New Data Managers Session 2

Melinda Offer, RN, MSN

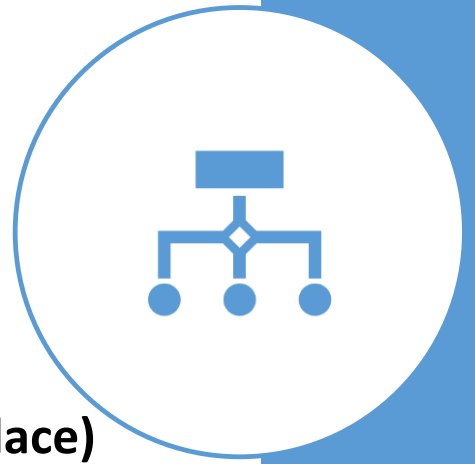
Learning Objectives:

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

- Understand the Procedure ID and the Risk Variable Chart
- Identify resources within the National Harvest Report

Procedure ID Chart

- **Isolated Coronary Artery Bypass (CAB)**
- **Isolated Aortic Valve Replacement (AV Replace)**
- **Isolated Mitral Valve Replacement (MV Replace)**
- **Aortic Valve Replacement + CAB (AV Replace + CAB)**
- **Mitral Valve Replacement + CAB (MV Replace + CAB)**
- **Aortic Valve Replacement + Mitral Valve Replacement (AV Replace + MV Replace)**
- **Isolated Mitral Valve Repair (MV Repair)**
- **Mitral Valve Repair + CAB (MV Repair + CAB)**



Need to have DCF with Seq Numbers to read this chart

STS Adult Cardiac Surgery Database V2.9
Procedure Identification Table

Current as of: 6/20/2019

Note, fields in green are new in v2.9x, fields in yellow are added or changed from the v2.81 definition

PART 1 (PROCID 1 through 4)				
Variable Short Name/Seq #	**Isolated CAB (ProcID=1)**	**Isolated AVR (ProcID=2)**	**Isolated MVR** (ProcID=3)**	**AVR + CAB (ProcID=4)**
OpCAB/2120	• Yes, planned • Yes, unplanned due to unsuspected disease or anatomy	• No • Yes, unplanned due to surgical complication • Missing	• No • Yes, unplanned due to surgical complication • Missing	• Yes, planned • Yes, unplanned due to unsuspected disease or anatomy •
OpCAB	OpCAB in(3,5)	OpCab in (NULL, 2,4)	OpCab in (NULL, 2,4)	OpCAB in(3,5)
OpValve/2125	<Not used in this calculation>	• Yes	• Yes	• Yes
OpValve		Opvalve eq 1	Opvalve eq 1	Opvalve eq 1
VSAV/3390	• No • Yes, unplanned due to surgical complication • Missing	• Yes, planned • Yes, unplanned due to unsuspected disease or anatomy	• No • Yes, unplanned due to surgical complication • Missing	• Yes, planned • Yes, unplanned due to unsuspected disease or anatomy
VSAV	VSAV in (NULL, 2,4)	VSAV in (3,5)	VSAV in (NULL, 2,4)	VSAV in (3,5)
VSAVPr/3395	<Not used in this calculation>	• Replacement	<Not used in this calculation>	• Replacement
VSAVPr		VSAVPr eq 1		VSAVPr eq 1
VSMV/3495	• No • Yes, unplanned due to surgical complication • Missing	• No • Yes, unplanned due to surgical complication • Missing	• Yes, planned • Yes, unplanned due to unsuspected disease or anatomy	• No • Yes, unplanned due to surgical complication • Missing
VSMV	VSMV in (NULL, 2,4)	VSMV in (NULL, 2,4)	VSMV in (3,5)	VSMV in (NULL, 2,4)
VSMVPr/3500	<Not used in this calculation>	<Not used in this calculation>	• Replacement	<Not used in this calculation>
VSMVPr			VSMVPr eq 2	
OCarCongProc1/ 6515	• Missing • PFO, Primary closure • Anomalous origin of coronary artery from pulmonary artery repair • Anomalous aortic origin of coronary artery from aorta (AAOCA) repair	• Missing • PFO, Primary closure	• Missing • PFO, Primary closure • ASD repair, Primary closure • ASD repair, Patch	• Missing • PFO, Primary closure • Anomalous origin of coronary artery from pulmonary artery repair • Anomalous aortic origin of coronary artery from aorta (AAOCA) repair

