**2026 BMC2 PCI Data Dictionary**
Blue Cross Blue Shield of Michigan
Percutaneous Coronary Interventions
Data Collection Definitions
*Definitions updated 01/01/2026 for 2026Q1 Discharges*

## Patient Information

### Date of Discharge

**Data Abstraction Instructions:**
Enter the date the patient was discharged from your facility for the current hospitalization.
Selections: enter (D-M-Y)

### NCDR Cath PCI Patient ID

**Data Abstraction Instructions:**
Enter CathPCI Identification number that matches CathPCI data sent to NCDR. This number is generated either by a vendor tool or the CathPCI website.

### NCDR Cath PCI Other ID

**Data Abstraction Instructions:**
Enter your own identification number. For example, a case number or number of your choice.

### Date of Birth

**Data Abstraction Instructions:**
Enter patient date of birth (D-M-Y)

## Insurance Coverage

### Insured

Data Abstraction Instructions:
If patient has no health insurance coverage, mark no. The term “self-pay” may be shown.
* If the patient is listed as “Medicaid Pending", mark them as Uninsured.
**Selections:**

- Yes
- No

### Commercial Insurance

**Data Abstraction Instructions:**
A type of health insurance that covers medical expenses for the insured. Commercial policies can be sold individually or as part of a group plan.
•Employment-based health insurance is coverage offered through one's own employment or a relative's. It may be offered by an employer or by a union.
•Own Employment-based health insurance is coverage offered through one's own employment and only the policyholder is covered by the plan.

•Direct-purchase health insurance is coverage through a plan purchased by an individual from a private company.
*BCBSM: Healthy Blue Outcomes, Simply Blue HRA; Simply Blue HSA; Community Blue
*Other Payer Examples: Priority, Aetna, Humana,

**Selections:**

- Yes
    - BCBSM
    - Other Payer
- No

## Health Maintenance Organization (HMO)

**Data Abstraction Instructions:** A **health maintenance organization** (HMO) is an organization that provides or arranges managed care for health insurance, self-funded health care benefit plans, individuals and other entities in the United States and acts as a liaison with health care providers (hospitals, doctors, etc.) on a prepaid basis.
* Blue Care Network (BCN) Michigan: Healthy Blue Living; Healthy Blue Living Rewards; Healthy Blue HMO HRA; Blue Care Network HMO HRA; BCN Advantage HMO-POS; Blue Elect Plus; BCN HMO; Blue Essentials
* Other HMO Example: HAP

**Selections:**

- Yes
    - Blue Care Network (BCN) Michigan
    - Other HMO
- No

## Government Provided Insurance

**Data Abstraction Instructions:**
Government health insurance includes plans funded by governments at the federal, state, or local level. The major categories of government health insurance are Medicare, Medicaid, the Children's Health Insurance Program (CHIP), military health care, state plans, and the Indian Health Service.

- **Medicare Original** is the Federal program which helps pay health care costs for people 65 and older and for certain people under 65 with long-term disabilities.
    - If Yes to Medicare, Patients may have a **Medicare Supplemental that they pay for**. Medigap (also Medicare supplement insurance or Medicare supplemental insurance) refers to various private supplemental health insurance plans sold to Medicare beneficiaries in the United States that provide coverage for medical expenses not or only partially covered by Medicare. Medigap's name is derived from the notion that it exists to cover the difference or "gap" between the expenses reimbursed by Medicare and the total amount charged.
    - **Medicare Supplemental Coverage:**
        - **BCBSM**
        - **Other Payer Medicare supplemental Coverage**:
            - HAP Senior Plus
- **Medicare Advantage** (Part C)

    - **BCBSM:**
        - Group Options: The UAW Retiree Medical Benefits Trust- URMBT Hourly Retirees: Chrysler, Ford, GM; Michigan Public School Employees Retirement System
        - My Blue Medigap Plan
    - **BCN**:
        - HMO-POS options: Elements, Basic, Classic, Prestige
        - HMO option: Focus (Wayne County Only)
    - **Other**
- **Medicaid** is a program administered at the state level, which provides medical assistance to the needy. Families with dependent children, the aged, blind, and disabled who are in financial need are eligible for Medicaid. It may be known by different names in different states.
- **Blue Cross Complete of Michigan** is a Medicaid health insurance plan contracted with the Michigan Department of Community Health. The plans service areas include Livingston, Washtenaw, and Wayne Counties. For more information see: http://www.mibluecrosscomplete.com/member/blue-cross-complete/blue-cross-complete-of-michigan.shtml
- **County:** Many communities in Michigan (not all) are using an innovative approach to providing health care benefits to persons in need. Programs called County Health Plans are serving as a vehicle to provide access to organized systems of health care for the indigent uninsured and lower income persons without private or public health insurance. Examples include Mid-Michigan Health Plan (MHP), Ingham Health Plan (IHP), Northern Health Plan (NHP), Kent Health Plan (KHP), and Washtenaw Health Plan (WHP).
- **Other:** Other Government Insurance (like Canadian Health Insurance, Military Health Care, or Indian Health Services).

****Medicare has *two* options**:**

1. Original Medicare, government provided (which includes part A (hospital coverage) and part B (medical outpatient coverage)

2. Medicare Advantage, offered by private companies with contracts with Medicare to provide hospital and medical services (A & B) which is called part C.

The second option, Medicare Advantage can be an HMO, PPO, private pay for service plans, special needs plans, and medical savings account plans.

If a patient has the original Medicare with parts A & B, they can have a Medicare supplemental plan as well. These supplemental plans are also private payers and can be Blue Cross, United Health, Humana, Omaha, etc.

If a patient has Medicare Advantage there will not be a supplemental insurance plan as well.

