NEW YORK STATE DEPARTMENT OF HEALTH
OFFICE OF HEALTH SERVICES QUALITY
AND ANALYTICS
CARDIAC SERVICES PROGRAM

2026 Data Collection:
12/1/2025 – 11/30/2026 Discharges

Structural Heart Interventions Report

Instructions and Data Element Definitions
Form DOH- 5838

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Attachments

SHIRS Data Reporting Policies

Hospice Policy

Beginning with patients discharged on or after January 1, 2003, any patient that is discharged from the hospital after cardiac surgery, transcatheter valve procedure or PCI to hospice care (inpatient or home with hospice care) and is still alive for 30 days after the discharge from the hospital will be analyzed as a live discharge.

All patients discharged to a hospice or home with hospice care should continue to be reported with Discharge Status – 12: Hospice. If a patient is still alive 30 days after discharge, whether in hospice or not, appropriate supporting documentation should be sent to the Cardiac Services Program. Examples of appropriate documentation include but are not limited to: a dated progress note from the hospice service, evidence of a follow-up doctor's visit more than 30 days after discharge, evidence of subsequent hospital admission more than 30 days after initial discharge, or evidence of death more than 30 days after initial discharge.

It will be the responsibility of the hospital (physician) to send documentation to the Cardiac Services Program to support this change. Upon receipt, review, and verification of the documentation, Cardiac Services Program staff will change the discharge status from dead to alive for purposes of analysis. All documentation must be received before the final volume and mortality for a given year of data is confirmed by the hospital.

Refractory Cardiogenic Shock Cases

Effective January 1, 2015, cases with the risk factor "Refractory Cardiogenic Shock" will be excluded from provider-specific publicly released reports and analyses. Cases with the risk factor "Cardiogenic Shock" will remain in analysis.

This continues the shock exclusion policy which was initiated in 2006 and reflects revised definitions and variable names. All excluded cases must meet the NYS Cardiac Services Program definition of Refractory Cardiogenic Shock and will be subject to medical record documentation review.

All cases will continue to be reported electronically and will be subject to data verification and quality monitoring activities. To ensure that the appropriate cases are identified as "Refractory Cardiogenic Shock" cases, submission of medical record documentation for any case reported with this risk factor will be required. If appropriate documentation is not provided by your center, the risk factor will be removed from the data and the case will be included in analysis. Medical record documentation will also be required for any case reported with the risk factor "Cardiogenic Shock."

It is strongly suggested that all appropriate staff closely review the definitions and documentation requirements for these two risk factors.

Physician Assignment

When multiple records exist for the same patient during a hospital admission and two or more physicians were reported for those procedures, the case will be assigned for analysis to the physician performing the first procedure. However, the hospital may submit a letter from the CEO or Medical Director requesting that the case be assigned to the physician performing the later procedure.

Reporting Schedule
SHIRS data is reported quarterly by discharge date. It is due to the Cardiac Services Program two months after the end of the quarter. The 2026 reporting schedule is as follows.

Quarter 1: Discharges 12/01/2025 – 02/28/2026 Due: 05/01/2026
Quarter 2: Discharges 03/01/2026 – 05/31/2026 Due: 08/01/2026
Quarter 3: Discharges 06/01/2026 – 08/31/2026 Due: 11/01/2026
Quarter 4: Discharges 09/01/2026 – 11/30/2026 Due: 02/01/2027

Results of Post-Procedure Transthoracic Echocardiograms are reportable if they occur up to 90-days after the Mitral TEER. To facilitate reporting information that is collected after hospital discharge, these data elements will be reportable up to six months after the end of the quarter according to the schedule below.

Post-Procedure Transthoracic Echo Result Reporting Schedule:

Quarter 1: Discharges 12/01/2025 – 02/28/2026 Due: 09/01/2026
Quarter 2: Discharges 03/01/2026 – 05/31/2026 Due: 12/01/2026
Quarter 3: Discharges 06/01/2026 – 08/31/2026 Due: 03/01/2027
Quarter 4: Discharges 09/01/2026 – 11/30/2026 Due: 06/01/2027

Limited extensions to the above deadlines will be granted on a case-by-case basis when warranted by extenuating circumstances. They must be requested in writing prior to the required submission date.

Technical Data Specifications
This document is supplemented by the 2026 Data Specification document which is available by request (CardiacServicesProgram@health.ny.gov).

When to Complete a SHIRS Form

Complete a Structural Heart Interventions Reporting System (SHIRS) form for every patient age 18 or over on admission undergoing a transcatheter valve replacement or mitral Transcatheter Edge to Edge Repair (TEER).

Unless otherwise specified, forms should be submitted for a reportable transcatheter procedure no matter where in the hospital the operation is performed. References to the “operating room” in these instructions can be interpreted to mean “the location where the cardiac procedure is occurring.”

If the patient has more than one reportable transcatheter procedure during a single hospital stay, complete a separate form for each reportable transcatheter procedure.

Attempted and aborted transcatheter valve replacement and mitral TEER should be reported. See “Guidance on Selecting Appropriate Procedure Codes” for additional details and definitions.

Special Note for hospitals performing transplantation procedures: A patient that undergoes a reportable SHIRS case in the same admission as a heart transplant will not be included in analysis. If you have any such patients, you must complete a SHIRS form for any reportable transcatheter procedure and notify the Cardiac Services Program that the patient also underwent heart transplant. These cases will be manually flagged for removal from analysis.

Code the following procedures only when they are performed at the same time as another reportable transcatheter procedure:

Transcatheter Endovascular Aortic Repair (TEVAR) (813)
Percutaneous Coronary Intervention (711)

Cardiac surgical procedures, including those that occur during the same procedure room visit as a SHIRS reportable structural heart intervention, must be reported to the Cardiac Surgery Reporting System (CSRS). The SHIRS data element “Concomitant Cardiac Surgery” must be reported for any cases that include reportable (open) cardiac surgery during the same procedure room visit as the structural heart intervention.

Guidance on Selecting Appropriate Procedure Codes

VALVE REPAIR AND REPLACEMENT

Bicuspid Aortic Valve: When a bicuspid aortic valve is being operated on for a patient who is not in the childhood era and the operation is required due to acquired valve disease, it should be coded as a standard valve procedure (Code 520-548).

Third Digit for Valve Replacement (510- 608): When reporting valve replacement procedures (codes 510-608), use the third digit to indicate if the valve currently being replaced has been previously intervened upon and if so the reason for the reoperation.

Approach Codes (640-641,643-647): Use these codes to report the appropriate approach. a transcatheter valve replacement or mitral valve transcatheter edge to edge repair (TEER) has been performed and by which approach. A valve replacement code or code 504 for TEER must also be reported.

PCI IN SAME SETTING AS TRANSCATHETER INTERVENTION (711)

Use this procedure code to indicate percutaneous coronary intervention (PCI) was performed in the same procedure room visit as a reportable transcatheter valve replacement or mitral TEER. The PCI must be reported to the Percutaneous Coronary Interventions Reporting System if the PCI was performed for the treatment of pre-existing coronary artery disease.

TEVAR (performed at the same time as reportable transcatheter valve replacement or mitral TEER) (813)

Use this code to indicate a Transcatheter Endovascular Aortic Repair was performed at the same time as a reportable transcatheter procedure.

ATTEMPTED / ABORTED PROCEDURES

Attempted Transcatheter Valve Replacement or mitral TEER (930): Should be reported when there is any vascular penetration of the patient designed to carry out a transcatheter valve replacement procedure or mitral valve transcatheter edge-to-edge repair, but the procedure did not proceed to completion. Also report the primary valve code (520-608, 504) and the approach code (640-641, 643-647).

Aborted Transcatheter Valve Replacement or mitral TEER (931): Should be used when the sheath for delivery of the device has been inserted, but the procedure does not proceed to completion. If reporting aborted, you should not also report attempted. Also report the primary valve code (520-608, or 504) and the approach code (640-641, 643-647).

Item-By-Item Instructions

I. Patient Information

Descriptive Name: PFI Number
Variable Name: PFI
Format: XXXX, or XXXXX, or XXXXXX
Definition: The PFI Number is a Permanent Facility Identifier assigned by the Department of Health. Enter your facility's PFI Number as shown in Attachment C.

Note:
The reported PFI must be at least 4 digits but can extend to 5 or 6 digits if the number is greater than 9999. PFI values less than 9999 (e.g., 0001 or 0925) should continue to be reported with leading zeros as needed to fill the required 4 digits. Additional 0s beyond those required to fill 4 digits should not be reported.

Descriptive Name: Sequence Number
Variable Name: SEQUENCE
Format: Free text
Definition: If your facility assigns a sequence number to each case on a chronological flow sheet or similar log, enter the sequence number here. The sequence number is not required for the Structural Heart Interventions Reporting System but has been included on the form in case your facility finds it useful in identifying and tracking cases.

Descriptive Name: Patient Last Name
Variable Name: LASTNAME
Format: Free text
Definition: Enter the patient's last name.

Descriptive Name: Patient First Name
Variable Name: FIRSTNAME
Format: Free text
Definition: Enter the patient's first name.

Descriptive Name: Medical Record Number
Variable Name: MEDRECNO
Format: 0-9 or A-Z; no punctuation or other characters
Definition: Enter the patient's medical record number.

Note:
Characters A-Z and 0-9 may be reported. Do not report punctuation or other symbols of any kind in the medical record number.

Descriptive Name: Social Security Number
Variable Name: SSNO
Format: XXX-XX-XXXX
Definition: Enter the patient's Social Security Number as shown in the medical record. If the medical record does not contain the patient's Social Security Number, leave this item blank.

Descriptive Name: Date of Birth
Variable Name: DOB
Format: MM/DD/YYYY
Definition: Enter the patient's exact date of birth.

Descriptive Name: Sex
Variable Name: SEX
Format: 1-3
Definition: Check the appropriate box for the patient's sex at birth.

1 - Male
2 - Female
3 - Other

Note:
In the absence of any other information, it is reasonable to assume that the sex at birth is the same as at the time of admission.

Descriptive Name: Ethnicity
Variable Name: ETHNIC
Format: 1 or 2
Definition: Check the appropriate box.

1 - Hispanic
2 - Non-Hispanic

Note:
The term "Hispanic" refers to persons who trace their origin or descent to Mexico, Puerto Rico, Cuba, Central and South America or other Spanish cultures.

Descriptive Name: Race
Variable Name: RACE_W, RACE_B, RACE_NA, RACE_O, RACE_U, AA_CODE, PI_CODE
Format: 1 = Yes, 0 or Blank = No, except AA_CODE (1-21, 0 or blank) and PI_CODE (1-4, 0 or Blank)
Definition: Select all that apply.

Report the patient's race. More than one response may be reported.

White: A person having origins in any of the original peoples of Europe, the Middle East, or North Africa.

Black or African American: A person having origins in any of the black racial groups of Africa.

Native American / American Indian or Alaska Native: A person having origins in any of the original peoples of North and South America (including Central America), and who maintains tribal affiliation or community attachment.

Other: Report for those responses that are not covered by any other category.

Unknown: Report if patient's race is unknown.

Asian: A person having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent including, for example, Cambodia, China, India, Japan, Korea, Malaysia, Pakistan, the Philippine Islands, Thailand, and Vietnam. Report using the most appropriate code from Attachment A.

Pacific Islander: A person having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands. Report using the most appropriate code from Attachment A.

Note:
Race should be based on the patient's racial/ethnic origins, which is not necessarily the same as their country or place of origin.

For White Hispanics, check "White." For Black Hispanics, check "Black."

Descriptive Name: Race Specify
Variable Name: RACESPEC, AA_OTH, PI_OTH
Format: Free text
Definition: If Race was reported as Other, Asian-Other, or Pacific Islander-Other provide the specific race.

Descriptive Name: ZIP Code
Variable Name: ZIPCODE
Format: XXXXX
Definition: For patients residing in NYS, enter the ZIP code of the primary residence. If the patient lives outside NYS, enter 99999.

Directions:
If the patient lives in a foreign country but is temporarily staying in the US during the pre-procedure and post-procedure time period, enter 99999. Do not enter the ZIP code of where the patient is staying in the US.

Descriptive Name: State or Country of Residence
Variable Name: STATE
Format: Free Text
Definition: For patients living outside NYS, enter the name of the state or country where the patient resides.

Directions:
If a valid NYS ZIP Code has been entered, then the "State or Country" field should be left blank.

Descriptive Name: Hospital Admission Date
Variable Name: ADMIDATE
Format: MM/DD/YYYY
Definition: Enter the date that the current hospital stay began.

Note:
Report the date that the patient arrived at the hospital, even if it is not equal to the technical "admission date" (i.e., this date may be prior to official inpatient status).

Descriptive Name: Primary Payer
Variable Name: PAYER
Format: 01-07, 11, or 19
Definition: Enter the primary source of payment for this hospital stay.

01 – Medicare—Fee For Service
02 – Medicare—Managed Care
03 – Medicaid—Fee For Service
04 – Medicaid—Managed Care
05 – Blue Cross
06 – HMO/Managed Care
07 – Other Private Insurance Company
11 – Self Pay
19 – Other

Interpretation:
For Medicaid pending code Primary Payer as 11-Self-Pay and check the box Medicaid.

For patients in prison, code Primary Payer as 19-Other.

Please note the difference between 07-Other Private Insurance Company and 19-Other. Code 07 refers to a Private Insurance Company (also referred to as Commercial insurance) that is not listed elsewhere. Code 19 is any other type of insurance that is not given a code of its own (e.g., Corrections, Worker's Compensation).

Report a PPO (Preferred Provider Organization) as 06 – HMO/Managed Care.

Descriptive Name: Medicaid
Variable Name: MEDICAID
Format: 1 = Yes, 0 or Blank = No
Definition: Check this box if the patient has Medicaid that will provide payment for any portion of this hospital stay.

Directions:
If the patient's primary payer is Medicaid, check this box in addition to entering 03 or 04 under Primary Payer.

Descriptive Name: Preferred Language
Variable Name: PREF_LANG
Format: From Attachment B
Definition: Indicate the patient's preferred language using the responses listed in Attachment B.

Descriptive Name: PFI of Transferring Hospital
Variable Name: TRANS_PFI
Format: XXXX or XXXXX or XXXXXX
Definition: If the patient was transferred from another acute care facility, enter the PFI of the transferring hospital.

This element only needs to be completed for transfer patients.

A listing of PFIs for cardiac diagnostic centers in New York State (NYS) is provided in Attachment C. If transferred from a Veterans Administration hospital in NYS, enter 8888; if transferred from outside NYS, enter 9999. For patients transferred from another hospital in NYS, please see https://profiles.health.ny.gov/hospital (search for the hospital by name and open the Administrative tab to find the PFI).

Note:
The reported PFI must be at least 4 digits but can extend to 5 or 6 digits if the number is greater than 9999. PFI values less than 9999 (e.g., 0001 or 0925) should continue to be reported with leading zeros as necessary to fill the required 4 digits. Additional 0s beyond those required to fill 4 digits should not be reported.

II. Procedural Information

Descriptive Name: Hospital That Performed Diagnostic Cath
Variable Name: CATHPFI
Format: XXXX or XXXXX or XXXXXX
Definition: If the procedure was preceded by a diagnostic catheterization, enter the name and PFI number of the hospital in the spaces provided.

Directions:

- If the catheterization was at a cardiac diagnostic center in NYS, enter its PFI Number from Attachment C.
- If done at a Veterans Administration hospital in NYS, enter 8888.
- If done outside NYS, enter 9999.
- If there was no diagnostic catheterization, leave this item blank.

Do not use this field to report any diagnostic procedure other than catheterization (e.g., CT).

