction of tum method other than excision (e.g., laser th
transbronchial lung biopsy(s), single lobe	☐ Bronchoscopy, with placement of cath radioelement application (31643)
transbronchial needle aspiration biopsy(s)	☐ Bronchoscopy, with therapeutic aspira initial (drainage of lung abscess) (31645
tracheal/bronchial dilation or closed reduction	☐ Bronchoscopy, with therapeutic aspira subsequent (31646)
placement of tracheal stent(s) (includes on as required) (31631)	

Surgical Procedure for Lung Cancer [redacted] Lung Cancer? LungCancer (1580)	☐ Yes ☐ No	*if yes, complete Section F*
Surgical Procedure for Esophageal Cancer? EsophCancer (1590)	☐ Yes ☐ No	*if yes, complete Section G*
Are you collecting data for Thymus / Mediastinal Mass Resection? ThymusMediastinalData (1600)	☐ Yes ☐ No	*if yes, complete Section H*
Are you collecting data for Tracheal Resection? TrachealData (1610)	☐ Yes ☐ No	*if yes, complete Section I*
Are you collecting data for Hiatal Hernia / GERD? HiatalHerniaData (1620)	☐ Yes ☐ No	*if yes, complete Section J*

If confirmed for primary Lung Cancer

Submitting Cases

Analyzed Procedures

Lung Cancer Resection

surgical; with lobectomy (32663)	☐ Removal of lung, single lobe (lobectomy) (32480)
with therapeutic wedge resection (eg mass or ateral (32666)	☐ Removal of lung, two lobes (bilobectomy) (32482)
with therapeutic wedge resection(eg mass or ional resection, ipsilateral (32667) List separately in procedure code	☐ Removal of lung, single segment (segmentectomy
with diagnostic wedge resection followed by ection (32668), List separately in addition to primary	☐ Removal of lung, sleeve lobectomy (32486)
with removal of a single lung segment (32669)	☐ Removal of lung, completion pneumonectomy (32
with removal of two lobes (bilobectomy) (32670)	☐ Resection and repair of portion of bronchus (bronc performed at time of lobectomy or segmentectomy (3
with removal of lung, pneumonectomy (32671)	☐ Resection of apical lung tumor (e.g., Pancoast tum chest wall resection, without chest wall reconstructio
th therapeutic wedge resection (eg mass nodule)	☐ Resection of apical lung tumor (e.g., Pancoast tum chest wall resection, with chest wall reconstruction (3
, total pneumonectomy; (32440)	☐ Thoracotomy with therapeutic wedge resection (eg each additional resection, ipsilateral (+32506)List sep addition to primary procedure code
, sleeve (carinal) pneumonectomy (32442)	☐ Thoracotomy with diagnostic wedge resection follo lung resection (+32507), List separately in addition to code
with mediastinal and regional lymphadenectomy arately in addition to primary procedure code	☐ Thoracic lymphadenectomy, regional, including me peritracheal nodes (38746)

Bronchoscopy

py through established tracheostomy incision	☐ Bronchoscopy, lobe (31632)
ound (EBUS) during bronchoscopy diagnostic ion(s) (31620)	☐ Bronchoscopy, each additional lob
nostic, with or without cell washing (31622)	☐ Bronchoscopy,
brushing or protected brushings (31623)	☐ Bronchoscopy, tracheal/bronchial
bronchial alveolar lavage (BAL) (31624)	☐ Bronchoscopy,
bronchial or endobronchial biopsy(s), single or	☐ Bronchoscopy, with revision of trache at previous session (31638)
placement of Fiducial markers (31626)	☐ Bronchoscopy, with excision of tumor
gational (31627)	☐ Bronchoscopy, with destruction of tum method other than excision (e.g., laser th
transbronchial lung biopsy(s), single lobe	☐ Bronchoscopy, with placement of cath radioelement application (31643)
transbronchial needle aspiration biopsy(s)	☐ Bronchoscopy, with therapeutic aspira initial (drainage of lung abscess) (3164
tracheal/bronchial dilation or closed reduction	☐ Bronchoscopy, with therapeutic aspira subsequent (31646)
placement of tracheal stent(s) (includes on as required) (31631)	