OCarCongProc1	Ocarcongproc1 in (NULL,10,1291,1305)	Ocarcongproc1 in (NULL,10)	Ocarcongproc1 in (NULL,10,20,30)	Ocarcongproc1 in (NULL,10,1291,1305)
OCarCongProc2/ 6520	• Missing • No other congenital procedures • PFO, Primary closure • Anomalous origin of coronary artery from pulmonary artery repair • Anomalous aortic origin of coronary artery from aorta	• Missing • No other congenital procedures • PFO, Primary closure	• Missing • No other congenital procedures • PFO, Primary closure • ASD repair, Primary closure • ASD repair, Patch	• Missing • No other congenital procedures • PFO, Primary closure • Anomalous origin of coronary artery from pulmonary artery repair • Anomalous aortic origin of coronary artery from aorta
OCarCongProc2	Ocarcongproc2 in (NULL,1,10,1291,1305)	Ocarcongproc2 in (NULL,1,10)	Ocarcongproc2 in (NULL,1,10,20,30)	Ocarcongproc2 in (NULL,1,10,1291,1305)
OCarCongProc3/ 6525	• Missing • No other congenital procedures • PFO, Primary closure • Anomalous origin of coronary artery from pulmonary artery repair • Anomalous aortic origin of coronary artery from aorta	• Missing • No other congenital procedures • PFO, Primary closure	• Missing • No other congenital procedures • PFO, Primary closure • ASD repair, Primary closure • ASD repair, Patch	• Missing • No other congenital procedures • PFO, Primary closure • Anomalous origin of coronary artery from pulmonary artery repair • Anomalous aortic origin of coronary artery from aorta
OCarCongProc3	Ocarcongproc3 in (NULL,1,10,1291,1305)	Ocarcongproc3 in (NULL,1,10)	Ocarcongproc3 in (NULL,1,10,20,30)	Ocarcongproc3 in (NULL,1,10,1291,1305)
Tricuspid Procedures: VSTV VSTrReplace VSTrValvec 3640, 3650, 3653	Unplanned Surgical Complications ONLY VSTV is one of : • No • Yes, unplanned due to surgical complication • Missing	Unplanned Surgical Complications ONLY VSTV is one of : • No • Yes, unplanned due to surgical complication • Missing	All tricuspid repairs are allowed. Tricuspid replacements and valvecotomies are only allowed if the tricuspid procedure was unplanned due to surgical complications. Must satisfy at least one of (1) or (2): 1. VSTrReplace: • No • Missing AND VSTrValvec: • No • Missing 2. VSTV	Unplanned Surgical Complications ONLY VSTV is one of : • No • Yes, unplanned due to surgical complication • Missing

			• Yes, unplanned due to surgical complication"]	
Tricuspid Procedures: VSTV VSTrReplace VSTrValvec	VSTV in (NULL, 2,4)	VSTV in (NULL, 2,4)	[VSTrReplace in (NULL, 2) and VSTrValvec in (NULL,2)] OR VSTV eq 4	VSTV in (NULL, 2,4)
VSPV/3685	• No • Yes, unplanned due to surgical complication • Missing			
VSPV	VSPV in (NULL, 2,4)			
PrevVADExp/ 3825	• Yes, not during this procedure • No • Missing			
PrevVADExp	PrevVADExp in (NULL, 1,3)			
VADImpTmg/ 3845	• Pre-Operative (during same hospitalization but not same OR trip as CV surgical procedure) • In conjunction with CV surgical procedure (same trip to the OR)- unplanned • Post-Operative (after surgical procedure during reoperation) • Missing			
VADImpTmg	VADImpTmg in (NULL, 1, 4, 5)			
VADImpTmg2/ 3900	• Pre-Operative (during same hospitalization but not same OR trip as CV surgical procedure) • In conjunction with CV surgical procedure (same trip to the OR)- unplanned • Post-Operative (after surgical procedure during reoperation) • Missing			
VADImpTmg2	VADImpTmg2 in (NULL, 1, 4, 5)			
VADImpTmg3/ 3955	• Pre-Operative (during same hospitalization but not same OR trip as CV surgical procedure) • In conjunction with CV surgical procedure (same trip to the OR)- unplanned • Post-Operative (after surgical procedure during reoperation) • Missing			
VADImpTmg3	VADImpTmg3 in (NULL, 1, 4, 5)			
VExp/3875	• Yes, not during this procedure • No • Missing			
VExp	VExp in (NULL, 3, 2)			
VExp2/3930	• Yes, not during this procedure • No • Missing			
VExp2	VExp2 in (NULL, 3, 2)			

