Quality ID #446 (NQF 0733): Operative Mortality Stratified by the Five STS-EACTS Mortality Categories – National Quality Strategy Domain: Patient Safety

2018 OPTIONS FOR INDIVIDUAL MEASURES:
REGISTRY ONLY

MEASURE TYPE:
Outcome

DESCRIPTION:
Percent of patients undergoing index pediatric and/or congenital heart surgery who die, including both 1) all deaths occurring during the hospitalization in which the procedure was performed, even if after 30 days (including patients transferred to other acute care facilities), and 2) those deaths occurring after discharge from the hospital, but within 30 days of the procedure, stratified by the five STAT Mortality Levels, a multi-institutional validated complexity stratification tool

INSTRUCTIONS:
This measure is to be submitted for all pediatric and/or congenital heart patients each time a surgery is performed during the performance period.

This measure is intended to reflect the quality of services provided for patients with congenital heart disease. This measure may be submitted by eligible clinicians who perform the quality actions described in the measure based on the services provided and the measure-specific denominator coding.

Mortality is only counted once - so the denominator is all patients having CHS and the numerator is 1) deaths occurring within the index acute care hospitalization and 2) Deaths occurring after discharge but within 30 days of surgery.

Measure Submission:
The listed denominator criteria are used to identify the intended patient population. The numerator quality-data codes included in this specification are used to submit the quality actions allowed by the measure. All measure-specific coding should be submitted on the claim(s) representing the eligible encounter. There are two submission criteria for this measure. 1.) Patients who undergo pediatric and/or congenital heart surgery that experience death during hospitalization or 2.) Patients who undergo pediatric and/or congenital heart surgery that experience death after hospital discharge and within 30 days post procedure

THERE ARE TWO SUBMISSION CRITERIA FOR THIS MEASURE:
Patients who undergo pediatric and/or congenital heart surgery that experience death during the index acute care hospitalization

OR

Patients who undergo pediatric and/or congenital heart surgery that experience death after discharge from the hospital but within 30 days post procedure

DENOMINATOR:

SUBMISSION CRITERIA 1: ALL DEATHS DURING HOSPITALIZATION

DENOMINATOR (SUBMISSION CRITERIA 1):
Number of index cardiac operations in each level of complexity stratification using the five STS-EACTS Mortality Levels, a multi-institutional validated complexity stratification tool

*DENOMINATOR NOTE: *Signifies that this CPT Category I code is a non-covered service under the Medicare Part B Physician Fee Schedule (PFS). These non-covered services should be counted in the denominator population for registry-based measures.*

Denominator Criteria (Eligible Cases) 1:
Diagnosis for congenital heart disease (ICD-10-CM):

Clinical Condition	Corresponding ICD-10-CM Codes
ASD	Q21.1, Q21.2, Q21.8, Q21.9, Q24.9
VSD	Q21.0, Q21.8, Q21.9
Atrioventricular Canal Defect	Q21.2
Aortopulmonary Window	Q21.4
Truncus Arteriosus	Q20.0, Q24.8, Q25.4
Partial Anomalous Pulmonary Venous Connection	Q26.3, Q26.4
Total Anomalous Pulmonary Venous Connection	Q26.2, Q26.4
Cor Tritriatum	Q27.2
Pulmonary Venous Stenosis	Q26.8
Tetralogy of Fallot	Q21.2, Q21.3, Q22.0, Q22.1
Pulmonary Atresia	Q21.1, Q22.0, Q25.4
Tricuspid Valve Disease and Ebstein's Anomaly	Q22.5, Q22.4, Q22.8, Q22.9
Right Ventricular Outflow Tract (RVOT) Obstruction and/or Pulmonary Stenosis	Q20.1, Q22.1, Q22.2, Q22.3, Q25.5, Q25.6, Q25.79
Pulmonary Valve Disease	Q25.79
Aortic Valve Disease	Q23.0, Q23.1, Q23.8, Q25.2, Q25.3
Sinus of Valsalva Fistula/Aneurysm	Q25.4
Left Ventricular to Aorta Tunnel	Q20.8
Mitral Valve Disease	Q23.2, Q23.3
Hypoplastic Left Heart Syndrome	Q23.4
Shone's Syndrome	Q24.8
Single Ventricle	Q20.4, Q20.4
Congenitally Correction of the Great Arteries (TGA)	Q20.3
Transposition of the Great Arteries	Q20.3
Double Outlet Right Ventricle	Q20.1
Double Outlet Left Ventricle	Q20.2
Coarctation of Aorta and Aortic Arch Hypoplasia	Q25.1, Q25.4
Coronary Artery Anomalies	Q24.5