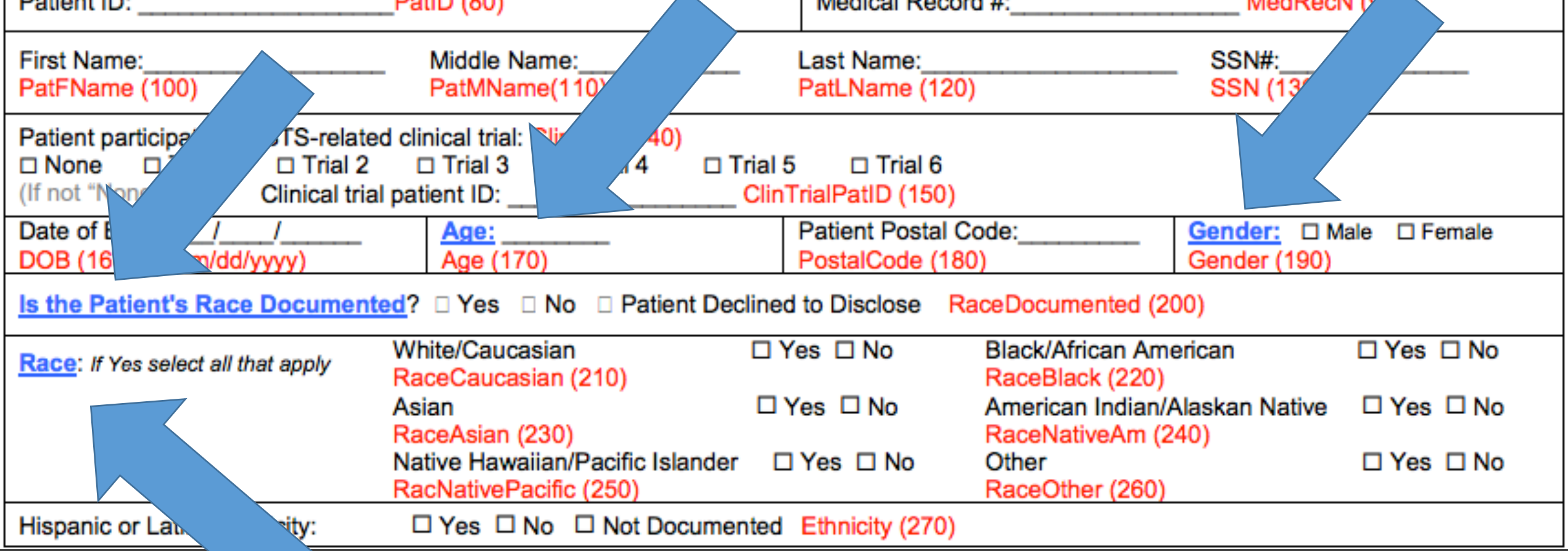
Non-Analyzed Procedure – if this is all that was performed, you may enter these cases, but they are not required and will not be analyzed

Surgical Procedure for Lung Cancer or Suspected Lung Cancer? LungCancer (1580)	☐ Yes ☐ No	*if yes, complete Section F*
Surgical Procedure for Esophageal Cancer? EsophCancer (1590)	☐ Yes ☐ No	*if yes, complete Section G*
Are you collecting data for Thymus / Mediastinal Mass Resection? ThymusMediastinalData (1600)	☐ Yes ☐ No	*if yes, complete Section H*
Are you collecting data for Tracheal Resection? TrachealData (1610)	☐ Yes ☐ No	*if yes, complete Section I*
Are you collecting data for Hiatal Hernia / GERD? HiatalHerniaData (1620)	☐ Yes ☐ No	*if yes, complete Section J*

If no analyzed procedure with positive primary Lung Cancer is performed then answer 'NO' to LungCancer (seq 1580)

Submitting Cases

- You must have a positive primary cancer finding and an analyzed procedure performed to answer 'YES' to either LungCancer – seq 1580 or EsophCancer – seq 1590
- For LungCancer
  - Primary means it is not a metastatic cancer in the lung for LungCancer – seq 1580
  - LungCancer – Seq 1580 – Code Yes
    - Example: Primary lung cancer with mets to other organs
  - LungCancer – Seq 1590 – Code No
    - Example: Primary colon cancer with mets to lung
- For EsophCancer
  - Primary means it is not a metastatic cancer in the esophagus for EsophCancer - seq 1590
  - EsophCancer – Seq 1590 – Code Yes
    - Example: Primary esophageal cancer with mets to other organs
  - EsophCancer – Seq 1590 – Code No
    - Example: Primary stomach cancer with mets to esophagus

