STS National Database[™]

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Society of Thoracic Surgeons

Congenital Heart Surgery Database Monthly Webinar

August 16, 2022

CHSD Monthly Webinar

- Welcome and Introductions
- STS Update
- AQO 2022
- Education (Chasity Wellnitz)
- User Feedback
 - Include Ticket Number/Case Number



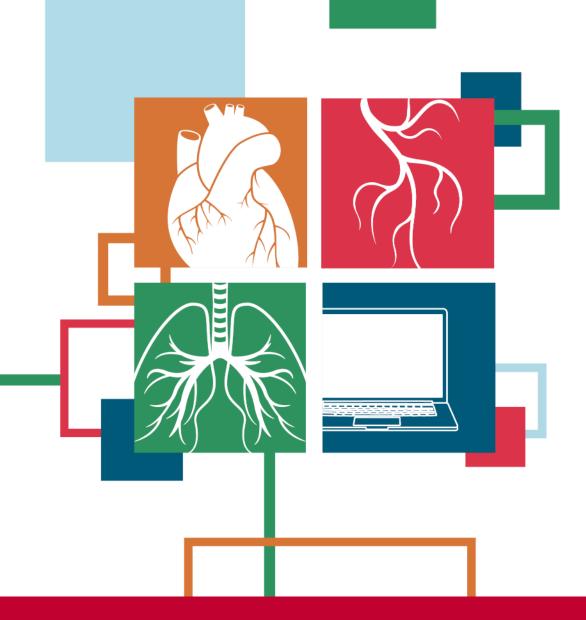
STS Updates

- August Training Manual posted
- 2022 Harvest Update
 - Task Force decision to conduct only the Fall 2022 Harvest (OR dates up through June 30, 2022)
 - Harvest close date is scheduled for September 16 @ 11:59pm ET
 - Opt Out by September 20th
 - Updated STAT Scores will be implemented in Analysis
 - Reporting period of 7/1/2018 6/30/2022
- Public Reporting Update
 - Website to be updated by the end of August
 - Will utilize results from the Fall 2021 Harvest Analysis
 - Questions should be directed to Sydney Clinton (sclinton@sts.org)

• 2022 Audit Update

- 7/15 Email Notification Letters sent (PDFC and Surgeon Rep) to selected sites
- For those selected sites, audit related questions should be directed to CRS





ADVANCES IN QUALITY & OUTCOMES: A Data Managers Meeting October 26-28, 2022 • PROVIDENCE, RHODE ISLAND







ADVANCES IN QUALITY & OUTCOMES: A Data Managers Meeting October 26-28, 2022 = PROVIDENCE, RHODE ISLAND

AQO Registration is Open!

Receive Early Bird Registration Pricing through Friday, August 26.

STS MEMBER	Early Bird (August 26, 2022)	Standard
One Track	\$550	\$650
Two Tracks	\$900	\$1,100
Multi-Day (Three Tracks)	\$1,150	\$1,450
Virtual Pass	\$300	\$300
NON-MEMBER	Early Bird (August 26, 2022)	Standard
	· · · · · · · · · · · · · · · · · · ·	Standard \$750
One Track	(August 26, 2022)	
NON-MEMBER One Track Two Tracks Multi-Day (Three Tracks)	(August 26, 2022) \$650	\$750



Friday, October 28, 2022 – Congenital Session

	In Person	Virtual Pass
 In-person sessions with live Q&A 	Ø	
 On-demand content (available mid-October) 	Ø	Ø
 Recorded archive of in-person sessions (available mid-November) 	\bigotimes	Ø
 Breakfast, lunch, and refreshment breaks 	\bigotimes	
 Personal interactions and networking with peers 	\bigotimes	
 Networking Reception with speakers, vendors, and colleagues 	Ø	
Face-to-face time with exhibitors	\bigotimes	
Complete exhibitor listing	Ø	Ø
 Exhibit Hall giveaways and Passport to Prizes 	\bigotimes	
 AQO Hot Topics Webinar (in January) 	Ø	Ø
 Digital conference materials (PowerPoint presentations, handouts, and case scenarios) 	Ø	Ø
 Opportunity to view and vote on your favorite e-poster 	Ø	Ø
Continuing Education/CEU Credits	\bigotimes	Ø
 Explore the sights and sounds of Providence, Rhode Island 	Q	

al Database



- Educational sessions and social events will take place at the Rhode Island Convention Center (1 Sabin St, Providence, RI 02903).
- A block of rooms have been reserved at the Omni Providence Hotel (1 West Exchange St., Providence, RI 02903). The special AQO group rate of \$259, plus state and local taxes, is guaranteed through **Tuesday, October 4**, or until the group block is sold out.
- <u>Reserve online</u>
- Call 401-598-8000. Be sure to reference "AQO" or "Advances in Quality and Outcomes."



