Society of Thoracic Surgeons

Congenital Heart Surgery Database Monthly Webinar

March 15, 2022
CHSD Monthly Webinar

- Welcome and Introductions
- STS Update
- STS Education (Chasity Wellnitz, CHSD Consultant)
- IQVIA Update
- User Feedback
  - Include Ticket Number/Case Number
STS Updates

- **March Training Manual available on STS website**
- **2021 Harvest Update**
  - Analysis results expected to be available mid-March
  - Coming Soon! Official STS Notification to be sent when available
- **Spring 2022 Harvest Update**
  - Official STS Communication sent Friday, February 18th

<table>
<thead>
<tr>
<th>CHSD</th>
<th>Harvest</th>
<th>Close</th>
<th>Opt-Out</th>
<th>Includes procedures performed through</th>
<th>Report Posting</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spring 2022</td>
<td>March 11</td>
<td>March 15</td>
<td>April 8</td>
<td>March 15 - April 12</td>
<td>December 31, 2021</td>
<td>Summer 2022</td>
</tr>
<tr>
<td>Fall 2022</td>
<td>September 16</td>
<td>September 20</td>
<td></td>
<td>June 30, 2022</td>
<td>Winter 2022</td>
<td></td>
</tr>
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</table>
STS Updates

- 6.22 Data Version Upgrade
  - Data Specs/Software specs to vendors
  - STS Vendor call held last week
  - Go Live date is under review – to be discussed at March TF Call
  - Upgrade webinars continue
  - Next webinar scheduled for Mar 22nd @ 12pmCT
    - Other Cardiac Procedures into Aorta

- Surgeon Upgrade Webinar
  - Thursday, March 17, 2022 @ 7pmET/6pmCT
  - Moderated by Drs. Jennifer Nelson and Ram Subramanyan
Chasity Wellnitz
CHSD Consultant/Core Group
Phoenix Children’s Hospital
It’s all about a data harvest...

Discussion Topics

- Completion steps
  - Missing data
  - Data Validation
- Tips for success
Steps to Harvest

1. Complete local data set
2. Upload to IQVIA

Spring 2022 Analytic Window:
Surgical dates between 01/01/18 and 12/31/21
Steps to Harvest

1. Complete local data set
   - Clean up / validate data set

2. Upload to IQVIA
   - Clean up / validate data set
What is Data Clean up?

- Identify missing data
- Validate for data accuracy

Inaccurate data is useless data
Identify Missing Data

Operational Reports -

Missing Variable Report

↓
Enter date range

↓
Select all operations or Index Only

Missing Variable Report
This report identifies important field-specific data quality issues that affect the complete surgery year, short name and field name are shown for each issue to help you target all in reports or risk-adjustment models.

Primary Procedure Mismatch and Mortality Eligibility Summary Report
The Primary Procedure Mismatch report will identify operation records where the primary Warehouse. The Case Eligibility for Inclusion in Mortality Analysis report will provide us

Harvest Summary Report
This report will allow users to see the current status of system validations on all active

CHSD Participant Dashboard Report
This participant dashboard report will display NON-ANALYZED data results for the con

CHSD Risk Adjusted Dashboard Report
The electronic CHSD Risk Adjusted Report includes analyzed harvest data results in pl adjusted performance against the STS overall for the same time period.
Missing Data Continued

Use the filters to identify missing fields from specific analysis tables

Prioritize data that will exclude the case from analysis
- mortality analysis
- case mix models
- benchmark ops
- lesion specific ops
Missing Data Continued

Identify patients with missing variables for mortality analysis

↓

Employ methods for completing fields

↓

Go back to software to update & reupload file to IQVIA
Missing Data Continued

Operational Reports -

Mortality Eligibility Summary Report

 ↓

Enter date range

 ↓

Use filters to identify ineligible cases
Mortality Eligibility Summary Report

Identifies missing thresholds for participant exclusion

Op Type 1 & 2 Case Eligibility Summary

<table>
<thead>
<tr>
<th>Surgery Year</th>
<th>Surgical Date Range</th>
<th>Total Number of Records</th>
<th>Number of Ineligible Cases</th>
<th>% Missing or “Unknown”</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>02 Jan 2018 - 27 Dec 2018</td>
<td>429</td>
<td>1</td>
<td>0.23</td>
</tr>
<tr>
<td>2019</td>
<td>02 Jan 2019 - 31 Dec 2019</td>
<td>395</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>2020</td>
<td>07 Jan 2020 - 31 Dec 2020</td>
<td>454</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>2021</td>
<td>04 Jan 2021 - 30 Jun 2021</td>
<td>241</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>Grand total</td>
<td></td>
<td>1519</td>
<td>1</td>
<td>0.07</td>
</tr>
</tbody>
</table>