**Selections:**

- Yes
    - Medicare Original
        - Medicare Supplemental (Y / N)
            - BCBSM
            - Other Payer Medicare supplemental coverage
    - Medicare Advantage (Part C)

        - BCBSM
        - BCN
        - Other
    - Medicaid
    - Blue Cross Complete of Michigan
    - County
    - Other
- No

## Patient History/Comorbidity

### Afib/Aflutter

**Data Abstraction Instructions:**

Prior to procedure, or history of paroxysmal, persistent, permanent atrial fibrillation and/or atrial flutter.

**Timeframe:** Birth until start of first PCI procedure performed during this admission.

**Selections:**

- Yes
- No

### History of TIA/CVA

**Data Abstraction Instructions:**

- Cerebrovascular Accident (CVA): Patient has a history of stroke, i.e., loss of neurological function with residual symptoms at least 72 hours after onset, presumed to be from vascular etiology.
- Transient Ischemic Attack (TIA): Patient has a history of loss of neurological function that was abrupt in onset but with complete return of function within 24 hours, presumed to be due to vascular etiology.

**Timeframe:** Birth until start of first PCI procedure performed during this admission.

**Selections:**

- Yes
- No

### Diabetes Treatment

**Data Abstraction Instructions:**

Select patients' highest level of diabetes therapy.
If patient is not diabetic, select not applicable "N/A"
Do not include sliding scale management during hospitalization as IDDM.
Example: Patient is on Metformin and Lantus select IDDM.
Example: Patient on Metformin and placed on sliding scale in hospital, select NIDDM.

**Timeframe:** Birth until start of first PCI procedure performed during this admission.

**Selections:**

- IDDM
- NIDDM
- Not Applicable

## Cardiogenic Shock and/or Arrest w/in 24 hours

**Data Abstraction Instructions:**

Indicate if there has been an episode of cardiogenic shock and/or cardiac arrest noted within 24 hours of start of first PCI procedure during this episode of care.

**Timeframe:** within 24 hours of the start of the first procedure during this episode of care.

**Selections:**

- Yes
- No

**If "Yes":**

**Lactate**

Record the value obtained closest to procedure start.

- only include values obtained within six hours of first procedure start.
- arterial or venous values are acceptable
- do not enter values obtained after procedure start

Range: 0-30 mmol/L

**pH**

Record the value obtained closest to procedure start.

- only include values obtained within six hours of first procedure start.
- arterial or venous values are acceptable
- do not enter values obtained after procedure start

**Range:** 6-8

## Cardiac Arrest

Select "Yes", if within 24 hours preceding the start of the first PCI procedure being entered, the patient experienced a cardiac arrest event that required CPR and/or defibrillation (tachy or brady event).

**If "Yes":**

**Targeted Temperature Management in the setting of Cardiac Arrest**

**Data Abstraction Instructions:**

- When medical record documentation indicates which targeted temperature management (TTM) strategy/protocol was used, select that protocol type.
- If TTM protocol type is not documented, but temperature goal is documented, please use the descriptions below to guide "Protocol Type" selection:
    - Normothermia goal temperature-36°C
    - Hypothermia goal temperature-32°C or 33°C
- When medical record documentation indicates temperature is being managed but there is no protocol type or temperature goal documented, select "Not Available".
  Notes: please refer to list of interventions below:
  A, Ice packs applied to the torso, neck, and proximal limbs. B, Infusion of cold saline via central access. C, Surface-based cooling system using circulating water/air or gel pads in conjunction with computerized temperature control unit. D, Cooling catheter inserted into the femoral vein with closed-loop intravascular circulation of cooling fluids. E, Intranasal cooling system featuring evaporated liquid coolant mixed with air and

delivered through bilateral nasal cannulae for induction of brain hypothermia. F, Heat exchanger module directly incorporated in an extracorporeal life support circuit. https://www.ahajournals.org/doi/10.1161/JAHA.122.026539

**Selections:**

- Yes
    - Select Protocol Type
        - Normothermia
        - Hypothermia
        - Not Available
- No

**Notes:**

Select "Yes", if within the 24 hours preceding the start of the first PCI procedure being entered, the patient experienced a cardiac arrest event that required CPR and/or defibrillation (tachy or brady event), **and/or** they experienced cardiogenic shock as defined by NCDR Cath PCI (see below).
Cardiac Arrest may/may not correlate with NCDR Cath PCI Sequence numbers 4630 "Cardiac Arrest Our of Healthcare Facility" or 4635 "Cardiac Arrest at Transferring Healthcare Facility" or 7340 "Cardiac Arrest at this facility" due to the BMC2 field "within 24 hours of first procedure start" timeframe restriction.
Cardiogenic shock entry should correlate with NCDR Cath PCI SEQ 7410="Yes" and NCDR Cath PCI SEQ 7415="Cardiogenic Shock" or "Refractory Cardiogenic Shock" first PCI procedure entries.

***NCDR Cath PCI SEQ 7415 definitions***

Cardiogenic shock is defined as a sustained (>30 min) episode of systolic blood pressure <90mm Hg and /or cardiac index <2.2 L/min per square meter determined to be secondary to cardiac dysfunction and/or the requirement for parenteral inotropic or vasopressor agents or mechanical support (eg, IABP, extracorporeal circulation, VADs) to maintain blood pressure and cardiac index above those specified levels. Note: Transient episodes of hypotension reversed with IV fluid or atropine do not constitute cardiogenic shock. The hemodynamic compromise (with or without extraordinary supportive therapy) must persist for at least 30 min.
Refractory cardiogenic shock is defined as acute hypotension with systolic blood pressure <90mmHg (or cardiac index <2.0l/min/m2) for more than 10 minutes despite mechanical support or pharmacologic support with at least two vasopressor agents.
NCDR Coder's Data Dictionary v5.0 