Clinical Condition	Corresponding ICD-10-CM Codes
Interrupted Arch	Q25.4
Patent Ductus Arteriosus	Q25.0
Vascular Rings and Slings	Q25.4, Q25.79
Aortic Aneurysm	Q25.4
Tracheal Disorder	Q32.0, Q32.1, Q32.2
Pectus Excavatum	Q67.6, Q67.7

AND

Patient procedure during performance period (CPT): 15732, 15734, 19271, 19272, 21550, 21555, 21552, 21556, 21554, 21557, 21558, 21600, 21615, 21616, 21620, 21627, 21630, 21632, 21685, 21705, 21740, 21742, 21743, 21750, 21899, 31612, 31613, 31614, 31622, 31623, 31624, 31625, 31626, 31627, 31628, 31629, 31630, 31631, 31634, 31635, 31636, 31638, 31640, 31641, 31643, 31645, 31646, 31647, 31648, 31652, 31653, 31786, 32096, 32097, 32100, 32110, 32120, 32124, 32140, 32141, 32150, 32151, 32160, 32200, 32215, 32220, 32225, 32310, 32320, 32400, 32405, 32503, 32504, 32601, 32604, 32606, 32607, 32608, 32609, 32850*, 32851, 32852, 32853, 32854, 32855, 32856, 32900, 33010, 33011, 33015, 33025, 33030, 33031, 33050, 33120, 33130, 33206, 33207, 33208, 33212, 33213, 33214, 33221, 33230, 33231, 33240, 33249, 33250, 33251, 33254, 33255, 33256, 33257, 33258, 33259, 33261, 33265, 33266, 33270, 33271, 33390, 33391, 33404, 33405, 33406, 33410, 33411, 33412, 33413, 33414, 33415, 33416, 33417, 33418, 33419, 33420, 33422, 33425, 33426, 33427, 33430, 33460, 33463, 33464, 33465, 33468, 33470, 33471, 33474, 33475, 33476, 33477, 33478, 33496, 33500, 33501, 33502, 33503, 33504, 33505, 33506, 33507, 33542, 33545, 33548, 33600, 33602, 33606, 33608, 33610, 33611, 33612, 33615, 33617, 33619, 33620, 33621, 33622, 33641, 33645, 33647, 33660, 33665, 33670, 33675, 33676, 33677, 33681, 33684, 33688, 33690, 33692, 33694, 33697, 33702, 33710, 33720, 33722, 33724, 33726, 33730, 33732, 33735, 33736, 33737, 33750, 33755, 33762, 33764, 33766, 33767, 33770, 33771, 33774, 33775, 33776, 33777, 33778, 33779, 33780, 33781, 33782, 33783, 33786, 33788, 33800, 33802, 33803, 33813, 33814, 33820, 33822, 33824, 33840, 33845, 33851, 33852, 33853, 33860, 33863, 33864, 33870, 33875, 33877, 33910, 33915, 33916, 33917, 33920, 33922, 33924, 33925, 33926, 33930*, 33933, 33935, 33940*, 33944, 33945, 33946, 33947, 33948, 33967, 33970, 33971, 33973, 33974, 33975, 33976, 33977, 33978, 33979, 33980, 33981, 33982, 33983, 33987, 33988, 33989, 33990, 33991, 33992, 33993, 33999, 59076, 59897, 71275, 74175, 75557, 75559, 75561, 75563, 75565, 75572, 75573, 75574, 76825, 76826, 76825, 92992, 92993, 93303, 93304, 93315, 93316, 93317, 93355, 93530, 93531, 93532, 93533, 93563, 93564, 93580, 93581, 93582, 93583