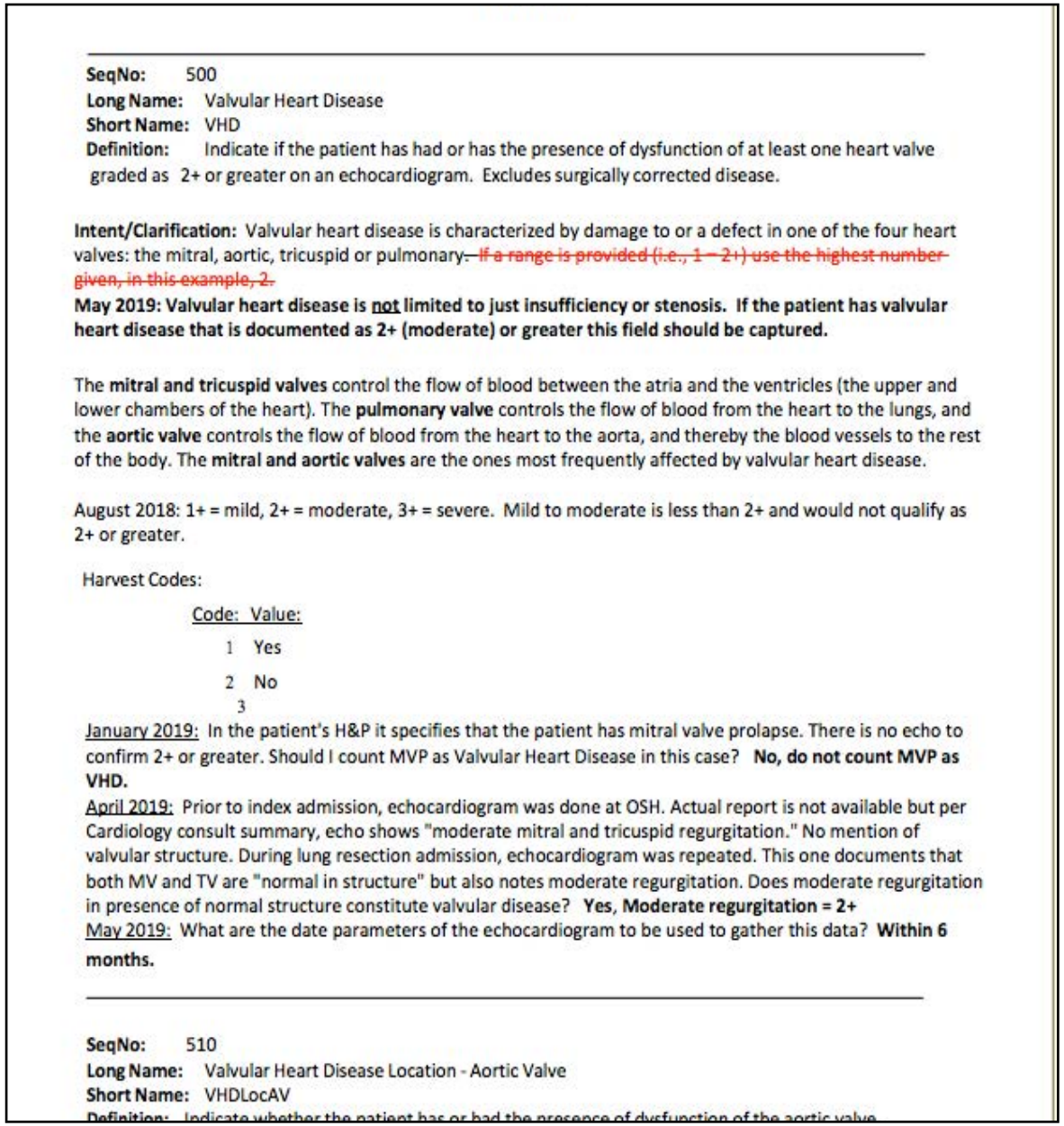


Required Variables for Case Inclusion

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

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.