VExp3/3985	• Yes, not during this procedure • No • Missing			
VExp3	VExp3 in (NULL, 3, 2)			
OCarLVA/4075	• No • Missing			
OCarLVA	OCarLVA in (NULL, 2)			
OCarVSD/4130	• No • Missing			
OCarVSD	OCarVSD in (NULL, 2)			
AortProc/2125	• No • Yes, unplanned due to surgical complication • Missing			
AortProc	Aortproc in (NULL, 2,4)			
EndovasProc/5066	• No • Missing			
EndovasProc	EndovasProc in (NULL, 2)			
OCarAFibIntraLes/ 4040	• No • Missing	• No • Missing	<Not used in this calculation>	• No • Missing
OCarAFibIntraLes	OcarAFibIntraLes in (NULL, 2)	OcarAFibIntraLes in (NULL, 2)		OcarAFibIntraLes in (NULL, 2)
OCarAFibLesLoc/ 4191	• Primarily epicardial • Missing	• Primarily epicardial • Missing	<Not used in this calculation>	• Primarily epicardial • Missing
OCarAFibLesLoc	OCarAFibLesLoc ne 2	OCarAFibLesLoc ne 2		OCarAFibLesLoc ne 2
OCarASDSec/ 4035	• No • Missing	• No • Missing	<Not used in this calculation>	• No Missing
OCarASDSec	OCarASDSec in (NULL, 2)	OCarASDSec in (NULL, 2)		OCarASDSec in (NULL, 2)
OCarACD/ 4055	<Not used in this calculation>	<Not used in this calculation>	• No • Missing • Permanent Pacemaker	<Not used in this calculation>
OCarACD			OCarACD in (NULL, 1, 2)	
OCarACDLE/ 4065	• Yes, unplanned due to surgical complication • No • Missing			

OCarACDLE	OCarACDLE in (NULL, 2,4)			
OCarLasr/4110	<Not used in this calculation>	<Not used in this calculation>	• No • Missing	<Not used in this calculation>
OCarLasr			OCarLasr in (NULL, 2)	
OCPulThromDis/ 4085	• No • Missing			
OCPulThromDis	OCPulThromDis in (NULL, 1)			
OCarSubaStenRes/ 4090	• No • Missing			
OCarSubaStenRes	OCarSubaStenRes in (NULL, 2)			
OCarSVR/4105	• No • Missing			
OCarSVR	OCarSVR in (NULL, 2)			
OCarCrTx/4120	• No • Missing			
OCarCrTx	OCarCrTx in (NULL, 2)			
OCarTrma/4125	• No • Missing			
OCarTrma	OCarTrma in (NULL, 2)			
OCTumor/4115	• No • Missing			
OCTumor	OCTumor in (NULL, 1)			
OCarOthr/4135	• No • Missing			
OCarOthr	OCarOthr in (NULL, 2)			
VSTCV/3400	• No • Missing			
VSTCV	VSTCV in (NULL, 2)			
VSTCVMit/3610	• No • Missing			
VSTCVMit	VSTCVMit in (NULL, 2)			
VSTCVTri/3652	• No • Missing			
VSTCVTri	VSTCVTri in (NULL, 2)			
VSTCVPu/3695	• No • Missing			
VSTCVPu	VSTCVPu in (NULL, 2)			

CCancCase/2050	• No • Missing
CCancCase	CCancCase in (NULL, 2)
ONCCarEn/6530	• No • Yes, unplanned due to surgical complication • Missing
ONCCarEn	ONCCarEn in (NULL, 2, 4)
ONCOVasc/6535	• No • Yes, unplanned due to surgical complication • Missing
ONCOVasc	ONCOVasc in (NULL, 2, 4)
ONCOThor/6540	• No • Yes, unplanned due to surgical complication • Missing
ONCOThor	ONCOThor in (NULL, 2, 4)
ONCOther/6545	• No • Yes, unplanned due to surgical complication • Missing
ONCOther	ONCOther in (NULL, 2, 4)

OCarVSD/4130	• No • Missing
OCarVSD	OCarVSD in (NULL, 2)

OCarVSD/4130

Short Name for Other Cardiac VSD SEQ Number 4130

On PROC ID Chart

No – this means if you code No to this field then the procedure will stay isolated

Missing- this means if you leave this field missing then the procedure will stay isolated

Ignore the Gray Line

https://youtu.be/2-vH1cCiCts

PROC ID Scenario

Patient has CABG with A-fib Pulmonary Vein Isolation performed SEQ 4191. Will this procedure be classified as an isolated CABG?

A. Yes

B. No

PROC ID Scenario

Patient has CABG with A-fib Pulmonary Vein Isolation performed SEQ 4191. Will this procedure be classified as an isolated CABG?

A. Yes – Correct Answer since the PVI is a coded as a primarily epicardial procedure.

B. No

PROC ID Scenario

If a Mitral Valve Replacement (MVR) is done with a Tricuspid Valve Repair SEQ 3646 will this procedure be classified as an isolated MVR?

A. Yes

B. No

PROC ID Scenario

If a Mitral Valve Replacement (MVR) is done with a Tricuspid Valve Repair SEQ 3646 will this procedure be classified as an isolated MVR?