Chasity Wellnitz CHSD Consultant/Core Group Phoenix Children's Hospital

Webinar Discussion Topics

- Education

Norwood source of pulmonary blood flow

Definition Update Fontan, Other procedure

Harvest Tools

Norwood Procedure: Source of pulmonary blood flow coding

Norwood Procedure and Source of Pulmonary Blood Flow

When coding (870) Norwood procedure, the second procedure must be the source of pulmonary blood flow

Procedures:

- 1. (870) Norwood procedure
- 2. Source of pulmonary blood flow
- 3. Other completed procedures

Norwood procedures without a source of pulmonary blood flow will not be analyzed

Sources of Pulmonary Blood Flow

- 1. Shunt, Systemic to pulmonary, Modified BlalockTaussig Shunt (MBTS)
- Shunt, Systemic to pulmonary, Central (from aorta or to main pulmonary artery)
- 3. Shunt, Systemic to pulmonary, Other
- 4. Conduit placement, RV to PA
- 5. Conduit placement, LV to PA
- 6. Conduit placement, Ventricle to aorta

- Bidirectional cavopulmonary anastomosis (BDCPA) (bidirectional Glenn)
- 8. Glenn (unidirectional cavopulmonary anastomosis) (unidirectional Glenn)
- Bilateral bidirectional cavopulmonary anastomosis (BBDCPA) (bilateral bidirectional Glenn)
- 10. HemiFontan

Sources of Pulmonary Blood Flow + Procedure Codes

The source of pulmonary blood flow must come from the following list:

(1590) Shunt, Systemic to pulmonary, Modified BlalockTaussig Shunt (MBTS)

- (1600) Shunt, Systemic to pulmonary, Central (from aorta or to main pulmonary artery)
- (1610) Shunt, Systemic to pulmonary, Other
- (610) Conduit placement, RV to PA
- (620) Conduit placement, LV to PA
- (1774) Conduit placement, Ventricle to aorta

(1670) Bidirectional cavopulmonary anastomosis (BDCPA) (bidirectional Glenn)

- (1680) Glenn (unidirectional cavopulmonary anastomosis) (unidirectional Glenn)
- (1690) Bilateral bidirectional cavopulmonary anastomosis (BBDCPA) (bilateral bidirectional Glenn)

(1700) HemiFontan

Sources of Pulmonary Blood Flow + Long List Terms

- 1. Palliation, Shunt systemic-to-pulmonary, Blalock-Taussig (BTS), (Classic BTS)
- 2. Palliation, Shunt systemic-to-pulmonary, Blalock-Taussig (BTS), (Classic BTS), Left
- 3. Palliation, Shunt systemic-to-pulmonary, Blalock-Taussig (BTS), (Classic BTS), Right
- Palliation, Shunt systemic-to-pulmonary, Blalock-Taussig (BTS), Modified Blalock-Taussig (MBTS) (deLeval shunt) (GOS shunt)
- Palliation, Shunt systemic-to-pulmonary, Blalock-Taussig (BTS), Modified Blalock-Taussig (MBTS) (deLeval shunt) (GOS shunt), Left (MBTSL)
- Palliation, Shunt systemic-to-pulmonary, Blalock-Taussig (BTS), Modified Blalock-Taussig (MBTS) (deLeval shunt) (GOS shunt), Right (MBTSR)

- 7. Palliation, Shunt systemic-to-pulmonary, Central (from aorta or to main pulmonary artery [or both])
- 8. Palliation, Shunt systemic-to-pulmonary, Central with tube graft (from aorta or to main pulmonary artery [or both])
- 9. Palliation, Shunt systemic-to-pulmonary, Central with tube graft (from aorta to left pulmonary artery)
- 10. Palliation, Shunt systemic-to-pulmonary, Central with tube graft (from aorta to main pulmonary artery)
- 11. Palliation, Shunt systemic-to-pulmonary, Central with tube graft (from aorta to right pulmonary artery)
- 12. Palliation, Shunt systemic-to-pulmonary, Potts Smith type (descending aorta to pulmonary artery)
- 13. Palliation, Shunt systemic-to-pulmonary, Waterston type (ascending aorta to pulmonary artery)