## Lipid Panel

**Data Abstraction Instructions:**

Indicate whether a lipid panel was obtained within 30 days prior to PCI procedure start or during this admission/episode of care (pt arrival-pt discharge).
*if "non-HDL" is description provided by laboratory, please enter as an LDL equivalent if no LDL level provided (non-HDL-total cholesterol-HDL)
*Examples:*
*Scenario: Patient arrival 1/1/2021 @ 16:45, Procedure 1/2/2021 @ 10:00, Discharged 1/3/2021 @ 13:00. Lipid panel obtained 12/15/2020 @12:00. Enter: "yes"*
*Scenario: Patient arrival 1/1/2021 @ 16:45, Procedure 1/2/2021 @ 10:00, Discharged 1/3/2021 @ 13:00. Lipid panel obtained 1/2/2020 @ 06:00. Enter: "yes"*

*Scenario: Patient arrival 1/1/2021 @ 16:45, Procedure 1/2/2021 @ 10:00, Discharged 1/3/2021 @ 13:00. Lipid panel obtained 1/3/2020 @12:00. Enter: "yes"*
**If "Yes":**

## Total Cholesterol

**Data Abstraction Instructions:**
Enter the Total Cholesterol level mg/dl obtained within 30 days of PCI procedure start or during this admission/episode of care.
**NOTES:** If this level is obtained both within 30 days prior to PCI and post PCI during this admission/episode of care, please enter the value obtained pre-PCI.
**Example:**
Patient arrival 1/1/2021 @ 16:45, Procedure 1/2/2021 @ 10:00, Discharged 1/3/2021 @ 13:00. Lipid panel obtained 12/15/2020 @12:00, total cholesterol=358 mg/dl. Another lipid panel is obtained 1/3/2020 @12:00, total cholesterol=322 mg/dl. Enter: 358 mg/dl
**Selections:**

- Yes
    - Enter value mg/dl
- Not documented

**Range:** 10-1100

### HDL

**Data Abstraction Instructions:**
Enter the high-density lipoprotein (HDL) level mg/dl obtained within 30 days of PCI procedure start or during this admission/episode of care.
**NOTES:** If this level is obtained both within 30 days prior to PCI and post PCI during this admission/episode of care, please enter the value obtained pre-PCI.
**Example:** Patient arrival 1/1/2021 @ 16:45, Procedure 1/2/2021 @ 10:00, Discharged 1/3/2021 @ 13:00. Lipid panel obtained 12/15/2020 @12:00, HDL=38 mg/dl. Another lipid panel is obtained 1/3/2020 @12:00, HDL 42mg/dl. **Enter: 38 mg/dl**
**Selections:**

- Yes
    - Enter value mg/dl
- Not documented

**Range:** 1-150

### LDL

**Data Abstraction Instructions:**
Enter the low-density lipoprotein (LDL) level mg/dl obtained within 30 days of PCI procedure start or during this admission/episode of care.
**NOTES:** If this level is obtained both within 30 days prior to PCI and post PCI during this admission/episode of care, please enter the value obtained pre-PCI.
**Example:**
Patient arrival 1/11/2021 @ 16:45, Procedure 1/12/2021 @ 10:00, Discharged 1/14/2021 @ 13:00. Lipid

panel obtained 12/28/2020 @12:00, LDL=170 mg/dl. Another lipid panel is obtained 1/13/2020 @12:00, LDL 168 mg/dl. **Enter: 170 mg/dl**

**Selections:**

- Yes
    - Enter value mg/dl
- Not documented

**Range:** 10-600

## Triglycerides

**Data Abstraction Instructions:**

Enter the triglycerides level mg/dl obtained within 30 days of PCI procedure start or during this admission/episode of care.

**NOTES:** If this level is obtained both within 30 days prior to PCI and post PCI during this admission/episode of care, please enter the value obtained pre-PCI.

**Example:**

Patient arrival 1/1/2021 @ 16:45, Procedure 1/2/2021 @ 10:00, Discharged 1/3/2021 @ 13:00. Lipid panel obtained 12/15/2020 @12:00, Triglycerides=300 mg/dl. Another lipid panel is obtained 1/3/2020 @12:00, total cholesterol=260 mg/dl. **Enter: 300 mg/dl**

**Selections:**

- Yes
    - Enter value mg/dl
- Not documented

**Range:** 10-5000

## LVEF Assessment this Admission

**Data Abstraction Instructions:**

Indicate whether or not an LVEF assessment was performed during this admission. Invasive (cath lab) or non-invasive (TTE, TEE, MUGA, Stress, etc.) methods would all be applicable.

**Selections:**

- Yes
- No

**If "Yes":**

**LVEF Percentage**

If LVEF assessed during this admission, enter value obtained closest to time of discharge (% of blood that is pumped (or ejected) out of the ventricles with each contraction of the left ventricle).

Example: 4/1/2018 Stress LVEF at rest is 45%, 4/2/2018 Cath Lab LVEF is 55%, 4/4/2018 TTE LVEF is 50%, patient discharged 4/4/2018. The value that would be entered into the BMC2 LVEF field would be 50% with rationale that TTE was performed closest to discharge.