A. Yes – Correct answer. Procedure ID algorithms for all Mitral Valve Procedures now also include intracardiac lesions and tricuspid repairs. Since it is common practice to do a full Maze procedure and/or an occasional tricuspid repair STS Leadership wanted to keep these cases in the Isolated MV Risk Algorithms.

B. No

PROC ID Scenario

Patient has CABG performed. During the procedure, the right ventricle is lacerated. A repair of the RV laceration is performed. I have coded this as a CABG with an unplanned Other Cardiac procedure SEQ 4135 due to surgical complication. Why is this case being classified as an "Other Procedure" since the RV repair was due to surgical complication?

A. The classification must be incorrect because all unplanned surgical complications will keep the patient in the isolated category.

B. For this field 4135 it doesn't matter if it was for surgical complication or not. If Other Cardiac SEQ 4135 is marked as no or missing it will stay in the isolated category.

PROC ID Scenario

Patient has CABG performed. During the procedure, the right ventricle is lacerated. A repair of the RV laceration is performed. I have coded this as a CABG with an unplanned Other Cardiac procedure SEQ 4135 due to surgical complication. Why is this case being classified as an "Other Procedure" since the RV repair was due to surgical complication?

A. The classification must be incorrect because all unplanned surgical complications will keep the patient in the isolated category.

B. Correct Answer - For this field 4135 it doesn't matter if it was for surgical complication or not. If Other Cardiac SEQ 4135 is marked as no or missing it will stay in the isolated category.

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)	If EF is missing or <10%: **CABG Model** If HeartFailTmg is Chronic or missing and gender is Male, set EF = 55% If HeartFailTmg is Chronic or missing and gender is Female, set EF = 58% If HeartFailTmg is Acute or Both and gender is Male, set EF = 40% If HeartFailTmg is Acute or Both and gender is Female, set EF = 45%

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

PrValveProc2 (700)				X		X	X	X	X
PrValveProc3 (705)				X		X	X	X	X
PrValveProc4 (710)				X		X	X	X	X
PrValveProc5 (715)				X		X	X	X	X
POC (805)			X	X	X			X	X
POCInt1 (810)		X	X	X	X		X	X	X
POCInt2 (815)		X	X	X	X		X	X	X
POCInt3 (820)		X	X	X	X		X	X	X
POCInt4 (825)		X	X	X	X		X	X	X
POCInt5 (830)		X	X	X	X		X	X	X
POCInt6 (835)		X	X	X	X		X	X	X
POCInt7 (840)		X	X	X	X		X	X	X
pocpci (775)	X		X			X	X		X
pocpciwhen (780)	X		X			X	X		X
pocpciin (800)	X		X			X	X		X
PrCVInt (665)			X	X		X	X		
F. Preoperative Cardiac Status									
MIWhen (890)	X	X	X	X			X	X	X
HeartFailTmg (912)	X	X	X	X	X	X	X	X	X
ClassNYH (915)	X	X	X	X	X	X	X	X	X
CardSympTimeOfAdm (895)	X		X	X		X	X	X	X
CarShock (930)	X		X	X		X	X	X	X
ArrhythAtrFib (961)	X	X	X	X	X	X	X	X	X
ArrhythAFib (962)	X	X	X	X	X	X	X	X	X
ArrhythAFlutter (960)	X	X	X	X	X	X	X	X	X
ArrhythThird (970)	X	X	X	X	X	X	X	X	X

ArrhythSecond (965)	×			×	×	×	×	×	×
ArrhythSSS (955)	×			×	×	×	×	×	×
ArrhythVV (950)	×			×		×	×	×	×
G. Preoperative Medications									
MedInotr (1130)	×	×	×	×			×	×	×
MedADP5Days (1060)	×	×	×	×		×	×	×	×
MedADPIDis (1065)	×	×	×	×		×	×	×	×
MedSter (1143)	×	×	×	×		×	×	×	×
MedGP (1073)	×	×	×	×		×	×	×	×
Resusc (935)	×	×	×	×	×	×	×	×	×
medacei48 (1020)			×						
H. Hemodynamics and Cath									
NumDisV (1170)	×	×	×	×	×	×	×	×	×
PctStenLMain (1195)	×			×		×	×		
HDEF (1545)	×	×	×	×		×	×	×	×
PctStenPro LAD (1215)		×						×	×
VDStenA (1600)	×					×			
VDStenM (1690)	×		×					×	
VDInsufA (1590)	×	×	×	×		×	×	×	×
VDInsufM (1680)	×		×	×		×	×		×
VDInsufT (1775)	×		×	×		×	×	×	×
VDAoPrimEt (1646)									
I. Operative									
Incidenc (1970)	×		×	×	×	×	×	×	×
Status (1975)	×	×	×	×	×	×	×	×	×