Note:
The reported PFI must be at least 4 digits but can extend to 5 or 6 digits if the number is greater than 9999. PFI values less than 9999 (e.g., 0001 or 0925) should continue to be reported with leading zeros as needed to fill the required 4 digits. Additional 0s beyond those required to fill 4 digits should not be reported.

File Structure Note:
Diagnostic Catheterization Hospital name is included on the data collection form for abstractor convenience. It is not part of the SHIRS file structure.

Descriptive Name: Date of Transcatheter Intervention
Variable Name: PROCDATE
Format: MM/DD/YYYY
Definition: Enter the date on which the transcatheter intervention procedure was performed.

Clarification:
The reported date on which the first skin incision, vascular access, or its equivalent, was made in order to start the procedure.

Descriptive Name: Start Time
Variable Name: STARTHOUR, STARTMIN
Format: STARTHOUR = HH; STARTMIN = MM
Definition: The start time is the time that the skin incision, vascular access, or its equivalent, was made in order to start the procedure. Indicate the time to the nearest minute (using 24-hour clock).

Descriptive Name: End Time
Variable Name: ENDHOUR, ENDMIN
Format: ENDHOUR = HH; ENDMIN = MM
Definition: The end time is the time that the operator completes the procedure and breaks scrub at the end of the procedure. Capture the time to the nearest minute (using 24-hour clock).

Explanation:
If the patient dies in the procedure room after start time, but prior to end time, code the end time as the time of death.

Descriptive Name: Prior Transcatheter Intervention This Admission
Variable Name: PRIOPROC
Format: 1, 2
Definition: Indicate whether the patient had any reportable (form generating) transcatheter valve replacement or mitral TEER prior to the present procedure during the same hospital admission.

1 - Yes
2 - No

Descriptive Name: Date of Prior Transcatheter Intervention This Admission
Variable Name: PRIODATE
Format: MM/DD/YYYY
Definition: If the patient had prior reportable transcatheter intervention this admission (PRIOPROC = 1), enter the date of that procedure.

Explanation:
The date of the most recent previous transcatheter intervention MUST be entered. This is very important because this date aids in combining multiple procedures that occurred on the same day in the proper order.

Descriptive Name: Cardiac Procedures This OR Visit
Variable Name: PROC1, PROC2, PROC3, PROC4, PROC5, PROC6, PROC7
Format: XXX
Definition: Enter the 3-digit State Cardiac Advisory Committee code from the procedure code list in Attachment D – Congenital and Acquired Cardiac Procedure Codes.

List up to 7 cardiac procedures performed during this procedure room visit.

If there are more than 7, list the 7 most significant.

Note:
Please see Attachment D: Congenital and Acquired Cardiac Procedure Codes and “When to Complete a SHIRS Form” and “Guidance on Selecting Appropriate Codes” for additional coding instructions and scenarios for reporting procedure codes.

Descriptive Name: Congenital Diagnosis
Variable Name: DIAG1, DIAG2, DIAG3
Format: XXXX
Definition: Indicate the three most significant congenital diagnoses for any patient with a congenital diagnosis.

The diagnosis codes in Attachment E are identical to those used for the Cardiac Surgery Reporting System (adult and pediatric). Inclusion of this information will allow for meaningful evaluation of outcomes for adult congenital transcatheter procedures.

Report in every case where a congenital diagnosis exists, even if there is no intervention for congenital disease during this procedure.

Some diagnoses listed in Attachment E are not congenital cardiac conditions. Those codes should not be used for this data element.

Descriptive Name: Surgeon Performing Operation
Variable Name: PHYSNUM
Format: XXXXXXXXXX
Definition: Enter the name and National Provider ID (NPI) number of the surgeon who performed the transcatheter intervention.

Directions:
If no surgeon participated in this procedure, report 9999999999.

File Structure Note:
Surgeon name is included on the data collection form for abstractor convenience. Surgeon name is not part of the required SHIRS data structure.

Descriptive Name: Interventional Cardiologist
Variable Name: CARDNUM
Format: XXXXXXXXXX
Definition: Enter the name and National Provider ID (NPI) number of the interventional cardiologist participating in the case.

Directions:
If no interventional cardiologist participated in this procedure, report 0000000000.

Note:
Interventional cardiologist name is included on the data collection form for abstractor convenience. Interventional cardiologist name is not part of the required SHIRS data structure.

Descriptive Name: Anesthesiologist (1)
Variable Name: ANESNUM1
Format: XXXXXXXXXX
Definition: Enter the name and National Provider ID (NPI) number of the responsible anesthesiologist at the start of the transcatheter intervention.

If no anesthesiologist participated in this procedure, report 8888888888.

File Structure Note:
Anesthesiologist name is included on the data collection form for abstractor convenience. Anesthesiologist name is not part of the required SHIRS data structure.

Descriptive Name: Anesthesiologist (2)
Variable Name: ANESNUM2
Format: XXXXXXXXXX
Definition: Enter the name and National Provider ID (NPI) number of the responsible anesthesiologist at the end of the transcatheter intervention.

If no anesthesiologist participated in this procedure, report 8888888888.

File Structure Note:
Anesthesiologist name is included on the data collection form for abstractor convenience. Anesthesiologist name is not part of the required SHIRS data structure.

Descriptive Name: Minimally Invasive
Variable Name: MINI_INV
Format: 1 = Yes, 0 or Blank = No
Definition: Indicate if the transcatheter intervention began through an incision other than a complete sternotomy or thoracotomy (less than 12 centimeters in length) regardless of whether the case converted to a standard incision or cardiopulmonary bypass was used.

Explanation:
It is anticipated that nearly all transcatheter interventions will have this element reported.

Descriptive Name: Converted to Standard Incision
Variable Name: STND_INC
Format: 1= Yes, 0 or Blank = No
Definition: Indicate if a minimally invasive procedure was modified to a standard incision.

Explanation: This box should never be checked unless Minimally Invasive is also checked.

Descriptive Name: Converted from Off Pump to On Pump
Variable Name: CONVERT
Format: 1 = Yes, 0 or Blank = No
Definition: Indicate if the procedure began without the use of cardiopulmonary bypass, but prior to the completion of the procedure the patient was placed on pump. This should only be checked if the patient was placed on pump unexpectedly.

Descriptive Name: Entire Procedure Off Pump
Variable Name: ALL_OFF
Format: 1 = Yes, 0 or Blank = No
Definition: Indicate if the cardiac procedure was performed entirely without the use of cardiopulmonary bypass.

Explanation:
It is anticipated that the vast majority of transcatheter interventions will have this element reported.

Descriptive Name: Concomitant Cardiac Surgery
Variable Name: CON_CS
Format: 1 = Yes, 0 or Blank = No
Definition: Indicate if a Cardiac Surgery Reporting System (CSRS) reportable cardiac surgery was performed in the same procedure room as this transcatheter intervention.

Explanation: This box should be checked for any open surgical cardiac procedure that occurs during the same procedure room visit as a reportable transcatheter intervention. This could include planned surgical intervention as well as unplanned cardiac surgery required due to a complication of the transcatheter procedure. The cardiac surgery must also be reported to CSRS.

Descriptive Name: Reason PCI Performed During this Procedure
Variable Name: PCI_RSN
Format: 1-3, 0 or Blank
Definition: For cases that include a PCI as part of the same procedure, choose the response that best describes why the PCI was performed.

1 – Planned treatment of pre-existing coronary artery disease (CAD)
2 – Prophylactic
3 – Required due to a complication

Directions:

- Report this element whenever procedure code 711 (“PCI in the same setting as transcatheter intervention”) is reported.
- Leave this item blank if procedure code 711 is not reported.

Cases reported with response category 1-Treatment of pre-existing CAD, must also be reported to the Percutaneous Coronary Interventions Reporting System (PCIRS). Cases with other response categories are not reportable to PCIRS.

III. Pre-Procedural Risk Factors

Descriptive Name: Priority
Variable Name: PRIORITY
Format: 1-4
Definition: Indicate the clinical status of the patient prior to entering the procedure room.

1 – Elective: The patient's cardiac function has been stable in the days or weeks prior to the operation. The procedure could be deferred without increased risk of compromised cardiac outcome.
2 – Urgent: Procedure required during same hospitalization in order to minimize chance of further clinical deterioration. Examples include but are not limited to: worsening, sudden chest pain; CHF; acute myocardial infarction; anatomy; IABP; unstable angina with intravenous nitroglycerin or rest angina.
3 – Emergent: Patients requiring emergency procedures will have ongoing, refractory (difficult, complicated, and/or unmanageable) unrelenting cardiac compromise, with or without hemodynamic instability, and not responsive to any form of therapy except transcatheter intervention. An emergency procedure is one in which there should be no delay in providing procedural intervention.
4 – Emergent Salvage: The patient is undergoing CPR enroute to the procedure room or has ongoing ECMO to maintain life.

Descriptive Name: Height
Variable Name: HEIGHT
Format: 1-999
Definition: Enter the patient's height in centimeters (cm) closest to the time of procedure start.

Directions:
For patients who have had lower extremity amputations, code the patient's original height.

Descriptive Name: Weight
Variable Name: WEIGHT
Format: 1-999
Definition: Indicate the weight of the patient, in kilograms (kg), closest to the date of the procedure.

Descriptive Name: LV End Systolic Dimension
Variable Name: LVED_SYS
Format: 00.0-99.9, Blank
Definition: Indicate LV End -Systolic Dimension in millimeters.

LV end systolic dimension is the same as left ventricular internal dimension in end systole (LVIDs)

Directions: Report if available from within 6 months prior to procedure.

Descriptive Name: LV End Diastolic Dimension
Variable Name: LVED_DIA
Format: 00.0-99.9, Blank
Definition: Indicate the Left Ventricular End-Diastolic Dimension in millimeters.

LV end diastolic dimension is the same as left ventricular internal dimension in end diastole (LVIDd).

Directions: Report if available from within 6 months prior to procedure.

Descriptive Name: Ejection Fraction
Variable Name: EJEC_FRA
Format: 1-99 or 0 for Unknown
Definition: Record the pre-operative ejection fraction taken closest to, but before, the start of the cardiac procedure.

Directions:
- If an ejection fraction is unavailable, enter "0".
- An ejection fraction that is described as "Normal" in the medical record without a numeric value documented, should be reported as 55%.
- If EF is given as a range, enter the midpoint of the range.

An EF measured up to one year prior to the procedure may be used if there is not a more recent value and if there was no change in clinical condition that would indicate the value was likely to change in that time period.

Intra-procedural TEE is acceptable, if no pre-procedure ejection fraction is available.

Descriptive Name: Ejection Fraction Measure
Variable Name: MEASURE
Format: 1-4, 8 or 9
Definition: Indicate how the ejection fraction was measured using one of the following:

1 – LV Angiogram
2 – Echocardiogram
3 – Radionuclide Studies
4 – Transesophageal Echocardiogram (TEE), this includes intra-procedure
8 – Other
9 – Unknown

Directions:
If an ejection fraction is unavailable, enter 9 – Unknown.

Descriptive Name: Anginal Classification within 2 Weeks
Variable Name: CCS_CLAS
Format: 1-4 or 8
Definition: Indicate the patient's anginal classification or symptom status within the past 2 weeks prior to procedure. The anginal classification or symptom status is classified as the highest grade of angina or chest pain by the Canadian Cardiovascular Angina Classification System (CCA).

1 – CCA I - Ordinary physical activity does not cause angina; for example, walking or climbing stairs, angina occurs with strenuous or rapid or prolonged exertion at work or recreation.
2 – CCA II - Slight limitation of ordinary activity; for example, angina occurs walking or stair climbing after meals, in cold, in wind, under emotional stress or only during the few hours after awakening, walking more than two blocks on the level or climbing more than one flight of ordinary stairs at a normal pace and in normal conditions.
3 – CCA III - Marked limitation of ordinary activity; for example, angina occurs walking one or two blocks on the level or climbing one flight of stairs in normal conditions and at a normal pace.
4 – CCA IV - Inability to carry on any physical activity without discomfort - angina syndrome may be present at rest.
8 – No Symptoms, No Angina - The patient has no symptoms, no angina.

Directions:
If this is a subsequent episode of care (within 2 weeks), code the most recent Anginal Classification.

When the only chest pain the patient experienced is during an exercise stress test, code no angina, since this system is designed to classify angina during activities of daily living. Do not capture angina that only occurred during diagnostic testing.

If the patient presents with atypical symptoms of myocardial ischemia (i.e., only shortness of breath, upper abdominal pain, left arm pain, etc.) that is known and documented to be myocardial ischemia, and is considered to be an angina equivalent, code the selection that fits their presentation.

Descriptive Name: Primary Coronary Symptom for Intervention
Variable Name: SYMP_PROC
Format: 1-7
Definition: Indicate the patient's worst symptom prior to procedure from admission to procedure start.

1 – No coronary symptoms – No coronary symptoms, no angina, no acute STEMI, non-STEMI, no anginal equivalent, and no other atypical chest pain.
2 – Stable angina – Angina without a change in frequency or pattern for the 6 weeks prior. Angina is controlled by rest and/or oral or transcutaneous medications.
3 – Unstable angina - There are three principal presentations of unstable angina.
- o Rest angina (occurring at rest and prolonged, usually >20 minutes)
- o New-onset angina (within the past 2 months, of at least Canadian Cardiovascular Society Class III severity)
- o Increasing angina (previously diagnosed angina that has become distinctly more frequent, longer in duration, or increased by 1 or more Canadian Cardiovascular Society class to at least CCS III severity)

4 – Non-STEMI - The patient was hospitalized for a non-ST elevation myocardial infarction (NSTEMI) as documented in the medical record. NSTEMIs are characterized by the presence of both criteria:

a. Cardiac biomarkers (creatinine kinase-myocardial band, Troponin T or I) exceed the upper limit of normal according to the individual hospital's laboratory parameters with a clinical presentation which is consistent or suggestive of ischemia. ECG changes and/or ischemic symptoms may or may not be present.
b. Absence of ECG changes diagnostic of a STEMI (see STEMI).

5 – ST Elevation MI (STEMI) - The patient presented with a ST elevation myocardial infarction (STEMI) or its equivalent as documented in the medical record. STEMIs are characterized by the presence of both criteria:

a. ECG evidence of STEMI: New or presumed new ST-segment elevation or new left bundle branch block not documented to be resolved within 20 minutes. ST-segment elevation is defined by new or presumed new sustained ST-segment elevation at the J-point in two contiguous electrocardiogram (ECG) leads with the cutoff points: >=0.2 mV in men or >= 0.15mV in women in leads V2-V3 and/or >= 0.1 mV in other leads and lasting greater than or equal to 20 minutes. If no exact ST elevation measurement is recorded in the medical chart, physician's written documentation of ST elevation or Q waves is acceptable. If only one ECG is performed, then the assumption that the ST elevation persisted at least the required 20 minutes is acceptable. Left bundle branch block (LBBB) refers to new or presumed new LBBB on the initial ECG.
b. Cardiac biomarkers (creatinine kinase-myocardial band, Troponin T or I) exceed the upper limit of normal according to the individual hospital's laboratory parameters with a clinical presentation which is consistent or suggestive of ischemia. Note: For purposes of the Registry, ST elevation in the posterior chest leads (V7 through V9), or ST depression that is maximal in V1-3, without ST-segment elevation in other leads, demonstrating posterobasal myocardial infarction, is considered a STEMI equivalent and qualifies the patient for reperfusion therapy.