Please follow the same coding instructions LVEF% instructions noted in NCDR Cath PCI dictionary. If a single numeric value is specified in addition to a range, report the specific value (see below):

*NCDR Cath PCI coding instruction notes:*

*If a percentage range was reported, report the lowest number of the range (i.e. 50-55%, is reported as 50%).*
*If only a descriptive value is reported (i.e. normal), enter the corresponding percentage value from the list below:*
*Normal = 60%*
*Good function = 50%*
*Mildly reduced = 45%*
*Fair function = 40%*
*Moderately reduced = 30%*
*Poor function = 25%*
*Severely reduced = 20%*

**Range:** 1-99

## P2Y12 Duration

**Data Abstraction Instructions:**
Indicate whether or not the specific P2Y12 medication and duration recommendations are documented in the procedural report.
Example: Interventionalist documents the following: Dual anti-platelet therapy for 6 months then Aspirin alone. Please select "No"
Example: “triple therapy” for a duration of 3 months, then please continue with warfarin and ASA afterwards. Please select "No"
Example: Procedural report indicates "Clopidogrel for a minimum of 6 months="Yes"

## Cardiac Rehab Liaison

**Data Abstraction Instructions:**
Please indicate whether there is evidence in the medical record that *a cardiac rehabilitation staff member or other appropriately trained staff member "liaison",* provided face to face information related to cardiac rehabilitation participation to the patient **prior to discharge**.
You would select "N/A if there is documentation in the medical record that the patient is not a suitable candidate for cardiac rehabilitation (would correlate with NCDR CathPCI field #10116="No-Medical Reason Documented" or "No-Healthcare System Reason Documented").
Selections:

- Yes
- No
- N/A

## LDL Goal

**Data Abstraction Instructions:**
Indicate whether a numeric LDL goal recommendation is documented in either the procedural report and/or the discharge/after visit summary.
Example: Please continue statin therapy post discharge. LDL goal is 70 mg/dl for this patient with known coronary artery disease. Please select "Yes."
Example: Continue high dose statin. Please select "No."

## Smoking Cessation Counseling

**Data Abstraction Instructions:**

Indicate if the patient received physician delivered advice, a prescription for nicotine replacement, and/or a referral for smoking cessation services submitted on the patient's behalf. Select all that applies.

- If NCDR Cath PCI V5.0 sequence #4625 "Tobacco Use"="Current-Every Day", "Current-Some Days" and NCDR #4626 "If any current, tobacco type"= "Cigarettes" **AND** the patient received 1 or more of the smoking cessation interventions during this discharge, please select "Yes".
- If NCDR Cath PCI V5.0 sequence #4625 "Tobacco Use"="Current-Every Day", "Current-Some Days" and NCDR #4626 "If any current, tobacco type"= "Cigarettes" **AND** the patient **REFUSED** 1 or more of the smoking cessation interventions, please select "Yes", then select the intervention(s) that was refused, then select "Patient Refused".
- If NCDR Cath PCI V5.0 sequence #4625 "Tobacco Use"="Current-Every Day", "Current-Some Days" and NCDR #4626 "If any current, tobacco type"= "Cigarettes" **AND** the patient **DID NOT** receive 1 or more of the smoking cessation interventions, please select "No".
- If NCDR Cath PCI V5.0 sequence #4625 "Tobacco Use"="Never", "Former", "Smoker, Current Status Unknown", "Unknown if every Smoked", please select "No".
- If NCDR Cath PCI V5.0 sequence #10105 "Discharge Status"="Deceased", please select "No".
- If NCDR Cath PCI V5.0 sequence # 10110 "Discharge Location" ="Left against medical advice (AMA)" and does not receive Smoking Cessation, please select "No.

Note: Documentation can be performed by any physician, nurse practitioner or physician assistant.

**Selections:**

**BMC2 PCI**

- Yes
    - Physician delivered advice
        - Patient refused Y/N
    - Nicotine replacement therapy (NRT)
        - Patient refused Y/N
    - Referral to smoking counseling services
        - Patient refused Y/N

If No:

- Local counseling service
- Michigan Quitline
- Other counseling service

- No

**Supporting Definitions:**

**BMC2 PCI:**

- **Physician delivered advice** = A surgeon, advanced practice personnel (PA, NP), or resident has a conversation with the patient and recommends that the patient stops smoking. A recommendation to stop smoking offered by a nurse, respiratory therapist, or student does not count as physician delivered advice.

- If the physician recommended smoking cessation, and the patient refused, enter Physician Delivered Advice **AND** Patient refused. There must be adequate documentation to support this claim.
- **Nicotine replacement therapy (NRT**) = The provider ordered or continued NRT at discharge. NRT may include a nicotine patch, gum, lozenge, or other pharmacologic assistance (Varenicline or Bupropion).
- If a patient refuses NRT, and there is provider documentation that NRT was offered and documentation that the patient refused, enter NRT **AND** Patient refused.
- **Referral to smoking counseling services** = The provider documents during the hospital admission or at discharge that they referred the patient to a smoking counseling service. Smoking counseling services may include a hospital specialist, a smoking cessation class, the Michigan Tobacco Quitline, or a national smoking cessation service. The provider must recommend a smoking counseling service to the patient. ***The standard message to stop smoking on the AVS or discharge summary template is not sufficient.***
- If a physician, mid-level provider, or resident does an assessment and then puts in a referral to a respiratory therapist or a dedicated smoking cessation nurse to provide smoking cessation education, you can choose Referral to smoking counseling services.
- If there is documentation that the provider recommended smoking counseling services and the patient refused, enter Referral to smoking counseling services, **AND** Patient refused. There must be adequate documentation to support this claim.
- If the referral to smoking counseling services was submitted to the Michigan Tobacco Quitline, enter Referral to smoking counseling services AND Michigan Quitline.
- **Local counseling service** = The provider refers the patient to the hospital's smoking counseling service or a community-based smoking counseling service. Enter Referral to smoking counseling services AND Local counseling service.
- **Michigan Quitline** = The provider refers the patient to the Michigan Tobacco Quitline. Enter Referral to smoking counseling services AND Referral to Michigan Quitline.
- **Other counseling service** = The provider refers the patient to a Federal or National smoking cessation service. Enter Referral to smoking counseling services AND Other counseling services.

## Procedure Information

### Procedure Start Date & Time

**Data Abstraction Instructions:**

Enter the date of the current procedure (D-M-Y) and enter the time the procedure was started. (Military time)

**Selections:**

- Enter Date & Time

**Supporting Definitions:**

The time the procedure started is defined as the time which local anesthetic was first administered for vascular access, or the time of the first attempt at vascular access for the intervention (use whichever is earlier), or incision time for open vascular surgery procedures. Indicate the time (hours: minutes) using military 24-hour clock, beginning at midnight (00:00 hours). If an arterial sheath is already in place, use the time of the introduction of a catheter or the time the sheath was exchanged.