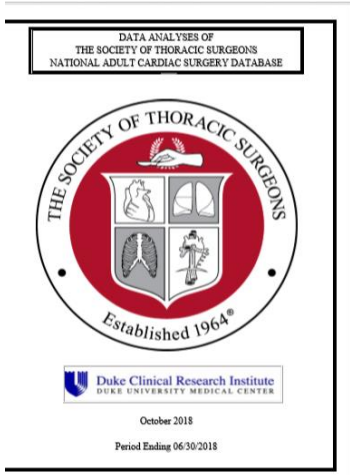
K. Valve Surgery									
VSTrRepair (3646)					X				
L. Mechanical Cardiac Assist Devices									
IABPWhen (3730)	X		X	X	X	X	X	X	X
CathBasAssistWhen (3760)	X		X	X		X	X	X	X
ECMOWhen (3780)	X		X	X		X	X	X	X

Additional Resource - STS Harvest Report

- Reports are published following each quarterly database harvest and the report is provided to each eligible STS database participant.

- This report is an important quality improvement tool for participants, allowing them to compare their risk-adjusted performance with that of similar participants, participants in their geographic region and the entire body of STS database participants.

- NQF Measure and Composite Quality (STAR) Ratings results are based on a full 12 months of data ending each June or December for CABG and 36 months for Valves