6 – Anginal Equivalent - An anginal equivalent is a symptom such as shortness of breath (dyspnea), diaphoresis, extreme fatigue, or belching, occurring in a patient at high cardiac risk. Anginal equivalents are considered symptoms of myocardial ischemia. Anginal equivalents are considered to have the same importance as angina pectoris in patients presenting with elevation of cardiac enzymes or certain EKG changes which are diagnostic of myocardial ischemia. There needs to be supportive documentation in the medical record that the symptoms are representative of angina. For example, if the patient presents with the symptoms above and it is proven that the patient has documented obstructive CAD, then anginal equivalent may be coded even if there is no provider documentation specifically stating that the symptoms are an anginal equivalent. For the patient with diabetes who presents with "silent angina", code anginal equivalent.
7 – Other

Explanation:
Choose the worst status from arrival at transferring facility / your facility to procedure room entry. For elective patients, choose the CAD presentation that is bringing them into the hospital.

If this is a subsequent episode of care, do not code the CAD Presentation from the previous episode of care.

If the patient presents with atypical symptoms of myocardial ischemia (i.e., only shortness of breath, upper abdominal pain, left arm pain, etc.) that is known and documented to be myocardial ischemia, and is considered to be an angina equivalent, code the selection that fits their presentation. If these symptoms are not thought to be or have not been proven to be the anginal equivalent, code "No Coronary Symptoms."

Descriptive Name: Creatinine
Variable Name: CREATININE
Format: XX.X
Definition: Indicate the creatinine level closest to the date and time of procedure but prior to procedure start.

Directions:
If no pre-procedure creatinine value is available, enter 00.0.

Explanation:
Acceptable documentation may include that from an outpatient record.

Vessels Diseased

Directions:
Report vessels diseased whenever available, otherwise leave blank.

If the diseased segment of the native vessel is bypassed by an open artery or vein graft, do not code as diseased. This vessel is revascularized.

Explanation:
Typically, the percent stenosis (as a numeric value) should be well-documented in the medical record for any significant vessel (2mm or greater). In the absence of this documentation, the ranges listed below may be used.

MILD	< 50%
MODERATE	50-69%
SEVERE	≥ 70%

- If a vessel or branch is described as having “Mild” stenosis then the vessel would NOT be coded as diseased, since that is interpreted as less than 50% stenosis.
- If the medical record reports the range 40-50% stenosis, then DO NOT CODE as diseased.
- If the medical record reports the range 60-70% stenosis, then code 50-69%.

The term “severe diffuse disease” should not be interpreted to mean that the vessel has a stenosis of 70% or greater.

Always take the highest stenosis reported for a vessel. If the medical record reports the Proximal RCA with a 70% lesion and the Distal RCA with a 50% you should code the RCA as 70-100%, since the Proximal RCA has a 70% lesion.

If the medical record only has documentation that states the LAD was stenosed (and does not specify location within the LAD) then code the Mid LAD and not the Proximal LAD.

Disease of the Major Diagonal should be reported with Mid/Distal LAD. The Ramus Intermediate should be coded as the Diagonal or Marginal.

Descriptive Name: LMT
Variable Name: LMT
Format: 1, 2, 3, blank or 0
Definition: If the Left Main is diseased, check the appropriate box to indicate the percent diameter stenosis as determined by angiography.

1 – 50-69%
2 – 70-89%
3 – 90–100%

Directions and Explanation:
See Vessels Diseased.

Descriptive Name: Proximal LAD
Variable Name: PROX_LAD
Format: 4, 5, blank or 0
Definition: If the Proximal Left Anterior Descending is diseased, check the appropriate box to indicate the percent diameter stenosis as determined by angiography.

4 – 50-69%
5 – 70–100%

Directions and Explanation:
See Vessels Diseased.

Descriptive Name: Mid/Distal LAD or Major Diagonal
Variable Name: MID_LAD
Format: 6,7, blank or 0
Definition: If the Mid or Distal Left Anterior Descending (or its major branches) are diseased, check the appropriate box to indicate the percent diameter stenosis as determined by angiography. Include significant branches.

6 – 50-69%
7 – 70–100%

Directions and Explanation:
See Vessels Diseased.

Descriptive Name: RCA or Significant Side Branches
Variable Name: RCA
Format: 8,9, blank or 0
Definition: If the Right Coronary Artery (RCA) is diseased, check the appropriate box to indicate the percent diameter stenosis as determined by angiography. Include significant branches.

8 – 50-69%
9 – 70-100%

Directions and Explanation:
See Vessels Diseased.

Descriptive Name: LCX or Significant Side Branches
Variable Name: LCX
Format: 10,11, blank or 0
Definition: If the Left Circumflex is diseased, check the appropriate box to indicate the percent diameter stenosis as determined by angiography. Include significant branches.

10 – 50-69%
11 – 70-100%

Directions and Explanation:
See Vessels Diseased.

Descriptive Name: Left Main - Minimal Luminal Area
Variable Name: LM_MLA
Format: X.X
Definition: Report the minimal luminal area in mm^2 as found by IVUS or OCT for the Left Main. If IVUS and OCT were not used, leave blank.

Descriptive Name: Proximal LAD - Minimal Luminal Area
Variable Name: PLAD_MLA
Format: X.X
Definition: Report the minimal luminal area in mm^2 as found by IVUS or OCT for the Proximal LAD. If IVUS and OCT were not used, leave blank.

Descriptive Name: Mid/Distal LAD - Minimal Luminal Area
Variable Name: MLAD_MLA,
Format: X.X
Definition: Report the minimal luminal area in mm^2 as found by IVUS or OCT for the Mid/Distal LAD or major branches. If IVUS and OCT were not used, leave blank.

Descriptive Name: RCA - Minimal Luminal Area
Variable Name: RCA_MLA
Format: X.X
Definition: Report the minimal luminal area in mm^2 as found by IVUS or OCT for the RCA or major branches. If IVUS and OCT were not used, leave blank.

Descriptive Name: LCX - Minimal Luminal Area
Variable Name: LCX_MLA
Format: X.X
Definition: Report the minimal luminal area in mm^2 as found by IVUS or OCT for the LCX or major branches. If IVUS and OCT were not used, leave blank.

Descriptive Name: Left Main – Fractional Flow Reserve
Variable Name: LM_FFR
Format: X.XX
Definition: Indicate the fractional flow reserve ratio (FFR) or instantaneous wave-free ratio (iFR) for the Left Main.

Directions:
- If FFR and iFR were not done, leave blank.
- If both FFR and iFR were done, report FFR values.

Descriptive Name: Proximal LAD - Fractional Flow Reserve
Variable Name PLAD_FFR
Format: X.XX
Definition: Indicate the fractional flow reserve ratio (FFR) or instantaneous wave-free ratio (iFR) for the Proximal LAD.

Directions:
See Left Main – Fractional Flow Reserve.

Descriptive Name: Mid/Distal LAD - Fractional Flow Reserve
Variable Name: MLAD_FFR
Format: X.XX
Definition: Indicate the fractional flow reserve ratio (FFR) or instantaneous wave-free ratio (iFR) for the Mid/Distal LAD and its major branches.

Directions:
See Left Main – Fractional Flow Reserve.

Descriptive Name: RCA - Fractional Flow Reserve
Variable Name: RCA_FFR
Format: X.XX
Definition: Indicate the fractional flow reserve ratio (FFR) or instantaneous wave-free ratio (iFR) for the RCA and its major branches.

Directions:
See Left Main – Fractional Flow Reserve.

Descriptive Name: LCX - Fractional Flow Reserve
Variable Name: LCX_FFR
Format: X.XX
Definition: Indicate the fractional flow reserve ratio (FFR) or instantaneous wave-free ratio (iFR) for the LCX and its major branches.

Directions:
See Left Main – Fractional Flow Reserve.

Descriptive Name: MLA Measurement Type
Variable Name: MLA_TYPE
Format: 1, 2, blank or 0
Definition: If minimal luminal area (MLA) is reported, indicate if the measurements were obtained from IVUS or OCT evaluation.

1 – IVUS
2 – OCT

Directions:
If no MLA is reported, leave this field blank or enter 0.

Descriptive Name: Flow Measurement Type
Variable Name: FLW_TYPE
Format: 1 or 2
Definition: If fractional flow reserve ratio (FFR) or Instantaneous wave-free ratio (iFR) is reported, indicate if the measurements were obtained from FFR or iFR evaluation.

1 – FFR
2 – iFR

Directions:

- If no FFR/iFR is reported, leave this field blank or enter 0.
- If both FFR and iFR were used, check FFR and report the values from FFR.

Valve Disease
Valve Disease should be reported for all patients.

Directions and Explanation:
Moderate through Severe Stenosis – Aortic, Mitral, or Tricuspid: Should be demonstrated by appropriate imaging technique, echocardiography, or hemodynamic measurement during cardiac catheterization or operation.

Moderate through Severe Aortic Incompetence: Should be demonstrated by aortography or by pre-op or intraoperative echocardiography.

Moderate through Severe Mitral Incompetence: Should be demonstrated by left ventriculography or by pre-op or intraoperative echocardiography.

Moderate through Severe Tricuspid Incompetence: Should be demonstrated by physical examination or by pre-op or intraoperative echocardiography.

Use pre-incision intra-operative TEE results if either: a) these findings changed the planned surgery or b) no other values are available. Otherwise, use the most recent values from 6 months prior to surgery up to OR entry.

Choose the **highest** level of valve dysfunction when there are differences in interpretation of the most recent study.

If a report shows “mild to moderate” disease, it would be appropriate to code “moderate.”

Valve Disease should be reported using the following codes:

0 – None
1 – Trace/Trivial
2 – Mild
3 – Moderate
4 – Moderate-Severe
5 – Severe

Descriptive Name: Aortic Valve Stenosis
Variable Name: STEN_AOR
Format: 0-5 or Blank
Definition: Report the aortic valve stenosis using the valve disease codes found above.

Directions and Explanation:
See Valve Disease.

Descriptive Name: Mitral Valve Stenosis
Variable Name: STEN_MIT
Format: 0-5 or Blank
Definition: Report the mitral valve stenosis using the valve disease codes found above.

Directions and Explanation:
See Valve Disease.

Descriptive Name: Tricuspid Valve Stenosis
Variable Name: STEN_TRI
Format: 0-5 or Blank
Definition: Report the tricuspid valve stenosis using the valve disease codes found above.

Directions and Explanation:
See Valve Disease.

Descriptive Name: Aortic Valve Incompetence
Variable Name: INCO_AOR
Format: 0-5 or Blank
Definition: Report the aortic valve incompetence using the valve disease codes found above.

Directions and Explanation:
See Valve Disease.

Descriptive Name: Mitral Valve Incompetence
Variable Name: INCO_MIT
Format: 0-5 or Blank
Definition: Report the mitral valve incompetence (regurgitation) using the valve disease codes found above.

Directions:
When reporting mitral valve incompetence/regurgitation with at least mild severity, also report information for the type, etiology, and leaflet involvement.

See additional directions and explanation under Valve Disease.

Descriptive Name: Tricuspid Valve Incompetence
Variable Name: INCO_TRI
Format: 0-5 or Blank
Definition: Report the tricuspid valve incompetence using the valve disease codes found above.

Directions and Explanation:
See Valve Disease.

Descriptive Name: Mitral Regurgitation Type - Secondary
Variable Name: SEC_MR
Format: 1 = Yes, 0 or Blank = No
Definition: For patients with mitral valve regurgitation, report if Secondary mitral valve disease is present.

Directions:
Report only when “Mitral Incompetence” is reported as mild or greater. (INCO_MIT = 2, 3, 4, 5)

This data element may be skipped for patients with a mitral valve prosthesis in place prior to the current transcatheter intervention.

It is acceptable to report both Primary and Secondary Mitral Regurgitation.

Explanation:
In Secondary MR, the mitral valve is usually normal and LV dysfunction is caused by coronary artery disease, myocardial infarction or idiopathic myocardial disease.

Descriptive Name: Mitral Regurgitation Type - Primary
Variable Name: PRIME_MR
Format: 1 = Yes, 0 or Blank = No
Definition: For patients with mitral valve regurgitation, indicate if Primary mitral valve disease is present.

Directions:
See Secondary Mitral Regurgitation.

Explanation:
Primary MR involves pathology of valve component(s), i.e., leaflets, chords, papillary muscle, annulus. This may be evidenced by mitral valve prolapse and associated with Barlow’s Valve, Fibroelastic deficiency disease, infective endocarditis, connective tissue disorders, rheumatic heart disease, cleft MV, or Radiation Heart Disease. May also be called “degenerative” disease.

Descriptive Name: Etiology for Primary MR – (select all that apply)
Variable Name: MR_DEGEN, MR_RHEUM, MR_ENDO, MR_CALC, MR_OTH
Format: 1 = Yes, 0 or Blank = No
Definition: For patients with Primary Mitral Regurgitation, indicate the etiology. Select all that apply.

- Degenerative
- Rheumatic
- Endocarditis
- Calcified
- Other

Directions:
Report only when the patient has Primary Mitral Regurgitation (PRIME_MR = 1).

This data element may be skipped for patients with a mitral valve prosthesis in place prior to the current transcatheter intervention.

Descriptive Name: Leaflet Involvement for Primary MR
Variable Name: MR_LEAF
Format: 1, 2, 3, blank or 0
Definition: For patients with Primary Mitral Regurgitation, indicate which leaflets are involved.

1 – Posterior
2 – Anterior
3 – Both

Directions:
Report only when the patient has Primary Mitral Regurgitation (PRIME_MR = 1).

This data element may be skipped for patients with a mitral valve prosthesis in place prior to the current transcatheter intervention.

Descriptive Name: Valve Symptoms
Variable Name: VALVE_SYMP
Format: 1 or 2, blank or 0
Definition: For patients with any valve disease, indicate their symptom status.

1 – Asymptomatic
2 – Symptomatic

Directions:

- Report for patients with stenosis or incompetence of any valve.
- Leave blank or enter 0 for patients with no valve disease.

Explanation:
Symptomatic patients are those with symptoms believed to be related to their valve disease such as: decreased exercise tolerance, exertional dyspnea, or heart failure symptoms.

Descriptive Name: 0. None
Variable Name: NORISK
Format: 1 = Yes, 0 or Blank = No
Definition: Report if none of the pre-procedural risk factors listed below are present.

Descriptive Name: 1. Previous CABG – Patent Grafts
Variable Name: PAT_GRAFT
Format: 1 = Yes, 0 or Blank = No
Definition: Indicate if, prior to this transcatheter intervention, the patient has undergone CABG and currently has one or more patent grafts.

Directions:
Include any surgeries that occurred prior to this procedure including those earlier in the current admission.

Check this box if there are any patent grafts, even if there are also occluded grafts. Only check box 1 or box 1a, not both.

If the patient has a history of CABG and a history of other cardiac surgery, you should report both risk factors.

Descriptive Name: 1a. Previous CABG – No Patent Grafts
Variable Name: OTH_CABG
Format: 1 = Yes, 0 or Blank = No
Definition: Indicate if, prior to this transcatheter intervention, the patient has previously undergone CABG and has no patent grafts.

Directions:
Include any surgeries that occurred prior to this procedure including those earlier in the current admission.

Check this box only if there are no patent grafts. Only check box 1 or box 1a, not both.

If the patient has a history of CABG and a history of other cardiac surgery, you should report both risk factors.

Descriptive Name: 2a. Previous Valve Surgery/Intervention
Variable Name: PRE_VALV
Format: 1 = Yes, 0 or Blank = No
Definition: Indicate if, prior to this transcatheter intervention, the patient has previously undergone surgery or catheter-based intervention for valve repair or replacement.

Note:
It is acceptable to report this risk factor as well as a risk factor for previous CABG surgery and/or other previous cardiac surgery.