### Performed in Lab#

**Data Abstraction Instructions:**
Enter the numerical value assigned to the cardiac catheterization laboratory where this procedure was performed.

- If your facility does not use numerical identifiers for its cath labs, create and disseminate a site-specific mapping tool that assigns a unique number to each lab (e.g., "Coronary Lab" = 1, "New Lab" = 2, "Combo Lab" = 3).
- Ensure that all abstractors use the mapping tool consistently to standardize entry for this field.

**Example:**
If the procedure took place in the "Combo Lab," and your facility's mapping tool assigns "Combo Lab" the number 3, enter **3**.
**Selections:**

- Yes (enter a whole number value)
- Not Documented

## Indication for Procedure NSTE-ACS

**Data Abstraction Instructions:**
Select "yes" if NCDR sequence # 7825 was captured as "NSTE-ACS"
**Selections:**

- Yes
- No

**If yes select one of the following:**
If NCDR sequence #7825 was entered as NSTE-ACS, please indicate whether the patient was diagnosed with NSTEMI or USA.
Selections:

- NSTEMI
- USA

## Presented to cath lab from

**Data Abstraction Instructions:**
Select the option that best describes the patient's location immediately before arriving in the cath lab or the cath lab holding area for this procedure.
**Selections:**

- **Home:** Patient arrived from outside the hospital, such as a private residence, physician's office, nursing or rehabilitation facility, prison, or jail. Most sites classify these patients as "outpatient."
- **ASC/FSOF (Ambulatory Surgical Center / Free-Standing Surgical Outpatient Facility):** Patient came from an ambulatory surgical center or a free-standing surgical outpatient facility.
- **ED (Emergency Department):** Patient came directly from your facility's emergency department to the cath lab. Includes patients arriving via EMS directly to the ED.
- **Another Acute Care Facility:** Patient was transferred directly from another hospital or a free-standing emergency department.
- **Other Area of This Facility:** Patient arrived from any location within your facility other than the ED (e.g., ICU, inpatient unit, short stay unit, 23-hour admit area, surgery, endoscopy).
- **Other:** Patient arrived from a location not covered above (neither within this facility nor from another acute care facility). Use this option only in rare circumstances.

## CT or Angiogram w/in 24 hours

**Data Abstraction Instructions:**

- **Select "Yes"** if the patient received a computed tomography (CT) scan or angiogram involving intravenous iodinated contrast within 24 hours before the procedure start time.
- **Select "No"** if the patient did not receive IV iodinated contrast via CT or angiogram in the 24 hours prior.

**Selections:**

- Yes
- No

**Additional Instructions:**

- Exclude studies using $CO_2$ or gadolinium as contrast agents.
- Exclude SPECT or SPECT/CT studies.

**If "Yes", Contrast Amount:**

Enter the total volume (mL) of iodinated contrast administered during qualifying CT or angiogram(s).

- If the contrast amount (mL) is **not documented**, select **"N/A"**.
- If **more than one qualifying procedure** was performed within the 24-hour window, **add the contrast volumes for all procedures and enter the combined total (mL).**

**Example:**

If a patient had two CT scans with 35 mL and 45 mL of iodinated contrast, enter **80 mL**.

## Peak Intra Procedure ACT

**Data Abstraction Instructions:**

Enter the highest (peak) activated clotting time (ACT) measured **in seconds** during the procedure.

- Activated clotting time (ACT) should be measured during the procedure after the heparin IV bolus is given (within 1 hour of heparin bolus). Example: STEMI patient receives heparin bolus in Emergency Department
- The ACT recorded for this field must be performed **during**, ***NOT*** at the end of the procedure.
- If there are multiple specimens obtained during the procedure, enter the highest measurement of ACT (peak) in seconds.
- Enter "not obtained" if peak ACT or clotting measurement was not obtained during the procedure.
- If the highest value exceeds the limit of the device, please enter the highest reportable value +1. Example: The device's limit is 400 seconds. The result is reported as "Exceeds Limit". Enter 401 seconds.
- For purposes of abstraction of this field: **During (intra) procedure= Procedure start-removal of the interventional guide. Selections:**
- Yes
    - Enter value in seconds
    - Not documented

**Range:** 1-1000

**Non-Wire Based Physiologic Assessment**

*A non-invasive physiologic method for assessing the functional significance of coronary artery stenosis without requiring a pressure wire or pharmacologic hyperemia.*

- **Non-wire based physiologic assessments** (e.g., QFR, angiography-derived FFR, vFFR, FFRangio) provide a functional analysis of coronary lesions via software applied to angiographic data, rather than direct intravascular pressure measurements.
- These methods do not require insertion of pressure wires or administration of agents such as adenosine.
- Results can inform clinical decision-making regarding the necessity of intervention for a given lesion, similar to standard wire-based FFR measurements.

**Examples of Non-Wire Based Techniques:**

- QFR (Quantitative Flow Ratio)
- vFFR (Vessel Fractional Flow Reserve)
- FFRangio

**Use Case:**

non-wire based physiologic assessment is typically performed when a coronary lesion's severity needs to be functionally evaluated, but pressure wire or hyperemic agent use is not desired or feasible.

**Registry Note:**

Document as "QFR" or "Non-wire based physiologic assessment" when such a modality was used to evaluate coronary stenosis and specify the technique if available.