DATA ANALYSES OF
THE SOCIETY OF THORACIC SURGEONS
NATIONAL ADULT CARDIAC SURGERY DATABASE

THE SOCIETY OF THORACIC SURGEONS
Established 1964

Duke Clinical Research Institute
DUKE UNIVERSITY MEDICAL CENTER

October 2018

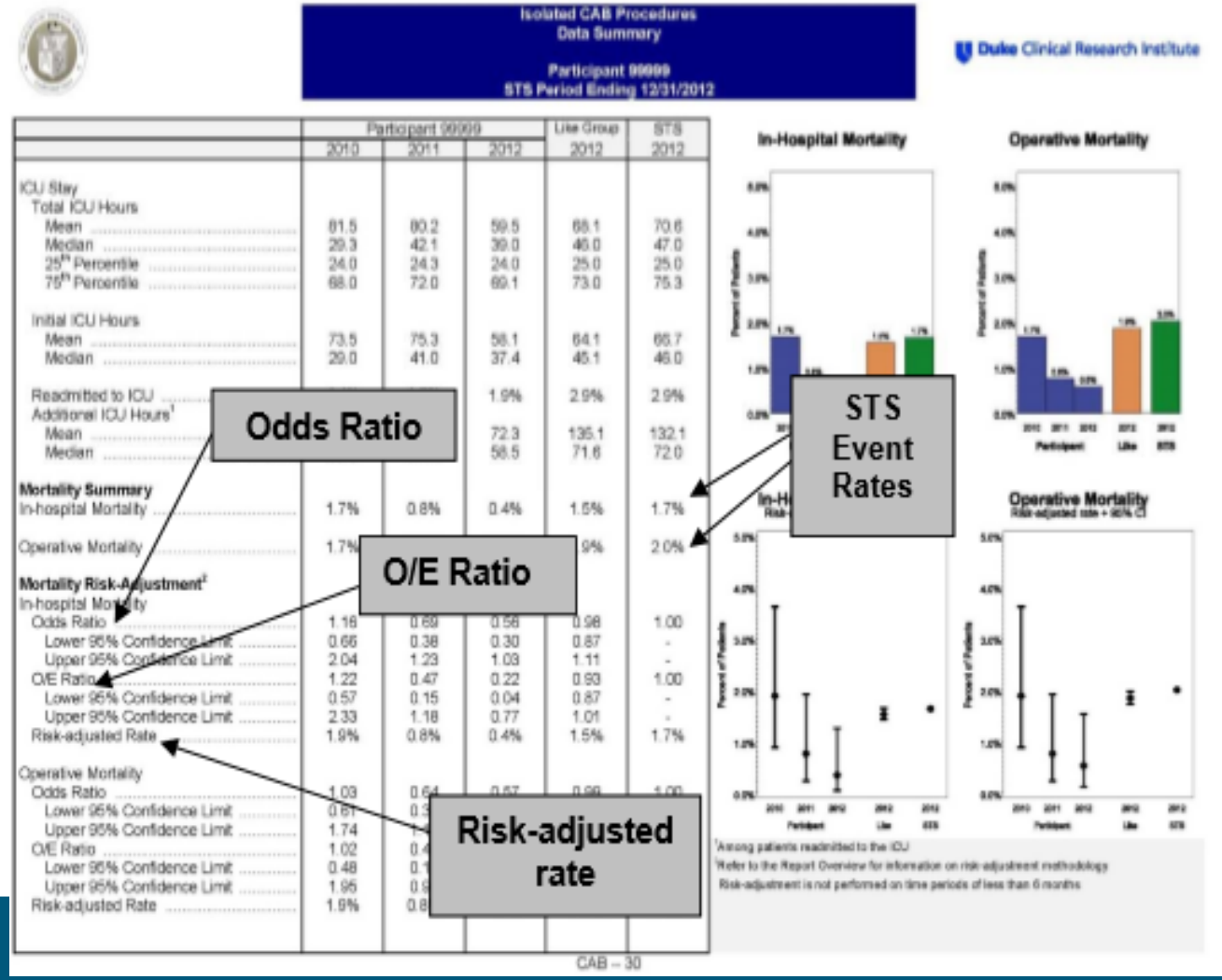
Period Ending 06/30/2018

Comparison of O/E Ratio and Odds Ratio

Because each of these statistics has its advantages, the STS has decided to provide both in the report.

OE Ratio: The benefit of O/E Ratios is that they are familiar to many surgeons and are simple to compute using an STS-certified software package.

OR Ratio: The main benefit of Odds Ratios obtained from hierarchical models is that they provide a more reliable estimate of performance for hospitals with a small number of patients.



O/E Ratio – The Simplified Version

The following table illustrates the possible interpretations of the O/E Ratio.

Table 11. O/E Ratio Interpretations*

Statistic	Interpretation
O/E Ratio > 1	When the O/E Ratio is greater than 1, the participant had an observed outcome level that was greater than expected. The participant performed worse than expected.
O/E Ratio < 1	When the O/E Ratio is less than 1, the participant had an observed outcome level that was less than expected. The participant performed better than expected.
O/E Ratio = 1	When the O/E Ratio is 1, the participant had an observed outcome level equal to expected. The participant performed as expected.

Observed is your site compared to the expected which is computed using the risk models on all sites data.

The interpretations in this table can also be roughly extended to Odds Ratios - values less than 1 imply better than average performance, values of 1 imply average performance and values over 1 imply worse than average performance. Note that the Odds Ratio will generally be closer to 1.0 than the O/E Ratio. It is possible that these two measures will be discrepant, but only if they are close to 1.0.

Understanding Risk Adjustment - The Simplified Version

Table 12. Risk-adjusted Rate Interpretations

Statistic	Interpretation
Risk-adjusted rate > STS event rate	When the risk-adjusted rate for a particular adverse outcome is greater than the STS average rate, then the participant had more of those outcomes than expected given their case-mix.
Risk-adjusted rate < STS event rate	When the risk-adjusted rate for a particular adverse outcome is less than the STS average rate, then the participant had less of those outcomes than expected given their case-mix.
Risk-adjusted rate = STS event rate	When the risk-adjusted rate for a particular adverse outcome is equal to the STS average rate, then the participant had the same number of those outcomes as expected given their case-mix.

STAR Rating

Column 4. Participant Rating.

The participant rating system assigns participants to rating categories designated by one, two, or three stars. The rating categories are defined as follows:

★★★ → Participant performance is significantly higher than STS mean.

★★ → Participant performance is not statistically different from STS mean.

★ → Participant performance is significantly lower than STS mean.

Data Completeness Requirement: Participants were excluded from the analysis if they had fewer than 10 isolated CABG procedures in the patient population and if they had more than 5% missing data on any of the following 5 NQF-endorsed process measures: use of IMA, preoperative beta blockade therapy, discharge beta blockade therapy; discharge anti-platelet medication; and discharge anti-lipid medication.

There are also thresholds that must be met for mortality fields.

Mortality fields: Mortality is counted as missing for a record if any of the fields below are missing. A value of unknown counts as missing.

a. MtDCStat (Sequence# 5010, Vrsn. 2.81); DischMortStat (Sequence# 7005, Vrsn. 2.9)
b. Mt30Stat (Sequence# 5015, Vrsn. 2.81; Sequence# 7001, Vrsn. 2.9)
c. MtOpD (Sequence# 5025, Vrsn. 2.81; Sequence# 7124, Vrsn. 2.9)

If the percent missing is higher than 10% for year 2015 you are at risk of not receiving a star rating.
If the percent missing is higher than 5% for year 2016 you are at risk of not receiving a star rating.
If the percent missing is higher than 2% for year 2017 or after you are at risk of not receiving a star rating.