Sources of Pulmonary Blood Flow + Long List Terms

- 14. Norwood (Stage 1)-modifier, Source of pulmonary blood flow, "Sano" modification (RV to PA valveless conduit)
- 15. Norwood (Stage 1)-modifier, Source of pulmonary blood flow, "Sano" modification (RV to PA valveless conduit), No proximal shunt patch + Distal shunt patch
- Norwood (Stage 1)-modifier, Source of pulmonary blood flow, "Sano" modification (RV to PA valveless conduit), No proximal shunt patch + No distal shunt patch
- 17. Norwood (Stage 1)-modifier, Source of pulmonary blood flow, "Sano" modification (RV to PA valveless conduit), Proximal shunt patch + Distal shunt patch
- Norwood (Stage 1)-modifier, Source of pulmonary blood flow, "Sano" modification (RV to PA valveless conduit), Proximal shunt patch + No distal shunt patch
- 19. Norwood (Stage 1)-modifier, Source of pulmonary blood flow, "Sano" modificationwith valve (RV to PA valved conduit)
- 20. Norwood (Stage 1)-modifier, Source of pulmonary blood flow, "Sano" modificationwith valve (RV to PA valved conduit), No proximal shunt patch
 + Distal shunt patch

- Norwood (Stage 1)-modifier, Source of pulmonary blood flow, "Sano" modificationwith valve (RV to PA valved conduit), No proximal shunt patch + No distal shunt patch
- 22. Norwood (Stage 1)-modifier, Source of pulmonary blood flow, "Sano" modificationwith valve (RV to PA valved conduit), Proximal shunt patch + Distal shunt patch
- 23. Norwood (Stage 1)-modifier, Source of pulmonary blood flow, "Sano" modificationwith valve (RV to PA valved conduit), Proximal shunt patch + No distal shunt patch
- 24. Norwood (Stage 1)-modifier, Source of pulmonary blood flow, Neo-aorta to PA anastomosis + intervening fenestrated baffle
- 25. Palliation, Cavopulmonary anastomosis (SVC to PA), Bidirectional (BDCPA) (Modified Glenn)
- 26. Palliation, Cavopulmonary anastomosis (SVC to PA), Bidirectional (BDCPA) (Modified Glenn), Left

Sources of Pulmonary Blood Flow + Long List Terms

- 27. Palliation, Cavopulmonary anastomosis (SVC to PA), Bidirectional (BDCPA) (Modified Glenn), Right
- 28. Palliation, Cavopulmonary anastomosis (SVC to PA), Unidirectional Glenn anastomosis
- 29. Palliation, Cavopulmonary anastomosis (SVC to PA), Unidirectional Glenn anastomosis, Left
- 30. Palliation, Cavopulmonary anastomosis (SVC to PA), Unidirectional Glenn anastomosis, Right
- 31. Palliation, Cavopulmonary anastomoses (SVC's to PA), Bilateral Bidirectional (BBDCPA)

- 32. Palliation, Hemi-Fontan
- 33. Conduit placement, Conduit: LV to PA
- 34. Conduit placement, Conduit: LV to PA, Homograft
- 35. Conduit placement, Conduit: LV to PA, Nonhomograft conduit reconstruction
- 36. Conduit placement, Conduit: Other
- 37. Conduit placement, Conduit: Other, Homograft
- 38. Conduit placement, Conduit: Other, Nonhomograft conduit reconstruction

Different from Procedure Specific Factors -

If the following is the Primary procedure, specify whether the procedure specific factors apply Norwood procedure						
Hybrid Approach "Stage 1", Application of RPA & LPA bands						
Hybrid Approach "Stage 1", Stent placement in arterial duct (PDA)						
Hybrid Approach "Stage 1", Stent placement in arterial duct (PDA) + application of RPA & LPA bands						
Source of pulmonary blood flow: Shunt - systemic artery-to-pulmonary artery						
PSFSrcPulFloShuntSys (988)	🗆 Yes 🗆 No					
Source of pulmonary blood flow: Shunt - ventricle-to-pulmonary artery						
PSFSrcPulFloShuntVent (989)	🗆 Yes 🗆 No					
Source of pulmonary blood flow: Superior caval vein-to-pulmonary artery						
PSFSrcPulFloSuper (990)	🗆 Yes 🗆 No					
Source of Pulmonary Blood Flow: Banded central PAs						
PSFSrcPulFloBandPA (991)	□ Yes □ No					

Also specified in the PSF section under Norwood – for Norwoods to be analyzed, must code as the second procedure (removed in V.6.23)

Fontan, Other Procedure Coding

(1030) Fontan, Other

Current TM definition:

Other Fontan procedure not specified in procedure codes. *May include takedown of a Fontan procedure.* "The Fontan" is defined as an operation or intervention that results in caval flow from both the upper and lower body draining to the pulmonary circulation in a patient with a functionally univentricular heart.