Op Type 1 & 2 Case Eligibility Record Details

<table>
<thead>
<tr>
<th>Data Value</th>
<th>Surgery Year</th>
<th>Operation</th>
<th>Patient</th>
<th>Ineligible or Eligible</th>
<th>Hospital Discharge Status</th>
<th>Database Discharge Status</th>
<th>30-day Status</th>
<th>Operation Type</th>
<th>Date of Admission</th>
<th>Access Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.3</td>
<td>2018</td>
<td>V34</td>
<td>V34</td>
<td>Ineligible</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

Reports identify missing only – does not apply logic applied in the analysis (i.e., analysis exclusions)
# Fields Required for Mortality Analysis

- Date of admission
- Primary procedure
- Date of surgery
- Mortality status hospital DC
- Operation type
- Mortality status 30 days
- Primary diagnosis
- Mortality status database DC

If any are missing, the case is excluded from all mortality analyses. *And* if >2% missing per year within the participant date file, the participant is excluded.

**Source:** IQVIA Library - CHSD Analyses Overview. Determination of Case Eligibility for Inclusion in Mortality Analysis.
**Fields Required for Risk Model Analysis**

Mortality analysis fields plus the following:

<table>
<thead>
<tr>
<th>Preoperative factors</th>
<th># prior cardiothoracic operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chromosomal abnormalities</td>
<td>Prematurity (neonates/infants)</td>
</tr>
<tr>
<td>Syndromes</td>
<td>Age (date of birth)*</td>
</tr>
<tr>
<td>Noncardiac congenital anatomic abnormalities</td>
<td>Sex (male/female)*</td>
</tr>
</tbody>
</table>

If >10% missing, the participant is excluded from model analysis

* If missing, case is excluded

**Source:**
IQVIA Library - CHSD Analyses Overview
CHSD Risk Model Specifications / Inclusion Criteria
How do I maintain organization and minimize rework?

- Keep a working report or spreadsheet to organize
- Note: when you update data, need to re-upload to IQVIA to see changes; data updates will impact multiple reports

What if I cannot find the information to complete the fields?

- Missing thresholds will be applied upon analysis
- Cases or entire data set may be excluded from analysis
Tools for Identifying Data Accuracy

**Missing Variable Report**
This report identifies important field-specific data quality issues that affect the complete surgery year; short name and field name are shown for each issue to help you target actions in reports or risk-adjustment models.

**Primary Procedure Mismatch and Mortality Eligibility Summary Report**
The Primary Procedure Mismatch report will identify operation records where the primary procedure mismatches in the Warehouse. The Case Eligibility for Inclusion in Mortality Analysis report will provide us with the necessary data to assess potential mismatches.

**Harvest Summary Report**
This report will allow users to see the current status of system validations on all active cases.

**CHSD Participant Dashboard Report**
This participant dashboard report will display NON-ANALYZED data results for the current month.

**CHSD Risk Adjusted Dashboard Report**
The electronic CHSD Risk Adjusted Report includes analyzed harvest data results in providing adjusted performance against the STS overall for the same time period.
Primary Procedure Mismatch Report

- Identifies if your entered Primary Procedure is following the STS rules for identifying the Primary Procedure
- Recommended to update your procedures to match the report
- Rules added overtime so Primary Procedure determination may change overtime (i.e., STAT score update, 3 new rules)
Primary Procedure Mismatch Report

### Primary Procedure Mismatch Summary

<table>
<thead>
<tr>
<th>Surgery Year</th>
<th>Surgical Date Range</th>
<th>Total Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>2019</td>
<td>23 Oct 2019 - 12 Dec 2019</td>
<td>1</td>
</tr>
<tr>
<td>2020</td>
<td>22 Sep 2020 - 22 Sep 2020</td>
<td>1</td>
</tr>
</tbody>
</table>