STS CABG Composite Quality Rating
Rating Trend

Participant 99999
STS Period Ending 06/30/2018

Duke Clinical Research Institute

Quality Domain	Participant Rating[1] Jan 2016 - Dec 2016	Jul 2016 - Jun 2017	Jan 2017 - Dec 2017	Jul 2017 - Jun 2018
Overall	★★★	★★★	★★★	★★★
Absence of Mortality	★ ★	★ ★	★ ★	★ ★
Absence of Morbidity[2]	★★★	★ ★	★ ★	★ ★
Use of IMA[2]	★ ★	★ ★	★ ★	★ ★
Medications[2]	★★★	★★★	★★★	★★★

[1]* = Participant performance is significantly lower than the STS mean based on 99% Bayesian probability
* * = Participant performance is not significantly different than the STS mean based on 99% Bayesian probability
* * * = Participant performance is significantly higher than the STS mean based on 99% Bayesian probability
[2]Please refer to Report Overview - STS Composite Quality Rating and NQF-Endorsed Measures for full details

Additional Resource - STS Harvest Report

Quality Domains and Study Endpoints: The following table summarizes the endpoints that were analyzed in order to assess performance within the four selected domains of quality.

Domain 1. Absence of Operative Mortality.
Proportion of patients (risk-adjusted) who do not experience operative mortality. Operative mortality is defined as death during the same hospitalization as surgery or after discharge but within 30 days of the procedure.

Domain 2. Absence of Major Morbidity.
Proportion of patients (risk-adjusted) who do not experience any major morbidity. Major morbidity is defined as having at least one of the following adverse outcomes: 1) reoperations for any cardiac reason (NQF definition); 2) renal failure; 3) deep sternal wound infection; 4) prolonged ventilation/intubation*; 5) cerebrovascular accident/permanent stroke.

Domain 3. Use of Internal Mammary Artery (IMA).
Proportion of first-time CABG patients who receive at least one IMA graft. Note: Patients with prior CABG surgery or with documented contraindication for IMA use (subclavian stenosis, previous cardiac or thoracic surgery, previous mediastinal radiation, an emergent or salvage procedure or no LAD disease) are not included in the denominator.

Domain 4. Use of All Evidence-based Perioperative Medications.
Proportion of patients who receive all required perioperative medications. The required perioperative medications are: 1) preoperative beta blockade therapy; 2) discharge anti-platelet medication; 3) discharge beta blockade therapy; and 4) discharge anti-lipid medication. Note: the discharge medications were not required for patients who died prior to discharge.

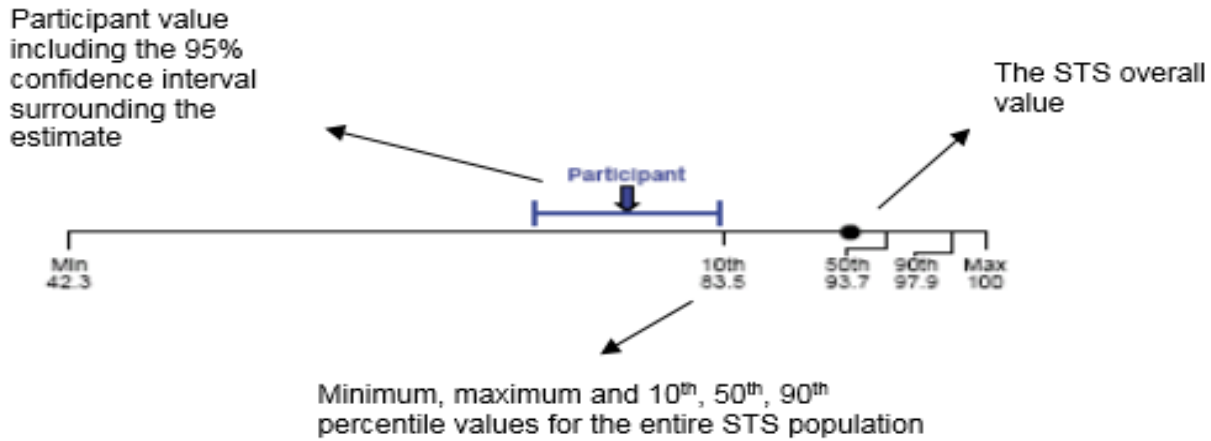
Report Overview
STS Composite Quality Ratings and NQF-endorsed Measures
STS Report – Period Ending 06/30/2018

Title	Description	Numerator	Denominator	Exclusions
				Discharge aspirin (DCASA) OR discharge P2Y12 antagonist (DCP2Y12) OR Other discharge anti-platelet (DCOthAntiPlat) is marked "contraindicated"
Beta Blockade at Discharge	Percent of patients aged 18 years and older undergoing isolated CABG who were discharged on beta blockers	Number of patients undergoing isolated CABG who were discharged on beta blockers Number of isolated CABG procedures in which discharge beta blockers (DCBeta) is marked "yes"	All patients undergoing isolated CABG according to STS Procedure Identification algorithm	Cases are removed from the denominator if there was an in-hospital mortality or if discharge beta blocker was contraindicated. Mortality Discharge Status (MtDCStat/DischMortStat), Mortality Date (MtDate), and Discharge Date (DischDt) indicate an in-hospital mortality; discharge beta blocker (DCBeta) marked as "contraindicated"
Anti-Lipid Treatment at Discharge	Percent of patients aged 18 years and older undergoing isolated CABG who were discharged on a statin or other lipid-lowering regimen *NOTE: Beginning with data version 2.81 only statins are considered for this measure.*	Number of patients undergoing isolated CABG who were discharged on a statin or other lipid-lowering regimen Number of isolated CABG procedures in which: Discharge statin medication (DCLipLowStat) is marked "yes"	All patients undergoing isolated CABG according to STS Procedure Identification algorithm	Cases are removed from the denominator if there was an in-hospital mortality or if discharge anti-lipid treatment was contraindicated. Mortality Discharge Status (MtDCStat/DischMortStat), Mortality Date (MtDate), and Discharge Date (DischDt) indicate an in-hospital mortality; Discharge statin medication (DCLipLowStat) is marked as "contraindicated"