AND

STS-EACTS Mortality Level Tool Utilized

NUMERATOR (SUBMISSION CRITERIA 1):

All deaths occurring during the index acute care hospitalization in which the procedure was performed (no matter how long post op) in which the procedure was performed stratified by the five STAT Mortality Levels, a multi-institutional validated complexity stratification tool

Numerator Instructions:

INVERSE MEASURE - A lower calculated performance rate for this measure indicates better clinical care or control. The “Performance Not Met” numerator option for this measure is the representation of the better clinical quality or control. Submitting that numerator option will produce a performance rate that trends closer to 0%, as quality increases. For inverse measures, a rate of 100% means all of the denominator eligible patients did not receive the appropriate care or were not in proper control.

Numerator Options:

Performance Met: Death occurring during the index acute care hospitalization (G9814)

OR

Performance Not Met: Death did not occur during the index acute care hospitalization (G9815)

OR

SUBMISSION CRITERIA 2: DEATHS OCCURING AFTER HOSPITAL DISCHARGE WITHIN 30 DAYS AFTER PROCEDURE

DENOMINATOR (SUBMISSION CRITERIA 2):

Number of index cardiac operations in each level of complexity stratification using the five STS-EACTS Mortality Levels, a multi-institutional validated complexity stratification tool

Denominator Criteria (Eligible Cases) 2:

Diagnosis for congenital heart disease (ICD-10-CM):

Clinical Condition	Corresponding ICD-10-CM Codes
ASD	Q21.1, Q21.2, Q21.8, Q21.9, Q24.9
VSD	Q21.0, Q21.8, Q21.9
Atrioventricular Canal Defect	Q21.2
Aortopulmonary Window	Q21.4
Truncus Arteriosus	Q20.0, Q24.8, Q25.4
Partial Anomalous Pulmonary Venous Connection	Q26.3, Q26.4
Total Anomalous Pulmonary Venous Connection	Q26.2, Q26.4
Cor Tritriatum	Q27.2
Pulmonary Venous Stenosis	Q26.8
Tetralogy of Fallot	Q21.2, Q21.3, Q22.0, Q22.1
Pulmonary Atresia	Q21.1, Q22.0, Q25.4
Tricuspid Valve Disease and Ebstein's Anomaly	Q22.5, Q22.4, Q22.8, Q22.9
Right Ventricular Outflow Tract (RVOT) Obstruction and/or Pulmonary Stenosis	Q20.1, Q22.1, Q22.2, Q22.3, Q25.5, Q25.6, Q25.79
Pulmonary Valve Disease	Q25.79
Aortic Valve Disease	Q23.0, Q23.1, Q23.8, Q25.2, Q25.3
Sinus of Valsalva Fistula/Aneurysm	Q25.4
Left Ventricular to Aorta Tunnel	Q20.8
Mitral Valve Disease	Q23.2, Q23.3
Hypoplastic Left Heart Syndrome	Q23.4
Shone's Syndrome	Q24.8
Single Ventricle	Q20.4

Clinical Condition	Corresponding ICD-10-CM Codes
Congenitally Correction of the Great Arteries (TGA)	Q20.3
Transposition of the Great Arteries	Q20.3
Double Outlet Right Ventricle	Q20.1
Double Outlet Left Ventricle	Q20.2
Coarctation of Aorta and Aortic Arch Hypoplasia	Q25.1, Q25.4
Coronary Artery Anomalies	Q24.5
Interrupted Arch	Q25.4
Patent Ductus Arteriosus	Q25.0
Vascular Rings and Slings	Q25.4, Q25.79
Aortic Aneurysm	Q25.4
Tracheal Disorder	Q32.0, Q32.1, Q32.2
Pectus Excavatum	Q67.6, Q67.7