**Left Ventricular End Diastolic Pressure (LVEDP)**

**Data Abstraction Instructions:**

- Indicate LVEDP (Left Ventricular End Diastolic Pressure) obtained during procedure.
- If multiple values are obtained, please capture the value obtained pre-PCI.
- In cases where there is a discrepancy between LVEDP values obtained via hemodynamics system and physician, please enter the physician's reported value unless it is an obvious error.
- If mechanical ventricular support (MVS) device is utilized during procedure, only utilize LVEDP(s) obtained prior to initiation of mechanical ventricular support.

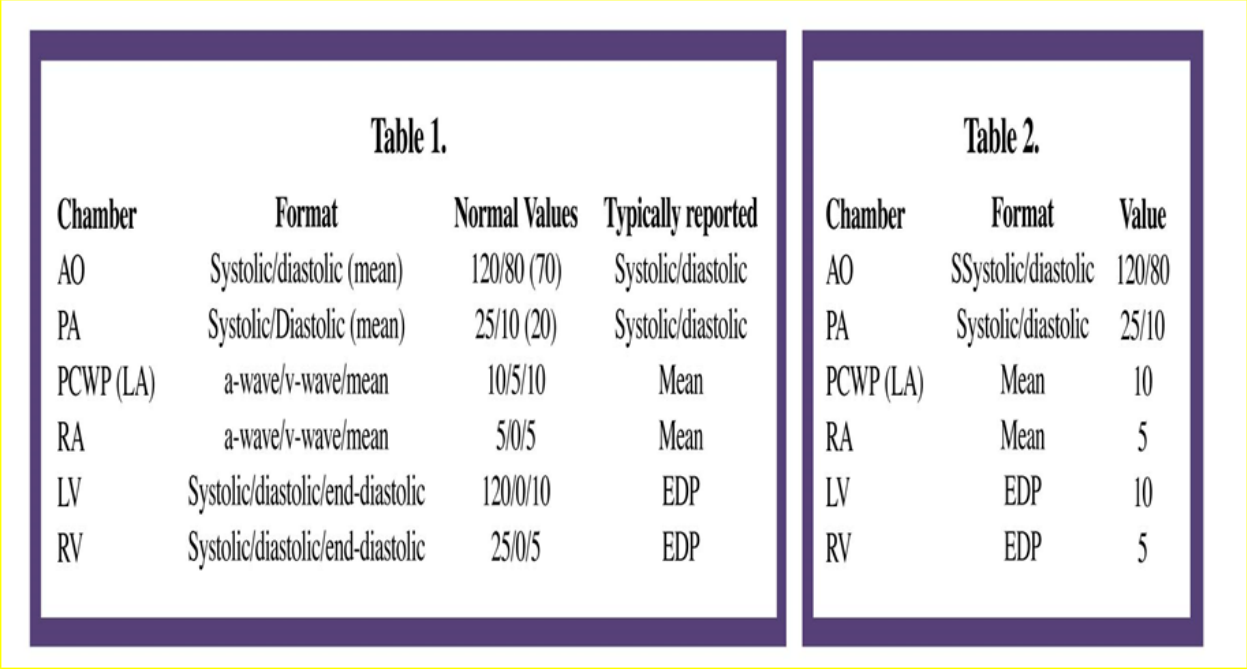

Table 1.

| Chamber | Format | Normal Values | Typically reported |
|---|---|---|---|
| AO | Systolic/diastolic (mean) | 120/80 (70) | Systolic/diastolic |
| PA | Systolic/Diastolic (mean) | 25/10 (20) | Systolic/diastolic |
| PCWP (LA) | a-wave/v-wave/mean | 10/5/10 | Mean |
| RA | a-wave/v-wave/mean | 5/0/5 | Mean |
| LV | Systolic/diastolic/end-diastolic | 120/0/10 | EDP |
| RV | Systolic/diastolic/end-diastolic | 25/0/5 | EDP |

Table 2.

| Chamber | Format | Value |
|---|---|---|
| AO | SSystolic/diastolic | 120/80 |
| PA | Systolic/diastolic | 25/10 |
| PCWP (LA) | Mean | 10 |
| RA | Mean | 5 |
| LV | EDP | 10 |
| RV | EDP | 5 |

¡http://www.cathlabdigest.com/articles/Hemodynamics-a-12-Letter-WordAn-intro-basics

**Selections:**

- Yes
    - Enter Value in mmHg
- Not Documented

### IVUS/OCT Post PCI

**Data Abstraction Instructions:**

Indicate whether IVUS/OCT was utilized after PCI portion of procedure underway.

When approaching this definition, the question you are trying to answer is: "was IVUS/OCT used to optimize PCI?" We are not addressing whether IVUS/OCT was used as one of the tools to diagnose/assess the lesion prior to PCI.

**Example #1: Patient** has NSTEMI, arrives in cath lab, diagnostic coronary angiography is performed. Physician assesses lesion with IVUS and then inserts stent. No further IVUS (or OCT) is performed. We would code this situation as "No" since IVUS was used to diagnose, not optimize PCI.

**Example #2:** Patient has NSTEMI, arrives in cath lab, diagnostic coronary angiography is performed. Physician assesses lesion with OCT and then inserts stent. The physician then performs IVUS and two additional balloon inflations. We would code "Yes" for this scenario as IVUS was utilized to optimize PCI.

**Selections:**

- Yes
- No

### If “Yes”, Lesion Number:

Enter the number that was entered into NCDR Cath PCI® sequence #8000 "Lesion Counter" to identify which lesion the IVUS/OCT measurements correlate to.

## Minimum Stent Area (MSA):

Enter the value noted in $mm^2$ for each coronary artery lesion in which this measurement is obtained.

- Enter the same lesion number noted in NCDR Cath PCI field #8000.
- If multiple MSA values are documented, enter the last (final) measurement.
- Select "N/A" if no measurement was obtained.

**Range:** 0-30$mm^2$

**Description:**

The units for minimum stent area are square millimeters (mm2).