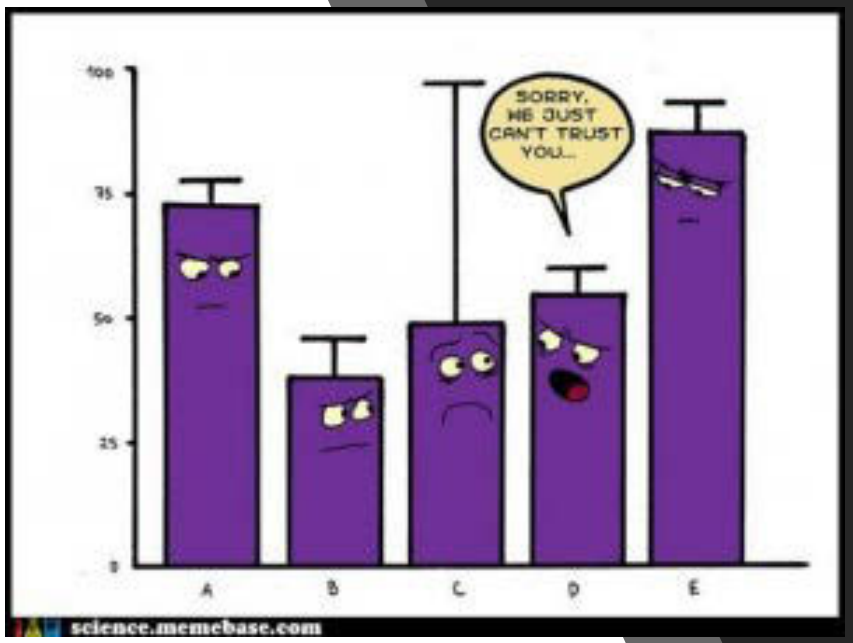
Harvest Codes:

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

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

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

Clean Data

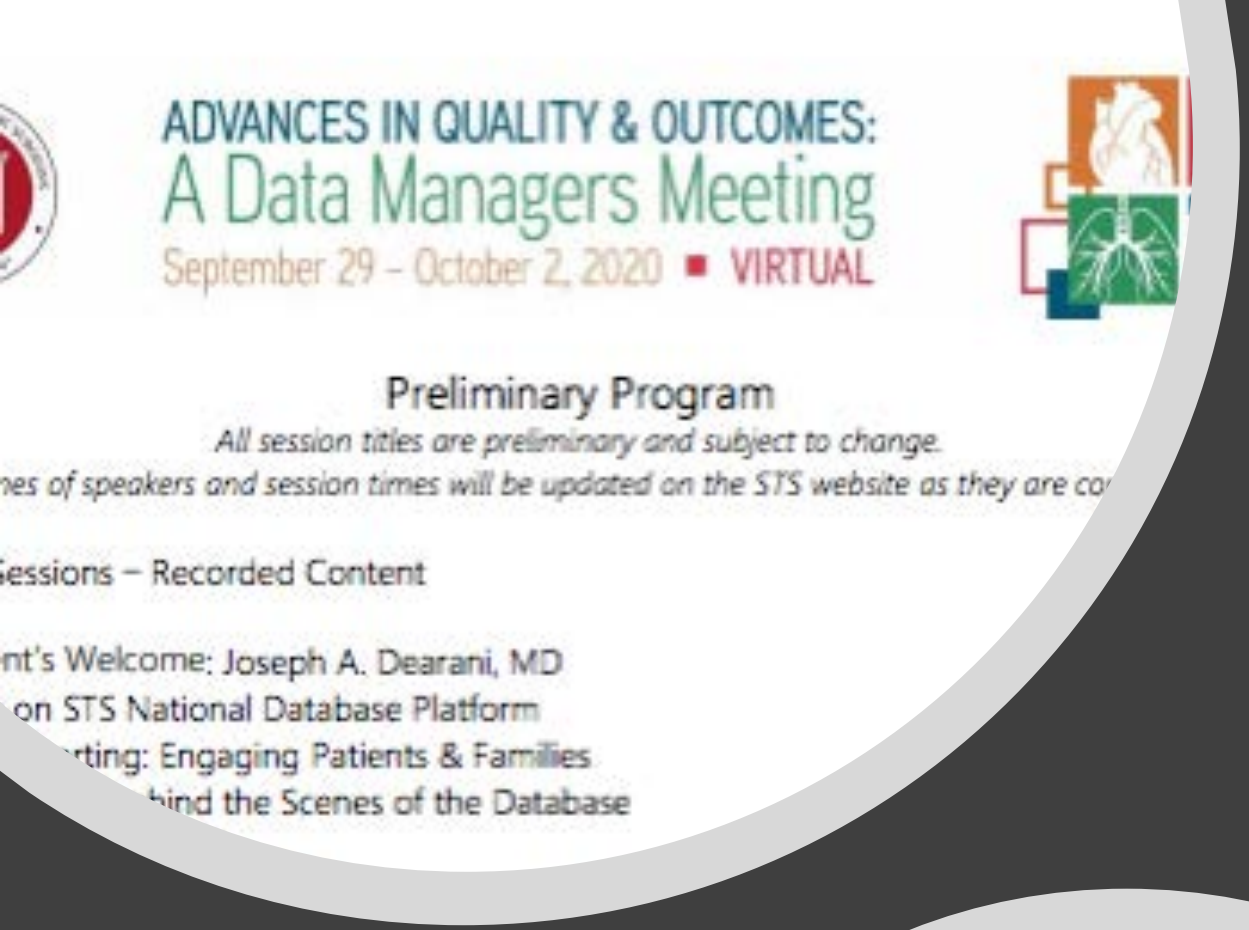
- Your vendor will allow you to run internal QA checks on your data prior to submission
- IQVIA, the data warehouse provides you with
  - Data Quality Report
  - Harvest Summary Report
  - Critical Error Report
- Next upgrade will have ‘on-save’ consistency checks built into your vendors software that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