AND

Patient procedure during performance period (CPT): 15732, 15734, 19271, 19272, 21550, 21555, 21552, 21556, 21554, 21557, 21558, 21600, 21615, 21616, 21620, 21627, 21630, 21632, 21685, 21705, 21740, 21742, 21743, 21750, 21899, 31612, 31613, 31614, 31622, 31623, 31624, 31625, 31626, 31627, 31628, 31629, 31630, 31631, 31634, 31635, 31636, 31638, 31640, 31641, 31643, 31645, 31646, 31647, 31648, 31652, 31653, 31786, 32096, 32097, 32100, 32110, 32120, 32124, 32140, 32141, 32150, 32151, 32160, 32200, 32215, 32220, 32225, 32310, 32320, 32400, 32405, 32503, 32504, 32601, 32604, 32606, 32607, 32608, 32609, 32850*, 32851, 32852, 32853, 32854, 32855, 32856, 32900, 33010, 33011, 33015, 33025, 33030, 33031, 33050, 33120, 33130, 33206, 33207, 33208, 33212, 33213, 33214, 33221, 33230, 33231, 33240, 33249, 33250, 33251, 33254, 33255, 33256, 33257, 33258, 33259, 33261, 33265, 33266, 33270, 33271, 33403, 33404, 33405, 33406, 33410, 33411, 33412, 33413, 33414, 33415, 33416, 33417, 33418, 33419, 33420, 33422, 33425, 33426, 33427, 33430, 33460, 33463, 33464, 33465, 33468, 33470, 33471, 33474, 33475, 33476, 33477, 33478, 33496, 33500, 33501, 33502, 33503, 33504, 33505, 33506, 33507, 33542, 33545, 33548, 33600, 33602, 33606, 33608, 33610, 33611, 33612, 33615, 33617, 33619, 33620, 33621, 33622, 33641, 33645, 33647, 33660, 33665, 33670, 33675, 33676, 33677, 33681, 33684, 33688, 33690, 33692, 33694, 33697, 33702, 33710, 33720, 33722, 33724, 33726, 33730, 33732, 33735, 33736, 33737, 33750, 33755, 33762, 33764, 33766, 33767, 33770, 33771, 33774, 33775, 33776, 33777, 33778, 33779, 33780, 33781, 33782, 33783, 33786, 33788, 33800, 33802, 33803, 33813, 33814, 33820, 33822, 33824, 33840, 33845, 33851, 33852, 33853, 33860, 33863, 33864, 33870, 33875, 33877, 33910, 33915, 33916, 33917, 33920, 33922, 33924, 33925, 33926, 33930*, 33933, 33935, 33940*, 33944, 33945, 33946, 33947, 33948, 33967, 33970, 33971, 33973, 33974, 33975, 33976, 33977, 33978, 33979, 33980, 33981, 33982, 33983, 33987, 33988, 33989, 33990, 33991, 33992, 33993, 33999, 59076, 59897, 71275, 74175, 75557, 75559, 75561, 75563, 75565, 75572, 75573, 75574, 76825, 76826, 76825, 92992, 92993, 93303, 93304, 93315, 93316, 93317, 93355, 93530, 93531, 93532, 93533, 93563, 93564, 93580, 93581, 93582, 93583

AND

STS-EACTS Mortality Level Tool Utilized

NUMERATOR (SUBMISSION CRITERIA 2):
Those deaths occurring after discharge from the hospital, but within 30 days of the procedure, stratified by the five STAT Mortality Levels, a multi-institutional validated complexity stratification tool

Numerator Instructions:
INVERSE MEASURE - A lower calculated performance rate for this measure indicates better clinical care or control. The "Performance Not Met" numerator option for this measure is the representation of the better clinical quality or control. Submitting that numerator option will produce a performance rate that trends closer to 0%, as quality increases. For inverse measures, a rate of 100% means all of the denominator eligible patients did not receive the appropriate care or were not in proper control.