A "Minimal Stent Area" (MSA) refers to the smallest cross-sectional area of a stent within its length, essentially representing the narrowest point of the stent lumen, usually measured using imaging techniques like intravascular ultrasound (IVUS) during a coronary intervention procedure; it is a critical parameter used to assess the adequacy of stent expansion and potential risk of restenosis (re-narrowing of the vessel) after stent placement.

https://www.jacc.org/doi/10.1016/j.jcin.2021.06.012

Stent diameter selection the identification of and then measuring the proximal and distal references. Following stent implantation, IVUS can assess the minimal stent area (MSA), a prognostic indicator closely associated with the likelihood of future events related to the stent. [6]

https://www.ncbi.nlm.nih.gov/books/NBK537019/#:~:text=Stent%20diameter%20selection%20the%20identification,to%20the%20stent.%5B6%5D

**Distal Reference Lumen Area (DRLA)**

Enter the value noted in $mm^2$ for each coronary artery lesion in which this measurement is obtained.

- Enter the same lesion number noted in NCDR cath PCI field #8000.
- If multiple DRLA values are documented for the same lesion, enter the last (final) measurement.
- Select "N/A" if no measurement was obtained.

**Range:** 0-30$mm^2$

**Description:**

The units for distal reference lumen area are square millimeters (mm2).

The distal reference lumen area is calculated by averaging the largest lumen areas measured within 5 mm proximally and distally to the stent edges.

The distal reference lumen area is used in the assessment of optimal stent expansion.

reference: https://www.ahajournals.org/doi/full/10.1161/CIRCINTERVENTIONS.121.011124#:~:text=Different%20criteria%20for%20IVUS%2Ddefined%20optimal%20stent%20expansion%20were%20primarily,the%20latest%20expert%20consensus%20document.&text=Absolute%20optimal%20expansion%20criteria%20included,when%20not%20meeting%20the%20criteria

## Secondary Access Site

**Data Abstraction Instructions:**

Indicate if a secondary arterial access site was used or attempted for any reason.

**Selections:**

- Yes

- No

### Rationale for Secondary Access Site

**Data Abstraction Instructions:**

Were any of the following devices used, or did any of the following circumstances apply? If so, check all devices used or circumstances that apply.

*Example: the PCI is performed via the RFA, without groin complications. The LFA is accessed during the procedure, and an Impella is placed. During the admission, the patient develops a thrombus in the left lower extremity that results in a surgical procedure. You will mark NO for the Primary PCI Site. You would mark Yes for Secondary Access site, Yes for Thrombus, and Yes for Mechanical Circulatory Support.*

**Selections:**

- Yes
    - Additional Procedure Access
    - Mechanical Circulatory Support
    - Failed Access
        - Femoral
        - Radial
        - Brachial
        - Other
- No

### Chronic Total Occlusion (CTO)

**Data Abstraction Instructions:**

Select "Yes" if any lesion during this procedure was captured as "Yes" in NCDR Cath PCI V5.O sequence #8005 "Chronic Total Occlusion".

**Selections:**

- Y=Yes
- N=No

**J-CTO Score**

**Data Abstraction Instructions:**

Enter the highest total score as noted in the procedure report. If multiple CTO lesions, enter highest score.

**Selections:**

- Yes
    - Enter Value
- Not Documented

**Supporting Definitions:**

Enter whole number value

**Range:** 0-5

**CTO Crossing Strategies**

**Data Abstraction Instructions:**

Select all approaches utilized and/or attempted to cross CTO lesion(s) during this procedure.

**Antegrade wiring:** Various guidewires are advanced in the antegrade direction (original direction of blood flow).
**Antegrade dissection/re-entry:** entering the subintimal space, followed by subintimal crossing of the CTO with subsequent reentry into the distal true lumen.
**Retrograde: A** guidewire is advanced into the artery distal to the occlusion (with or without a device) and is used to cross the CTO.

### Re-entry device used

**Data Abstraction Instructions:**
**Select all that apply:**

- Select "yes-attempted successful" if a re-entry device is successfully used to direct the guidewire from the subintimal space into the true lumen (i.e. re-enter).
- Select "yes-attempted unsuccessful" if physician attempts to use a re-entry device but is not successful.
- Select "No" is no re-entry device is not used/attempted during this procedure.

**Selections:**

- Yes, attempted successful
- Yes, attempted unsuccessful
- No

### Perforation requiring treatment

**Data Abstraction Instructions:**
Select yes **only** if any CTO perforation required one or more of the following treatments, across all treated CTO lesions during this procedure and/or within 24 hours of procedure end NCDR Cath PCI V5.0 sequence #7005 "Procedure End Date/Time": pericardiocentesis, coils, plugs, covered stent, thrombin or fat embolization. If perforation is only treated with prolonged balloon inflation, select “No”.
**Selections:**

- Yes
- No

## Outcomes in Lab

Indicate whether there were any complications or outcomes from the time the patient entered the lab to the time of departure from the lab.

### Acute Closure

**Data Abstraction Instructions:**
Indicate for the treated segment if an acute closure was observed during the PCI procedure. Complete occlusion of the treated vessel is usually indicated by TIMI grade flow of 0 or 1.
**Selections:**

- Yes
- No

### No Reflow

**Data Abstraction Instructions:**

Indicate if within the treated segment there was a period where no flow phenomenon was noted during the PCI procedure. No reflow phenomenon pertains to lack of flow distal to the treated segment.
No reflow pertains to lack of perfusion down the vessel despite the vessel having been opened with either ballooning or stenting.

**Selections:**

- Yes
- No

### Untreated Dissection

**Data Abstraction Instructions:**

Significant (flow limiting) dissection noted but not treated. Do not capture type A & B dissections.

**Selections:**

- Yes
- No

### Side Branch Occlusion

**Data Abstraction Instructions:**

Total occlusion of any side branch resulting from treatment of the index lesion.