Descriptive Name: 2. Any Other Previous Cardiac Surgery
Variable Name: OTH_SURG
Format: 1 = Yes, 0 or Blank = No
Definition: Indicate if prior to this transcatheter intervention the patient has had any cardiac surgery other than CABG or valve repair / replacement.

Note:
Do not include catheter-based interventions.

If the patient has previously had CABG and/or valve surgery as well as another cardiac surgery, report this risk factor in addition to the appropriate Previous CABG and/or Valve risks.

Descriptive Name: 4. Previous MI < 6 hours
Variable Name: PREMILT6
Format: 1 = Yes, 0 or Blank = No
Definition: Indicate if the symptom onset of the patient's most recent MI was less than 6 hours before procedure.

Explanation:
Timing should be from the onset of symptoms to the start of the procedure. If the exact time that the symptoms started is not available in the medical record, every effort should be made to create a close estimate based on available documentation.

The diagnosis of Acute Coronary Syndrome (ACS) in the medical record is not sufficient to Code risk factors 4 – 6. There must be documentation of a diagnosed myocardial infarction.

Descriptive Name: 5. Previous MI 6 - 23 hours
Variable Name: PREMI623
Format: 1 = Yes, 0 or Blank = No
Definition: Indicate if the symptom onset of the patient's most recent MI was 6 - 23 hours before procedure.

Explanation:
See Previous MI < 6 hours.

Descriptive Name: 6. Previous MI Days
Variable Name: PREMIDAY
Format: 1-31, 0 or Blank
Definition: If the patient's most recent MI was 1 day or more before procedure, enter the number of days since symptom onset. If the MI was 31 days or more prior to procedure, enter 31.

Explanation:
See Previous MI < 6 hours.

Descriptive Name: 64. Neurological Event, within 8 weeks
Variable Name: CVD_RECNT
Format: 1, 2 or 0 or Blank
Definition: Use the following codes to indicate if the patient has experienced a neurological event within the last 8 weeks.

1 – Stroke
2 – Transient Ischemic Attack (TIA), without stroke in 8 weeks

Directions:
If no recent history (8 weeks or less) of stroke or TIA, enter 0 or leave blank.
This can be reported with Neurological Event, Remote if there is a remote history as well.

Explanation:
Stroke is an acute episode of focal or global neurological dysfunction caused by brain, spinal cord, or retinal vascular injury as a result of hemorrhage or infarction, where the neurological dysfunction lasts for greater than 24 hours.

TIA is defined as a transient episode of focal neurological dysfunction caused by brain, spinal cord, or retinal ischemia, without acute infarction, where the neurological dysfunction resolves within 24 hours.

Descriptive Name: 64b. Neurological Event, Remote
Variable Name: CVD_REMOT
Format: 1, 2 or 0 or Blank
Definition: Use the following codes to indicate if the patient has experienced a neurological event greater than 8 weeks prior to procedure.

1 – Stroke
2 – Transient Ischemic Attack (TIA), without history of stroke

Directions:
If no history of stroke or TIA greater than 8 weeks, enter 0 or leave blank.
This can be reported with Neurological Event within 8 weeks if the patient has both a remote and recent history.

Explanation:
See Neurological Event, within 8 weeks.

Descriptive Name: 65. Arterial Imaging Test
Variable Name: CVD_IMG
Format: 1, 2, 0 or Blank
Definition: Use the codes below to indicate if a noninvasive or invasive arterial imaging test demonstrated 50% or greater stenosis of any of the major extracranial or intracranial vessels to the brain.

1 – 50-79% occlusion
2 – >79% occlusion

Directions:
If no findings in this range, or no testing performed, enter 0 or leave blank.

Descriptive Name: 66. Cervical or Cerebrovascular Procedure
Variable Name: CVD_PROC
Format: 1 = Yes, 0 or Blank = No
Definition: Check the box to indicate if the patient has previous cervical or cerebral artery surgery or percutaneous intervention.

Explanation:
It is acceptable to report cerebrovascular aneurysm clipping or coiling for this risk factor.

The procedure should be related to cerebrovascular disease, not trauma.

Descriptive Name: 67. Cardiogenic Shock
Variable Name: SHOCK_COND
Format: 1 = Yes, 0 or Blank = No
Definition: Indicate if, in the immediate pre-procedural period, the patient was in cardiogenic shock as defined below.

Cardiogenic shock is defined as an episode of systolic blood pressure less than 90 mmHg and/or cardiac index less than 2.2 L/min /m^2 determined to be secondary to cardiac dysfunction and the requirement for parenteral inotropic or vasopressor agents or mechanical support (e.g., IABP) to maintain blood pressure and cardiac index above those specified levels.

Explanation:
See Refractory Cardiogenic Shock.

Descriptive Name: 68. Refractory Cardiogenic Shock
Variable Name: SHOCK_REFR
Format: 1 = Yes, 0 or Blank = No
Definition: Indicate if, in the immediate pre-procedural period, the patient was in refractory cardiogenic shock as defined below.

Refractory cardiogenic shock is defined as an episode of systolic blood pressure less than 80 mmHg and/or cardiac index less than 2.0 L/min /m^2 determined to be secondary to cardiac dysfunction despite the use of parenteral inotropic or vasopressor agents or mechanical support (e.g., IABP).

Cases with Refractory Cardiogenic Shock will be excluded from analysis.

Explanation (Applies to Cardiogenic Shock and Refractory Cardiogenic Shock):
Transient episodes of hypotension reversed with IV fluid or atropine do not constitute cardiogenic shock or refractory cardiogenic shock.

For these purposes, the immediate pre-procedural period is defined as the period just prior to case start (skin incision, vascular access or its equivalent).

Ongoing CPR warrants the coding of Refractory Cardiogenic Shock.

If the patient is Ventricular Assist Device (VAD) dependent then Refractory Shock should be coded. For these purposes ECMO is treated like a VAD. Use of Impella is treated like a VAD when there is evidence prior to insertion that the hemodynamic criteria above are met.

If the patient has an IABP, the augmented or non-augmented systolic BP less than 80 mmHg may be used as support for coding Refractory Cardiogenic Shock.

Descriptive Name: 10. Peripheral Arterial Disease
Variable Name: PERIPH
Format: 1 = Yes, 0 or Blank = No
Definition: Angiographic demonstration of at least 50% narrowing in a major aortoiliac or femoral/popliteal vessel, previous surgery for such disease, absent femoral or pedal pulses, or the inability to insert a catheter or intra-aortic balloon due to iliac aneurysm or obstruction of the aortoiliac or femoral arteries. Ankle-Brachial Index less than 0.9 is also acceptable documentation.

Examples:

Peripheral Arterial Disease	Code	Do Not Code
1. Tortuosity of the vessel alone		X
2. Tortuosity of the vessel with an inability to insert a Catheter	X	
3. Abdominal aortic aneurysm (AAA)	X	
4. Aneurysm in the ascending or descending aorta	X	
5. Absence of femoral pulse on either the right or the left	X	
6. Diminished femoral pulse on either right or left or both		X
7. Claudication		X
8. A negative popliteal pulse alone (1+1- or 1-1+)		X
9. Palpable dorsalis pedis and posterior tibial pulses		X
10. If pulses are non-palpable, but are detectable by doppler	X	
11. Inability to insert a catheter or IABP in femoral Arteries	X	
12. Amputated toes, necrotic toes, gangrene of the foot in the absence of other acceptable criteria		X
13. Renal artery with significant stenosis	X	
14. Subclavian artery with significant stenosis	X	
15. Iliac artery aneurysm	X	
16. Infrarenal aortic dissection	X	
17.“Moderate” subclavian artery stenosis with no % documented		X
18. Documentation of Subclavian Steal Syndrome	X	

Descriptive Name: 18. Heart Failure, Current
Variable Name: CHF_CUR
Format: 1 = Yes, 0 or Blank = No
Definition: Within 2 weeks prior to the procedure, the patient has a clinical diagnosis of heart failure and symptoms requiring treatment for heart failure.

Physician diagnosis of heart failure may be based on one of the following:

- Paroxysmal nocturnal dyspnea (PND)
- Dyspnea on exertion (DOE) due to heart failure
- Chest X-Ray showing pulmonary congestion

Documentation must include the presence of a diagnosis of heart failure, evidence of symptoms, and treatment for heart failure.

Explanation:
The diagnosis component may be documented with a variety of terms such as: congestive heart failure (CHF), heart failure (HF), systolic heart failure, diastolic heart failure, heart failure with reduced EF (HFrEF), heart failure with preserved EF (HFpEF).

Renal dialysis is acceptable for the treatment component of this definition, if there is documentation that the patient is receiving dialysis as a treatment for heart failure.

Documentation of NYHA Class III or IV may fulfill both the diagnosis and symptoms components of this definition. Documentation of a lower NYHA class may fulfill the symptoms component, but there must also be documentation of a heart failure diagnosis.

Cardiomyopathy is acceptable to demonstrate the diagnosis component of Heart Failure, Current. However, this is not acceptable as a diagnosis of Heart Failure, Past.

It is acceptable to report both Heart Failure Current and Past.

Descriptive Name: 19. Heart Failure, Past
Variable Name: CHF_PAST
Format: 1 = Yes, 0 or Blank = No
Definition: Between 2 weeks and 6 months prior to the procedure, the patient has a clinical diagnosis / past medical history of heart failure and ongoing treatment for heart failure.

Note:
Physician diagnosis of heart failure may be based on one of the following:

- Paroxysmal nocturnal dyspnea (PND)
- Dyspnea on exertion (DOE) due to heart failure
- Chest X-Ray showing pulmonary congestion

Documentation must include a diagnosis of heart failure and evidence of treatment for heart failure. Patient's clinical status may be compensated.

Explanation:
See Heart Failure, Current.

Descriptive Name: 20. Malignant Ventricular Arrhythmia
Variable Name: MAL_VENT
Format: 1 = Yes, 0 or Blank = No
Definition: Recent (within the past 14 days) sustained ventricular tachycardia requiring electrical defibrillation or conversion with intravenous anti-arrhythmic agents or ventricular fibrillation requiring electrical defibrillation. Excludes V-Tach or V-Fib occurring within 6 hours of the diagnosis of a myocardial infarction and responding well to treatment.

Explanation:
Sustained arrhythmia is that which continues until something is done to stop it; it does not resolve on its own.

For patients within 6 hours of the diagnosis of an MI who are experiencing V-Tach or VFib that otherwise meets the above criteria, you may still code this risk factor if the arrhythmia is not responding well to treatment. In this context, “not responding well to treatment” means there is a recurrent episode of Vtach or VFib that requires additional therapies (multiple shocks or additional pharmacological intervention) or the initial episode required multiple shocks at maximal energy.

If the patient has an AICD that is documented to have performed cardioversion, defibrillation, or anti-tachycardia pacing, then report the risk factor, unless the patient is within 6 hours
of the onset of a diagnosed MI.

Regular oral medication for a ventricular arrhythmia is NOT sufficient reason to report the risk factor.

Descriptive Name: 21. Chronic Lung Disease
Variable Name: COPD
Format: 1-4
Definition: Indicate whether the patient has chronic lung disease, and the severity level according to the following classification:

1 – None
2 – Mild – Report for patients with a diagnosis of chronic lung disease and one or more of the following:
- FEV_1 60% to 75% of predicted,
- DLCO or the DLCO/VA >60% of predicted and < lower limit of normal,
- chronic inhaled or oral bronchodilator therapy or chronic inhaled steriod therapy.

3 – Moderate – Report for patients with a diagnosis of chronic lung disease and one or more of the following:
- FEV_1 50% to 59% of predicted,
- DLCO or the DLCO/VA 40-60% of predicted,
- chronic oral steroid therapy aimed at lung disease.

4 – Severe – Report for patients with a diagnosis of chronic lung disease and one or more of the following:
- FEV_1 < 50% predicted,
- DLCO or the DLCO/VA <40% of predicted,
- pO_2 < 60 or pCO_2 > 50.

Explanation:
A history of chronic inhalation reactive disease (asbestosis, mesothelioma, black lung disease or pneumoconiosis) may qualify as chronic lung disease. Radiation induced pneumonitis or radiation fibrosis also qualifies as chronic lung disease (if above criteria are met). A history of atelectasis is a transient condition and does not qualify.

Chronic lung disease can include patients with chronic obstructive pulmonary disease, chronic bronchitis, or emphysema. Patients with asthma or seasonal allergies are not considered to have chronic lung disease.

COVID-19, when resulting in reduced lung function and/or need for chronic bronchodilator or steroid therapy for the lung condition, can be accepted as the diagnosis portion of this risk factor.

Acceptable documentation for “severe” includes pO_2 less than 60 or pCO_2 greater than 50 on supplemental oxygen as well as on room air.

Bedside spirometry may be used to identify the severity of chronic lung disease when there is a diagnosis of COPD or other qualifying chronic lung disease in the patient’s medical record. Findings on a full PFT or bedside spirometry such as “moderate obstructive defect” are not a diagnosis of chronic lung disease. For all cases, there must be a diagnosis of pre-procedure chronic lung disease to report this risk factor.

Do not use values obtained more than 12 months prior to the transcatheter procedure.

Documentation Note:
Diagnosis must be present in the medical record. This information must be included with any medical record documentation submitted for review of this risk factor. When severity is documented based on treatment of chronic lung disease, it is necessary to show that the patient was receiving the treatment at the time of admission or just prior to admission.

Descriptive Name: 23. Extensive Aortic Atherosclerosis
Variable Name: CALCAORT
Format: 1 = Yes, 0 or Blank = No
Definition: Ascending, transverse, and/or descending aortic atherosclerosis marked by either extensive calcification or luminal atheroma such that the intended procedure is altered.

Explanation:
It is necessary to demonstrate that the intended procedure is altered. A procedure note that dictates a change in the intended procedure (e.g., transapical access due to no peripheral access) is acceptable documentation.

Documentation of the advanced aortic pathology by either transesophageal echocardiography, epi aortic echocardiography, intravascular ultrasound, magnetic resonance angiography or other imaging modality performed in the peri-procedural period should be available either by official report or dictated in the procedure notes.

Calcium in aortic arch on chest X-ray is not enough to code this risk.

Extensive evaluation ***does not*** represent a change in the intended procedure.

Descriptive Name: 24. Diabetes
Variable Name: DIABETES
Format: 1 = Yes, 0 or Blank = No
Definition: Indicate whether patient has a history of diabetes diagnosed and/or treated by a healthcare provider.

Explanation:
Exclusions are steroid induced hyperglycemia and gestational (transient), without elevated HbA1c and/or treatment.

Not all patients receiving diabetic medications are considered diabetic. It is important to remember some medications used to treat diabetes may be used to treat other conditions.

A hemoglobin A1c value of 6.5% or greater, collected within 3 months prior to procedure, is acceptable to use for documentation of diabetes.

Patients with a history of diabetes who have had a pancreatic transplant are coded as Yes to Diabetes.

Descriptive Name: 24a. Diabetes Therapy
Variable Name: DM_TRT
Format: 1-7 or Blank
Definition: Indicate the patient's diabetes control method (long-term management) as presented on admission.

Patients placed on a pre-procedure diabetic pathway of insulin drip at admission but whose diabetes was controlled by diet or oral methods are not coded as being treated with insulin.

1 – None - No treatment for diabetes
2 – Diet only - Treatment with diet only
3 – Oral - Treatment with oral agent (includes oral agent with or without diet treatment)
4 – Insulin - Insulin treatment (includes any combination with insulin)
6 – Other subcutaneous medication - Other subcutaneous medications (such as GLP-1 agonists)
5 – Other - Other adjunctive treatment, not oral/insulin/diet
7 – Unknown

Directions:
Choose the most aggressive therapy from the order below.
• Insulin: insulin treatment (includes any combination with insulin)
• Other subcutaneous medications (e.g., GLP-1 agonist)
• Oral: treatment with oral agent (includes oral agent with or without diet treatment)
• Diet only: Treatment with diet only
• None: no treatment for diabetes
• Other: other adjunctive treatment, not oral/insulin/diet
• Unknown

Report this element for all cases where Risk Factor #24 - Diabetes is also reported, otherwise leave the field blank or enter 0.