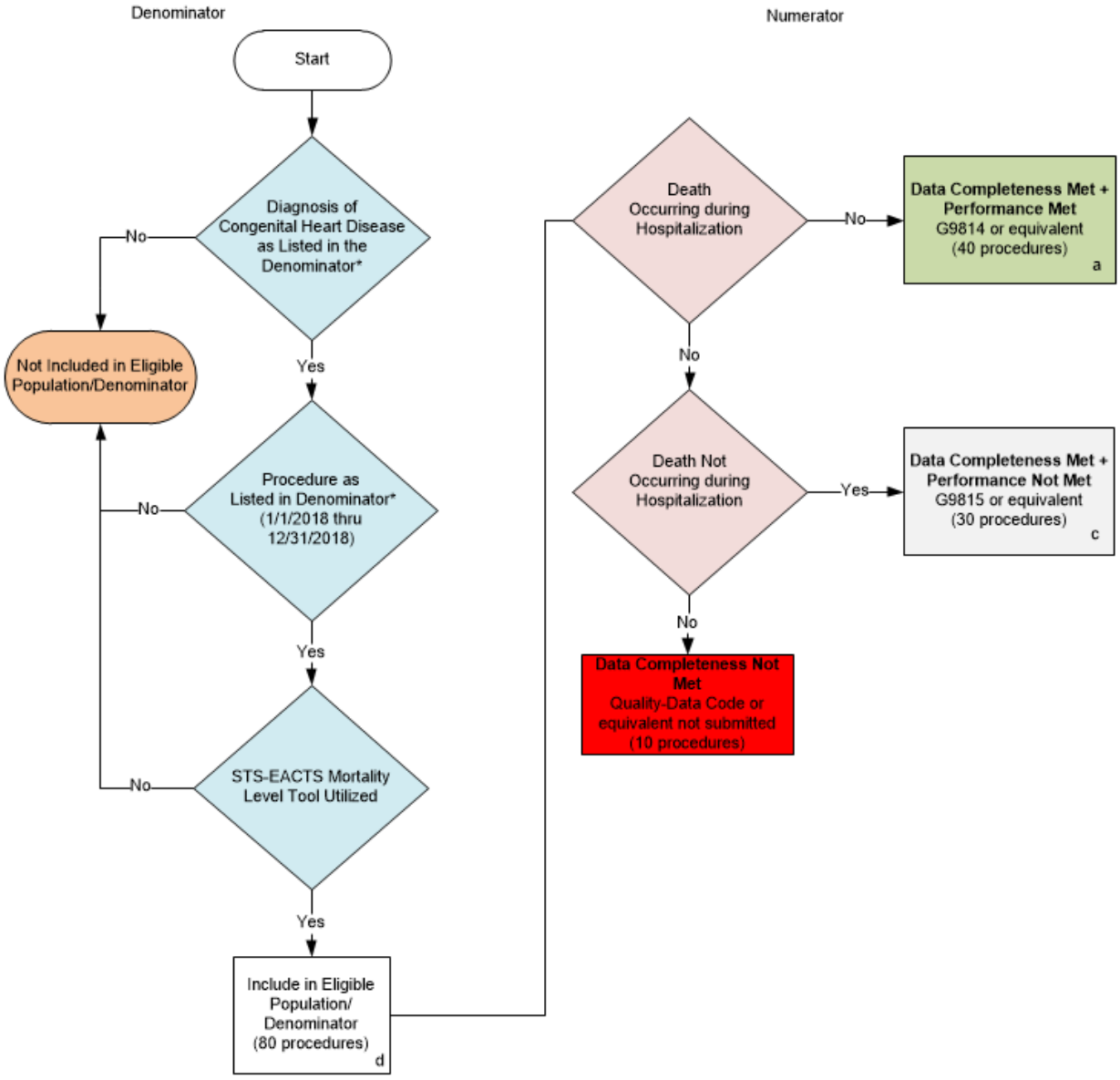
Numerator Options:

Performance Met:	Death occurring after discharge from the hospital but within 30 days post procedure (G9816)
OR	
Performance Not Met:	Death did not occur after discharge from the hospital within 30 days post procedure (G9817)

RATIONALE:
Intended to promote quality assessment and improvement in congenital heart surgery

CLINICAL RECOMMENDATION STATEMENTS:
Congenital heart disease is a common birth defect that affects approximately 1 in 125 live births. Pediatric and congenital heart surgery is a subspecialty of high resource utilization that has the potential to repair or palliate the majority of patients with pediatric and congenital cardiac disease. Mortality is likely the single most important negative outcome that can be associated with a surgical procedure. Critical evaluation of operative mortality allows one to evaluate the risk associated with a given procedure for various patient characteristics, and more importantly, aggressively search for ways to minimize that risk. Over the past decade, mortality after pediatric cardiac surgery has been declining and currently stands at 3.4%.

2018 Registry Flow for Quality ID #446 NQF #0773: Operative Mortality Stratified by the Five STS-EACTS Mortality Categories Submission Criteria One



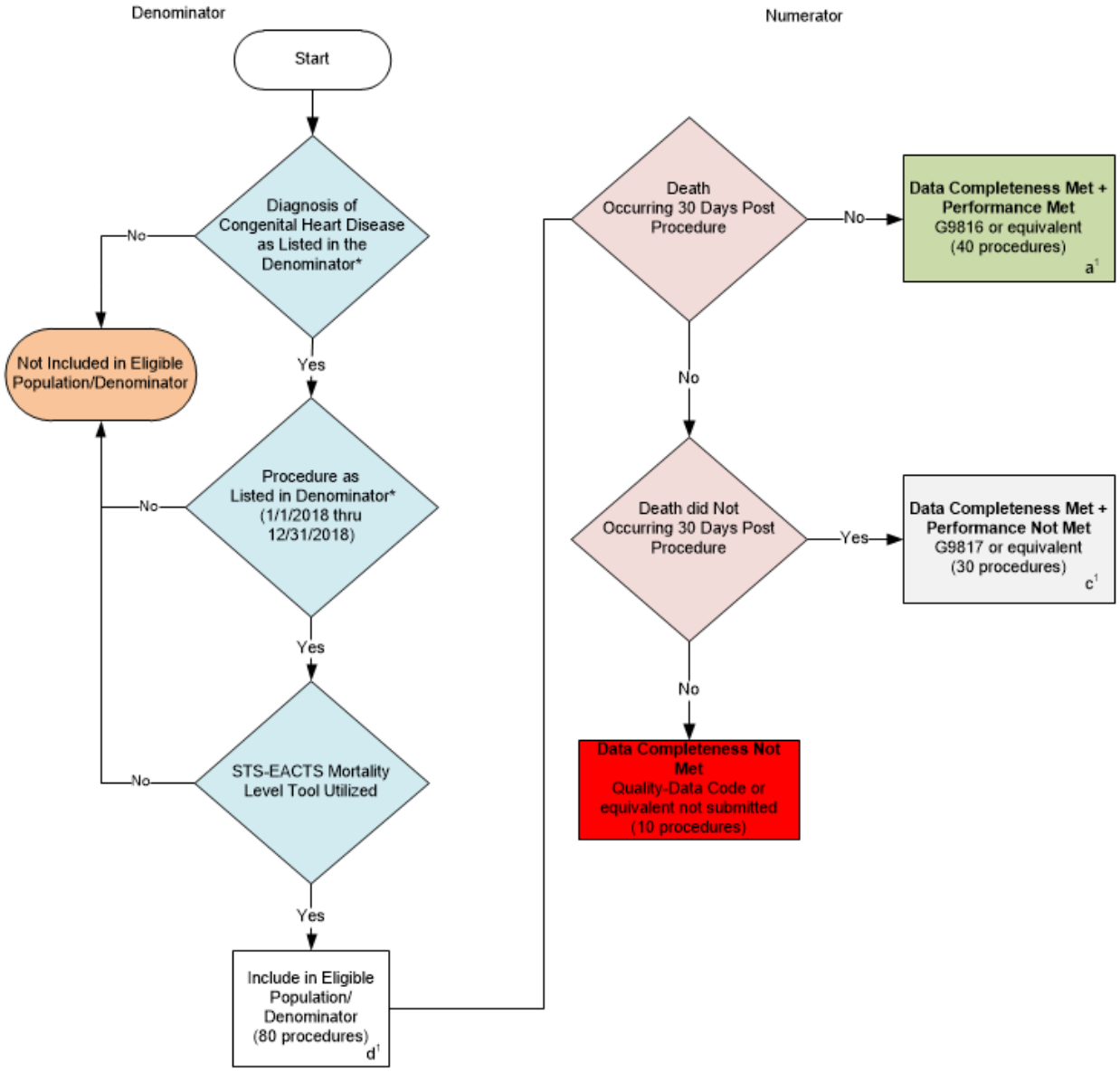
*See the posted Measure Specification for specific coding and instructions to submit this measure.