### Primary Procedure Mismatch Record Details

<table>
<thead>
<tr>
<th>Data Version</th>
<th>Surgery Year</th>
<th>Operation Code</th>
<th>Patient ID</th>
<th>Participant Primary</th>
<th>Participant Primary Procedure</th>
<th>STS Primary</th>
<th>STS Primary Procedure Description</th>
<th>Access Case</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.41</td>
<td>2019</td>
<td>V34...</td>
<td>V3...</td>
<td>110</td>
<td>VSD repair, Patch</td>
<td>150</td>
<td>Ventricular septal fenestration</td>
<td><a href="https://sts..">https://sts..</a></td>
</tr>
<tr>
<td>3.41</td>
<td>2020</td>
<td>V34...</td>
<td>V3...</td>
<td>1150</td>
<td>Rastelli</td>
<td>140</td>
<td>VSD creation/enlargement</td>
<td><a href="https://sts..">https://sts..</a></td>
</tr>
</tbody>
</table>
Harvest Summary Report

- Identifies data file Errors and Warnings
- Includes missing data
CHSD Participant Dashboard Report

Useful for data validation
- Can filter by index operation (not just op type 1 & 2)

Select index or all operations
Data Validation by Report

Admin/Demographics Report
  • Identify Sex at birth = Ambiguous
  • Number of cases submitted

Discharge/Readmission
  • Mortality review

Tip:
Run for all and index operations when validating data
Validating Mortalities

Fields used to determine mortality:

- Mortality status at hospital discharge
- Mortality status at database discharge
- Mortality status at 30 days after the last cardiovascular surgical operation of the episode of care

Source: IQVIA Library - CHSD Analyses Overview Fields Used for Mortality Calculation
Validating Mortalities

<table>
<thead>
<tr>
<th>DISCHARGE/READMISSION</th>
<th>NUMBER OF CASES</th>
<th>NUMBER OF CASES</th>
</tr>
</thead>
<tbody>
<tr>
<td>MORTALITY STATUS AT HOSPITAL DISCHARGE:</td>
<td>ALIVE</td>
<td>DEAD</td>
</tr>
<tr>
<td>MORTALITY STATUS AT DATABASE DISCHARGE</td>
<td>ALIVE</td>
<td>DEAD</td>
</tr>
</tbody>
</table>

| STATUS AT 30 DAYS AFTER SURGERY: | ALIVE | DEAD | UNKNOWN | MISSING |

- Easiest to export tables into Excel
- Review each case marked as dead
Tips for Successful Harvest

- Do not wait until end of harvest to clean/validate data
- Consistent/organized approach
- Re-validate after changing local data and uploading data
The below is currently under release review by the IQVIA development team. Release Timing: TBD

CHSD Primary Procedure Report

- **STS-7662** – Report update will be implemented to update the priority of transplants when done in conjunction with Rule 1 Exception codes
- **STS-7666** – Report update will be implemented to update to include a new rule to address PVR procedures.
- **STS-7667** – Report will be updated to include new STAT codes on the report
- **STS-7678** – Report will be updated to consider VSD repair patch (110) as the primary when the report identifies a tie with the PFO, Primary closure (100) when done in conjunction with the Valvuloplasty, Tricuspid (460)
The below is currently under release review by the IQVIA development team.
Release Timing: TBD

CHSD Risk Adjusted Report

- **STS-7589** – Updates will be applied to Table 21 to remove results for VSD + Aortic Arch Hypoplasia and VSD + Coarctation of Aorta (1275 and 1285)
The full list of CHSD known issues are posted to the Library. Enhancements are still under review and will be updated once the list is finalized.
Please note: Submitted tickets are currently under review and the IQVIA support team will follow up on resolution and/or target release confirmation.

The IQVIA Team is currently reviewing items that will be released in an upcoming release. Those items will be posted to the Notifications section.
Analysis Report Questions

• Please contact IQVIA Support
  • chsdtechsupport@iqvia.com

• STS/DCRI will be looped in as needed when tickets are escalated to Tier 2
# Contact Information

**Leigh Ann Jones, STS National Database Manager, Congenital and General Thoracic**

- Ljones@sts.org
- 312-202-5822

**Database Operational Questions**

- STSDB@sts.org
Upcoming CHSD Webinars

**Monthly Webinar**
- March 15 @ 12pm CT

**Upgrade Webinars**
- February 22 @ 12pm CT
- March 1 @ 12pm CT
- March 8 @ 12pm CT
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!