Explanation:
If the patient has had a pancreatic transplant, code "other" since the insulin from the new pancreas is not exogenous insulin.

Descriptive Name: 25. Hepatic Failure
Variable Name: HEPATICF
Format: 1 = Yes, 0 or Blank = No
Definition: The patient has cirrhosis or other liver disease and has a bilirubin greater than 2 mg/dL and a serum albumin less than 3.5 g/dL.

Descriptive Name: 27. Renal Failure, Dialysis
Variable Name: REN_DIAL
Format: 1 = Yes, 0 or Blank = No
Definition: Indicate whether the patient is currently (prior to procedure) undergoing dialysis on a routine basis.

Explanation:
Includes any form of peritoneal or hemodialysis patient is currently receiving routinely prior to procedure with the intent to resume post-procedure. Also may include Continuous Veno-Venous Hemofiltration (CVVH, CVVH-D), and Continuous Renal Replacement Therapy (CRRT) as dialysis.

Do not report renal dialysis if ultrafiltration is the only documentation found in the record since this is for volume management.

Descriptive Name: 32. Previous PCI, This Episode of Care
Variable Name: PCITHIS
Format: 1 = Yes, 0 or Blank = No
Definition: Indicate whether there was a previous PCI performed within this episode of care. Episode of care is defined as continuous inpatient hospitalization which includes transfer from one acute care hospital to another.

Explanation:
This is reported only for PCI prior to the transcatheter procedure; therefore, do not report this risk factor for PCI in the same procedure room visit.

Descriptive Name: 33. PCI Before This Episode of Care
Variable Name: PCIBEFO
Format: 1 = Yes, 0 or Blank = No
Definition: The patient has had a PCI before this episode of care.

Descriptive Name: 38. Stent Thrombosis
Variable Name: THROMBOS
Format: 1 = Yes, 0 or Blank = No
Definition: Formation of a blood clot/thrombus in the stented segment of an artery and/or adjacent area. This usually results in an acute occlusion, chest pain or development of an acute MI. Patient must be currently affected by stent thrombosis as evidenced by AMI, ACS, or clinical angina to code this risk factor.

Explanation:
An occlusion alone, plaque build-up or in-stent restenosis does not constitute coding. There must be documentation noting thrombus. The thrombus needs to be in or around the area that was stented for the risk factor to be coded. Patients with stent thrombosis that has been resolved prior to this transcatheter procedure should not be coded with this risk factor.

Descriptive Name: 39. Any Previous Organ Transplant
Variable Name: ORGAN
Format: 1 = Yes, 0 or Blank = No
Definition: The patient has had any organ transplant prior to the current transcatheter procedure. This includes, but is not limited to, heart, lung, kidney, and liver transplants.

Explanation:
Also code for bone marrow transplant. Do not code for corneal or skin transplant (grafting).

If the patient had a previous organ transplant and that organ was later removed, do not code this risk factor.

Descriptive Name: 40. Heart Transplant Candidate
Variable Name: HT_TRANS
Format: 1 = Yes, 0 or Blank = No
Definition: This risk factor should be coded when the patient is an approved heart transplant candidate before the start of the procedure.

Explanation:
Supporting documentation must be included in the patient's medical record showing that the patient was a transplant candidate prior to the start of the procedure. Acceptable documentation includes: notes that a pre-transplant evaluation was performed and patient was accepted, notes from the transplant coordinator that they have discussed this issue with the patient/family, or a note indicating the transplant patient's status based on UNOS urgency criteria.

During quarterly and annual data verification and validation efforts, supporting documentation for cases coded with this risk factor may be requested.

Descriptive Name: 62. Active Endocarditis
Variable Name: ENDOCARD
Format: 1 = Yes, 0 or Blank = No
Definition: Two or more positive blood cultures without other obvious source with demonstrated valvular vegetations or histopathology report with findings of endocarditis.

This can include patients who are still on antibiotics at the time of procedure.

Excludes patients who have completed antibiotic therapy and have no evidence of residual infection.

IV. Major Events Following Operation

Reminder: Check to be sure that all of the listed major events occurred during or after the current transcatheter procedure. Check at least one box in this section.

Please Note:
Unless otherwise specified, a documented pre-procedure condition that persists post-procedure with no increase in severity is not a major event. This is true even if the pre-procedure condition is not part of this reporting system.

Unless otherwise specified, major events are only reported if they occur post-procedure, but before hospital discharge.

Descriptive Name: 0. None
Variable Name: NOCOMPs
Format: 1 = Yes, 0 or Blank = No
Definition: Check if none of the major events listed below occurred following the procedure.

Descriptive Name: 1. Stroke
Variable Name: STROKE
Format: 1 = Yes, 0 or Blank = No
Definition: Indicate whether the patient has a post-procedure stroke (i.e., any confirmed neurological deficit of abrupt onset caused by a disturbance in blood supply to the brain) that was confirmed by imaging or did not resolve within 24 hours.

Descriptive Name: 2. Post-Procedure MI
Variable Name: POSTMI
Format: 1 = Yes, 0 or Blank = No
Definition: Report if post-procedure there is a new MI defined as:

- elevation of cTn values (>5 x 99th percentile URL) in patients with normal baseline values (99th percentile URL)
- or a rise of cTn values >20% if the baseline values are elevated and are stable or falling.

And at least one of the following:

- symptoms suggestive of myocardial ischemia or
- new ischemic ECG changes or
- angiographic findings consistent with a procedural complication or
- imaging demonstration of new loss of viable myocardium or new regional wall motion abnormality.

Descriptive Name: 4. Deep Sternal Wound Infection
Variable Name: STERNINF
Format: 1 = Yes, 0 or Blank = 0
Definition: Indicate whether the patient had a deep sternal wound infection within 30 days of procedure (whether in the initial hospital stay or after discharge).

A deep incisional SSI must meet the following criteria:
Infection occurs within 30 days after the transcatheter procedure **and** involves deep soft tissues (e.g., fascial and muscle layers) of the incision **and** patient has at least 1 of the following:

a. Purulent drainage from the deep incision but not from the organ/space component of the procedure site.
b. A deep incision spontaneously dehisces or is deliberately opened by a surgeon and is culture-positive or not cultured when the patient has at least 1 of the following signs or symptoms: fever (greater than 38°C), or localized pain or tenderness. A culture-negative finding does not meet this criterion.
c. An abscess or other evidence of infection involving the deep incision is found on direct examination, during reoperation, or by histopathologic or radiologic examination.
d. Diagnosis of a deep incisional SSI by a surgeon or attending physician.

Descriptive Name: 5. Bleeding Requiring Reoperation
Variable Name: BLEDREOP
Format: 1, 2, Blank or 0
Definition: If the patient was re-explored for mediastinal bleeding with or without tamponade either in the ICU, PACU or returned to the procedure room, use the code below to indicate the time frame.

1 – Acute (within 24 hours of the end of the case);
2 – Late (more than 24 hours after the case ends).

Interpretation:
Do not capture reopening of the chest or situations of excessive bleeding that occur prior to the patient leaving the procedure room at the time of the primary procedure. Tamponade is a situation which occurs when there is compression or restriction placed on the heart within the chest that creates hemodynamic instability or a hypo-perfused state. Do not include medically (non-operatively) treated excessive post-procedure bleeding/tamponade events. Include patients that return to an OR suite or equivalent OR environment (i.e., ICU setting), as identified by your institution, that require surgical re-intervention to investigate/correct bleeding with or without tamponade. Include only those interventions that pertain to the mediastinum or thoracic cavity.

Code exactly 24 hours as acute.

Descriptive Name: 8. Sepsis
Variable Name: SEPSIS
Format: 1 = Yes, 0 or Blank = No
Definition: Sepsis is defined as evidence of serious infection accompanied by a deleterious systemic response.

Explanation:
In the time period of the first 48 hours post-procedure, the diagnosis of sepsis requires the presence of a Systemic Inflammatory Response Syndrome (SIRS) resulting from a proven infection (such as bacteremia, fungemia or urinary tract infection). A systemic inflammatory response syndrome (SIRS) is present when at least two of the following criteria are present: hypo- or hyperthermia (greater than 38.5 or less than 36.0), tachycardia or bradycardia, tachypnea, leukocytosis or leukopenia, and thrombocytopenia.

During the first 48 hours, a SIRS may result from the stress associated with undergoing a procedure and/or cardiopulmonary bypass. Thus, the clinical criteria for sepsis during this time period should be more stringent.

In the time period after the first 48 hours post-procedure, sepsis may be diagnosed by the presence of a SIRS resulting from suspected or proven infection.

Descriptive Name: 9. G-I Event
Variable Name: GIBLEED
Format: 1 = Yes, 0 or Blank = No
Definition: Indicate whether the patient had a post-procedure occurrence of any GI event, including but not limited to:

- GI bleeding requiring transfusion;
- Pancreatitis with abnormal amylase/lipase requiring nasogastric (NG) suction therapy;
- Cholecystitis requiring cholecystectomy or drainage;
- Mesenteric ischemia requiring exploration;
- Prolonged ileus;
- Clostridium difficile

Explanation:
GI events may require medical management, observational management or surgical intervention to control. DO NOT include events such as prolonged nausea and/or vomiting with no other documented physiological cause. Refer to the specific list included within the definition.

Example # 1: A patient has a placement of a Percutaneous Endoscopic Gastrostomy (PEG). Patients that receive PEG's are generally very sick patients that require long term nutritional support because of multiple post procedure complications and the inability to eat. If a PEG is placed in the stomach, it means that the stomach is working well enough to support the nutritional support that the PEG feedings are providing. Do not code a GI complication in this situation.

Example # 2: A patient experiences a post procedure paralytic ileus that does not increase the length of stay and does not require invasive therapy. Do not code a GI complication.

Example # 3: A patient has elevated liver enzymes post procedure; a transient rise in the patient's liver enzymes does not represent a GI complication.

Descriptive Name: 10. Renal Failure
Variable Name: RENAL_FAI
Format: 1 = Yes, 0 or Blank = No
Definition: Indicate whether the patient had a new requirement for dialysis post-procedure, which may include hemodialysis or peritoneal dialysis.

Explanation:
This includes a one-time need for dialysis as well as implementation of longer term therapy.

Do not include patients who need dialysis but refuse or expire prior to initiation of dialysis.

If the patient was on preoperative peritoneal dialysis and moved to hemodialysis postoperatively, this does not constitute a worsening of the condition and should not be coded as an event.

Continuous Veno-Venous Hemofiltration (CVVH, CVVH-D), Continuous Renal Replacement Therapy (CRRT) and Intermittent hemodialysis (iHD) should be coded here as "Yes."

Does not include aquapheresis or ultrafiltration which is for fluid overload and is not counted as dialysis.

Descriptive Name: 13. Prolonged Ventilator Dependence
Variable Name: RESP_FAI
Format: 1 = Yes, 0 or Blank = No
Definition: Pulmonary insufficiency requiring intubation and ventilation for a period of 72 hours or more, at any time during the post-procedure stay. For patients who are placed on and taken off ventilation several times, the total of these episodes should be 72 hours or more.

Explanation:
If the patient is intubated for 72 or more hours after procedure this major event should be coded, even if the patient was intubated prior to the procedure.

The following scenario would be coded:

> Patient was extubated 48 hours post-procedure. Patient was re-intubated sometime the next day. Patient was extubated 32 hours later.

It is not necessary to show that the prolonged ventilatory dependence was due to respiratory failure.

Descriptive Name: 14. Unplanned Cardiac Reoperation or Interventional Procedure
Variable Name: UNPLANREOP
Format: 1 = Yes, 0 or Blank = No
Definition: Any unplanned cardiac reoperation or percutaneous coronary intervention that is required as a result of the current transcatheter procedure. This would exclude a reoperation to control bleeding that is reported under Major Event #5.

Explanation:
This major event should be reported for any cardiac surgery, PCI or transcatheter procedure, not just those reportable in the NYS cardiac registries. Procedures should be directly related to the heart. Examples of reportable surgeries include but are not limited to: valve replacement, CABG, cardiac massage, or cardiac explorations. Some examples of the procedures not reportable are: pacemaker insertion, pericardiocentesis, and pleurocentesis.

The procedure does not have to be performed in the operating room or cath lab.

Descriptive Name: 15. Bleeding at Primary Access Site
Variable Name: ACCBLD_P
Format: 1 = Yes, 0 or Blank = No
Definition: Report for any procedure with bleeding at the primary access site when any of the following criteria are met:

- Overt bleeding in a critical organ, such as intracranial, intraspinal, intraocular, pericardial (associated with hemodynamic compromise/tamponade and necessitating intervention), or intramuscular with compartment syndrome (BARC 3b, BARC 3c)
- Overt bleeding causing hypovolemic shock or severe hypotension (systolic blood pressure less than 90 mmHg lasting 30 minutes or more and not responding to volume resuscitation) or requiring vasopressors or surgery (BARC 3b)
- Overt bleeding requiring reoperation, surgical exploration, or reintervention for the purpose of controlling bleeding (BARC 3b, BARC 4)
- Post-thoracotomy chest tube output 2 L or greater within a 24-hour period (BARC 4)
- Overt bleeding requiring a transfusion of 5 units or more of whole blood/red blood cells (BARC 3a)
- Overt bleeding associated with a hemoglobin drop 5 g/dL or more (3.1 mmol/L or more) (BARC 3b).

Primary Access Site refers to the vascular access site used for placement of the valve or device.

Descriptive Name: 16. Bleeding at Secondary Access Site
Variable Name: ACCBLD_S
Format: 1 = Yes, 0 or Blank = No
Definition: Report for procedure with bleeding at a secondary access site when any of the following criteria are met:

- Overt bleeding in a critical organ, such as intracranial, intraspinal, intraocular, pericardial (associated with hemodynamic compromise/tamponade and necessitating intervention), or intramuscular with compartment syndrome (BARC 3b, BARC 3c)
- Overt bleeding causing hypovolemic shock or severe hypotension (systolic blood pressure less than 90 mmHg lasting more than 30 min and not responding to volume resuscitation) or requiring vasopressors or surgery (BARC 3b)
- Overt bleeding requiring reoperation, surgical exploration, or reintervention for the purpose of controlling bleeding (BARC 3b, BARC 4)
- Post-thoracotomy chest tube output 2 L or greater within a 24-hour period (BARC 4)
- Overt bleeding requiring a transfusion of 5 units or more of whole blood/red blood cells (BARC 3a)
- Overt bleeding associated with a hemoglobin drop 5 g/dL or greater (3.1 mmol/L or greater) (BARC 3b).

Secondary Access Site refers to any vascular access site associated with the procedure other than that used for placement of the valve or device.

V. Post-Procedure Transthoracic Echo-Mitral TEER Cases Only

Report the following data elements for Mitral TEER cases.

For all of the following data elements, the reportable time period for post-operative transthoracic echo (TTE) results is after leaving the procedure room where the Mitral TEER occurred up to 90-days post-procedure (including after discharge).

If there was more than one TTE during the time period, report the last one in the 90-day period.

Please see Data Reporting Policies for information on submitting data that is collected after the initial SHIRS data submission.