NOTE: Submission Frequency: Procedure

v2

2018 Registry Flow for Quality ID #446 NQF #0773: Operative Mortality Stratified by the Five STS-EACTS Mortality Categories

Submission Criteria Two



*See the posted Measure Specification for specific coding and instructions to submit this measure.

NOTE: Submission Frequency: Procedure

v2

2018 Registry Flow for Quality ID #446 NQF #0773: Operative Mortality Stratified by the Five STS-EACTS Mortality Categories

SAMPLE CALCULATIONS:

Data Completeness=

Performance Met (a+a^1=80 procedures) + Performance Not Met (c+c^1=60 procedures) = 140 procedures = **87.50%**

Eligible Population / Denominator (d=160 procedures) = 160 procedures

Performance Rate=

Performance Met (a+a1=80 procedures) = 80 procedures = **57.14%**

Data Completeness Numerator (140 procedures) = 140 procedures

*See the posted Measure Specification for specific coding and instructions to submit this measure.

NOTE: Submission Frequency: Procedure

v2

2018 Registry Flow for Quality ID
#446 NQF #0773: Operative Mortality Stratified by the Five STS-EACTS Mortality Categories

Please refer to the specific section of the specification to identify the denominator and numerator information for use in submitting this Individual Specification This flow is for registry-data submission.

Submission Criteria 1

1. Start with Denominator
2. Check Diagnosis of Congenital Heart Disease:
    a. If Diagnosis of Congenital Heart Disease as Listed in Denominator equals No, do not include in Eligible Patient Population. Stop Processing.
    b. If Diagnosis of Congenital Heart Disease as Listed in Denominator equals Yes, proceed to check Procedure as listed in Denominator.
3. Check Procedure as Listed in Denominator:
    a. If Procedure as Listed in the Denominator equals No, do not include in Eligible Patient Population. Stop Processing.
    b. If Procedure as Listed in the Denominator equals Yes, proceed to STS-EACTS mortality Level Tool Utilized.
4. Check STS-EACTS Mortality Level Tool Utilized:
    a. If STS-EACTS Mortality Level Tool Utilized equals No, do not include in Eligible Patient Population. Stop Processing.
    b. If STS-EACTS Mortality Level Tool Utilized equals Yes, include in Eligible Patient Population.
5. Denominator Population:
    a. Denominator population is all Eligible Patients in the denominator. Denominator is represented as Denominator in the Sample Calculation listed at the end of this document. Letter d equals 80 patients in the Sample Calculation.
6. Start Numerator
7. Check Death Occurring During Hospitalization:
    a. If Death Occurring During Hospitalization equals No, include in Data Completeness Met and Performance Met.
    b. Data Completeness Met and Performance Met letter is represented in the Data Completeness and Performance Rate in the Sample Calculation listed at the end of this document. Letter a equals 40 patients in the Sample Calculation.

c. If Death Occurring During Hospitalization equals Yes, proceed to Death Not Occurring During Hospitalization.