**Example:** *100% occlusion of 1st diagonal during stenting of mid LAD lesion. To qualify as a side branch occlusion the vessel must be occluded at the end of the case.*

**Selections:**

- Yes
- No

### Distal Embolization

**Data Abstraction Instructions:**

Angiographic cutoff of a distal branch or vessel at any point during the procedure and/or decreased flow in a distal vessel that was previously patent in the absence of an occlusion at the site of the target lesion

**Selections:**

- Yes
- No

## Outcomes Post Lab

Indicate whether the patient had any complications or outcomes from the time they left the cath lab until the next PCI, hospital discharge, or death—whichever occurs first. For hospital stays longer than 30 days after the last PCI, only include outcomes that happened within 30 days of the last PCI.

### Stent Thrombosis

**Data Abstraction Instructions:**

Select **"Yes"** if the patient returned to the cath lab during this admission and angiography confirmed stent thrombosis in any stent placed during this hospitalization.
Select **"No"** if stent thrombosis was not identified on angiography during this admission.

**Selections:**

- Yes

- No

### VT/VF Requiring Therapy

**Data Abstraction Instructions:**

Select **"Yes"** if the patient experienced ventricular tachycardia (VT) or ventricular fibrillation (VF) that required treatment with medication or a mechanical intervention (such as defibrillation or cardioversion), including an ICD firing.

**Selections:**

- Yes
- No

### New Atrial Fibrillation

**Data Abstraction Instructions:**

Select **"Yes"** if the patient experienced a new instance of atrial fibrillation after leaving the cath lab and before the next PCI, hospital discharge, or death (whichever comes first).

Select **"No"** if the patient had a prior history of atrial fibrillation, even if they had an episode during this period.

**Examples:**

- Ms. Smith had no history of atrial fibrillation; the morning after PCI staff notes afib on the monitor and calls the physician who confirms diagnosis of atrial fibrillation. **Select "Yes".**
- Mr. Jones had a brief episode of atrial fibrillation several years prior; he experienced an episode after PCI. **Select "No".**

**Selections:**

- Yes
- No

### Primary Access Site Vascular Complication

**Data Abstraction Instructions:**

Select **"Yes"** if any of the vascular complications listed below occur at the intervention access site within **72 hours** of procedure end or removal of arterial access/device.

**Selections:**

- Yes
    - Pseudoaneurysm
    - Acute thrombosis
    - AV fistula
    - Surgical repair
    - Femoral neuropathy
    - Loss of limb
    - Retroperitoneal hematoma
    - Hematoma
- No

**Supporting Definitions:**

**Pseudoaneurysm:** Disruption and dilation of the arterial wall without clear identification of the arterial wall layers at the site of the catheter entry seen by arteriography or ultrasound.

**Acute thrombosis**: Total obstruction of the artery by thrombus. For transradial access thrombosis may be demonstrated by loss of radial pulse, hand pain may or may not be present, or via Doppler ultrasound demonstrating thrombotic radial occlusion. Femoral access thrombosis may be demonstrated by: pain, pallor, paresis, pulselessness and paresthesia/anesthesia.
**AV Fistula: Connection** between access artery and vein at the site, identified by arteriography or ultrasound, often with a continuous bruit.
**Surgical Repair:** Any invasive method to fix the access site (e.g., surgical closure, site exploration, balloon angioplasty, or covered stent placement).
**Femoral Neuropathy**: Loss of movement or sensation in the leg due to nerve injury; symptoms can include thigh weakness, numbness, and pain.
**Loss of Limb:** Access site–related amputation.
**Retroperitoneal Hematoma**: accumulation of blood in the retroperitoneal space.
**Hematoma:** a localized collection of blood outside the blood vessel.
*Only code as hematoma if one or more of the following apply:*

- Hemoglobin drop >3 g/dL
- Blood transfusion (whole blood or packed RBCs)
- Surgical/procedural intervention at the bleed site

## Secondary Access Site Vascular Complication

**Data Abstraction Instructions:**
Select **"Yes"** if any vascular complication below occurs at a secondary arterial access site (used for a support device, other purpose, or as a failed attempt prior to the primary site) within **72 hours** of procedure end or removal of arterial access/device.
**Selections:**

- Yes
    - Pseudoaneurysm
    - Acute thrombosis
    - AV fistula
    - Surgical repair
    - Femoral neuropathy
    - Loss of limb
    - Retroperitoneal hematoma
    - Hematoma
- No

**Supporting Definitions:**
**Pseudoaneurysm:** Disruption and dilation of the arterial wall without clear identification of the arterial wall layers at the site of the catheter entry seen by arteriography or ultrasound.
**Acute thrombosis**: Total obstruction of the artery by thrombus. For transradial access thrombosis may be demonstrated by loss of radial pulse, hand pain may or may not be present, or via Doppler ultrasound demonstrating thrombotic radial occlusion. Femoral access thrombosis may be demonstrated by: pain, pallor, paresis, pulselessness and paresthesia/anesthesia.
**AV Fistula: Connection** between access artery and vein at the site, identified by arteriography or ultrasound, often with a continuous bruit.
**Surgical Repair:** Any invasive method to fix the access site (e.g., surgical closure, site exploration, balloon

angioplasty, or covered stent placement).
**Femoral Neuropathy**: Loss of movement or sensation in the leg due to nerve injury; symptoms can include thigh weakness, numbness, and pain.
**Loss of Limb:** Access site–related amputation.
**Retroperitoneal Hematoma**: accumulation of blood in the retroperitoneal space.
**Hematoma:** a localized collection of blood outside the blood vessel.
*Only code as hematoma if one or more of the following apply:*

- Hemoglobin drop >3 g/dL
- Blood transfusion (whole blood or packed RBCs)
- Surgical/procedural intervention at the bleed site