Descriptive Name: Post Procedure TTE Performed
Variable Name: PO_TTE
Format: 1 = Yes, 2= No, 0 or Blank
Definition: Report yes if there was a transthoracic echo (TTE) up to 90 days post-procedure for mitral TEER patients.

Descriptive Name: Date TTE Performed
Variable Name: PO_TTE_DATE
Format: XX/XX/XXXX
Definition: Enter the date the TTE was performed.

Clarification: If there was more than one TTE after leaving the procedure room through 90-days post-procedure, report the last one in the 90-day period.

Descriptive Name: Location TTE Performed
Variable Name: PO_TTE_LOC
Format: 1-3 0 or blank

1- This Hospital
2- Another Acute Care Hospital
3- Other (eg. clinic, physician's office)

Definition: Enter the location of the post-procedure TTE.

Descriptive Name: Post-Procedure Mitral Regurgitation
Variable Name: PO_MR
Format: 0- 5 or blank
0 – None
1 – Trace/Trivial
2 – Mild
3 – Moderate
4 – Moderate-Severe
5 – Severe

Definition: Enter mitral regurgitation from the post-procedure TTE.

Descriptive Name: Post-Procedure MV Mean Gradient
Variable Name: PO_GRAD
Format: XX.X mmHg
Definition: Enter mitral valve mean gradient from the post-procedure TTE.

Interpretation:
The average gradient across the mitral valve occurring during the entire systole.

Descriptive Name: Effective Regurgitant Orifice Area (EROA)
Variable Name: PO_EROA
Format: X.XX cm^2
Definition: Enter effective regurgitant orifice area from the post-procedure TTE.

Descriptive Name: Post-Procedure Ejection Fraction
Variable Name: PO_EF
Format: 1-99, 0 or blank
Definition: Record the ejection fraction taken from the post-procedure TTE.

Directions:
- If an ejection fraction is unavailable, enter “0”.
- Any ejection fraction that is described as “Normal” in the medical record should be considered 55%.
- If EF is given as a range, enter the midpoint of the range.

Descriptive Name: Post Procedure TTE Not Performed
Variable Name: PO_NO_TTE
Format: 1-3, 0 or blank
Definition: If there was no TTE performed in the post-procedure time period, select the most appropriate response from the list below.

1- In-hospital mortality prior to post-procedure TTE
2- Not done before discharge or after discharge within 90 days of the procedure
3- Not done before discharge, unknown if done after discharge within 90 days

VI. Discharge Information

Descriptive Name: Discharge Status
Variable Name: STATUS
Format: 2-6, 8, 11-15, or 19
Definition: Enter the appropriate code.

Discharged Alive:	Died In:
11 – Home	2 – Operating Room
12 – Hospice	3 – Recovery Room
13 – Acute Care Facility	4 – Critical Care Unit
14 – Skilled Nursing Facility	5 – Medical/Surgical Floor
15 – Inpatient Physical Medicine and Rehab	6 – In-transit to Other Facility
19 – Other(specify)	8 – Elsewhere in Hospital (specify)

Directions:
If a patient is discharged to hospice (including home with hospice), the discharge status should be reported with code 12. Note that for purposes of analysis a hospice discharge (code 12) is considered an in-hospital mortality unless the hospital can provide documentation that 30 days after discharge the patient was still alive (even if still in hospice). Please see the full hospice policy and reporting requirements in “SHIRS Data Reporting Policies.”

If the patient came from a prison or correctional facility and is being discharged back to the same setting then “11 – Home” would be reported.

Use code 14 for patients who arrive from and are discharged to a skilled nursing home.

If the patient is discharged to sub-acute rehab that is in a skilled nursing facility then the discharge status would be code 14. If it is unknown where the sub-acute rehab facility is located, or if it is in a location other than a skilled nursing facility, then the discharge status would be code 19.

If the patient is discharged to an inpatient physical medicine and rehabilitation unit, the discharge status should be code 15.

Code 19 – Other (specify) should only be checked for a live discharge status not otherwise specified in this section (e.g., AMA).

Descriptive Name: Discharge to Other Location - Specify
Variable Name: DISWHERE
Format: Free Text
Definition: For patients reported with discharge status 19 – Other Live Discharge or 8 – Died Elsewhere in Hospital, enter the specific discharge disposition or location of death.

Descriptive Name: Hospital Discharge Date
Variable Name: DISDATE
Format: MM/DD/YYYY
Definition: Enter the date the patient was discharged from the hospital.
If the patient died in the hospital, the hospital discharge date is the date of death.

Descriptive Name: 30 Day Status
Variable Name: THIRTYDAY
Format: 1, 2, or 9
Definition: Report the patient's status at 30 days post-procedure using the appropriate code.

1-Live
2-Dead
9-Unknown

VII. Person Completing Report

REMINDER: This section is optional for all cases

Descriptive Name: Person Completing Report - Optional
Variable Name: REPORT_NAME
Format: Free Text (not on upload file)
Definition: This space is provided as an aid to the hospital. This space may be used to enter the name and telephone number of the person completing the report, and the date the report was completed. This field is not required and is not used by the Department of Health. It is provided solely for the use of the individual hospitals.

This field appears only on the data collection form, it is not part of data entry or file specification for transmission to the Cardiac Services Program.

Descriptive Name: Referring Physician - Optional
Variable Name: REF_PHYS
Format: Free Text
Definition: This space is provided as an aid to the hospital. It is intended to allow the name of the referring cardiologist or primary care physician to be entered. For many hospitals, this is useful for tracking 30-day status. By entering the name of the referring physician, case lists can be generated and sent to the referring physician for follow-up.

This field is not required and is not used by the Department of Health. It is provided solely for the use of the individual hospitals.

Stages of Shock Classification

Note: The data elements in this section are required only for records with any of the following criteria: MI < 24 hours, Refractory Cardiogenic Shock, Non-refractory Cardiogenic Shock, Heart Failure - Current (other than elective, same-day admission), Emergency or Salvage Priority or has a clinical diagnosis of cardiogenic shock within 12 hours prior to Case Start.

Note: For all data elements below, the term "Case Start" refers to the time that the skin incision, vascular access, or its equivalent, was made in order to start the procedure

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Descriptive Name: Clinical Diagnosis of Cardiogenic Shock
Variable Name: CLINDX_CS
Format: 1 = Yes, 0 or Blank = No
Definition: Indicate if the patient has a clinical diagnosis of cardiogenic shock within 12 hours prior to Case Start.

Clarification:
Report if there is a diagnosis of cardiogenic shock even if the case does not meet the NYS SHIRS definition of Shock or Refractory Shock.

Documentation of SCAI Shock Stage B – Stage E is sufficient to report this data element. Examples of other acceptable documentation include but are not limited to an indication of "Cardiogenic Shock" on the procedure note, or physician notes indicating "Cardiogenic Shock" in the 12 hours prior to Case Start.

Pre-Op Biochemical Markers

Descriptive Name: Lactate in mmol/L
Variable Name: LACTATE
Format: 0.0 – 99.9 or blank
Definition: Report the last recorded Lactate (in mmol/L) prior to Case Start but within 12 hours.

Clarification:
Report the most recent value obtained. Either venous or arterial may be reported.

Descriptive Name: Lactate Not Documented/Unknown
Variable Name: LACTATE_ND
Format: 1 = Yes, 0 or Blank = No
Definition: Indicate if there was no Lactate recorded within 12 hours prior to Case Start or the value is unknown or not documented.

Descriptive Name: Lactate – Date and Time Drawn
Variable Name: LAC_DT
Format: MM/DD/YYYY HH:MM
Definition: Report the date and time that the lactate reported above was drawn. Use military time.

Descriptive Name: Lactate – Date and Time Not Documented/Unknown
Variable Name: LAC_DT_ND
Format: 1 = Yes, 0 or Blank = No
Definition: Indicate if the date and/or time that the reported lactate was drawn is unknown or not available.

Descriptive Name: ALT (Alanine Transaminase) in iU/L
Variable Name: ALT
Format: 0 – 9999
Definition: Report the last recorded ALT (in iU/L) prior to Case Start but within 12 hours.

Descriptive Name: ALT Not Documented/Unknown
Variable Name: ALT_ND
Format: 1 = Yes, 0 or Blank = No
Definition: Indicate if there was no ALT recorded within 12 hours prior to Case Start or the value is unknown or not documented.

Descriptive Name: ALT – Date and Time
Variable Name: ALT_DT
Format: MM/DD/YYYY HH:MM
Definition: Report the date and time that the ALT reported above was drawn. Use military time.

Descriptive Name: ALT – Date and Time Not Documented/Unknown
Variable Name: ALT_DT_ND
Format: 1 = Yes, 0 or Blank = No
Definition: Indicate if the date and/or time that the reported ALT was drawn is unknown or not available.

Descriptive Name: Arterial pH
Variable Name: PH
Format: 0.00 – 9.99
Definition: Report the last recorded pH prior to Case Start but within 12 hours.

Descriptive Name: Arterial pH Not Documented/Unknown
Variable Name: PH_ND
Format: 1 = Yes, 0 or Blank = No
Definition: Indicate if there was no pH recorded within 12 hours prior to Case Start or the value is unknown or not documented.

Descriptive Name: Arterial pH – Date and Time
Variable Name: PH_DT
Format: MM/DD/YYYY HH:MM
Definition: Report the date and time that the pH reported above was measured. Use military time.

Descriptive Name: Arterial pH – Date and Time Not Documented/Unknown
Variable Name: PH_DT_ND
Format: 1 = Yes, 0 or Blank = No
Definition: Indicate if the date and/or time that the reported pH was measured is unknown or not available.

Blood Pressure Before Case Start

For all Blood Pressure elements below, when both invasive and noninvasive values are available, the invasive value should be reported. Additionally, if the patient is on an IABP, the augmented values should be reported.

Descriptive Name: Systolic Blood Pressure, Last Before Start
Variable Name: LAST_BPSYS
Format: 0-999
Definition: Report the last systolic blood pressure recorded prior to Case Start.

Descriptive Name: Diastolic Blood Pressure, Last Before Start
Variable Name: LAST_BPDIA
Format: 0-999
Definition: Report the last diastolic blood pressure recorded prior to Case Start.

Descriptive Name: Blood Pressure, Last Before Start Not Documented/Unknown
Variable Name: LAST_BP_ND
Format: 1 = Yes, 0 or Blank = No
Definition: Indicate if the systolic and/or diastolic blood pressure before Case Start is unknown, not recorded, unavailable.

Descriptive Name: Mean Arterial Pressure, Last Before Start
Variable Name: LAST_MAP
Format: 0-999
Definition: Report the last Mean Arterial Pressure recorded prior to Case Start.

Clarification:
This may be calculated based on Systolic and Diastolic blood pressure if the MAP is not recorded.

Descriptive Name: Mean Arterial Pressure, Last Before Start Not Documented/ Unknown
Variable Name: LAST_MAP_ND
Format: 1 = Yes, 0 or Blank = No
Definition: Indicate if the Mean Arterial Pressure before Case Start is unknown, not recorded, unavailable.

Descriptive Name: Systolic Blood Pressure, Lowest in 1 Hour
Variable Name: LOW_BPSYS
Format: 0-999
Definition: Report the lowest systolic blood pressure within 1 hour prior to Case Start.

Clarification:
In the event of a cardiac arrest within 1 hour prior to Case Start, report “0”.

Descriptive Name: Diastolic Blood Pressure, Lowest in 1 Hour
Variable Name: LOW_BPDIA
Format: 0-999
Definition: Report the diastolic blood pressure associated with the lowest systolic blood pressure within 1 hour prior to Case Start.

Clarification:
In the event of a cardiac arrest within 1 hour prior to Case Start, report “0”.

Report the diastolic blood pressure recorded at the time of the lowest systolic blood pressure within 1 hour prior to Case Start. This may not be the lowest diastolic blood pressure recorded.

Descriptive Name: Blood Pressure, Lowest in 1 Hour Not Documented/Unknown
Variable Name: LOW_BP_ND
Format: 1 = Yes, 0 or Blank = No
Definition: Indicate if the lowest systolic and/or diastolic blood pressure within 1 hour prior to Case Start is unknown, not documented, unavailable.

Descriptive Name: Mean Arterial Pressure, Lowest in 1 Hour
Variable Name: LOW_MAP
Format: 0-999
Definition: Report the lowest Mean Arterial Pressure (MAP) within 1 hour prior to Case Start.

Clarification:
This may be calculated based on Systolic and Diastolic blood pressure if the MAP is not recorded.

In the event of a cardiac arrest within 1 hour prior to Case Start, report “0”.

Report the lowest recorded MAP within 1 hour prior to Case Start, even if it was recorded at a different time than the lowest systolic blood pressure.

Descriptive Name: Mean Arterial Pressure, Lowest in 1 Hour Not Documented/ Unknown
Variable Name: LOW_MAP_ND
Format: 1 = Yes, 0 or Blank = No
Definition: Indicate if the lowest Mean Arterial Pressure (MAP) within 1 hour prior to Case Start is unknown, not documented, unavailable.

Vasoactive Medications

Descriptive Name: Vasoactive Drugs Used
Variable Name: VASO_MEDS
Format: 1 = Yes, 0 or Blank = No
Definition: Indicate if the patient was receiving an infusion of vasoactive medications at Case Start or received a bolus of vasoactive medications within 1 hour prior to Case Start.

Descriptive Name: Dobutamine, Dopamine, Epinephrine, Levosimendan, Milrinone, Norepinephrine, Phenylephrine, Vasopressin
Variable Name: VM_DOBUT, VM_DOPA, VM_EPI, VM_LVSDN, VM_MILR, VM_NOREPI, VM_PHEN, VM_VASP
Format: 1 = Bolus Only, 2 = Infusion, 0 or Blank = No
Definition:

Use the codes below to indicate the use of vasoactive medications as listed in this section.
1 = Bolus within 1 hour prior to Case Start
2 = Infusion ongoing at time of Case Start

Leave blank or enter 0 if the patient did not receive a bolus within 1 hour prior to Case Start and was not receiving an infusion at the time of Case Start.

For patient receiving an infusion at Case Start who also received a bolus within 1 hour, report the infusion.

Descriptive Name: Other Vasoactive Medication
Variable Name: VM_OTH
Format: 1 = Bolus Only, 2 = Infusion, 0 or Blank = No
Definition: Use the codes below to indicate use of a vasoactive medication not listed above.
1 = Bolus within 1 hour prior to Case Start
2 = Infusion ongoing at time of Case Start

Descriptive Name: Other Vasoactive Medication Specify
Variable Name: VM_SPEC
Format: Free text
Definition: If Other Vasoactive Medication is reported, indicate specifically what drug was given in the space provided.

Mechanical Circulatory Support / Ventricular Assist Device

Descriptive Name: Mechanical Support Used
Variable Name: MECH_USED
Format: 1 = Yes, 0 or Blank = No
Definition: Indicate if the patient was on a Mechanical Circulatory Support Device or Ventricular Assist Device (VAD) at the time of Case Start.

Descriptive Name: IABP
Variable Name: IABP
Format: 1 = Yes, 0 or Blank = No
Definition: Report the use of IABP at Case Start.

Descriptive Name: Tandem Heart
Variable Name: TANDEM
Format: 1 = Yes, 0 or Blank = No
Definition: Report the use of Tandem Heart at Case Start.

Descriptive Name: Impella 2.5
Variable Name: IMP_25
Format: 1 = Yes, 0 or Blank = No
Definition: Report the use of Impella 2.5 at Case Start.

Descriptive Name: Impella CP
Variable Name: IMP_CP
Format: 1 = Yes, 0 or Blank = No
Definition: Report the use of Impella CP at Case Start.