(1030) Fontan, Other

Updated TM definition:

Other Fontan procedure not specified in procedure codes. May include takedown of a Fontan procedure. "The Fontan" is defined as an operation or intervention that results in caval flow from both the upper and lower body draining to the pulmonary circulation in a patient with a functionally univentricular heart.

How to Code Fontan Takedown?

Current 3.41

- Code (2010) Cardiac procedure, Other
- Can go back and update prior cases where a Fontan takedown was performed

Future 6.23

- Code (3600) Fontan, Takedown
- Cannot code until date of version go-live



Harvest Tool Review

Available Harvest Reports / Tools



Primary Procedure Mismatch Report Mortality Eligibility Summary Report

Available Harvest Reports/Tools

Data Quality Report

Harvest Summary Report

Missing Variable Report

Primary Procedure Mismatch Report Mortality Eligibility Summary Report

Data Quality Report (DQR)

- Location: Upload screen
- Use to identify:
 - errors & warnings
 - combination code errors

Note: reporting only for the uploaded file at that date/time

Click View Reports to access (2) reports

Data Quality Report (DQR)

Click on the pie to see the errors/warnings

CRITICAL ERROR:

Missing Primary Procedure

	Ļ	Recor	ds Leve	Validation			
Records Le	evel Validation	Valida		alidationErrors occurred	0 V3	Short proced	Message warning : QCH4888 You have selected the proc
Validat	Error Type						
Critical	Warning/Error occurred w	V3		Cannot save form with Cri	tical erro	r(s)	†
Critical	ValidationErrors occurred	V3	primproc	critical : caseform-primpro	c_reqi Pi	imary Pi	
Critical	Warning/Error occurred w	V3		Cannot save form with Cri	tical erro	r(s)	
Critical	ValidationErrors occurred	V3	primproc	critical : caseform-primpro	c_reqi Pi	imary P	WARNING: Combo
Critical	Warning/Error occurred w	V3		Cannot save form with Cri	tical erro	r(s)	Code error
Critical	ValidationErrors occurred	V3	primproc	critical : caseform-primpro	c_regi Pi	imary P	

Data Quality Report (DQR)

Example: Combination Code Warning

warning : QCH4888 You have selected the procedure 'Arterial switch operation (ASO)' and one of the procedures 'VSD repair, Primary closure' or 'VSD repair, Patch' or 'VSD repair, Device' or 'VSD, Multiple, Repair', but not 'Arterial switch operation (ASO) and VSD repair'. Please review.

> Go back to software and enter the combo code then re-upload file

Note – Fontan + AV Valvuloplasty

Missed coding was omitted from the warning list

- Analyzed appropriately -DCRI changed the separate procedures to the combination procedure
- IQVIA working to rectify

Use local software to identify missed combination codes

Note – Fontan + AV Valvuloplasty

If any of the following Fontan procedures:

- 950 Fontan, Atrio-pulmonary connection
- or 960 Fontan, Atrio-ventricular connection
- or 970 Fontan, TCPC, Lateral tunnel, Fenestrated
- or 980 Fontan, TCPC, Lateral tunnel, Nonfenestrated
- or 1000 Fontan, TCPC, External conduit, Fenestrated
- or 1010 Fontan, TCPC, External conduit, Nonfenestrated
- or 2780 Fontan, TCPC, Intra/extracardiac conduit, Fenestrated

- or 2790 Fontan, TCPC, Intra/extracardiac conduit, or Nonfenestrated
- *or* 3310 Fontan, TCPC, External conduit, hepatic veins to pulmonary artery, Fenestrated
- or 3320 = Fontan, TCPC, External conduit, hepatic veins to pulmonary artery, Nonfenestrated
- or 1025 Fontan revision or conversion (Re-do Fontan)
- or 1030 Fontan, Other

is completed with one of the listed AV valvuloplasty procedures:

- 2300 Valvuloplasty, Common atrioventricular valve
- or 460 Valvuloplasty, Tricuspid
- or 830 Valvuloplasty, Mitral

code combination procedure (2340) Fontan + Atrioventricular Valvuloplasty

Critical Summary Report

Submission Date	Upload ID -	First Surgery Date	Last Surgery	File Status	Total Records	Number of Successful Records	Number of Failed Records	Number of Records Not Changed	Data Qu
08/11/2022 05:5	148660	07/01/2022	07/12/2022	Passed	26	26	0	25	https://s
08/11/2022 05:5	148659	07/11/2022	07/12/2022	Passed	8	8	0	8	https://s
08/11/2022 04:4	148650	07/01/2022	08/05/2022	Passed	74	71	3	0	https://s

Click on the

DQRs to access

- Housed within DQR
- Lists all DQRs within entered date range
- Useful if uploaded multiple data files during the harvest period

Enter date range and click Run Report

Available Harvest Reports / Tools



Primary Procedure Mismatch Report Mortality Eligibility Summary Report

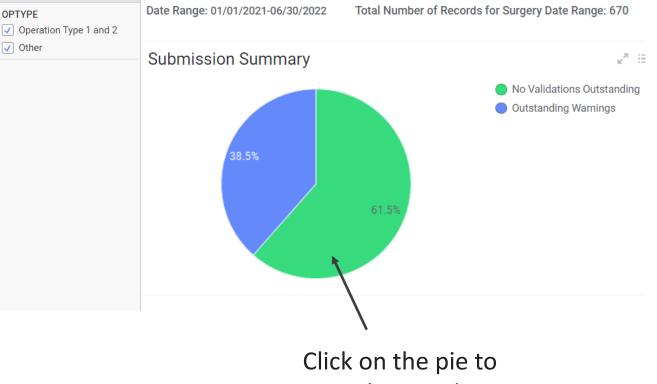
Harvest Summary Report

OPTYPE

✓ Other

- Location: Operational Reports
- Use to identify:
 - All warnings

Note: reporting for entered surgical date range



see the case list

Available Harvest Reports / Tools



Primary Procedure Mismatch Report Mortality Eligibility Summary Report

Missing Variable Report (MVR)

Parameters: Enter surgery date range and Yes/No Index Ops

Export

Report Description:					
Use this report to determine					
which variables are missing					
data for the date range					
selected.					

Date Range: 07/01/2022 - 08/12/2022

All Mortality Anesthesia Risk Model

Operation Type
OPERATION TYPE 1 AND 2

Micoipa	Variable Summary
IVIISSIITU	Variable Summary
	,

Shortname	Name	Missing %	Ν
ABLDGASMGT	ARTERIAL BLOOD GAS MANAG	22	7/32
ADMITFROMLOC	LOCATION FROM WHICH PATIE	3	1/38
AIRWAYINSITU	AIRWAY IN-SITU (ETT OR TRAC	43	15/35
AIRWAYSIZEINTUB	AIRWAY SIZE - ENDOTRACHEAL	5	1/19
AIRWAYTYPE	AIRWAY TYPE [3]	43	15/35
ANESADVEVENT	ANESTHESIA ADVERSE EVENT [3]	14	5/35
ANESTHESIA	ANESTHESIOLOGY DATA COLLE	3	1/38
ANTENATALDIAG	ANTENATAL DIAGNOSIS OF CO	5	2/38
ANTICOAGUSED	ANTICOAGULANT USED	25	8/32
ANTIFIBUSAGE	ANTIFIBRINOLYTIC USED INTRA	3	1/38
APGARKNOWN	APGAR SCORES KNOWN	5	2/38
ARTLINE	ARTERIAL LINE [3]	43	15/35

- Location: Operational Reports
- Use to identify:
 - Missing fields
- Filters available:
 - Risk model variables
 - Mortality variables
 - Op types 1 & 2 vs. all others

Missing Variable Report (MVR)

Filter for Risk Model missing variables

Identifies cases with missing variables from the risk model / missing percent / number of cases

Filter for Mortality missing variables

Identifies cases with missing variables from the mortality analysis / missing percent / number of cases

Available Harvest Reports / Tools



Primary Procedure Mismatch Report Mortality Eligibility Summary Report

Mortality Eligibility Summary Report

- Location: Operational Reports
- Use to identify missing fields for mortality analysis
- Mortality status at:
 - Hospital discharge
 - Database discharge
 - 30 days after surgery