Data Submission Deadlines

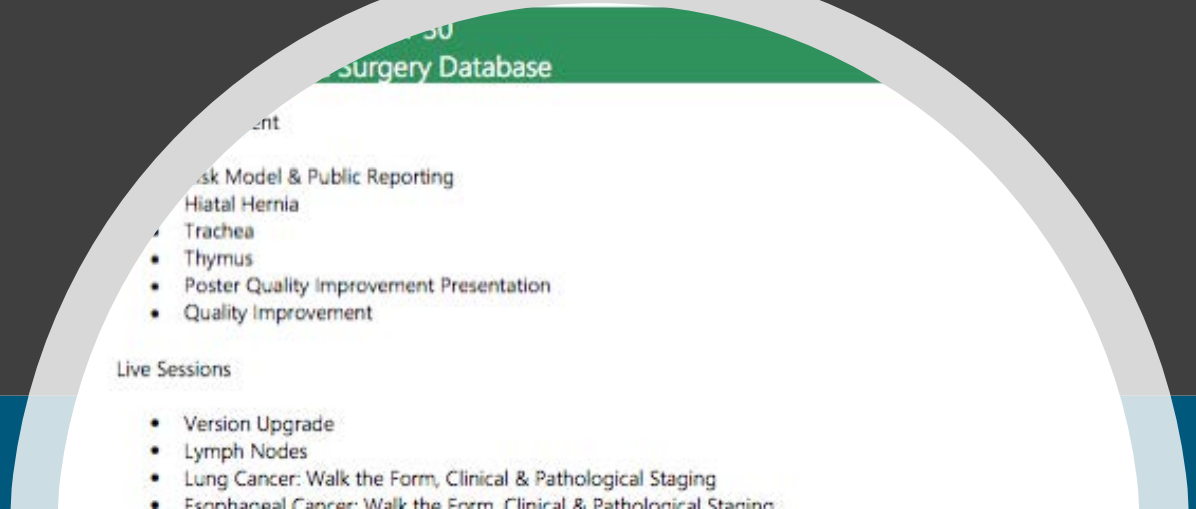
- Harvest submission deadlines occur twice a year for General Thoracic
  - Spring and Fall
    - Each report will be a star-rating
  - Voluntary Public Reporting Result are based on the Spring Harvest
    - Lung Cancer and Esophageal Cancer Cases

Additional STS Resources

- Monthly Didactic Webinar
- Monthly User Group Calls
- Quarterly New Data Manager Webinars
- Advances in Quality and Outcomes: A Data Managers Meeting
  - This year we will be reviewing the 5.21 upgrade
  - Virtual with live and pre-recorded content
  - CEU's available
- New Data Managers can contact Adie Dolan for a welcome packet
  - Adolan@sts.org



Advances in Quality and Outcomes: A Data Mangers Meeting (AQO)



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!

Contacts:
Leigh Ann Jones – Ljones@sts.org

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