Descriptive Name: Impella 5.0/5.5
Variable Name: IMP_50
Format: 1 = Yes, 0 or Blank = No
Definition: Report the use of Impella 5.0 or 5.5 at Case Start.

Descriptive Name: VA ECMO
Variable Name: VA_ECMO
Format: 1 = Yes, 0 or Blank = No
Definition: Report the use of VA ECMO at Case Start.

Descriptive Name: Percutaneous RVAD
Variable Name: PERC_RVAD
Format: 1 = Yes, 0 or Blank = No
Definition: Report the use of Percutaneous RVAD at Case Start.

Note:
Impella RP is reported in this category.

Descriptive Name: Temporary Surgical VAD
Variable Name: TEMP_VAD
Format: 1 = Yes, 0 or Blank = No
Definition: Report the use of Temporary Surgical VAD at Case Start.

Note:
Centrimag is reported in this category.

Descriptive Name: Implanted Surgical VAD
Variable Name: IMPLN_VAD
Format: 1 = Yes, 0 or Blank = No
Definition: Report the use of Implanted Surgical VAD at Case Start.

Note:
Heartmate is reported in this category.

Descriptive Name: Other Mechanical Support
Variable Name: MECH_OTH
Format: 1 = Yes, 0 or Blank = No
Definition: Report the use of an Other Mechanical Circulatory Support / VAD at Case Start.

Descriptive Name: Other Mechanical Support Specify
Variable Name: MECH_SPEC
Format: Free text
Definition: If an Other Mechanical Circulatory Support Device or VAD was reported, indicate the specific device used in the space provided.

Invasive Hemodynamic Assessment / Pulmonary Artery Catheterization

Descriptive Name: Invasive Hemodynamic Assessment
Variable Name: INV_HEMO
Format: 1 - 4, blank or 0
Definition: Use the codes below to indicate if there was invasive hemodynamic assessment and the timeframe performed.

1 – None within 12 hours of procedure
2 – Immediately prior to Case Start (within 1 hour)
3 – Between 1 and 12 hours prior to Case Start
4 – Not Documented / Unknown

Clarification:
The RA Pressure may have been obtained at an earlier time than the other PA Catheterization values. In that situation, indicate the time frame that the other values were obtained for this question and check the box for "Right Atrial Pressure Recorded at Remote Time."

Descriptive Name: Right Atrial Pressure (mean)
Variable Name: RA_MEAN
Format: 0-999
Definition: Report the Right Atrial (RA) pressure if available from within 12 hours prior to Case Start.

Descriptive Name: Right Atrial Pressure Not Documented/Unknown
Variable Name: RA_ND
Format: 1 = Yes, 0 or Blank = No
Definition: Indicate if the Right Atrial pressure is not documented or unknown.

Descriptive Name: Right Atrial Pressure on Vasoactive Medications
Variable Name: RA_MEDS
Format: 1 = Yes, 0 or Blank = No
Definition: If the Right Atrial pressure was reported, indicate if that value was recorded while the patient was receiving vasoactive medications.

Descriptive Name: Right Atrial Pressure on Mechanical Support
Variable Name: RA_MECH
Format: 1 = Yes, 0 or Blank = No
Definition: If the Right Atrial pressure was reported, indicate if that value was recorded while the patient was receiving mechanical circulatory support.

Descriptive Name: Right Atrial Pressure Recorded at Remote Time
Variable Name: RA_REMOTE
Format: 1 = Yes, 0 or Blank = No
Definition: Indicate if the Right Atrial pressure was recorded at a time remote from other Pulmonary Artery Catheterization values.

Descriptive Name: Pulmonary Artery Pressure, Systolic
Variable Name: PA_SYS
Format: 0-999
Definition: Report the systolic Pulmonary Artery (PA) pressure if available from within 12 hours prior to Case Start.

Descriptive Name: Pulmonary Artery Pressure, Diastolic
Variable Name: PA_DIA
Format: 0-999
Definition: Report the diastolic Pulmonary Artery (PA) pressure if available from within 12 hours prior to Case Start.

Descriptive Name: Pulmonary Artery Pressure Not Documented/Unknown
Variable Name: PA_ND
Format: 1 = Yes, 0 or Blank = No
Definition: Indicate if the Pulmonary Artery (PA) pressure if not documented or unknown.

Descriptive Name: Pulmonary Artery Pressure on Vasoactive Medications
Variable Name: PA_MEDS
Format: 1 = Yes, 0 or Blank = No
Definition: If the Pulmonary Artery pressure was reported, indicate if that value was recorded while the patient was receiving vasoactive medications.

Descriptive Name: Pulmonary Arterial Pressure on Mechanical Support
Variable Name: PA_MECH
Format: 1 = Yes, 0 or Blank = No
Definition: If the Pulmonary Artery pressure was reported, indicate if that value was recorded while the patient was receiving vasoactive medications.

Descriptive Name: Pulmonary Capillary Wedge Pressure (PCWP)
Variable Name: PCWP
Format: 0-99
Definition: Report the systolic Pulmonary Capillary Wedge Pressure (PCWP) if available from within 12 hours prior to Case Start.

Descriptive Name: Pulmonary Capillary Wedge Pressure Not Documented/Unknown
Variable Name: PCWP_ND
Format: 1 = Yes, 0 or Blank = No
Definition: Indicate if the Pulmonary Capillary Wedge Pressure (PCWP) is not documented or unknown.

Descriptive Name: Pulmonary Capillary Wedge Pressure on Vasoactive Medications
Variable Name: PCWP_MEDS
Format: 1 = Yes, 0 or Blank = No
Definition: If the Pulmonary Capillary Wedge Pressure (PCWP) was reported, indicate if that value was recorded while the patient was receiving vasoactive medications.

Descriptive Name: Pulmonary Capillary Wedge Pressure on Mechanical Support
Variable Name: PCWP_MECH
Format: 1 = Yes, 0 or Blank = No
Definition: If the Pulmonary Capillary Wedge Pressure (PCWP) was reported, indicate if that value was recorded while the patient was receiving mechanical circulatory support.

Descriptive Name: Left Ventricular End Diastolic Pressure
Variable Name: LVEDP
Format: 0-99 or Blank
Definition: Report the Left Ventricular End Diastolic Pressure if available from within 12 hours prior to Case Start.

Clarification:
If the documentation includes only a range and not a specific value, the highest end of the range may be reported.

Descriptive Name: Left Ventricular End Diastolic Pressure Not Documented/Unknown
Variable Name: LVEDP_ND
Format: 1 = Yes, 0 or Blank = No
Definition: Indicate if the Left Ventricular End Diastolic Pressure is not documented or unknown.

Descriptive Name: Left Ventricular End Diastolic Pressure on Vasoactive Medications
Variable Name: LVEDP_MEDS
Format: 1 = Yes, 0 or Blank = No
Definition: If the Left Ventricular End Diastolic Pressure was reported, indicate if that value was recorded while the patient was receiving vasoactive medications.

Descriptive Name: Left Ventricular End Diastolic Pressure on Mechanical Support
Variable Name: LVEDP_MECH
Format: 1 = Yes, 0 or Blank = No
Definition: If the Left Ventricular End Diastolic Pressure was reported, indicate if that value was recorded while the patient was receiving mechanical circulatory support.

Descriptive Name: Cardiac Index
Variable Name: CI
Format: 0.0-9.9 or Blank
Definition: Report the Cardiac Index if available from within 12 hours prior to Case Start.

Descriptive Name: Cardiac Index Not Documented/Unknown
Variable Name: CI_ND
Format: 1 = Yes, 0 or Blank = No
Definition: Indicate if the Cardiac Index is not documented or unknown.

Descriptive Name: Cardiac Index on Vasoactive Medications
Variable Name: CI_MEDS
Format: 1 = Yes, 0 or Blank = No
Definition: If the Cardiac Index was reported, indicate if that value was recorded while the patient was receiving vasoactive medications.

Descriptive Name: Cardiac Index on Mechanical Support
Variable Name: CI_MECH
Format: 1 = Yes, 0 or Blank = No
Definition: If the Cardiac Index was reported, indicate if that value was recorded while the patient was receiving mechanical circulatory support.

Attachment A
Response Codes for Asian and Pacific Islander Groups

These codes are to be used when race includes Asian (Variable Name AA_Code) .

01 Chinese
02 Japanese
03 Filipino
04 Korean
05 Vietnamese
06 Asian Indian
07 Bangladeshi
08 Pakistani
09 Burmese
10 Nepalese
11 Taiwanese
12 Thai
13 Bhutanese
14 Cambodian
15 Hmong
16 Indonesian
17 Laotian
18 Malaysian
19 Mongolian
20 Sri Lankan
21 Other Asian

These codes are to be used when race includes Pacific Islander (Variable Name PI_Code)

1 Native Hawaiian
2 Guamanian and Chamorro
3 Samoan
4 Other Pacific Island group

Attachment B
Response Codes for Preferred Language

Acceptable responses for “Preferred Language” (PREF_LANG). The language responses follow the ISO 639.2 conventions and there are two special codes for Other and Unknown/Not Documented.

Language	Response Code
Albanian	sqi
Arabic	ara
Bengali	ben
Cantonese	yue
Chinese	zho
English	eng
French	fra
German	deu
Greek	gre
Haitian-Creole	hat
Hindi	hin
Italian	Ita
Japanese	jpn
Korean	kor
Mandarin	cmn
Polish	pol
Russian	rus
Spanish	spa
Tagalog	tgl
Urdu	urd
Yiddish	yid
SPECIAL VALUES	
Other Language Not Above	888
Language Unknown/Not Documented	999

Attachment C
PFI Numbers for Cardiac Diagnostic and Surgical Centers

PFI	Facility
	ALBANY AREA
0001	Albany Medical Center Hospital
0746	Bassett Medical Center
0829	Ellis Hospital
1005	Glens Falls Hospital
0756	Samaritan Hospital
0818	Saratoga Hospital
0005	St. Peter's Hospital
0135	UVM Health Network - CVPH
	BUFFALO AREA
0207	Buffalo General Medical Center
0210	Erie County Medical Center
0213	Mercy Hospital of Buffalo
0574	Niagara Falls Memorial Medical Center
0066	Olean General Hospital
0103	UPMC Chautauqua
	ROCHESTER AREA
0116	Arnot Ogden Medical Center
0411	Rochester General Hospital
0413	Strong Memorial Hospital
0471	The Unity Hospital of Rochester
	SYRACUSE AREA
0977	Cayuga Medical Center
0636	Crouse Hospital
0630	St. Joseph’s Hospital Health Center
0058	UHS-Wilson Medical Center
0635	Upstate University Hospital – SUNY
15478	Wynn Hospital

Attachment C
PFI Numbers for Cardiac Diagnostic and Surgical Centers

PFI	Facility
NEW ROCHELLE AREA	
0699	Garnet Health Medical Center (formerly Orange Regional Medical Center)
0779	Good Samaritan Hospital of Suffern
0925	Good Samaritan University Hospital
0989	HealthAlliance Hospital – Mary's Ave
0913	Huntington Hospital
0895	John T. Mather Memorial Hospital
0885	Long Island Community Hospital
0513	Mercy Medical Center
0180	MidHudson Regional Hospital of Westchester Medical Center
1072	Montefiore New Rochelle Hospital
0776	Montefiore Nyack Hospital
0694	Montefiore St. Luke's Cornwall Hospital
0527	Mount Sinai South Nassau
0528	Nassau University Medical Center
0541	North Shore University Hospital
0192	Northern Dutchess Hospital
1117	Northern Westchester Hospital
1039	NY Presbyterian-Hudson Valley Hospital
1122	NYP Westchester
0511	NYU- Langone Hospital - Long Island
0938	Peconic Bay Medical Center
0552	Plainview Hospital
0924	South Shore University Hospital
0943	St. Catherine of Siena Medical Center
0563	St. Francis Hospital & Heart Center
1097	St. John's Riverside Hospital-St. John's Division
0551	St. Joseph Hospital
0889	Stony Brook Southampton Hospital
0245	University Hospital at Stony Brook
0181	Vassar Brothers Medical Center
1139	Westchester Medical Center
1045	White Plains Hospital
NY CITY AREA	
1438	Bellevue Hospital Center
1178	BronxCare Health System-Concourse
1286	Brookdale University Hospital Medical Center
1288	Brooklyn Hospital Center-Downtown
1294	South Brooklyn Health
1626	Elmhurst Hospital Center
1309	Interfaith Medical Center
1165	Jacobi Medical Center

Attachment C
PFI Numbers for Cardiac Diagnostic and Surgical Centers

PFI	Facility
	NY CITY AREA (CONT.)
1629	Jamaica Hospital Medical Center
1301	King's County Hospital Center
1450	Lenox Hill Hospital
1630	Long Island Jewish Medical Center
1305	Maimonides Medical Center
1169	Montefiore Medical Center-Henry and Lucy Moses Division
3058	Montefiore Medical Center-Jack D. Weiler Hospital of A. Einstein College Division
1439	Mount Sinai Beth Israel
1456	Mount Sinai Hospital
1469	Mount Sinai Morningside
1639	Mount Sinai Queens
1306	NYP Hospital - Brooklyn Methodist Hospital
1464	NYP Hospital-Columbia Presbyterian Center
1458	NYP Hospital-NY Weill Cornell Center
1637	NYP Hospital-Queens
1463	NYU Hospitals Center
1304	NYU Langone Hospital-Brooklyn
1738	Richmond University Medical Center
1176	St. Barnabas Hospital
1740	Staten Island University Hospital-North
1320	University Hospital at Downstate
1318	Wyckoff Heights Medical Center

8888 Catheterization Laboratory at a Veterans Administration Hospital in New York (For use in this reporting system; not an official Permanent Facility Identifier.)

9999 Catheterization Laboratory Outside New York State (For use in this reporting system; not an official Permanent Facility Identifier.)

A complete listing of NYS hospitals, including their PFI can be found at:
https://profiles.health.ny.gov/hospital

Attachment D

Structural Heart Interventions Procedure Codes
NYSDOH CARDIAC ADVISORY COMMITTEE

Approach Codes

640 Transfemoral Arterial
641 Transapical
643 Ascending Aorta (aka “Direct Aorta”)
644 Transcaval
645 Transseptal
646 Transaxillary
647 Transcarotid

Note: Use these codes in conjunction with the procedure codes below to indicate which access site was used for the procedure.

Transcatheter Valve Repair

504 Mitral Transcatheter Edge to Edge Repair

Valve Replacement - For Acquired Conditions

520-528* Aortic Mechanical
530-538* Aortic Heterograft
540-548* Aortic Homograft
550-558* Mitral Mechanical
560-568* Mitral Heterograft
600-608* Mitral Homograft
570-578* Tricuspid Mechanical
580-588* Tricuspid Heterograft
590-598* Pulmonary

*REOPERATIONS: For Valve Replacement (510-608), use third digit to indicate reason for reoperation, as below. Note, the information below is specific to the valve reported. For example, a patient with previous aortic valve replacement who is now having mitral valve replacement (mechanical) would be reported using code 550 because this is not a re-operation on the mitral valve. In the event of multiple valve surgery, the third digit may be different for each valve code reported, i.e. one valve may be a re-op and the other(s) may not.