8. Check Death Not Occurring During Hospitalization:

   a. If Death Not Occurring During Hospitalization equals Yes, include in Data Completeness Met and Performance Not Met.

   b. Data Completeness Met and Performance Not Met letter is represented in the Data Completeness in the Sample Calculation listed at the end of this document. Letter c equals 30 patients in the Sample Calculation.

   c. If Death Not Occurring During Hospitalization equals No, proceed to Data Completeness Not Met.

9. Check Data Completeness Not Met:

   a. If Data Completeness Not Met equals No, Quality Data Code or equivalent not submitted. 10 patients have been subtracted from the Data Completeness Numerator in the Sample Calculation.

2018 Registry Flow for Quality ID
#446 NQF #0773: Operative Mortality Stratified by the Five STS-EACTS Mortality Categories

Please refer to the specific section of the specification to identify the denominator and numerator information for use in submitting this Individual Specification. This flow is for registry-data submission

Submission Criteria 2

1. Start with Denominator
2. Check Diagnosis of Congenital Heart Disease:
    a. If Diagnosis of Congenital Heart Disease as Listed in Denominator equals No, do not include in Eligible Patient Population. Stop Processing.
    b. If Diagnosis of Congenital Heart Disease as Listed in Denominator equals Yes, proceed to check Procedure as listed in Denominator.
3. Check Procedure as Listed in Denominator:
    a. If Procedure as Listed in the Denominator equals No, do not include in Eligible Patient Population. Stop Processing.
    b. If Procedure as Listed in the Denominator equals Yes, proceed to STS-EACTS mortality Level Tool Utilized.
4. Check STS-EACTS Mortality Level Tool Utilized:
    a. If STS-EACTS Mortality Level Tool Utilized equals No, do not include in Eligible Patient Population. Stop Processing.
    b. If STS-EACTS Mortality Level Tool Utilized equals Yes, include in Eligible Patient Population.
5. Denominator Population:
    a. Denominator population is all Eligible Patients in the denominator. Denominator is represented as Denominator in the Sample Calculation listed at the end of this document. Letter d1 equals 80 patients in the Sample Calculation.
6. Start Numerator
7. Check Death Occurring 30 Days Post Procedure:
    a. If Death Occurring 30 Days Post Procedure equals No, include in Data Completeness Met and Performance Met.
    b. Data Completeness Met and Performance Met letter is represented in the Data Completeness and Performance Rate in the Sample Calculation listed at the end of this document. Letter a1 equals 40 patients in the Sample Calculation.

c. If Death Occurring 30 Days Post Procedure equals Yes, proceed to Death Did Not Occur 30 Days Post Procedure.

8. Check Death Did Not Occur 30 Days Post Procedure:

   a. If Death Did Not Occur 30 Days Post Procedure equals Yes, include in Data Completeness Met and Performance Not Met.

   b. Data Completeness Met and Performance Not Met letter is represented in the Data Completeness in the Sample Calculation listed at the end of this document. Letter c1 equals 30 patients in the Sample Calculation.

   c. If Death Did Not Occur 30 Days Post Procedure equals No, proceed to Data Completeness Not Met.

9. Check Data Completeness Not Met:

   a. If Data Completeness Not Met equals No, Quality Data Code or equivalent not submitted. 10 patients have been subtracted from the Data Completeness Numerator in the Sample Calculation.

SAMPLE CALCULATIONS:

Data Completeness=

Performance Met (a+a^1=80 procedures) + Performance Not Met (c+c^1=60 procedures) = 140 procedures = **87.50%**
Eligible Population / Denominator (d=160 procedures) = 160 procedures

Performance Rate=

Performance Met (a+a1=80 procedures) = 80 procedures = **57.14%**
Data Completeness Numerator (140 procedures) = 140 procedures