Report Overview
STS Composite Quality Ratings and NQF-endorsed Measures
STS Report – Period Ending 06/30/2018

V. Figure Interpretation

In addition to the statistics provided for each of the STS Composite Quality Domains and NQF-endorsed measures, a figure representing the distribution of values for the entire STS population is provided.



STS CABG Composite Quality Rating

Participant 99999
STS Period Ending 06/30/2018

Duke Clinical Research Institute

Quality Domain	Participant Score (98% CI)	STS Mean Participant Score	Participant Rating[1]	Distribution of Participant Scores • = STS Mean
Jul 2017 - Jun 2018 Overall	97.7% (96.9 , 98.4)	96.6%	★★★	Participant; Min 90.1; 10th 95.0; 50th 96.8; 90th 98.0; Max 99.0

STS CABG Composite Quality Rating
Domain Details

Participant 99999
STS Period Ending 06/30/2018

Duke Clinical Research Institute

Quality Domain	Eligible Procedures	Detail	Count	Percent of Morbidity/Failure[1]
Jul 2017 - Jun 2018 Absence of Mortality	612	Mortality	7	
Jul 2017 - Jun 2018 Absence of Morbidity[2]	612	Any Morbidity	56	
		Reoperation only[3]	4	7.1 %
		Renal Failure only[4]	5	8.9 %
		Deep Sternal Infection/Mediastinitis only	3	5.4 %
		Prolonged Ventilation only	26	46.4%
		Cerebrovascular Accident only	6	10.7%
		Multiple Morbidities	12	21.4%
Jul 2017 - Jun 2018 Use of IMA[5]	600	IMA Failures	5	
Jul 2017 - Jun 2018 Medications[6]	612	Failed to Prescribe all eligible NQF-Endorsed Medications	25	
		Only Failed to Prescribe Preoperative Beta Blockade	13	52.0%
		Only Failed to Prescribe Discharge Beta Blockade[7]	3	12.0%
		Only Failed to Prescribe Discharge Anti-Lipids[7]	4	16.0%
		Only Failed to Prescribe Discharge Anti-Platelets[8]	2	8.0 %
		Failed to Prescribe Multiple Medications	3	12.0%

[1]Percentages represent the proportion that the specific morbidity or process non-compliance contributed to the total number of patients for whom credit was not received for these 'all/any or none' bundles. This information is intended to facilitate and focus process and quality improvement initiatives by providers.

[2]Includes Reoperations, Renal Failure, Deep Sternal Infection/Mediastinitis, Prolonged Ventilation, and CVA

[3]Includes Reoperations for Bleeding/Tamponade, Valvular Dysfunction, Graft Occlusion, and Other Cardiac Problems

[4]Excludes patients with preop Renal Failure or Last Creatinine >= 4.

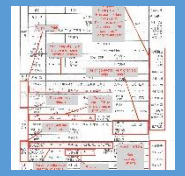
[5]Excludes patients with prior CABG surgery and contraindications for IMA. Refer to Report Overview for definitions.

[6]Includes Preoperative Beta Blockade, Discharge Beta Blockade, Discharge Anti-Lipids, and Discharge Anti-Platelets. Excludes contraindicated / not indicated records.

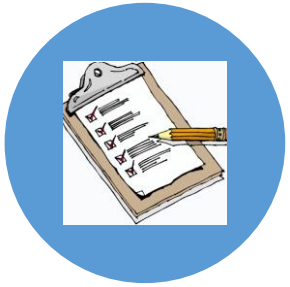
[7]Excludes in-hospital mortalities

[8]Anti-platelet use includes Aspirin, ADP Inhibitors, P2Y12 Antagonists and any other anti-platelet medications, and excludes in-hospital mortalities

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.

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
Questions?

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

Contact Information

- Carole Krohn, Sr. Clinical Manager, STS National Database
  - CKrohn@sts.org
  - 312-202-5847
- Database Operational Questions
  - STSDB@sts.org