0 Not a Reoperation
1 Periprosthetic Leak
2 Prosthetic Endocarditis
3 Prosthetic Malfunction
4 Failed Surgical Valve Repair
5 Disease of Another Valve
6 Failed Catheter-based Valve Repair
7 Complication of Transcatheter Valve Replacement
8 Other Reason

Attachment D

Structural Heart Interventions Procedure Codes
NYSDOH CARDIAC ADVISORY COMMITTEE

Valve Replacement - For Congenital Conditions

112 Aortic
113 Mitral
114 Tricuspid
115 Pulmonary

Other

711 Percutaneous Coronary Intervention in the same setting as a reportable SHIRS Intervention
813 TEVAR performed at the same time as a reportable SHIRS Intervention
930 Attempted Transcatheter Valve Replacement or Mitral TEER
931 Aborted Transcatheter Valve Replacement or Mitral TEER

Attachment E
Congenital Cardiac Diagnosis Codes[1]

SEPTAL DEFECTS

ASD

10	PFO
20	ASD, Secundum
30	ASD, Sinus venosus
40	ASD, Coronary sinus
50	ASD, Common atrium (single atrium)
2150	ASD, Postoperative interatrial communication

VSD

71	VSD, Type 1 (Subarterial) (Supracristal) (Conal septal defect) (Infundibular)
73	VSD, Type 2 (Perimembranous) (Paramembranous) (Conoventricular)
75	VSD, Type 3 (Inlet) (AV canal type)
77	VSD, Type 4 (Muscular)
79	VSD, Type: Gerbode type (LV-RA communication)
80	VSD, Multiple

AV Canal

100	AVC (AVSD), Complete (CAVSD)
2610	AVC (AVSD), Complete (CAVSD), Left dominant
2620	AVC (AVSD), Complete (CAVSD), Right dominant
2630	AVC (AVSD), Complete (CAVSD), Balanced
110	AVC (AVSD), Intermediate (transitional)
2640	AVC (AVSD), Intermediate (transitional), Left dominant
2650	AVC (AVSD), Intermediate (transitional), Right dominant
2660	AVC (AVSD), Intermediate (transitional), Balanced
120	AVC (AVSD), Partial (incomplete) (PAVSD) (ASD, primum)
2670	AVC (AVSD), Partial (incomplete) (PAVSD) (ASD, primum), Left dominant
2680	AVC (AVSD), Partial (incomplete) (PAVSD) (ASD, primum), Right dominant
2690	AVC (AVSD), Partial (incomplete) (PAVSD) (ASD, primum), Balanced
2580	Common AV valve insufficiency
2970	Common AV valve stenosis
830	Single ventricle, Unbalanced AV canal

AP Window

140	AP window (aortopulmonary window)
150	Pulmonary artery origin from ascending aorta (hemitruncus)

Truncus Arteriosus

160	Truncus arteriosus
2010	Truncus arteriosus + Interrupted aortic arch

PULMONARY VENOUS ANOMALIES

Partial Anomalous Pulmonary Venous Connection

180	Partial anomalous pulmonary venous connection (PAPVC)
190	Partial anomalous pulmonary venous connection (PAPVC), scimitar

Total Anomalous Pulmonary Venous Connection

200	Total anomalous pulmonary venous connection (TAPVC), Type 1 (supracardiac)
210	Total anomalous pulmonary venous connection (TAPVC), Type 2 (cardiac)
220	Total anomalous pulmonary venous connection (TAPVC), Type 3 (infracardiac)
230	Total anomalous pulmonary venous connection (TAPVC), Type 4 (mixed)

COR TRIATRIATUM

250	Cor triatriatum

[1]*Society of Thoracic Surgeons, Adult Cardiac Surgery Database v6.23.2, used with permission.*

Attachment E
Congenital Cardiac Diagnosis Codes[1]

PULMONARY VENOUS STENOSIS

260 Pulmonary venous stenosis
2480 Pulmonary venous stenosis, acquired
2490 Pulmonary venous stenosis, spontaneous

SYSTEMIC VENOUS ANOMALIES

Anomalous Systemic Venous Connection
270 Systemic venous anomaly

Systemic Venous Obstruction
280 Systemic venous obstruction

RIGHT HEART LESIONS

Tetralogy of Fallot
290 TOF
2140 TOF, Pulmonary stenosis
300 TOF, AVC (AVSD)
310 TOF, Absent pulmonary valve

Pulmonary Atresia
320 Pulmonary atresia
330 Pulmonary atresia, IVS
340 Pulmonary atresia, VSD (Including TOF, PA)
350 Pulmonary atresia, VSD-MAPCA
360 MAPCA(s) (major aortopulmonary collateral[s]) (without PA-VSD)

Tricuspid Valve Disease and Ebstein's Anomaly
370 Ebstein's anomaly
2700 Dysplastic Tricuspid or non-systemic atrioventricular valve, non-Ebstein's
410 Tricuspid or non-systemic atrioventricular valve, Other

RVOT Obstruction and/or Pulmonary Stenosis
420 Pulmonary stenosis, pulmonary or neo-pulmonary Valvar
430 Pulmonary artery stenosis (hypoplasia), Main (trunk)
440 Pulmonary artery stenosis, Branch, Central (within the hilar bifurcation)
450 Pulmonary artery stenosis, Branch, Peripheral (at or beyond the hilar bifurcation)
470 Pulmonary artery, Discontinuous
490 Pulmonary stenosis, Subvalvar
500 DCRV

Pulmonary Valve Disease
510 Pulmonary valve, Other
530 Pulmonary insufficiency
540 Pulmonary insufficiency and pulmonary stenosis

SHUNT FAILURE

Shunt Failure
2130 Shunt failure
2730 Shunt Problem
2740 Shunt Problem, Excess pulmonary blood flow (pulmonary overcirculation)
2750 Shunt Problem, Inadequate pulmonary blood flow

[1]*Society of Thoracic Surgeons, Adult Cardiac Surgery Database v6.23.2, used with permission.*

Attachment E
Congenital Cardiac Diagnosis Codes[1]

CONDUIT FAILURE

Conduit Failure

520 Conduit failure

LEFT HEART LESIONS

Aortic Valve Disease

550 Aortic stenosis, Subvalvar
2500 Aortic stenosis, subvalvar, discrete
2510 Aortic stenosis, subvalvar, IHSS
2520 Aortic stenosis, subvalvar, tunnel-like
560 Aortic stenosis, neo-aortic or truncal, Valvar
570 Aortic stenosis, Supravalvar
590 Aortic valve atresia
600 Aortic, neo-aortic, or truncal valve insufficiency
610 Aortic, neo-aortic or truncal valve, other
620 Aortic, neo-aortic, or truncal valve, Other

Sinus of Valsalva Fistula/Aneurysm

630 Sinus of Valsalva aneurysm

LV to Aorta Tunnel

640 LV to aorta tunnel

Mitral Valve Disease

650 Mitral stenosis, Supravalvar mitral ring
660 Mitral or systemic AV valve stenosis, Valvar
670 Mitral or systemic AV valve stenosis, Subvalvar
680 Mitral or systemic AV valve stenosis, Subvalvar, Parachute
700 Mitral or systemic AV valve insufficiency and stenosis
710 Mitral or systemic AV valve insufficiency
720 Mitral or systemic AV valve, Other

Hypoplastic Left Heart Syndrome

730 Hypoplastic left heart syndrome (HLHS)
2760 Hypoplastic left heart syndrome (HLHS), AA+MA
2770 Hypoplastic left heart syndrome (HLHS), AA+MS
2780 Hypoplastic left heart syndrome (HLHS), AS+MA
2790 Hypoplastic left heart syndrome (HLHS), AS+MS

Shone's Syndrome

2080 Shone's syndrome

CARDIOMYOPATHY

740 Cardiomyopathy (including dilated, restrictive, and hypertrophic)
750 Cardiomyopathy, End-stage congenital heart disease

PERICARDIAL DISEASE

760 Pericardial effusion
770 Pericarditis
780 Pericardial disease, Other

[1]*Society of Thoracic Surgeons, Adult Cardiac Surgery Database v6.23.2, used with permission.*

Attachment E
Congenital Cardiac Diagnosis Codes[1]

SINGLE VENTRICLE

790 Single ventricle, DILV
800 Single ventricle, DIRV
810 Single ventricle, Mitral atresia
820 Single ventricle, Tricuspid atresia
830 Single ventricle, Unbalanced AV canal
840 Single ventricle, Heterotaxia syndrome
850 Single ventricle, Other
851 Single Ventricle + Total anomalous pulmonary venous connection (TAPVC)

TRANSPOSITION OF THE GREAT ARTERIES

Congenitally Corrected TGA

870 Congenitally corrected TGA
872 Congenitally corrected TGA, IVS
874 Congenitally corrected TGA, IVS-LVOTO
876 Congenitally corrected TGA, VSD
878 Congenitally corrected TGA, VSD-LVOTO
2800 Congenitally corrected TGA, IVS + Coarctation or arch hypoplasia or arch interruption
2810 Congenitally corrected TGA, VSD + Coarctation or arch hypoplasia or arch interruption

Transposition of the Great Arteries

880 TGA, IVS
890 TGA, IVS-LVOTO
900 TGA, VSD
910 TGA, VSD-LVOTO
2820 TGA, IVS + Coarctation or arch hypoplasia or arch interruption
2830 TGA, VSD + Coarctation or arch hypoplasia or arch interruption

DORV

930 DORV, VSD type
940 DORV, TOF type
950 DORV, TGA type
960 DORV, Remote VSD (uncommitted VSD)
2030 DORV + AVSD (AV Canal)
975 DORV, IVS

DOLV

980 DOLV

THORACIC ARTERIES AND VEINS

Coarctation of Aorta and Aortic Arch Hypoplasia

990 Coarctation of aorta
1000 Aortic arch hypoplasia
92 VSD + Aortic arch hypoplasia
94 VSD + Coarctation of aorta

[1]*Society of Thoracic Surgeons, Adult Cardiac Surgery Database v6.23.2, used with permission.*

Attachment E
Congenital Cardiac Diagnosis Codes[1]

THORACIC ARTERIES AND VEINS (CONTINUED)

Coronary Artery Anomalies

1010 Coronary artery anomaly, Anomalous aortic origin of coronary artery (AAOCA)
2840 Coronary artery anomaly, Anomalous aortic origin of coronary artery (AAOCA), Left coronary artery from right sinus
2850 Coronary artery anomaly, Anomalous aortic origin of coronary artery (AAOCA), Right coronary artery from left sinus
2860 Coronary artery Anomaly, Intramural coronary

1020 Coronary artery anomaly, Anomalous pulmonary origin (includes ALCAPA)
1030 Coronary artery anomaly, Fistula
1040 Coronary artery anomaly, Aneurysm
2420 Coronary artery anomaly, Ostial atresia
1050 Coronary artery anomaly, Other

Interrupted Arch

1070 Interrupted aortic arch
2020 Interrupted aortic arch + VSD
2000 Interrupted aortic arch + AP window (aortopulmonary window)

Patent Ductus Arteriosus

1080 Patent ductus arteriosus

Vascular Rings and Slings

1090 Vascular ring
1100 Pulmonary artery sling
2870 Esophageal compression by vessel
2880 Tracheal compression by vessel

Aortic Aneurysm

1110 Aortic aneurysm (including pseudoaneurysm)

Aortic Dissection

1120 Aortic dissection

THORACIC AND MEDIASTINAL DISEASE

Lung Disease

1130 Lung disease, Benign
1140 Lung disease, Malignant

Tracheal Stenosis

1160 Tracheal stenosis
2430 Tracheomalacia
1170 Airway disease

Pleural Disease

1430 Pleural disease, Benign
1440 Pleural disease, Malignant
1450 Pneumothorax
1460 Pleural effusion
1470 Chylothorax
1480 Empyema

[1]*Society of Thoracic Surgeons, Adult Cardiac Surgery Database v6.23.2, used with permission.*

Attachment E
Congenital Cardiac Diagnosis Codes[1]

THORACIC AND MEDIASTINAL DISEASE (CONTINUED)

Esophageal Disease

1490 Esophageal disease, Benign
1500 Esophageal disease, Malignant

Mediastinal Disease

1505 Mediastinal disease
1510 Mediastinal disease, Benign
1520 Mediastinal disease, Malignant

Diaphragmatic Disease

1540 Diaphragm paralysis
1550 Diaphragm disease, Other

Chest Wall

2160 Rib tumor, Benign
2170 Rib tumor, Malignant
2180 Rib tumor, Metastatic
2190 Sternal tumor, Benign
2200 Sternal tumor, Malignant
2210 Sternal tumor, Metastatic

Pectus Excavatum, Carinatum

2220 Pectus carinatum
2230 Pectus excavatum

Thoracic Outlet

2240 Thoracic outlet syndrome

ELECTROPHYSIOLOGICAL

1180 Arrhythmia
2440 Arrhythmia, Atrial, Atrial fibrillation
2450 Arrhythmia, Atrial, Atrial flutter
2460 Arrhythmia, Atrial, Other
2050 Arrhythmia, Junctional
2060 Arrhythmia, Ventricular
1185 Arrhythmia, Heart block
1190 Arrhythmia, Heart block, Acquired
1200 Arrhythmia, Heart block, Congenital
1220 Arrhythmia, Pacemaker, Indication for replacement
2530 Short QT syndrome
2540 Long QT syndrome (Ward Romano syndrome)
2550 Wolff-Parkinson-White syndrome (WPW syndrome)

MISCELLANEOUS, OTHER

1230 Atrial Isomerism, Left
1240 Atrial Isomerism, Right
2890 Interrupted IVC with azygos continuation
2090 Dextrocardia
2100 Levocardia
2110 Mesocardia
2120 Situs inversus
1250 Aneurysm, Ventricular, Right (including pseudoaneurysm)
1260 Aneurysm, Ventricular, Left (including pseudoaneurysm)
1270 Aneurysm, Pulmonary artery

[1]*Society of Thoracic Surgeons, Adult Cardiac Surgery Database v6.23.2, used with permission.*

Attachment E
Congenital Cardiac Diagnosis Codes[1]

MISCELLANEOUS, OTHER (CONTINUED)

1280	Aneurysm, Other
1290	Hypoplastic RV
1300	Hypoplastic LV
2070	Postoperative bleeding
1310	Mediastinitis
2910	Mediastinitis, Deep
2920	Mediastinitis, Superficial
1320	Endocarditis
1325	Rheumatic heart disease
1330	Prosthetic valve failure
1340	Myocardial infarction
1350	Cardiac tumor, Unspecified.
2930	Cardiac tumor, Ventricular fibroma
2940	Cardiac tumor, Ventricular rhabdomyoma
2950	Cardiac tumor, Atrial myxoma
2960	Pericardial teratoma
1360	Pulmonary AV fistula
1370	Pulmonary embolism
1385	Pulmonary vascular obstructive disease
1390	Pulmonary vascular obstructive disease (Eisenmenger's)
1400	Primary pulmonary hypertension
1410	Persistent fetal circulation
1420	Meconium aspiration
2250	Kawasaki disease
1560	Cardiac, Other
1570	Thoracic and/or mediastinal, Other
1580	Peripheral vascular, Other
2260	Complication of cardiovascular catheterization procedure
2270	Complication of cardiovascular catheterization procedure, Device embolization
2280	Complication of cardiovascular catheterization procedure, Device malfunction
2290	Complication of cardiovascular catheterization procedure, Perforation
2300	Complication of interventional radiology procedure
2310	Complication of interventional radiology procedure, Device embolization
2320	Complication of interventional radiology procedure, Device malfunction
2330	Complication of interventional radiology procedure, Perforation
2340	Foreign body, Intracardiac foreign body
2350	Foreign body, Intravascular foreign body
2360	Open sternum with closed skin
2370	Open sternum with open skin (includes membrane placed to close skin)
2380	Retained sternal wire causing irritation
2390	Syncope
2400	Trauma, Blunt
2410	Trauma, Penetrating
2560	Cardio-respiratory failure not secondary to known structural heart disease
2570	Myocarditis
2590	Protein-losing enteropathy
2600	Plastic bronchitis
7000	Normal heart
7777	Miscellaneous, Other