Note: Must also have Surgdt, PrimDiag, PrimProc – if these are missing, will not show up in this report (Identified as critical errors)



Parameters: Harvest surgery date range

Mortality Eligibility Summary Report

Op Type 1 & 2 Case Eligibility Summary

Surgery Year	Surgical Date Range	Total Number of Records	Number of Ineligible Cases	% Missing or "Unknown"
2018	02 Jan 2018 - 27 Dec 2018	429	1	0.23
2019	02 Jan 2019 - 31 Dec 2019	395	0	0.00
2020	07 Jan 2020 - 31 Dec 2020	454	0	0.00
2021	04 Jan 2021 - 30 Jun 2021	241	0	0.00
Grand total		1519	1	0.07

Identifies missing thresholds for participant exclusion by year

	Op Type 1 & 2 Case Eligibility Record Details										
3.3 2018 V34 V34 Ineligible X	Data Ve	Surg	Ope	Pati	Ineligible or Eligible	Hospital Discharge Status	Database Discharge Status	30-day Status	Operation Type	Date of Admission	Access C
	3.3	2018	V34	V34	Ineligible		(X	./		https://st

Reports identify missing only – does not apply logic applied in the analysis (i.e., analysis exclusions)

Available Harvest Reports / Tools



Harvest Summary Report

Missing Variable Report

Primary Procedure Mismatch Report

Mortality Eligibility Summary Report

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

Primary Procedure Mismatch Report

Once changed in software, upload a new data file

Primary Procedure Mismatch Record Details

Data Version	Surgery Year	0	P	Participant Primary	Participant Primary Procedure Description	STS Primary	STS Primary Procedure Description	Access
3.41	2022	V3	V	590	Valvuloplasty, Pulmonic	510	RVOT procedure	https://
	Entere	•••	load	led primary ure	ST	S defined	primary procedure	

Question:

How do I know if I have missed coding the available combination codes?

Data Quality Report

- If you have coded both procedures that make up the combination, the DQR will report as a warning
- Refer to STS Procedure Codes document under Add'l Resources

https://www.sts.org/registries-research-center/stsnational-database/congenital-heart-surgerydatabase/data-collection/STS Combination Procedure Codes

Question

How do I know what the error/warning message is telling me?

IQVIA Library

Refer to posted document:
 Errors and Warnings Reference List

Question:

How do I determine if I have missing mortality fields used in analysis? Missing Variable Report (MVR) + Mortality Eligibility Summary

- MVR will identify <u>all</u> missing fields, and can be filtered for fields used in risk model & mortality analyses for the entered surgical date range
- Mortality Eligibility Summary will identify missing fields used for mortality analysis for the harvest date range

Question:

The MVR is saying a field is missing; however, I am seeing the field completed in my software. How do I rectify?

Work with your vendor

- IQVIA is not receiving the data you have entered into your software
- Contact your vendor first to see if they can identify an upload or file transfer issue

IQVIA Update Joe Brower



The below items were resolved and deployed to the production environment.

Notifications were posted to the platform to inform users for the noted items.

Risk Adjusted Report – Fall 2021 Harvest Report

STS-8576 – An error is appearing on Table 1 and Table 7 when selecting a result entry on the report. The error displays, "Could not load on-demand data for Table(x)_CaseList."

Uploader

STS-8555 – The uploader is displaying a critical error on records that have a surgery date of 7/1/2022 or later. The application displays, *"Core date does not match any form version."* Operation records prior to 7/1/2022 are not impacted and will upload as expected.



The below items were resolved and deployed to the production environment.

Notifications were posted to the platform to inform users for the noted items.

Risk Adjusted Report – Fall 2021 Harvest Report Con't

STS-8578 – **Print/Export** - The STS aggregate column results for Table 1 and Table 18 are displayed on a separate page in the PDF report. This has been corrected and the STS results are displayed on the same page with the participant results for the impacted tables.



The below items are currently under review by the IQVIA Development Team:

STS-8510 - CHSD Non-Analyzed Dashboard, update the STAT category to reflect latest changes to the Appendix C updates on the parameter selection page.

IQVIA Update

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.



sts.org

Analysis Report Questions

- Please contact IQVIA Support
 - <a>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

<u>STSDB@sts.org</u>

Upcoming CHSD Webinars

User Group Call

• September 6 @ 12pm CT

Monthly Webinar

• September 20 @ 12pm CT

New Data Manager Webinar – Note new date

• September 8 @ 1pm 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!